Correspondence.

THE FARCE OF OUR MILITARY MANEUVERS.

To the Editor of the SCIENTIFIC AMERICAN:

The results of the recent Boston maneuvers led an enthusiastic militiaman to inquire, "What's the matter with the militia?" As far as I know, an answer has never been attempted.

The writer participated as a regular officer in the Manassas maneuvers of 1904, and later served in the New York State troops. He has had occasion to view military maneuvers both from the standpoint of a regular and from that of a militiaman. In other words, he has maneuvered on a full stomach when physically fit, and when the work imposed upon him was little more than that which regularly befell his command, and he has taken part in military encampments when fresh from an office desk, unhardened to tramping, exposure to sun, rain, heat and cold, and the coarse, half-cooked food at which his stomach revolted.

Field instruction as now imparted consists of a senseless, unnecessary physical tax upon the health and strength of our militia. Nothing but the enthusiasm, the nerve, the gameness, of our citizen soldiers enable them to stand up under the work required of them, and enable them to perform duties which no regular officer would expect or require of his men, seasoned and hardened as they are, unless matters of the gravest import were at stake. In fact, I doubt if even the splendid discipline of our finest troops could stand such a test, for men experienced in military matters know that empty stomachs are not easy to reason with, and they certainly do not prompt blind obedience.

The armory affords but one form of instruction, and that form should be perfected as nearly as possible, and too much interest cannot be created in the organization, in order that the necessary tedium of drill may not drive the men away. The day of tin soldiery, of strutting about in feathers and gaudy colors, has passed.

The fault then, as I see it, is not with the militia nor the present system of armory training, which does well enough. The fault lies in the system of field instruction, as conducted by the War Department of the United States of America.

No one denies that maneuvers when properly conducted afford splendid training for the troops engaged therein; for any large assemblage of troops is certain to yield valuable experience to men as well as officers. But there are many ways of conducting maneuvers, and the wrong way is the one people find fault with.

Thoroughbred colts, however carefully bred for speed, require hard training and severe work to win on the track; but do trainers take likely animals and gallop them under great weight until every limb of their bodies aches, until their backs, unaccustomed to the saddle, blister and gall, until they become foot-sore and fall from exhaustion? Are these colts then dragged to strange quarters, exposed to the elements, and fed on sour corn and ill-prepared food? No. Their food is carefully prepared, and they are comfortably housed. It is only after they are seasoned that serious work is imposed upon them, and that great exertion is exacted of them. They are but animals after all. They are creatures of flesh and blood, and there is a limit to their endurance. And so is the poor militiaman an animal of limited strength, though this fact has been lost sight of on the occasions known as "military maneuvers." The fact remains as true now, however, after the Manassas and Boston affairs, as it did before, for our War Department cannot change nature, nor can it reasonably hope to make a nation of seasoned war material by periodically overtaxing and maltreating a handful of citizens, who in their military zeal crowd up to the sacrifice of the maneuvers.

Did I say that these men were maltreated? Well, they are, for I have seen them with my own eyes trudging over the heaviest roads, weak and worn, with tender, bleeding feet bound with their handkerchiefs, while the relentless sun beat down upon their dizzy heads. I have seen them sweltering in stale clothes that stunk with the sweat of days, and no provision made to give them a change of clothing. I have seen them crawl like filthy animals from under insufficient covering to take up the labors of an endless day, filling their stomachs with ginger pop and doughnuts, while the nearby regulars, warm and dry, breakfasted on good hot coffee, bacon, hash, and bread. Is it not pitiful to think that these poor fellows are misled into believing that such is the life of a soldier?

How can men under such conditions profit by the object lesson intended for them? The events, in which they play a sad part, are as non-understandable to these poor militiamen as ignorance and folly can make them. They flit through their weakened minds like troublous dreams. A waking dream it is, however, for seldom is the citizen soldier allowed to drown his troubles in sleep to recoup his depleted strength in repose. The night hikes, the fiasco of guard duty, the din of the camp added to by numberless officers who rate their ability by the amount of noise they can make, render sleep a foreigner to the militia camp.

Such, then, are some of the conditions which repeat themselves maneuver after maneuver. Much thought and time are spent on plans of attack, on entraining and detraining the troops, on testing the water supply and inspecting pits, but having lured the guardsman to the camp, little time is spent on his personal instruction.

He is taught not to shoot at his friends with real charges, and asked to march, march, march, day and night without food, without rest, without the slightest attention to bodily cleanliness, all of which are fundamental in the preservation of health and sanitary conditions.

Having criticised and condemned the present method of conducting maneuvers, it is only fair to answer the question, How can the militia be really benefited by field maneuvers?

In the first place, the time usually allotted is absolutely insufficient to permit of any real benefit to the militia, for the militiaman is not physically fit to stand the work of field movements on a large scale. Before such exertions are required of them, they should have at least a week or ten days to accustom themselves to camp fare and field conditions, to learn to make themselves comfortable in camp and bivouac, to toughen themselves gradually. With each command of militia should be camped enough regular troops to supply each militia company with a competent cook, to instruct the men in the preparation of their rations. To each company should be detailed several regulars, to instruct the men in tent pitching, camp police, how to keep themselves and their equipment clean, how to make comfortable pallets on hard ground, how to secure rest at night, in matters of camp sanitation and numberless other things which experienced soldiers regard as necessary. Such instructions would indeed be valuable, for these are things which are not to be learned in the armory.

For the first week or ten days in camp, tedious drills and ceremonies should be dispensed with, and instead the men should be given light exercise in the form of short marches during the cool of the day, so as to allow them to adjust their packs, break in their shoes, and harden their feet to marching. Upon returning from such marches, they should be required to wash themselves and change clothing, and then be allowed to rest. Dress parades, reviews, and such displays should be dispensed with. They do not instruct the men. After the machinery of the camp is in good working order, and the quartermasters and commissaries have distributed their supplies, after the sore feet and weaklings have been weeded out, night attacks, forced marches, picket duty, etc., may be indulged in, with some advantage to the field officers at least, and without very great punishment to the men of their command. The men will by this time be in a physical condition which will permit of discipline, and will not be broken down and demoralized, so that they will go home utterly exhausted, and with the idea firmly rooted in their minds that the mobilization of a large body of troops means confusion and neglect of all semblance of the order and the precision which have been drilled into them by their officers at home. I may here say that my experience has been that it takes a number of drills after an encampment to get the men back in shape, so demoralized do they become under the influence of the so-called field discipline, which should be, if possible, even greater than garrison discipline.

Tactical movements as maneuvers can be instructive only to field officers and their staffs; the other participants are not in a position to follow the movement of the army as a whole. Therefore, since the junior officers and men must remain necessarily in more or less ignorance concerning the movements of the army, unless something is devised for their instruction and benefit, the maneuver, so far as the great mass of participants is concerned, is a useless farce. This being so, every move and every order emanating from the commander of a maneuver army should have in view the instruction of the individuals of the army, and no move should ever be made which would sacrifice order and discipline in the ranks, even to the tactical success of the commander.

Now, then, it will be said that the militiamen cannot spare the time to follow out the above plan; that they cannot neglect their business, upon which they depend for a living; and that to require the militia to spend two or three weeks now and then in camp, would be to set up requirements which would discourage enlistment in the State organizations. This is an old argument, and apparently has some weight; but upon investigation it will be found that the average militiaman, under present methods, is rendered unfit for effective work for a much longer period than that actively spent in camp. Some of them, poor fellows, never return to work. Many more go to the hospitals and to their sick beds for weeks, and the demoralization of mind, due to utter exhaustion of the body, renders the majority of the remainder unfit for work for varying periods of time.

But suppose the militia could not be mobilized for two weeks, or better still, a month, every second year, so as to throw an encampment in every man's enlistment; is it not better to give up the present farcical, cruel, and demoralizing system of maneuvers, than to subject the militia to such senseless physical tests?

Even if such methods as now employed were capable of putting our citizen soldiers in fit physical condition, would they remain so indefinitely? Would they not be soft, and again unseasoned upon the advent of war? Is not the fact that our militia is demoralized and unfit for the slightest additional effort at the end of the maneuver periods, ample proof that the present system is erroneous? There is but one correct answer to each of these questions, and it is a crying shame for the sages of our War Department to take enthusiastic militiamen, far more intelligent than the average regular soldier, eager to learn and unselfish in the devotion of their time to their State, and subject them to hardships which regulars could not be expected to bear under similar circumstances.

As a regular, I have smiled and looked with scorn upon the disorganized and crippled ranks of our citizen soldiers in the maneuver field, but as a militiaman I have felt the indignities which earnest and willing men have borne in those exhausted ranks.

I say that the fault lies not with the militia, far from perfect as it is, but with our War Department and those who conduct the field maneuvers. If their judgment were as faultless as the enthusiasm and willingness of the average militiaman is great, much good would result from field instruction.

JENNINGS C. WISE.

An American Demonstration of the Urban-Smith Process of Animated Color Photography.

The evening of December 11th a demonstration was given in the concert hall of Madison Square Garden, New York city, of a new process of moving pictures in natural colors, which has been perfected during the last two years by Mr. G. Albert Smith of London, England. A large audience was entertained for two hours with a considerable number of kinematograph views in natural colors. These pictures, besides being excellent reproductions of the original subjects both as to shade and color, were not so tiring to the eyes as the ordinary moving pictures, due probably to two reasons, viz., double the number of pictures thrown upon the screen, thirty-two in a second, and the toning down of the light by the color screens.

The new process is a modification of the Friesse-Greene process illustrated in the issue of this journal of October 9th last. Instead of using three color screens—red, green, and blue—in connection with two films, as does this inventor, Messrs. Urban and Smith have combined the blue and the green into a single blue-green screen. One-half the pictures are taken through a red screen, and the other half through this blue-green screen. The screens, of colored gelatine, are arranged so that each forms half of a revolving disk placed in front of the lens. The pictures are taken on a specially-prepared film made panchromatic by means of suitable dyes. As a result of this there is scarcely any difference in the density of the two images made through the different color screens. A positive is made from the negative upon ordinary film. When this is projected through the colored screens—each picture of course being projected through the same colored screen as that through which it was taken—the spectator sees the view in its natural colors, since the eye retains the color impression of the red, for example, while the blue-green picture is being substituted for it and after the latter is in its place. The combination of these two colors produces white light in much the same way as three colors do this with the Ives process. The single film and single revolving screen in front of the lens is a great simplification of the Friesse-Greene two-film process. The pictures can be made with an ordinary machine with but few changes. The subjects shown varied widely, extending from flowers to animals and birds, harvest scenes, military reviews, waterfalls and surf, etc. In all of these pictures the coloring was excellent and altogether true to nature. Such colored pictures have been shown for some time in several large music halls abroad, and they will soon be produced, no doubt, in similar places in this country.

A sliding embankment on the Pennsylvania lines west of Pittsburg near Dinsmore, Pa., which had given trouble for some years, was remedied at a time when a new culvert was put through it by driving two small tunnels entirely through the embankment and filling them with riprap. The embankment is 30 feet high and is on a sharp curve on a hillside having a slope of 20 deg., down the face of which runs a small stream. When the tunnels pierced the core of the embankment water gushed out for several hours in a stream large enough to fill a 12-inch pipe. These tunnels keep the embankment drained, and no trouble has occurred.