

SUGGESTIONS
ON
PHYSICAL CULTURE

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"Mens sana in corpore sano."

By system of gymnastics, we understand a regular method of properly applying athletic exercises for the development and preservation of physical strength. Gymnastics must have health for final aim, and not merely the performance of certain athletic feats; they should be guided so as to systematically develop the physical organism into an harmonious whole, and to maintain this equilibrium after it is once gained. The harmony is decided by the proportional development of the parts; all the muscles in a healthy person should not be equally strong,--they should have a certain strength relative to each other; a man is not necessarily strong because he can lift 500 pounds, or because he can jump the rope at 5 feet 5, for he may have weak lungs, heart, etc. Athletes are often anything but the picture of health, although they may be "strong" in a certain sense of this word; many an acrobat whose "physical development" we have admired, has died of heart disease before the next morning; and still the fact remains that these men were "strong", because this word was here used in a wrong sense. Each individual is himself the unit by which his

physical strength should be measured, and thus a system of gymnastics must be based on the laws of the organism, and not on any outward considerations. A system founded on scientific basis, considers and uses apparatus--and to a certain extent also, the muscles, bones, joints, etc.--, only as a means to act upon nerves and vessels; it makes the exercise correspond to the laws of human anatomy and physiology; it aims at the development of weak parts and the correcting of faults. We ought not to lift ourselves by the arms on a horizontal bar, merely for the sake of developing our biceps, but rather to increase the capacity of the chest; the muscles of the abdomen should be worked with the purpose of affecting the internal organs; so that the exercises all have the distinct aim to affect the nervous energy, the respiration, circulation, digestion and secretion. For this reason, movements should be considered according to their physiological effects, and such exercises as have no distinct, healthy influence on the organism should be omitted.

But the exercises should at the same time be as simple as possible,--so that everybody can perform them,--and at the same time be the shortest road to the desired goal. Thus, we can say that "the gymnastic value of a movement is determined by how it combines a relative but clear simplicity with distinct effect

toward correct physical development in the shortest possible time." (Ling)

The old Greek philosophers scorned to adopt every movement that was possible, and they maintained that gymnastic exercises should fill the simplest laws of beauty, according to every one's ability. Before their gymnastics degenerated into festivals of competition by a few "champions", they were free from coarseness ("manly art of self defence," etc.), and the truth of these ideas is corroborated by the knowledge of to-day, that when a selection of movements is made according to the effects desired, the simplest and most beautiful exercises are generally found to be the best. The only good rule is to "obey Nature", by giving her what she demands. The simplicity of rational methods however, has often been a hinderance to their prosperity, as ignorant people mostly despise free-standing and other movements.

But a practical, easy and scientific method must not only fill the conditions: simplicity of performance and distinctness of effect, combined with beauty,--it also must be of a kind that reaches all ages and classes of either sex; in other words, it must be independent of costly apparatus. The question may arise, "Who should exercise?" and the only correct answer is, "Everybody"--the young to develop the body and prevent faulty growth, the

adult to maintain strength and prevent disease; the exercises, however, should vary according to age and sex.

Some "scientists" would have it that girls grow too wild and strong by gymnastics, and that the "military" posture taught in gymnastics is unwomanly, but these authorities have themselves prescribed for women, movements that are both violent and strong, and anything but graceful or particularly beautiful in woman--or in anybody else. We all admire grace in woman, and nothing is better adapted to produce this than gymnastics, as they give perfect command over the motions of the body. It certainly gives more pleasure to see a class of young ladies go through a number of gymnastic exercises, than it does to watch a "ballerine" with thin arms and narrow chest compressed by tight lacing, pantingly in some degree, performing some wonders of her art; and if the exercises then be a means of preventing a hanging head, round shoulders, bent knees and a clumsy walk, we ought to be grateful instead of displeased. Before girls reach maturity, they may with safety have the same exercises as boys of the same age and strength. The Spartans gave the same exercises to both boys and girls, and Grecian beauty did not suffer from it; this people did not confound delicacy with weakness,--an error that Rousseau found it necessary to point out to his contemporaries. But girls should practise gymnastics separated from older boys--what sex the teacher

belongs to, matters little-- , and their exercises, once properly chosen, should have all the distinctness belonging to gymnastics. That Indian clubs, dumb bells, etc., give a matronly appearance to girls who use them, only proves that the method is bad, but not that all gymnastics are injurious to the weaker sex; and it is a fact, proved by experience, that properly conducted gymnastics, even without apparatus, will do a great deal toward maintaining health and strength in schoolgirls and grown women. Nevertheless, we all agree that girls are weak, and that their exercises could not be too well restricted.

Every age has its distinctive predisposition in some respect, as also has each sex; from this follows that progression is less even, than people would have it, or that physical power does not increase in even pace with age, height of stature, or avoirdupois. So, for instance, the flexibility of the back increases as children grow, but decreases afterward; overgrown children from 15 to 17 years old, find it difficult to "collect" themselves for jumping, whereas certain forms of climbing are for them an easy thing. Thus exercise must vary according to age, and the progression, which in grown people is made by an increase in quality or force of movement, takes with children the form of increase in quantity, or number and frequency of movements. As

we must learn to creep before we can walk, so it is for all an important rule, not to attempt an exercise until the next easier of the same kind can be well and easily executed.

Ling classified all movements according to their local effects, and arranged them in every class in progressive order according to their strength; this enabled him to make progressive gymnastic tables--that can now be followed by "routine," almost like "bills of fare"--, and this is above all what gives his method the right to be called a rational system. He found by experiments not only how movements of the same kind should follow each other, but also how different kinds should alternate in one lesson, in order to make it efficacious according to the needs of the body. No system is so independent of external considerations as his, and consequently so well adapted to reach all, men, women, children, rich and poor. It can be applied without apparatus, and also shows how the simplest articles of furniture can be rendered serviceable. Indeed, the simpler the apparatus, the more useful it is.

No apparatus is good, unless there be a skilled hand to direct the use of it, and a good teacher of gymnastics must be able to use whatever there is at hand. A "professor" who is unable to guide the youth to activity, effort, and order, never thinks that

the fault is his own, but that it depends upon the lack of varied and intricate apparatus, of which he can never get enough. Good apparatus must be cheap, take up but little room, be useful for a variety of gymnastically unlike exercises, allow a great number to use it at one time, and be suitable for all differences of age and strength. This may seem hard on the apparatus now in use in certain gymnasiums, but it is nevertheless true.

Good lungs, where the blood can spread over a wide surface, and a large amount of it be oxidized at one time, are one of the first conditions for the maintenance of good health. Ling took this for the foundation principle of his gymnastic system, and aimed in the first place at the development of the respiratory organs. His first rule was "breathe!", his second rule was "breathe!", and his last rule was "breathe!", and it is significant that among the numerous movements of the Swedish system of gymnastics, not one interferes with free respiration.

In accordance with the proverb: "As you stand and walk, so will you act", Ling claims that "a correct basis and a posture that allows full respiration are the first requisites for the utmost beauty and power of a complete and decided action. Hence, every perfect active movement, performed with undivided attention and activity of will, is to be considered in a measure as a res-

piratory movement. This fact is expressed to every experienced eye by the way the head, neck, chest, shoulders, pelvis, etc., are carried, and it is lost by even such a slight movement as dropping the eyelids, looking down, etc. This is essentially true about positions, simple or complicated, but as the motion depends upon the position, it also refers to movements." He further says, that all execution of movements depends not only on their quantity but also on their quality--even in vaulting---and that no greater mistake could be made than to suppose that there could be a single "active" position deviating from this rule. An active sitting position, for instance, ought to be very different from the same passive position,--the common expression of idleness or lack of attention. As a consequence of this, Ling disapproved of "series" to be committed to memory, as we sometimes see in the gymnasiums, when boys go through a great number of exercises, and pay more attention to what follows next than to the way every special movement is done. Nor did he, or any other rational teacher, approve of gymnastics with music as an aid to rhythm. A lesson in gymnastics should be conducted by words of command (if it may be called so) from the instructor, who explains and shows every movement, when it is to be done for the first time, whereas he should not do the exercises with the class

as is generally supposed by those who know no better; for he is there to correct as well as to teach, and how can he have his attention on the movement he is himself performing, and at the same time see that the pupils make no mistakes? Either or both will be neglected, as no man was yet known to do two things at one time, and do them both well.

A certain amount of discipline is required, if anything is to be done with order and decision; and it should be understood, that as long as the lesson lasts, the class is under the command of the instructor. It will be generally found, that this touch of "militarism"--which need not be pedantic--is agreeable to both pupils and teacher; in gymnastics for children it is particularly necessary, as it is an essential part of education to teach children to obey. For he who has not learned this will not have any discipline over himself, any self-control. Children like restriction, when it is combined with rhythmic activity, precision, and frequent change from play to work, from rest to attention; few things will better keep children awake and teach them speed in thought and action, than to do easy and rapid movements after command. It is important to begin every lesson of gymnastics by the command: "Attention"--this word implies an active and careful position with readiness for work--as a correct commencing position is necessary when efficacy of movement is desired. To

omit this on any occasion, when free-standing movements are to be made after command, is to allow them to be done carelessly and with perhaps injurious effects. Children, however, cannot be kept attentive for any length of time, and for this reason rest must occur frequently during every lesson. It is only by making a distinct difference between rest and activity, that we make the most out of our work.

With reference to gymnastic attire, I would say that any loose dress is good; compressing hinderances, such as collars, neckties, suspenders, corsets, or tight-fitting clothes generally should be removed. " "Shirt-sleeves" is the proper dress for men; all fancy costumes are unnecessary. " (Ling), for when you work, you should wear clothes that are not hurt by work. The best dress for ladies would be a blouse, held together by a loose waistband, and reaching almost to the knee; knee-breeches, stockings and light boots. The gymnastic dress should be plain and free from showy colors--gaudiness becomes the circus-rider, but not respectable people practising physical culture.

The temperature of the gymnasium should be 50° to 55°F., and the room must be well ventilated and free from dust--as far as this can be accomplished.

In a lesson, according to the Swedish system, the different exercises always follow each other in unchanging order, viz:

1. Introductory, easy movements to correct posture and gain general attention.
2. Exercises for the extensors of the back.
3. ,, to enlarge the chest.
4. ,, for balance.
5. ,, that pull the shoulders backward.
6. ,, for the abdomen.
7. ,, for the lateral parts of the trunk.
8. ,, that quiet the action of the heart: slow leg-movements.
9. Same as No. 3.
10. Respiratory movements.
11. Jumping and vaulting.

Ling and his followers found by experiments that this arrangement gave the best results, but did not disapprove of reasonable alterations in it. The movements are classified as belonging to one of these headings, and are all carefully arranged in progressive order within each class, as found in Ling's Gymnastic tables (written by the son of P. H. Ling). Tables 1 to 12 are progressive lessons that can be followed just as they are written, and each table is meant to be used one week with lessons

every day. The remaining 22 tables contain all the exercises arranged as above, so that, for instance, table 13 contains all the movements belonging to the 8th order; table 14, those of the 3rd order; table 15, those of the 11th order; table 16, those of the 2nd order, etc. From these, the teacher selects exercises, which he himself arranges into progressive day-lessons. These tables are so complete, that a teacher need never be at a loss, no matter under what circumstances he has to work. They contain exercises for all ages, and of the most varied nature; free-standing movements, movements on apparatus, gymnastic games for children and adults, etc. They also contain directions for use and are full of good advice to the teacher.

One great feature of the Swedish system is the so-called "corrective movements", which are borrowed from the Swedish medical gymnastics, and are used by the teacher to correct the faulty growth or careless posture of single individuals. These enable the teacher to coach his pupils to an even development; no one need to be left behind, because Nature made him feebler or less harmonious, but all can reach the same good average.

The following sketches may serve to somewhat illustrate the Swedish system of gymnastics with and without apparatus.

I. Introductory or "order-movements".



Fig. 1. "Attention. Feet close. Position." Adjusts the base.

Fig. 2. "Hips firm. Position." Corrects the position of the arms

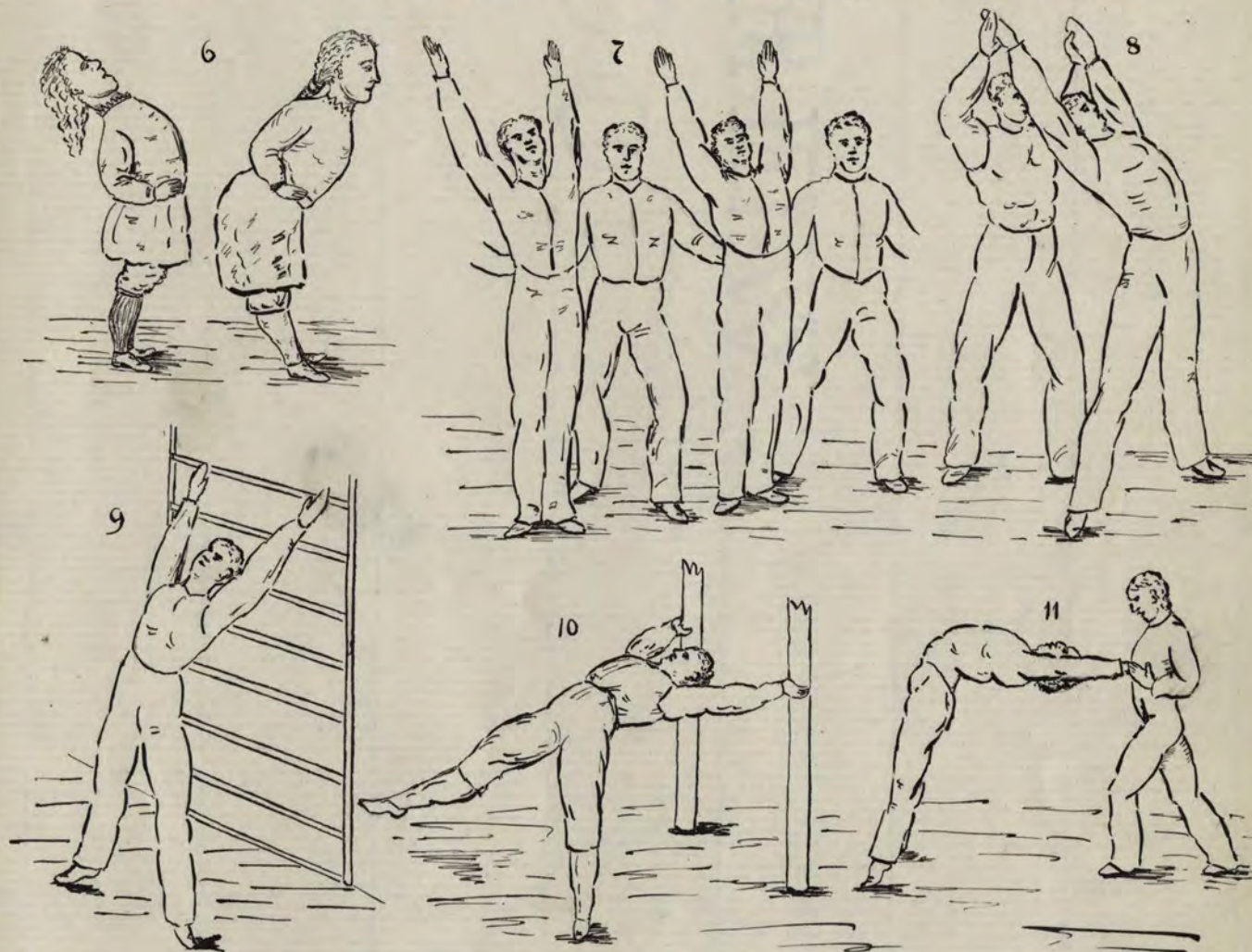
Fig. 3. "Heels raise. Heels sink." Gives the right balance.

Fig. 4. "Head forward and backward bend. Upward raise." Adjust
the pos-

Fig. 5. "Head to the right and left turn; forward turn." Adjust
the head.

Turnings, closing ranks, etc. (according to the infantry drill), belong to this class of movements.

II. Exercises for the extensors of the back, "arch-flexions."



- Fig. 6. Backward and forward bend.
 Fig. 7. Trunk-flexion backward with support at waist.
 Fig. 8. The same; hands supported by assistant.
 Fig. 9. Same as No. 3, with apparatus.
 Fig. 10 & 11. Stronger exercise of the same kind with and without apparatus.

The head should be kept erect (relative to the body), the chest well forward and the knees straight; respiration must not be stopped. If any one of these conditions is not fulfilled, the exercises lose their character and may become injurious. These movements affect not only the back, but they also expand the lower part of the chest.

III. Exercises to expand the chest, "heave-movements".

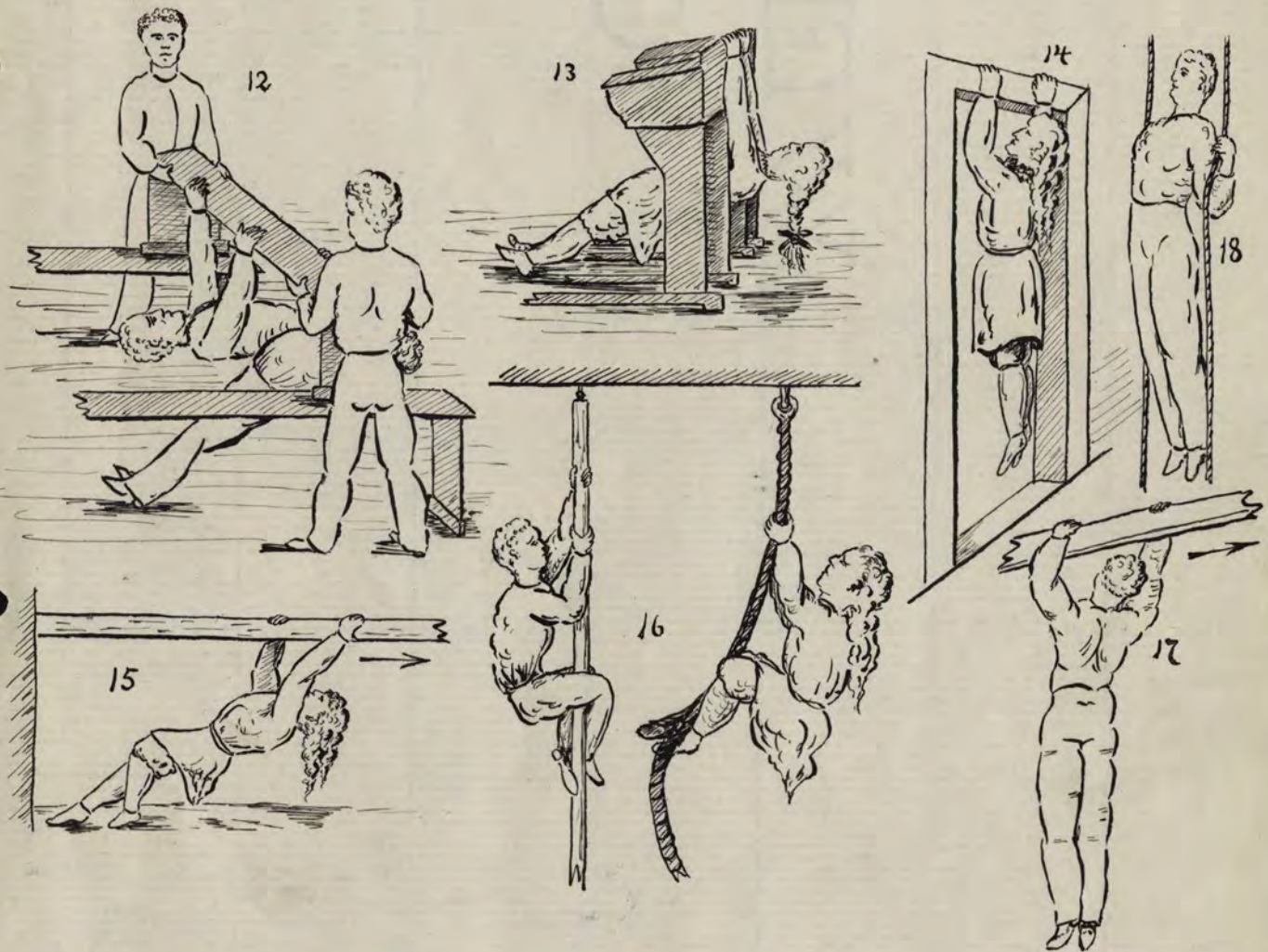


Fig. 12, 13, & 14. Hanging by the arms on different apparatus.
"Heave. Sink."

Fig. 15 & 17. Hand over hand movement with or without help of the feet.
Fig. 16. Climbing a pole or a rope with aid of both hands and feet.

These movements, of which there are hundreds of varieties, expand the upper part of the chest (besides strengthening the arms). The head must be kept erect and the chest vaulted; when the arms are flexed the elbows must be pointed sideways--not forward--otherwise the movement compresses the chest, instead of expanding it.

IV. "Balance-Movements."



Fig. 19 & 21. "Balance-walk" on bench and horizontal bar.

Fig. 20 & 23. Free-standing balance-movements.

Fig. 22. Balance-movement with help.

The question here is not merely to keep the balance, but to do it with good posture: erect head and straight back, etc. For instance, if the body leans backward, or either knee is bent in Fig. 23, or if the trunk is bent forward in Fig. 20, etc., the effect of the movement is almost entirely lost.

V. Exercises to pull the shoulders backward, "shoulder-blade-movements."

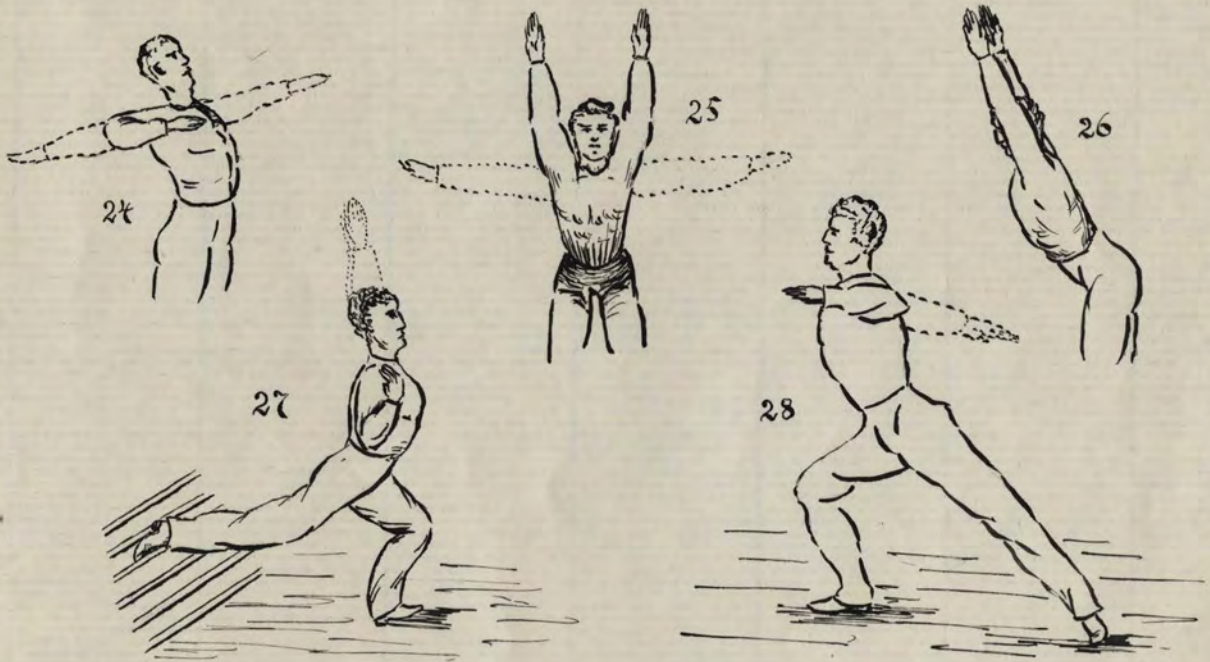


Fig. 24 & 28. "Arms forward bend and sideways stretch."

Fig. 25 & 26. "Arms upward stretch. Trunk forward bend. Arms sideways sink, upward lift. Repeat."

Fig. 27. Arm-stretching upward in a difficult position.

If the position is correct and the arms are held backward as much as can be done, these movements will adjust the position of the clavicles and "flatten" the shoulder-blades.

VI. Exercises for the abdomen.

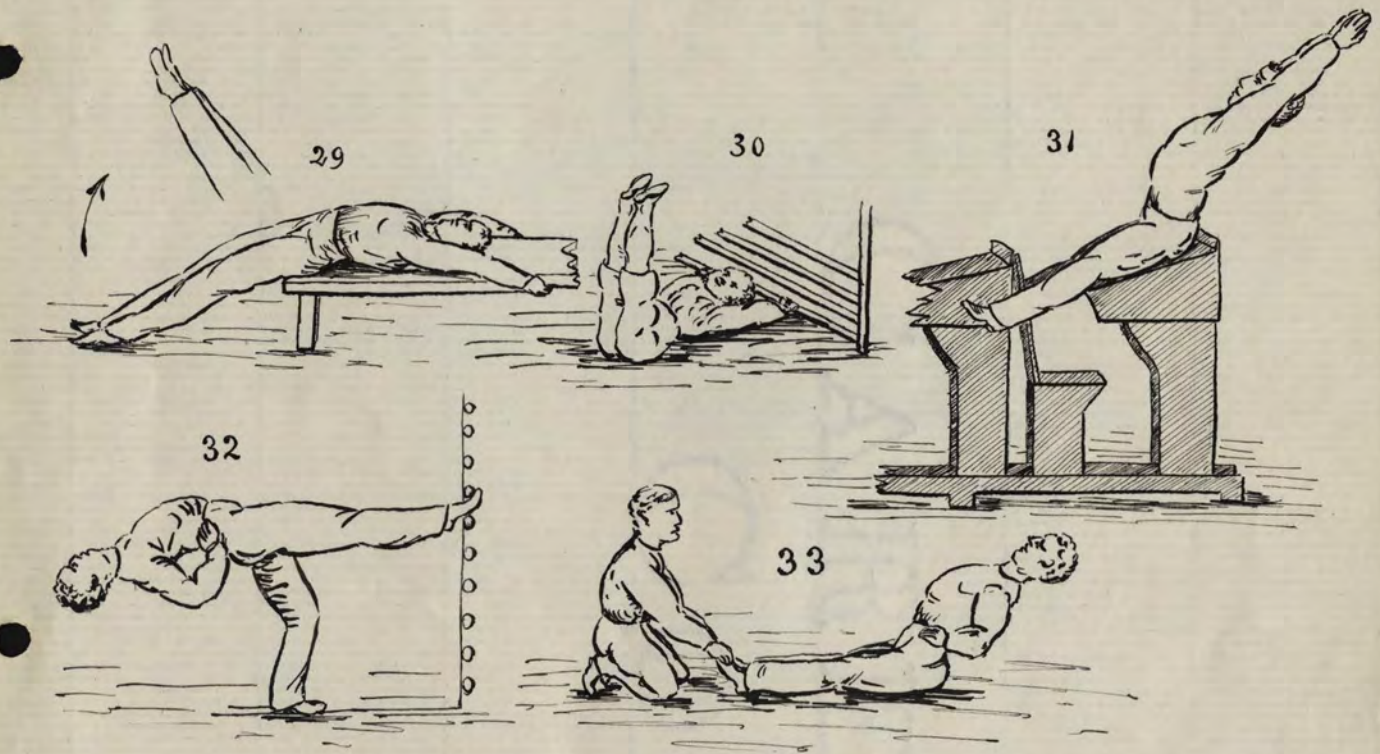


Fig. 29 & 30. Legs-raising in lying position.

Fig. 31 & 33. Trunk-flexion backward in sitting position.

Fig. 32. Trunk-flexion backward in difficult position.

It is only when the chest is kept expanded that these movements have a distinct effect on the abdomen. Respiration must not be stopped.

VII. Exercises for the lateral parts of the trunk. "Alternate side-movements."

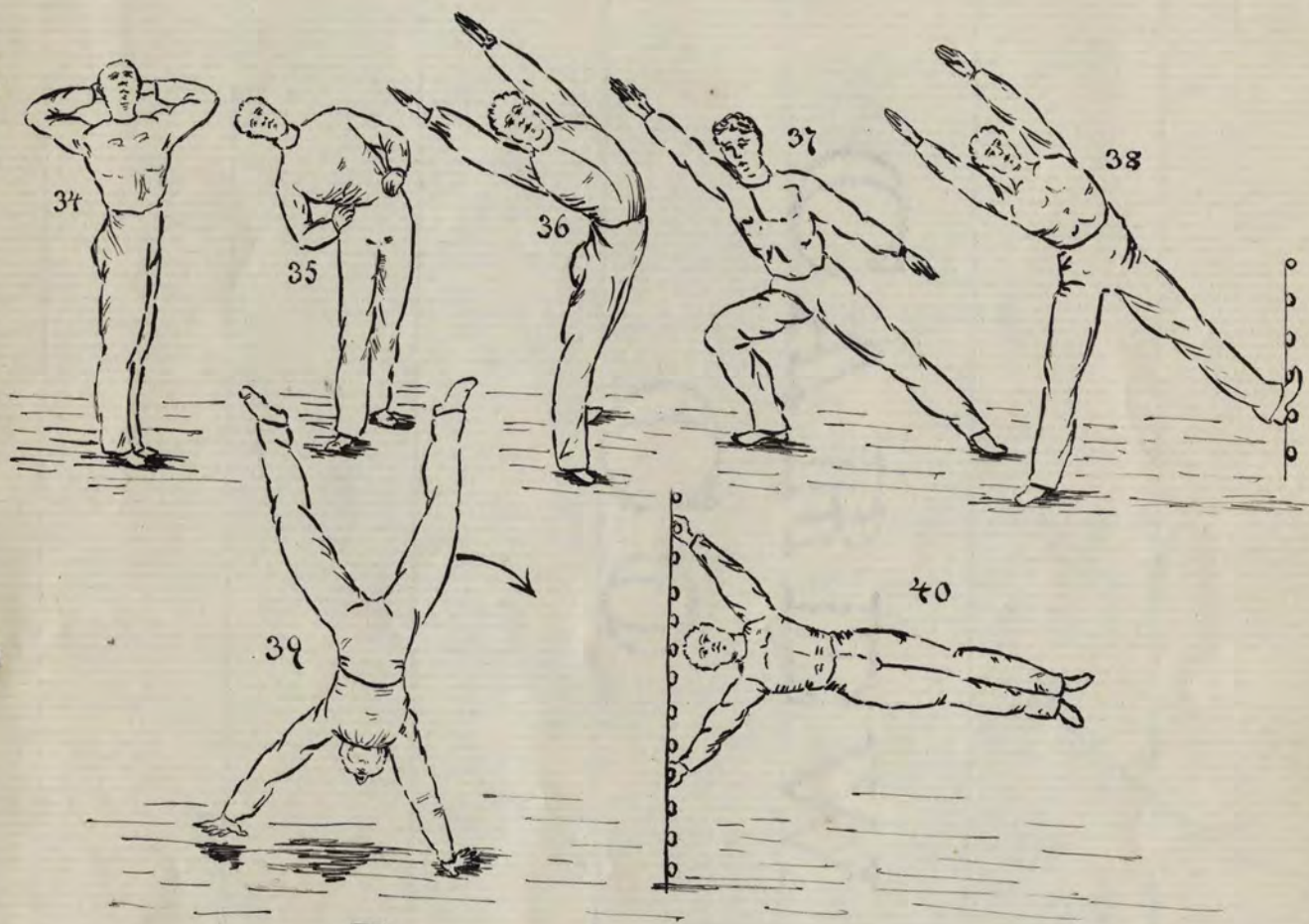
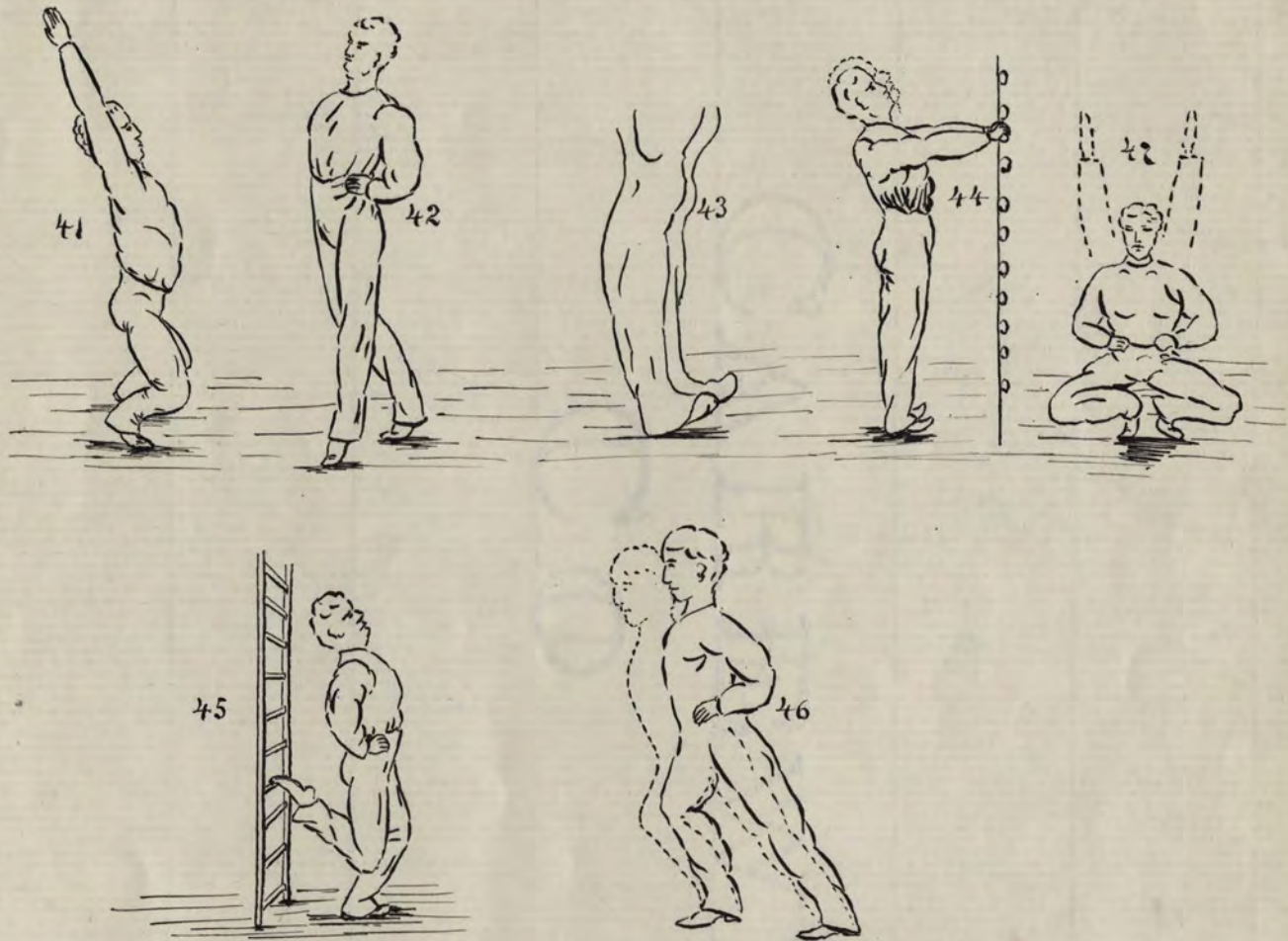


Fig. 34. Trunk-twisting. Fig. 37. Introductory fencing movement.
 Fig. 35, 36, & 38. Trunk-flexion sideways in different positions.
 Fig. 39. "Wheeling." Fig. 40. "Sideways lie-out."

The exercises must be made to both sides equally, one at a time; one-sidedness gives rise to deformities. In flexion sideways, the trunk should never in the least be bent forward or backward. Flexion should be confined to the waist and not include neck, arms, knees or any other part--faults that ignorance or carelessness would never notice.

VIII. Exercises to quiet the action of the heart, "derivative leg-movements."



- Fig. 41. "Arms upward stretch. Knees bend and stretch (slowly)!"
 Fig. 42. Walk on tip-toes.
 Fig. 43 & 44. "Heels raise. Heels sink. Toes lift and repeat."
 Fig. 45. "Left knee bend. Stretch."
 Fig. 46. "Right knee bend. Stretch."
 Fig. 47. "Hips firm. Knees bend. Sit. Arms upward stretch."

All these movements are to be done in slow rhythm.

IX. Respiratory Movements.

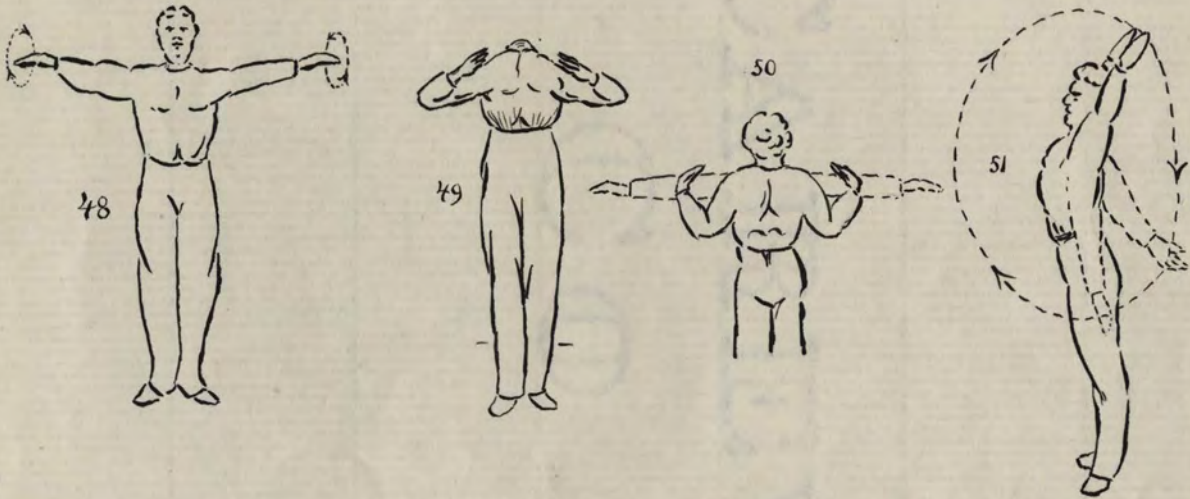


Fig. 48. "Arm-rotation. Start."

Fig. 49. "Arms forward bend. Backward bend. Arms sideways stretch. Bend. Stretch," etc.

Fig. 50. "Arms upward bend. Arms sideways stretch. Repeat."

Fig. 51. "Arms forward and upward raise. Sideways down sink and repeat."

These movements should follow the **rhythm** of deep respiration.

Breathe in, when the chest expands; breathe out, when it contracts.

X. Jumping & Vaulting.

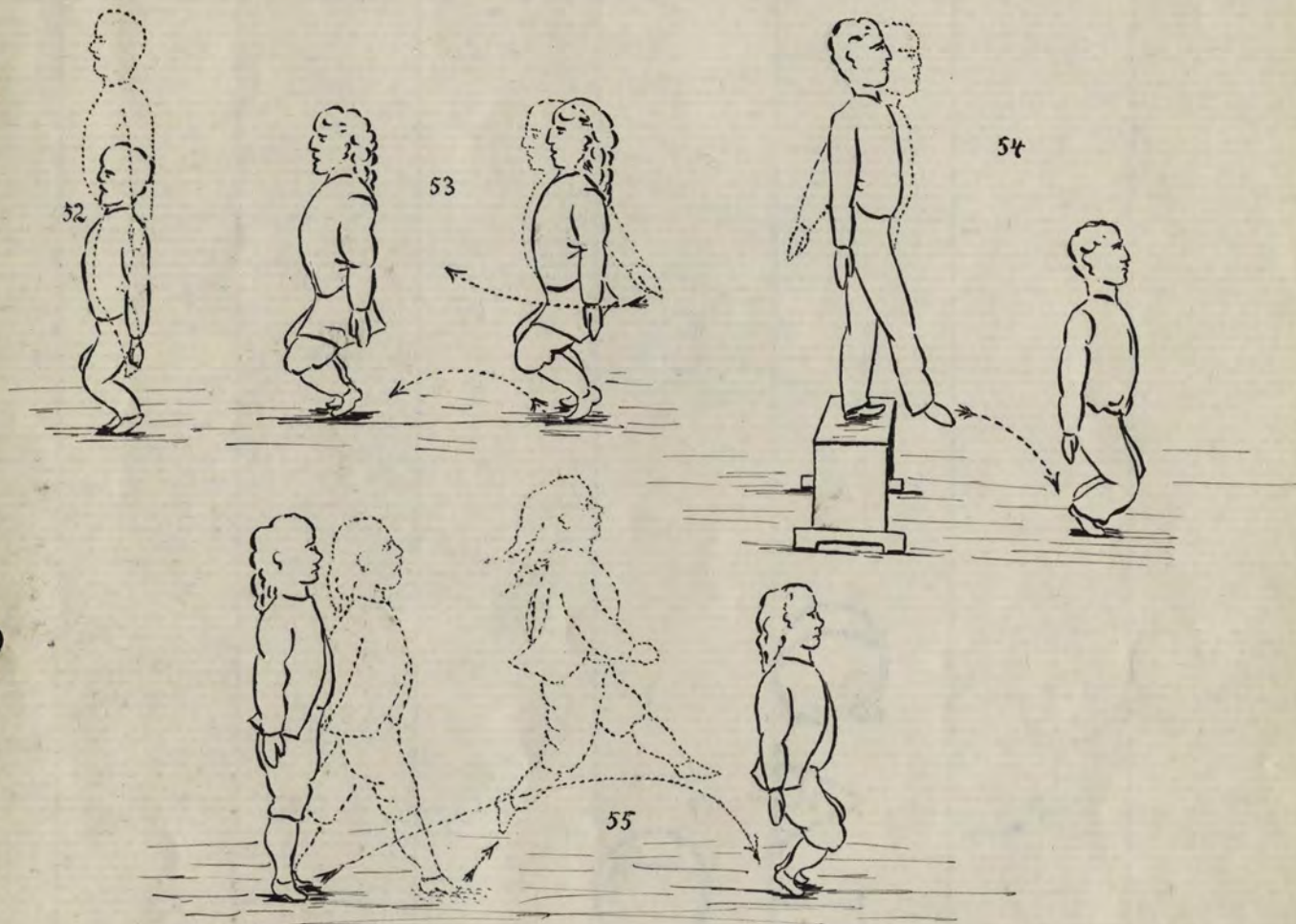


Fig. 52, 53, 54, 55. Various jumps; the thick lines show the beginning and end, and the dotted lines, the intermediate movement. The knees must be slightly bent and the heels raised when the feet strike the ground; the body must be carried as erect as possible all through the movement.

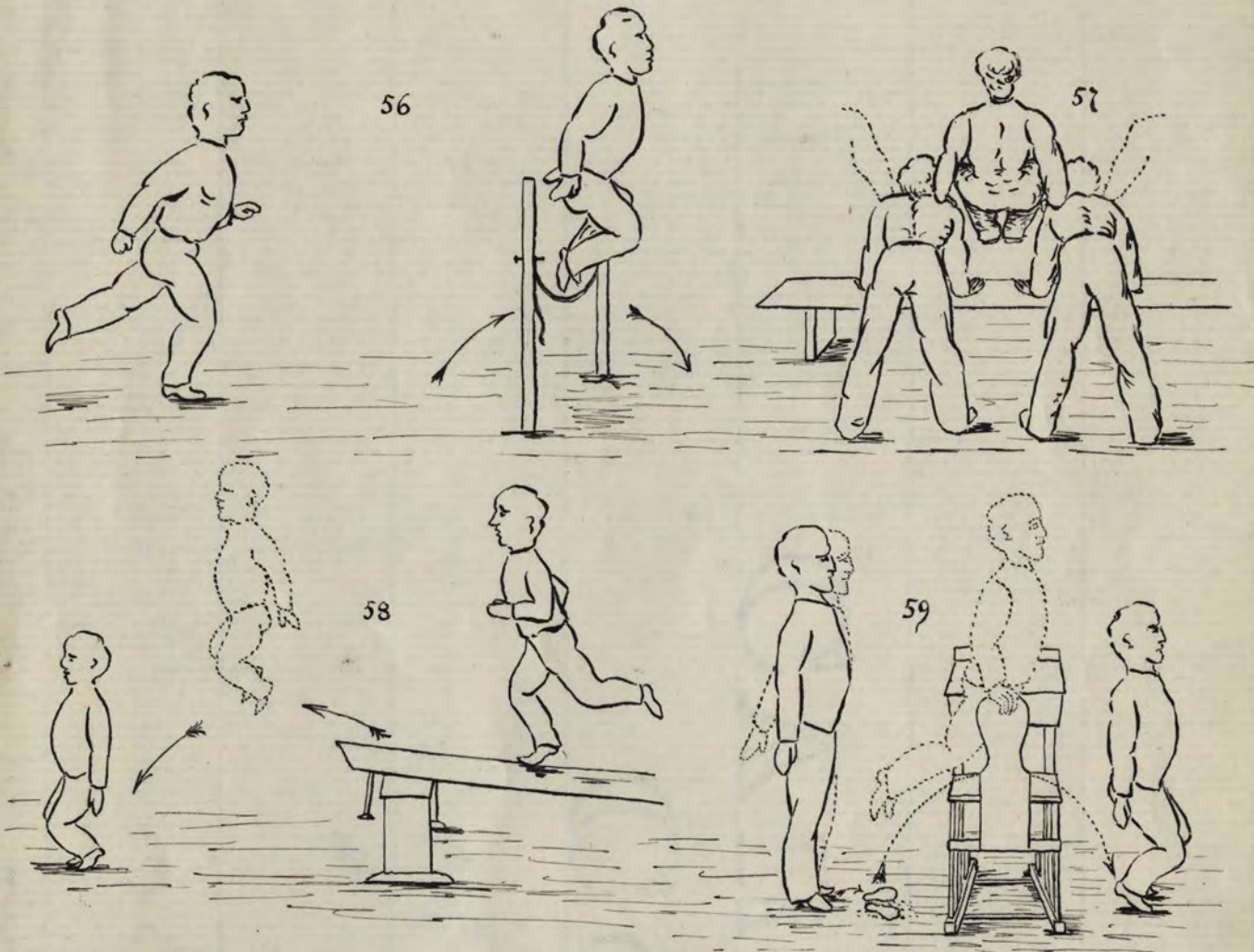
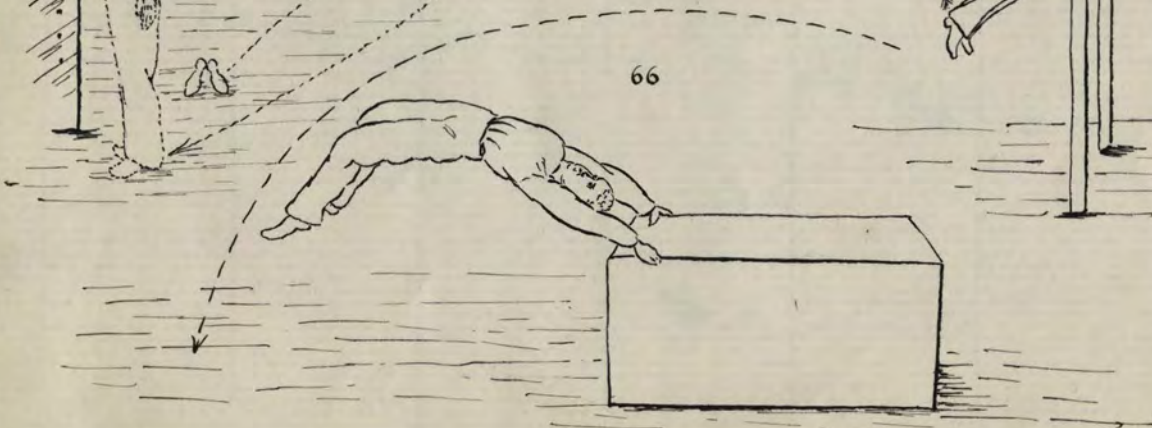
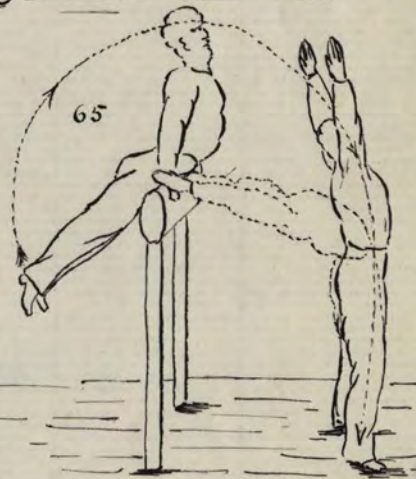
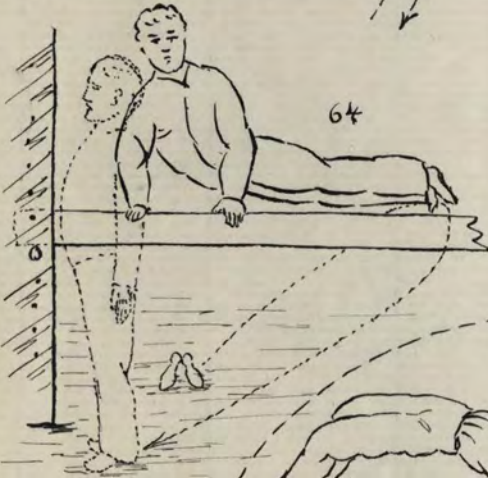
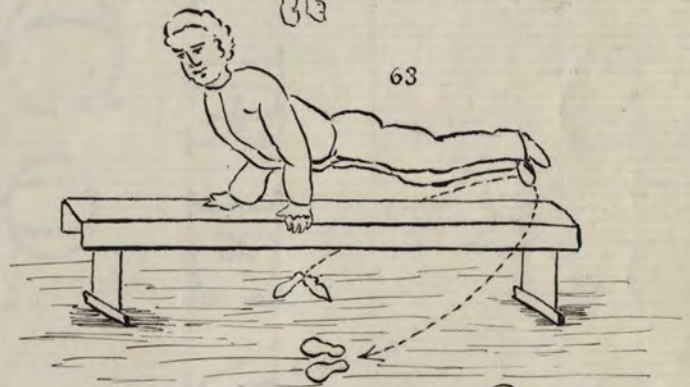
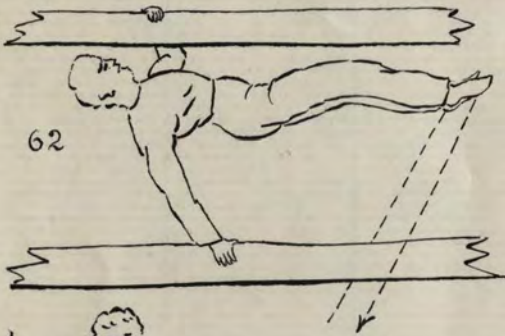
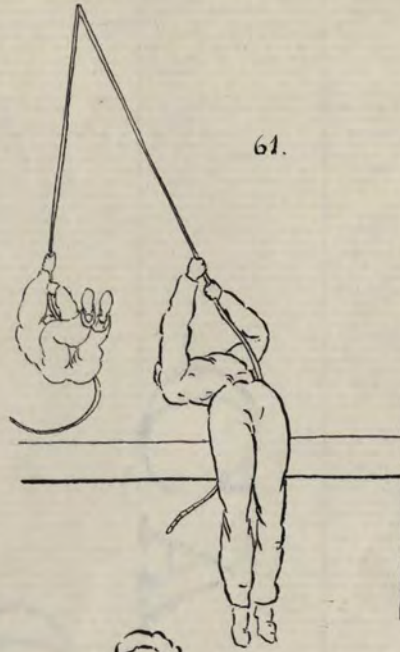
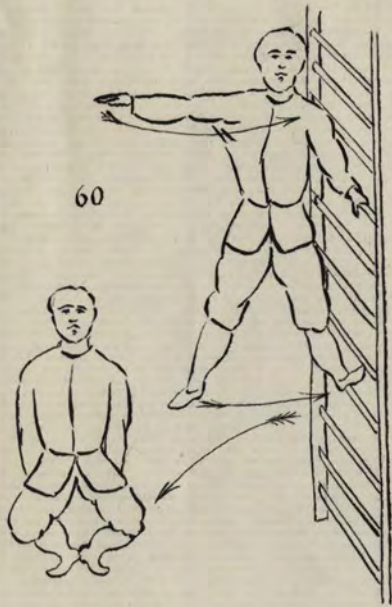


Fig. 56 & 58. Running high jump.

Fig. 57 & 59. Jumping with help of hands.

The jump should be straight forward, and the legs should be drawn up perpendicularly--not sideways--and thrown slightly backward, so that the front side of the body is well extended.



The Ling system of gymnastics is introduced in all the Swedish schools, where half an hour to an hour a day is devoted to it, either at the end of the day's work, or just before the noon-recess. Every high school and college has its own gymnasium and its own teacher. Gymnastics are as compulsory as any other branch of education, and no boy or girl is excused from taking them, unless the physician of the school finds that gymnastics would hurt him or her. Any one who teaches gymnastics in a high school or college must be a graduate of the Royal Gymnastic Central Institute; in the grammar and lower schools the teacher need not be a graduate--though these always have preference--provided he can prove that he possesses the necessary qualifications.

The object of the Royal Gymnastic Central Institute in Stockholm is "to perfect and maintain gymnastics in the whole of their theoretical and practical comprehension. It is intended partly to educate gymnastic instructors and medico-gymnastic doctors, partly to communicate practical instruction in all parts of gymnastics, as also to treat such invalids for whom gymnastics are considered beneficial." It has three departments, the military, the pedagogic, and the medical. The military department educates instructors for the army, the pedagogic, teachers for

the schools. The pedagogic and medical departments are open to both men and women, and require for admission the same examination as that which admits to the universities. Those who take the pedagogic course, study, beside other branches, Anatomy and Physiology, Science of Movements (Kinesiology), and the theory and practice of pedagogical gymnastics, in which they are examined at the end of the course. The pupils not only take a practical course of gymnastics themselves, but during their second year they also get experience in teaching, as each one, for that length of time, has to instruct a class of those school children who use the gymnasiums of the Institute.

A similar system is taught in institutions of the same character in St. Petersburg and Berlin.

Boston.
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Wilsdorf.

