known exercise suffices to bring about spontaneously, as it were, all necessary irritations of motion, in their various degrees. This faculty of our will organ makes it possible that a positive control of the co-ordinate activity of the will-organ may be acquired, and that the primitive principles of all possible motions may be thoroughly mastered. The better known a motion, the less necessary is a conscious co-ordinating activity. But it is different in all unknown new forms of motion, or when changes in known motions are made. Here the nervous system lacks the image impressed upon its mind, which must be created by experiments; new combinations of muscles must be sought and discovered. The co-ordinating work of the will goes hand-in-hand with the strength-giving work of the will. Now, it is a known fact that it is a difficult matter to discern just how much force should be used in attempting an unknown motion, especially as regards the supporting muscles, and therefore the will, to make sure, applies too much force.

A person who has had no practice, when required to co-ordinate an unknown motion, will naturally make much greater efforts of both the muscles and the nerves than one who has had practice. For as soon as a motion has been learned, or at least partly learned, and the performer thereof has become familiar with the co-ordination of the motion has become more or less "mechanized"—it is performed with the least possible amount of exertion. It is easily performed; no unnecessary over-taxation and contraction of muscles lame the joints which the moving muscles are to move, thereby rendering their work more difficult. It is performed as it ought to be; there are no unnecessary, useless motions of disinterested muscles. Thus the co-ordinating will finds the correct solution of the purposed problem of motion, and this correct solution is at the same time the one that requires the least amount of strength, and which as to its outward form is, from a gymnastic point, also the most beautiful.

The German Gymnastics, as far as calisthenics and exercises on the apparatus are concerned—i.e., in localized exercises of strength and skill—are in reality a school of co-ordination; they are principally Gymnastics of the nerves and secondly Gymnastics of the muscles. It is impossible to imagine a broader cultivation of co-ordination as to form than that which the German system of Gymnastics offers. In this respect it is unsurpassed.

Now, the abstract forms of motion, especially those on the apparatus, are such as are rarely made use of in common life. To master them would be useless if we did not know that a general participation of the will increases the faculty of co-ordination, even for unknown motions; that is, it not only gives a foundation to our acquired skill, but it also assists the brain to immediately find the right way and means for any new form of motion—in a word, to master them would be useless if they did not materially aid us in getting a full control over the body.

We must now consider the activity of the nerves in exercises of quickness and endurance. We have seen that they consist mainly of an endless number of motions rhythmically repeated, limited in regard to their form to a few generally well-known kinds of motion. We have also seen that motions of quickness do not require an utmost effort of any single muscle. With them the invigorating activity of the will, the straining of the nerves, falls away; neither do they necessitate any special co-ordinating activity, since we have to deal with well-known motions only—and if any new motion of quickness is to be learned, the co-ordination of the constantly repeated fundamental motion is quickly learned, quickly mechanized. The activity of the nerves or of the will in exercises of quickness and endurance is finally reduced to such a minimum that these motions follow the slightest impulse.