

**Instructions in all kinds of gymnastic exercises, as taught and practised in the gymnastic institutions of Germany... / By a military officer.**

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Military officer.  
W. S.

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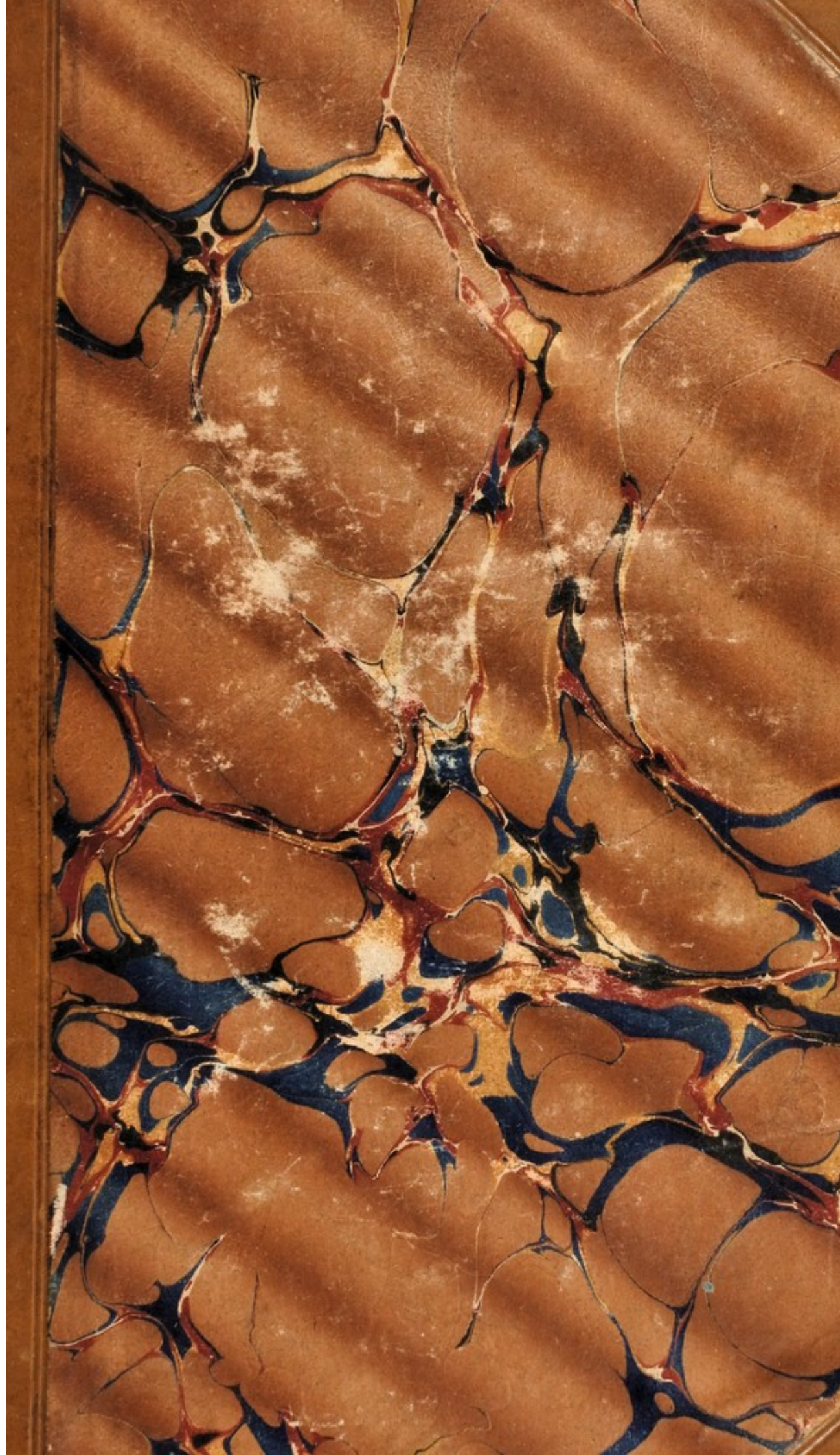
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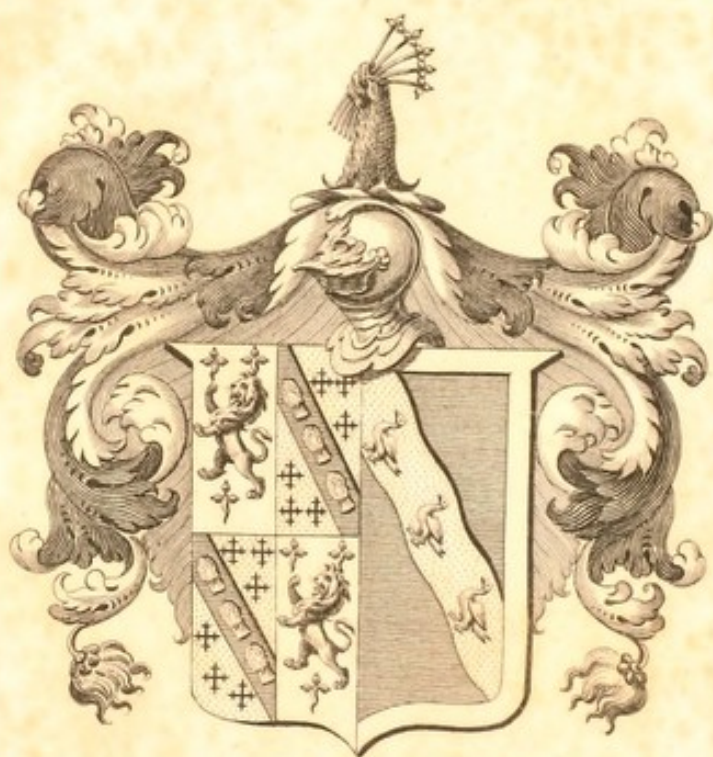
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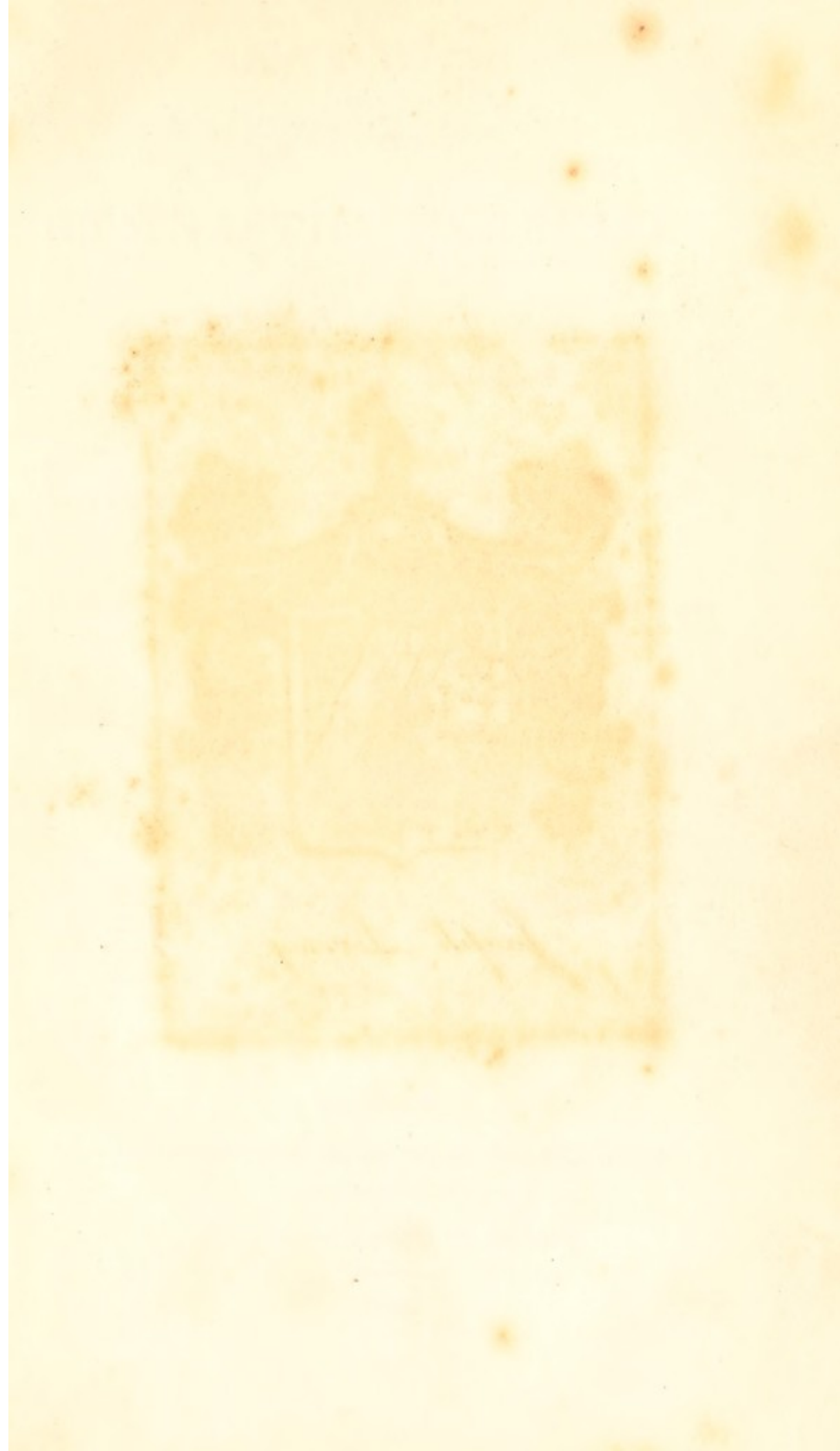







*Joseph Lirney*

*Edgar & Cyria*







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# INSTRUCTIONS

IN ALL KINDS OF

## GYMNASTIC EXERCISES,

AS

**Taught and Practised**

IN THE

GYMNASTIC INSTITUTIONS OF GERMANY:

DESIGNED

AS WELL FOR COLLEGES, SCHOOLS, AND OTHER PLACES OF EDUCATION,

AS FOR PRIVATE USE.

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WITH ELEVEN ILLUSTRATIVE PLATES.

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BY A MILITARY OFFICER.

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LONDON:

PRINTED FOR G. & W. B. WHITTAKER,

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## **P R E F A C E.**

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THE education of youth is naturally divided into two parts—mental and physical. In England, the attention of those who have the superintendence of education, has been entirely confined to the former ; the latter has been left to chance and the natural necessity for exertion which characterizes the human body in the early stages of life. The importance of exercise is universally allowed, but no attempts have hitherto been made to reduce it to any system, or subject it to the guidance of experience and judgment. The modes of exercise, such as games, plays, &c.,



have been left to the invention of children, whose supreme command over their own sports has never been denied or molested. The consequence is, that the hours of exercise are turned to very small account as regards their original destination. The only advantage obtained by time spent in recreation, at present, is the relaxation of the mind. The body is left to take care of itself. It often happens, that plays and games which serve the one purpose, are injurious to the other; for a little reflection will convince any one that the sports practised in schools, and by children in general, are by no means well adapted to form or invigorate the muscular powers. In many instances they are, on the contrary, calculated to injure the frame, and superinduce bad habits and awkward motions. The object of this work is to turn the attention of teachers to this most important branch of physical education, and to introduce a system of bodily exercise, which, while it forms considerable amusement, and total relaxation of the mental faculties, brings into a full and



healthy action, all the muscles of the body. Health, vigour, elasticity, robustness and beauty of frame, are the rewards which this system holds out to those who will persevere in the practice of its precepts.

The attempts which have been made of late in Germany to revive the ancient exercises of the Greeks, have been attended with complete success. No seminary whatever, in that country, is now considered perfect, which does not admit a course of gymnastic exercises into its system of education. Towards the close of the last century, a course of elementary gymnastic exercises was framed at Schnepfenthal, a small town near Gotha, under the direction of SALZMANN, which were subsequently improved, augmented, and systematically arranged, by GUTSMUTH, who published the first modern treatise on this subject in 1793, the second edition of which appeared in 1804, entitled "*Die Gymnastik.*" GUTSMUTH not only attracted attention towards the importance of a systematical phy-



sical education by his work, but was also most indefatigable in his exertions to introduce the subject wherever the slightest encouragement was held out to him. It was in Denmark where these exercises were first considered in a *national* point of view. In 1803, the number of gymnastic establishments in that country had already amounted to fourteen, to which three thousand young men resorted. Since that period, the government has issued an order for allotting a space of two hundred square yards to every public school, for the purpose of gymnastic exercises. The successful progress of his system in Denmark, induced GUTSMUTH more than ever to render it a national object in Germany; and for this purpose he made application to the Prussian government. The answer he received from the then minister of state was as follows:—“The bodily exercises of youth form an essential part of my plan of national education.” In 1810, the gymnastic establishment at Berlin was placed under the direction of JAHN, through whose zeal and perseverance they



have since been promulgated to various parts of Germany. GUTSMUTH published a more complete system of gymnastic exercises in 1817, which is undoubtedly the best which has hitherto appeared; and it is from this that I have principally selected the following exercises; the salutary effects of which I saw in others, and experienced in myself during a residence in Germany. I have considered it quite unnecessary to dwell at any length upon the advantages and importance of every single exercise; these must be obvious to every one, and have therefore offered nothing further than a concise, and I hope, sufficiently intelligible description of each.

I think it proper to mention in this place, lest any suspicion should arise, that the idea of the present work has originated from a very recent publication of a similar nature, that my MSS. and Plates, already engraved by myself, were put into the hands of the publishers the same day on which the former was announced. Had I found that my own work was superseded



by the above publication, I should have conceived it a point of duty to relinquish all idea of publishing it; but as this was not the case, I did not hesitate to put my MSS. and Plates immediately to press.

With a view to assist masters and teachers in introducing these exercises into their establishments, and to show how small a piece of ground is required to enable a great number of boys to perform them together, I have annexed my proposed plan of an exercise-ground, which will be found to contain all the implements, &c. to which reference is made in the following pages, and arranged in such a manner as to admit of all the exercises being performed by the boys at the same time, without interfering with one another. This arrangement is as follows;—

## PLAN OF AN EXERCISE-GROUND.

- Plate I. fig. 1.—Ground prepared for leaping. See page 23.  
——— 2.—Ditch for leaping. See page 22.  
——— 3.—Do. do. See page 57.  
——— 4. } Leaping-stands. See page 15, and Plates  
——— 5. } II. and VI.  
——— 6.—Flight of steps. See pages 27 and 59.  
——— 7. } Exercise-stands. See page 28, and Plate  
——— 8. } III.  
——— 9. } Exercise-stands. See page 28, and Plate  
——— 10. } IV.  
——— 11. } Vaulting-bars. See page 38, and Plate V.  
——— 12. }  
——— 13. } Balancing-bar. See page 63, and Plate  
VIII.  
——— 14. } Climbing-stand. See page 70, and  
Plate IX.





## CONTENTS.

---

CHAP.				
	PLAN OF THE EXERCISE-GROUND	-	-	ix
I.	WALKING	-	-	1
	<i>Position of the Body in Walking</i>	-	-	5
II.	RUNNING	-	-	7
	<i>Position of the Body in Running</i>	-	-	ib.
	<i>Preparatory Exercises</i>	-	-	8
	<i>Gymnastic Exercises</i>	-	-	10
III.	LEAPING	-	-	13
	<i>Preparatory Exercises</i>	-	-	ib.
	THE LEAPING-STAND	-	-	15
	THE HIGH LEAP WITHOUT A RUN	-	-	16
	<i>Gymnastic Exercises</i>	-	-	ib.
	THE HIGH LEAP WITH A RUN	-	-	17
	<i>Gymnastic Exercises</i>	-	-	19
	THE LONG LEAP	-	-	21
	<i>Preparatory Exercises</i>	-	-	22
	<i>Gymnastic Exercises</i>	-	-	23
	THE DEEP LEAP	-	-	26
	<i>Gymnastic Exercises</i>	-	-	ib.
IV.	Gymnastic Exercises for augmenting the Muscular Powers of the Body and Limbs	-	-	28

## CHAP.

V.	VAULTING	-	-	-	-	37
	<i>Preparatory Exercises</i>	-	-	-	-	38
	<i>Gymnastic Exercises</i>	-	-	-	-	40
	LEAP-FROG	-	-	-	-	45
VI.	LEAPING WITH A POLE	-	-	-	-	46
	THE HIGH LEAP WITH A POLE	-	-	-	-	ib.
	<i>Preparatory Exercises</i>	-	-	-	-	47
	<i>Gymnastic Exercises</i>	-	-	-	-	49
	THE LONG LEAP WITH A POLE	-	-	-	-	56
	<i>Gymnastic Exercises</i>	-	-	-	-	58
	THE DEEP LEAP WITH A POLE	-	-	-	-	ib.
VII.	BALANCING	-	-	-	-	60
	<i>Preparatory Exercises</i>	-	-	-	-	ib.
	THE BALANCING-BAR	-	-	-	-	63
	<i>Gymnastic Exercises</i>	-	-	-	-	ib.
VIII.	CLIMBING AND MOUNTING	-	-	-	-	69
	THE CLIMBING-STAND	-	-	-	-	70
	<i>Gymnastic Exercises</i>	-	-	-	-	71
	<i>Exercises in Mounting</i>	-	-	-	-	84
IX.	WRESTLING	-	-	-	-	86
	<i>Preparatory Exercises</i>	-	-	-	-	ib.
	<i>Gymnastic Exercises</i>	-	-	-	-	91

## CHAPTER I.

### WALKING.

It may appear at first sight a very unnecessary labour to give instructions in walking—the most common and natural exercise of the body, which the man is taught in his infancy, and which he puts in practice every day of his life. One question will set the matter at rest. How many of your acquaintance walk well? Every one will answer surprisingly few. One stoops in the shoulders, another sinks in the back, another slackens the knee as if he would kneel at every step, others have a jump in their gait, others again drag the body heavily along, while the limbs are twitching nimbly



in all directions, or extended in a sprawling, loose and aukward manner. An easy, graceful and firm deportment in walking is as uncommon as it is dignified and prepossessing. In walking gracefully, every muscle employed, is called upon for no more than its fair share of exertion—all is compact and united, the whole frame proceeds calmly and equably, and each part of it is acting in unison with the rest.

We are far too apt to neglect the accomplishments immediately within our reach, and run after objects of difficult attainment merely because they are so. It is in the power of every man to walk well, unless, indeed, already inveterately confirmed in some bad habit; the following few instructions will tend more to that end than will at first be readily apprehended. These instructions relate alone to walking well and gracefully. The power of walking great distances without fatigue is another matter, and also well worthy of attention. In this, practice is every thing—practice at any age can do much, but practice from infancy renders the muscles of the human frame so rigid, and at the same time so pliable, as to enable man to perform absolute prodigies. The wonder-



ful speed and security of foot, as well as the long and uncomplaining endurance of exertion, among the Indians, is well known to all. The English too, of late, have excelled in this branch of exercise to a most remarkable degree. The newspapers of every day record feats which give ample proof of how much has been done in this respect, and at the same time clearly shew that the limit to which exertion in walking may be carried, has by no means been attained. Few things are of more importance, either for the preservation or restoration of health, than walking; and when an easy gait has been habitually acquired, there is so much less fatigue in it that we are by the increased facility and agreeableness of the exercise, induced more frequently to apply to it. It is well known that numbers of people have lost their health, by the neglect of exercise, and this neglect has often been caused by the fatigue and discomfort superinduced by an awkward habit of walking. If it were not for the greater fatigue attendant upon walking, there can be no doubt that it would be far preferred for pleasure to every kind of conveyance, and it is certain, that by well-directed practice, this fatigue may be di-



minished in a surprising degree, and, at length, very great distances may be passed over on foot without any failure of the strength at the end of the walk, or painful exertion in the course of it. The true pedestrian will come in after a walk of twenty miles to breakfast with freshness on his countenance, healthy blood coursing in his veins, and vigour in every limb, while the indolent and inactive man painfully creeps over a mile or two, and returns to a dinner which his stomach cannot digest. And this, to say nothing of the independence which a power of walking great distances confers upon the pedestrian ; he is tied down to the time of no stage-coach, and indebted to no friend for a carriage, or a horse unwillingly lent ; and at the same time he not only enjoys the beauties of the country through which he passes with a greater relish, but also sees infinitely more of it than the man who thinks an hour's walk a great achievement. In one of Mr. Wordsworth's poems there are some lines on the *Pleasures of the PEDESTRIAN*, so beautiful in themselves, and so applicable to the subject of this chapter, that we shall make no apology for quoting them.



" No sad vacuities his heart annoy ;  
 Blows not a zephyr but it whispers joy ;  
 For him lost flowers their idle sweets exhale ;  
 He tastes the meanest note that swells the gale ;  
 For him sod-seats the cottage door adorn,  
 And peeps the far off spire, his evening bourn !  
 Dear is the forest frowning o'er his head,  
 And the green sward to his velvet tread ;  
 Moves there a cloud o'er mid-day's flaming eye,  
 Upward he looks and " calls it luxury."  
 Kind charities his steps attend,  
 In every babbling brook he finds a friend,  
 While chast'ning thoughts of sweetest use, bestow'd  
 By wisdom, moralize his pensive road.  
 Host of his welcome inn, the noontide bower,  
 To his spare meal he calls the passing poor :  
 He views the sun uplift his golden fire,  
 Or sink, with heart alive like Memnon's lyre ;  
 Blesses the moon that comes with kindest ray  
 To light him shaken by his viewless way.  
 With bashful fear no cottage children steal  
 From him, a brother of the cottage meal.  
 His humble looks no sly restraint impart,  
 Around him plays at will the virgin heart.  
 While unsuspended wheels the village dance  
 The maiden eye him with inquiring glance,  
 Much wondering what sad stroke of care,  
 Or desperate love could lead a wanderer there."

#### POSITION OF THE BODY IN WALKING.

*Directions.*—The position of the body must be upright and unconstrained ; the



breast thrown well forward, and square to the front; and the stomach drawn in a little, but not so much as to prevent a free breathing. The shoulders must be drawn back, and kept at an equal height. The arms must have a gentle, but perfectly free and natural motion by the side of the body. The head should be very upright, but without any stiffness; and ought to have a free motion from right to left, or upwards and downwards, as occasion may require, without causing any material alteration in the position of the body. The knees must neither bend too much, nor appear stiff. The toes must be turned out so as to form about half a right angle with the direction-line in which the person is walking; and great care should be taken not to throw them upwards, but to keep the sole of the foot at the concluding part of the step, nearly parallel with the ground. The weight of the body should rest more upon the balls of the toes than upon the heels; by which means the whole position is rendered firm.

## CHAPTER II.

### RUNNING.

RUNNING is one of the most natural, and at the same time, most healthy and strengthening exercises, when taken in moderation; it is also the fundamental part of the gymnastic exercises, the strength of the upper members depending greatly upon that of the lower ones; and is, therefore, the first exercise with which the beginner should make himself familiar.

### POSITION OF THE BODY IN RUNNING.

The breast must be thrown well forward, and kept perfectly free. The upper parts of the arms are kept almost close to the sides of the body; the elbows bent, so that both parts of the arm may form, at this place, an



acute angle ; for the arms ought only to move to and fro in a very trifling degree, in order that the muscles connected with the breast may remain, as much as possible, at rest. At every step the knees are stretched out, and the tread must neither be made entirely with the balls of the toes, since this would affect the calves too powerfully, nor yet with the whole sole of the foot.

*Precautions.*—Proceed gradually, as in all exercise. Choose a time when the air is cool. Take off your coat at the commencement of the exercise, and resume it the instant it is completed. Let the breast be either quite exposed, or very thinly covered. Wear a very light covering upon the head ; a straw hat is best. The teacher should observe the runners, and let each cease as soon as a strong perspiration appears, and the breath becomes very short.

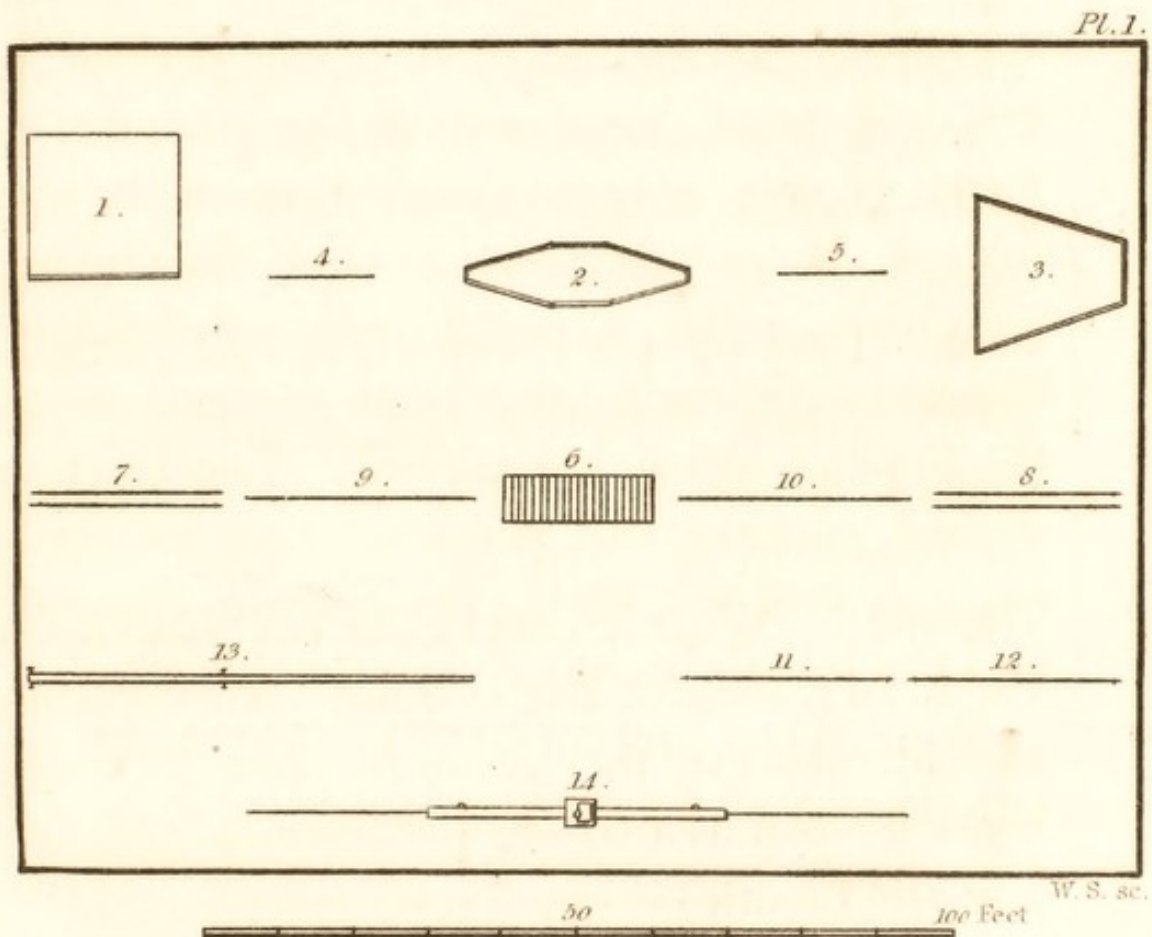
With these precautions, no fear need be entertained of the longest run.

#### PREPARATORY EXERCISES.

1. The teacher moves forward with his young pupils, at a moderate running pace, for five minutes. After they have frequently

run over the ground, in this stated time, it must be gradually reduced ; for instance, first to four and then to three minutes.

2. Another piece of ground should be run over at a moderate pace during ten minutes





acute angle; for the arms ought only to move to and fro in a very trifling degree, in order that the muscles connected with the breast may remain, as much as possible, at rest. At every step the knees are stretched

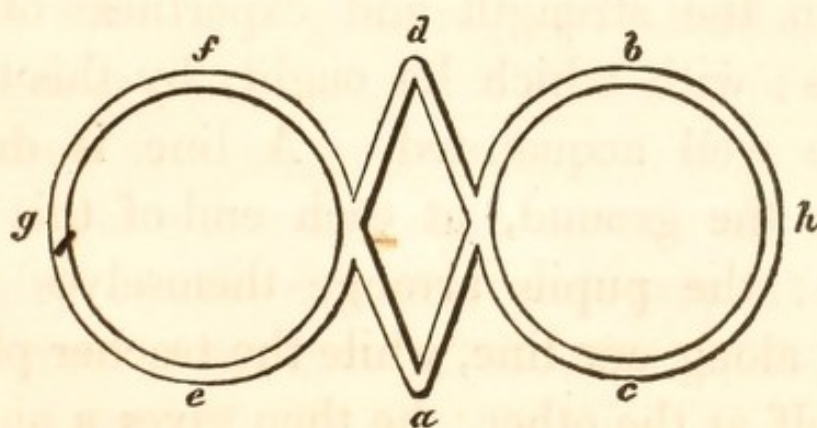


run over the ground, in this stated time, it must be gradually reduced ; for instance, first to four and then to three minutes.

2. Another piece of ground should be run over, at a moderate pace, during ten minutes, which time must also be gradually reduced as before.

In these exercises, the teacher must not reduce the stated times, so as to render the exercise too violent for the weakest of his pupils. He should also pay particular attention to their relative strength, in order to judge which of them are capable of completing the more difficult exercises.

3. In order to practise the pupils in turning, the teacher should form a figure upon the exercise-ground, similar to the annexed :



In running through this, they would be necessitated to turn the body suddenly in different directions. The direction to be taken by the runners, must be frequently



changed by the teacher. They may also run in pairs, thus:—two, of nearly equal strength, start together at *a*, the one taking the direction of *a, e, f* to *d*, the other, that of *a, c, b*; he that reaches *d* first is the winner. The distance from *f* to *h*, should be about fifty feet, and that of *a, d*, about twenty-five feet.

#### GYMNASTIC EXERCISES.

*The Quick Run.*—The teacher paces a distance of about three hundred feet, upon some open plain, or upon the exercise-ground, should it admit of it. This distance will not, generally, be found too great: it may, however, be shortened by the teacher, according to the strength and expertness of the pupils; with which he ought, by this time, to be well acquainted. A line is drawn across the ground, at each end of this distance; the pupils arrange themselves in a rank, along one line, while the teacher places himself at the other; he then gives a signal, at which they all commence running, and he who first passes the line at the opposite extremity is the conqueror.

After having frequently repeated this ex-



ercise, the teacher should, on the following day, form his pupils into two or three divisions, in such a manner, that each may be composed of such as are of nearly equal strength. The divisions move on alternately, by a signal or word of command.

*Faults.*—Too long and slow, as also too short and quick steps, are faults which frequently happen, and ought to be noticed to the pupils. Some boys are often observed to breathe very quick when running, and even before they commence, as if it were necessarily combined with this exercise: this error must be carefully avoided.

*The Long Run.*—This exercise is particularly useful in strengthening the legs and the breast; and is very soon accomplished by those who have gone regularly through the preceding exercises. A distance of three hundred feet is measured, as before. The pupils place themselves in a rank at one extremity of this distance, and proceed, in a slow trot, at the rate of about seven feet in a second, towards the opposite one, where they immediately turn round, and continue running until they reach the spot from whence they first started. A frequent repetition of this exercise is sufficient, at first: on the



following day, instead of doubling the above distance, they may run over it three or four times without stopping. It generally happens that, towards the close of the run over four times the above distance, the legs begin to be fatigued. The exercise should, therefore, be limited, for some time, to this extent; afterwards, to that of five, and then of six times the distance. In the run of seven times the distance, the fatigue of the lower members is entirely removed; and there is no longer any difficulty in the further continuation of the run. The runner may now, if he is neither overheated nor forced to breathe too quickly, even accelerate his pace.

## CHAPTER III.

### LEAPING.

LEAPING is the art of forcing the body rapidly through the air for a small space, by an exertion of the muscular powers; and is the best bodily exercise for giving strength and agility to the lower members.

#### PREPARATORY EXERCISES.

*The Hop Walk.*—The action of the muscles of the legs must be brought moderately into play, at first, particularly with little boys, and gradually increased afterwards. The hop-walk is therefore the first preparatory exercise. It consists in a continued stepping forward upon the balls of the toes, so that the body is perceptibly raised by each foot.

*The Hop Run.*—This is a continued hop-



ping forward upon the balls of the toes, in such a manner, that one foot springs a few inches up from the ground, whilst the other makes a step forward : the latter rests but a moment upon the ground to spring up a few inches, while the former makes a step forwards. By means of this exercise, the muscles of the lower members are very much excited.

*Hopping.*—The breast must be kept well forward, the arms a-kimbo, the knees quite stiff, and the legs closed. In this position, the body must be propelled by means of very small hops, following each other in rapid succession.

*The Striking of the lower part of the Back with the Feet.*—The position of the body is the same as in hopping. The exercise is either *single* or *double*. In the former, the feet must be raised alternately, rather briskly, and made to strike the posteriors. By this means the muscles of the thighs are brought into play, and the knee-joints rendered more flexible. Boys soon become so expert in this exercise, as to be enabled to place the feet in the required position without any jerk. The double exercise is more violent ; it consists in striking both the feet at once, against this



part of the body. Both exercises should be lengthened as much as possible; a repetition of the single one fifty times, and of the double one twenty, may be considered the maximum. The return of the feet to the ground must be scarcely audible.

*Raising the Knees.*—The body is first placed in a proper standing position: a spring is then made upwards, so that the knees may approach as near as possible to the breast. The position of the upper part of the body must be straight, though inclined a little forward; but the breast and head must, by no means, sink so as to admit of the chin being nearly touched by the knees.

#### DESCRIPTION OF THE LEAPING-STAND.

The leaping-stand, which is represented in fig. 1, Plate II. consists of two moveable posts, *a* and *b*, about nine feet in height, and divided into a number of holes bored through them, at the distance of one inch, or two inches from each other, commencing at the second foot from the ground, as shown in the figure: *xx*, are two iron pegs which may be placed in the holes, at any required



height. Over these two pegs a cord is placed, which is kept straight by means of two sand-bags, fastened to its extremities. The leap over the cord must be made from the same side of the stand as that on which the heads of the pegs are situated (see the figure), so that if the feet happen to meet the cord, they will cause it either to fall, or give way instantly. Weights are usually placed upon the feet of the posts, to prevent the latter from falling. The distance between the posts should be from ten to fifteen feet.

#### THE HIGH LEAP WITHOUT A RUN.

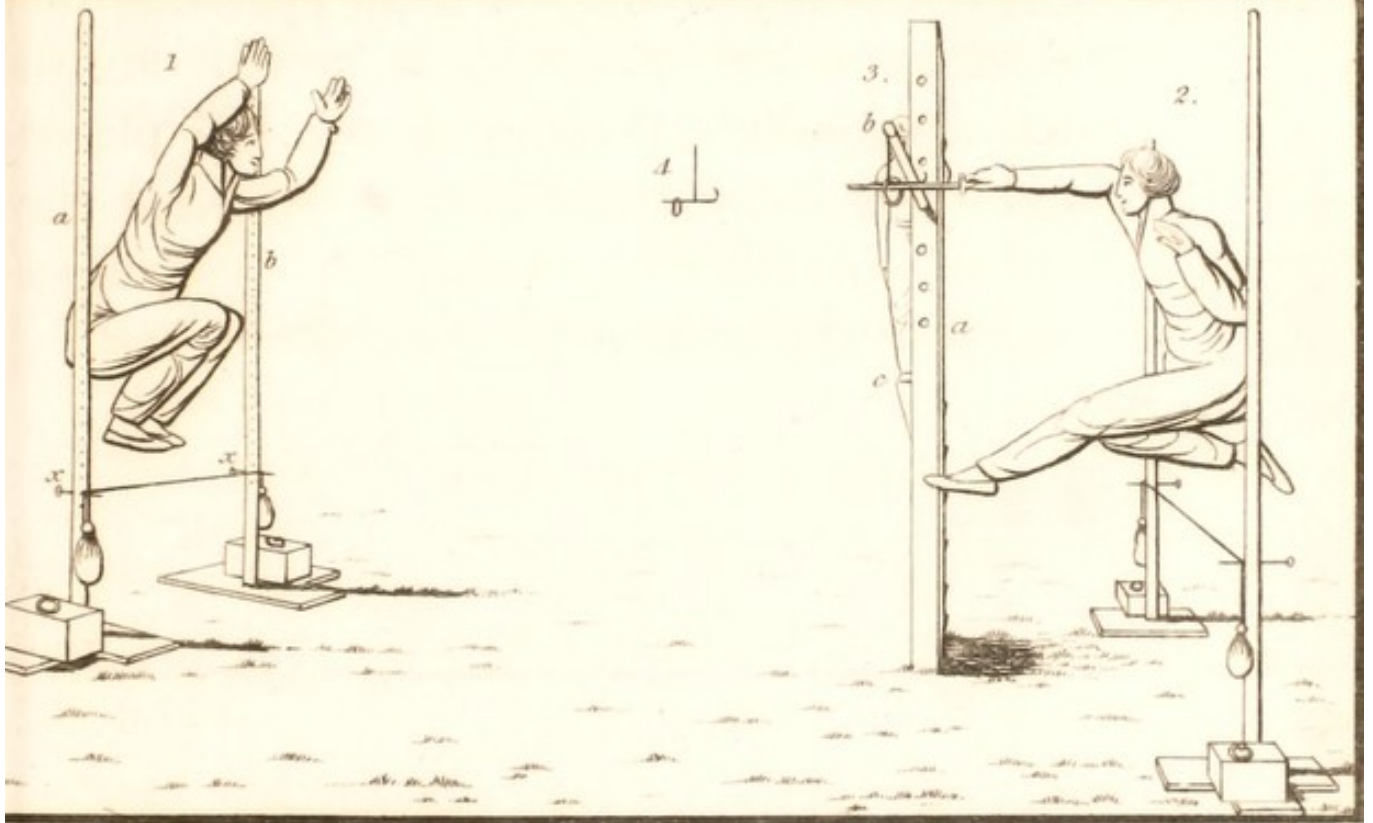
*Position of the Body.*—The upper part of the body is inclined a little forward, but kept straight, particularly the back and neck; the legs and feet are perfectly closed; the knees are so much bent that the calves almost touch the thighs; and the arms are naturally thrown forward with force. This position is clearly shewn in fig. 1, Plate II. In descending, the body should not be at all bent backward, but rather inclined forward.

#### GYMNASTIC EXERCISES.

The beginner places himself at two paces

distance in front of the cord ; makes a little spring one pace forward, upon the balls of the toes, and then leaps over the cord. The preparatory spring is made in order to excite the elastic force of the feet, and great

Pl. 2.



W. S. sc.

the one bent, and the other stretched out. In the former, the leaper immediately closes the foot with which he has made the spring to



height. Over these two pegs a cord is placed, which is kept straight by means of two sand-bags, fastened to its extremities. The leap over the cord must be made from the same side of the stand as that on which

#### GYMNASTIC EXERCISES.

The beginner places himself at two paces

distance in front of the cord ; makes a little spring one pace forward, upon the balls of the toes, and then leaps over the cord. The preparatory spring is made in order to excite the elastic force of the feet, and great care should be taken to remain as little time as possible upon the ground after it, as its object would otherwise be lost. The motions of the body ought to be altogether so light, that scarcely any thing of the leap should be heard, when it is performed upon hard ground.

The exercises in the high leap without a run, follow one another in this order :

1. *Not quite the height of the knees.*
2. *The height of the knees.*
3. *The height of the middle of the thighs.*
4. *The height of the hips.*
5. *The height of the lower ribs.*

#### THE HIGH LEAP WITH A RUN.

*Position of the Leaper.*—There are only two correct positions in leaping with a run ; the one *bent*, and the other *stretched out*. In the former, the leaper immediately closes the foot with which he has made the spring to



the other; the knees are drawn forcibly up towards the chin, and the soles of the feet are kept at an equal height above the ground. See fig. 1, Plate II. In the *stretched out* position, the leaper immediately throws, at the commencement of the leap, the foot with which he has *not* made the spring, straight forward over the cord, and draws up the other by a quick bend of the knee. See fig. 2, Plate II.

*The Run* taken previous to the leap, should not exceed in length more than ten paces. The eye of the leaper is directed more to the spot from whence he is to make the spring, than to the cord; particularly if he is accustomed to spring with one particular foot, since it is necessary for him to judge his distance so that this foot may arrive at the required place. This greatly depends on practice; but the beginner is recommended to spring with either foot, and at times, with both feet. He should also observe this rule: viz. that the distance between the point from which the spring is made, and the cord, ought to be about equal to half the height of the latter from the ground.

*Faults.*—These take place when the pre-

paratory run is impetuous ; when the legs are not closed in the leap ; when the back and nape are bent down ; when the feet do not descend together at the same time, &c. The teacher must endeavour to prevent these by making his pupils repeat the exercise over the cord at a moderate height, until they have completely mastered the proper position. He must not allow them to leap over heights beyond their powers, but make them advance progressively. A good leaper will show his power in the flexibility, and in the unforced command of the legs, rather than in a violent exertion of the whole body.

#### GYMNASTIC EXERCISES.

Order of the exercises in leaping with a run :

1. *The height of the middle of the thighs,*
2. *The height of the hips.*
3. *The height of the lower ribs.*
4. *The height of the pit of the stomach.*
5. *The height of the breast.*
6. *The height of the chin.*
7. *The height of the eyes.*
8. *The height of the crown of the head.*

Most boys will leap the height of the pit



of the stomach, and many, that of the head and the chin. Some have learned in Germany to leap over a height considerably greater than their own.

The teacher has hitherto accustomed his pupils to leap singly; but he should now form them into divisions, each division being composed of such as are of nearly equal strength, and direct them to practice various amusing exercises together. The following are recommended:

1. The pupils form a ring, standing at the distance of about ten paces behind each other. The leaping-stand is placed in the circumference of this ring, and they commence leaping over the cord one after the other, preserving the order of the ring.

2. The same exercise, except that each carries something with him, such as a wooden musket, staff, or pole, &c. which must not be allowed to touch the cord.

3. The leaping-stand is placed in front of a post, such as *a*, fig. 2, Plate II., in the latter an arm *b*, is fixed in one of the holes seen in the figure. An iron hook is fastened to this arm for the purpose of holding a ring; it is better seen in fig. 4, Plate II. On the other side of the post are steps leading to *c*, upon

which a boy stands ready to place a ring upon the hook when required. Each leaper is provided with a pointed wooden sword, with which he takes an aim at the ring, at the moment he makes the leap over the cord. The leapers follow in the same succession as in the preceding exercise: he who gets most rings out of a given number is conqueror; but a ring is not fairly won, if only knocked off the hook; it must remain upon the sword; and whoever touches the cord forfeits a ring, if he has already won any.

4. The leaping-stand is widened as much as possible, and the leapers go over the cord, in succeeding ranks of two, three, or four at a time. In advancing to the cord, they should be made to step together in a slow trot.

#### THE LONG LEAP.

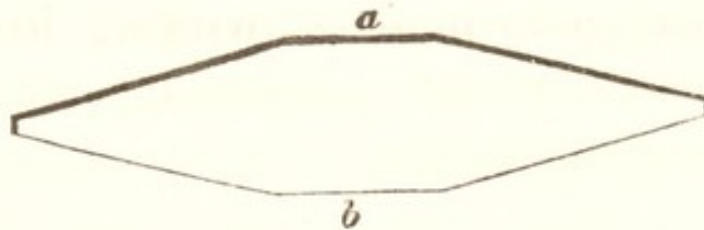
This is the art of forcing the body over a certain space of ground, water, or otherwise, either merely by the elastic power of the lower members, or by means of this with the aid of a quick preparatory run. This kind of leap is, therefore, also performed either without or with a run. The first is an excellent



exercise, particularly for the muscles of the feet, calves, and thighs. The second, besides having this advantage, practises the eye in judging the proper place from which to make the spring; and also excites courage in the leaper.

#### PREPARATORY EXERCISES.

*The Jump.*—Dig a ditch about half or three-quarters of a foot in depth, upon the exercise-ground, in the form of the annexed figure, which affords the learner an opportunity for advancing progressively from short to longer jumps.



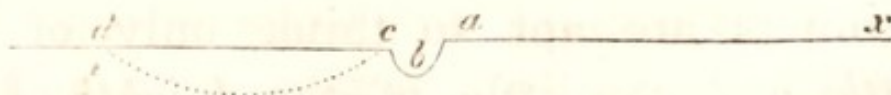
Eight feet are sufficient for the length of *a*, *b*, since a jump of once and a half times the length of the body, is considerable for the beginner. The situation of this ditch upon the exercise-ground is shewn at fig. 2, Plate I. The jump is *without a run*. The beginner places himself at one bank with the feet closed; his whole weight rests

upon the balls of the toes ; the body is inclined forward ; both arms are swung once forward, and once backward, and then drawn very forcibly from the rear to the front ; at the same moment the lower members must be propelled with as much force as possible by means of a great exertion of the elastic power of the feet.

*The continued Jump.*—The pupil places himself at one extremity of a measured distance of from eighty to one hundred feet, and jumps as far forward as he can, observing the same position of the body and limbs, as in the preceding exercise. From his new station, he makes another jump, and continues in this manner, as far as the other extremity of the above distance. This is a very good exercise, particularly for several muscles of the thighs.

#### GYMNASTIC EXERCISES.

The ground must be prepared in the following manner. In the section given in the annexed figure,



the part *a*, from which the spring is made,



must consist of firm earth; *b* is a small ditch, which obliges the leaper to make the spring exactly at *a*. The ground between *c* and *d*, which is about eighteen feet long, is first dug from three to four feet deep, and afterwards filled with loose sand. Fig. 1, Plate I. shows the situation of this ditch upon the exercise-ground.

This leap may be divided into three principal parts; viz. the *run*, the *spring*, and the *descent*.

The *run* is made from *x* to *a*; which piece of ground should be firm, and not at all slippery; its length, ten, fifteen, or twenty paces. The run consists in small steps which increase in quickness as they approach the point where the spring must be made. The body is inclined very much forward. Long steps must be avoided, since they considerably diminish the force of the spring.

The *spring* is performed with one foot at the point *a*. As already remarked, the leaper should practice his eye, so as to bring that foot upon the point *a*, with which he is accustomed to make the spring. Beginners are apt to think only of the *length*, and too little of the *height* of the leap. They do not consider that they come

sooner to the ground, and, consequently shorten the leap, by not springing a proper height.

The *descent* has no difficulty whatever in it, if the ground between *c* and *d*, consists of loose sand, as before recommended. The feet are closed, the knees bent, and the whole of the upper part of the body inclined forward. The toes touch the ground first, and therefore sink in deepest. At the same moment, a light spring is made, accompanied by some short steps, in order not to give a sudden check to the force of the body, but to let it die away gradually.

*Faults.*—These consist in throwing the feet too much forward, so as to cause the leaper to fall backward after the descent; separating the feet during the descent, instead of letting them come to the ground exactly at the same moment.

Order of exercises in the long leap:

1. *The leap of double the length of the body.*
2. *That of twice and a half this length.*
3. *That of three times this length.*
4. *Learners of equal size try to outleap each other.*

The teacher should now take his pupils to some rivulet, and let one of them give the



lead, by running along the latter, and leaping from one side to the other; the others follow him, and make the same leaps. By means of this exercise, they accustom themselves to judge the requisite degree of force to be employed, and the proper points where the spring is to be made, in leaping over the natural obstacles which present themselves to the eye.

#### THE DEEP LEAP.

#### GYMNASTIC EXERCISES.

This leap is performed either with or without the assistance of the hands. In both methods every thing depends upon the position of the body during the descent. Great care must be taken to avoid falling upon the heels instead of the balls of the toes, and to keep the body in a bent position; by which means, the violent shock which the body would otherwise receive from the hard quality of the ground is prevented.

When combined with the assistance of the hands, this exercise is extremely useful, and evidently a desirable accomplishment. The leaper places both hands down before the

feet, so that, during the leap, the weight of the body rests, at first, entirely upon the hands, and passes gradually over to the feet. By this means, the shock against the ground is wonderfully diminished; and the learner will soon find, by practising progressively higher and higher, that it is very easy to leap down from heights which, at first, appeared to him quite formidable. A wooden flight of steps is particularly well adapted to this exercise, and should have a place upon every exercise-ground. The learner ascends a certain number of steps; makes the leap upon the ground from the side of them, and gradually increases the depth of his leaps, by augmenting the number of steps.

The teacher should now let his pupils combine the long and deep leaps; thus forming a separate exercise in leaping, which is the most violent of all. A rivulet which here and there presents a high bank, with an opposite low one, is most favourable for this exercise.

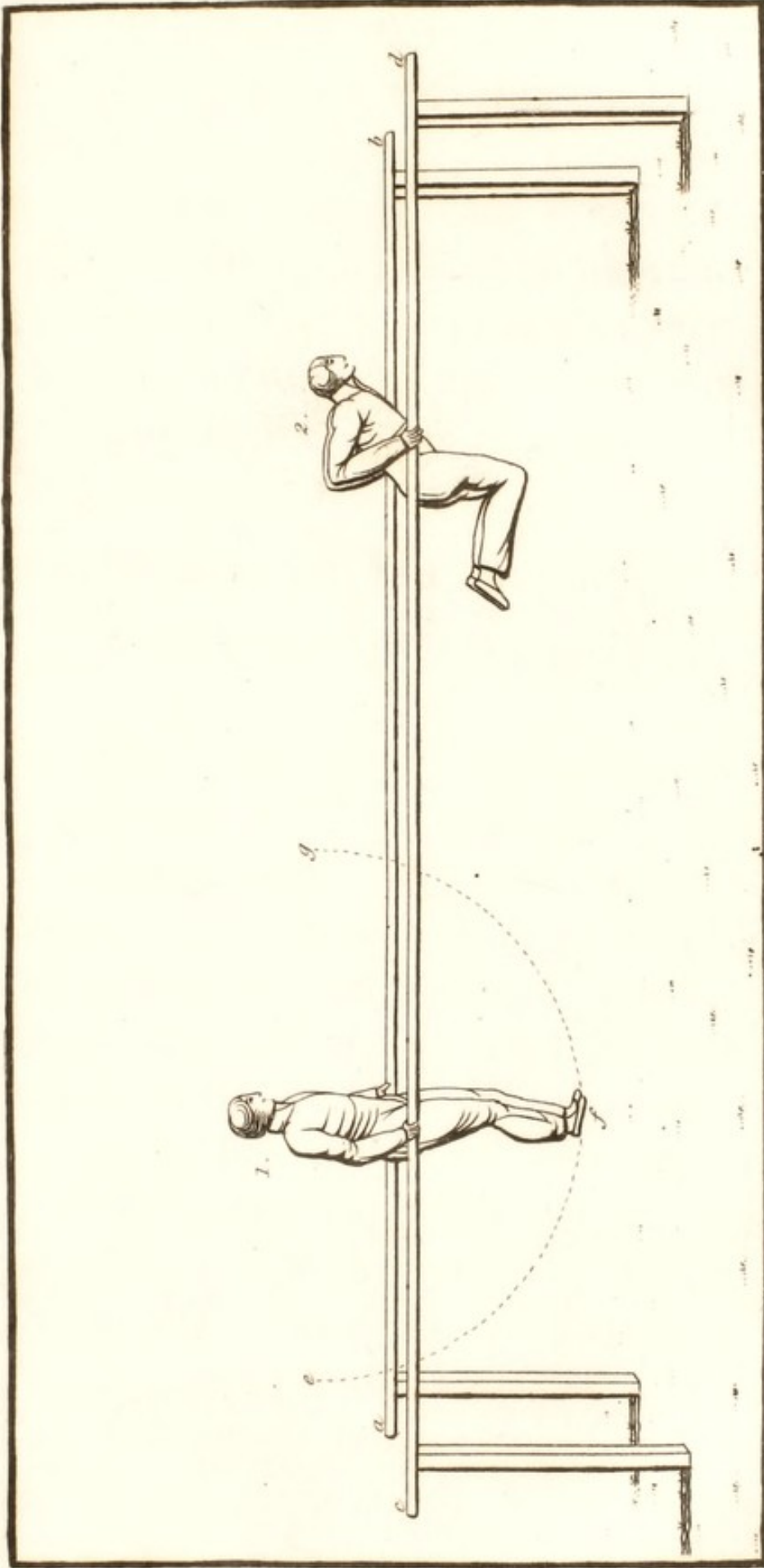
*Precautions.*—Increase the depth of the leap very gradually. Never perform any gymnastic exercise immediately after a meal, but particularly this one.



## CHAPTER IV.

### EXERCISES FOR AUGMENTING THE MUSCULAR POWERS OF THE BODY AND LIMBS.

It is absolutely necessary that stands, similar to the two represented in Plate III. and IV. be situated on the exercise-ground ; (See fig. 7, 8, 9, and 10, Plate I.) and, if possible, under cover, in order that the learners may be sheltered from either the rain or sun. That shewn in Plate III. is about five feet high, two feet in width, and of any convenient length ; the upper surface of the bars *a*, *b*, *c*, and *d*, is rounded off so as to be more easily grasped by the hand. The other, in Plate IV. consists of four posts *a*, *b*, *c*, *d*, of which *b* and *c*, are about fifteen feet distant from each other, the one six, and the other seven feet high. The latter support a cross-







piece, *e, f*, which is six inches deep, its lower side three inches wide, and its upper one about two; altogether it is shaped like the upper part of the rail of an ordinary staircase; *g, h*, and *i, k*, are two poles made of fir, eight feet long, and from two to two inches and a half thick; made round and smooth, and of different heights for the convenience of the learners.

*Exercise 1.* The learner raises himself into the position shewn at fig. 1, Plate III. upon the stand *a, b, c, d*, and swings his legs backward and forward, the higher the better, as long as he possibly can; during which motion his feet will nearly describe the semi-circle *e, f, g*.

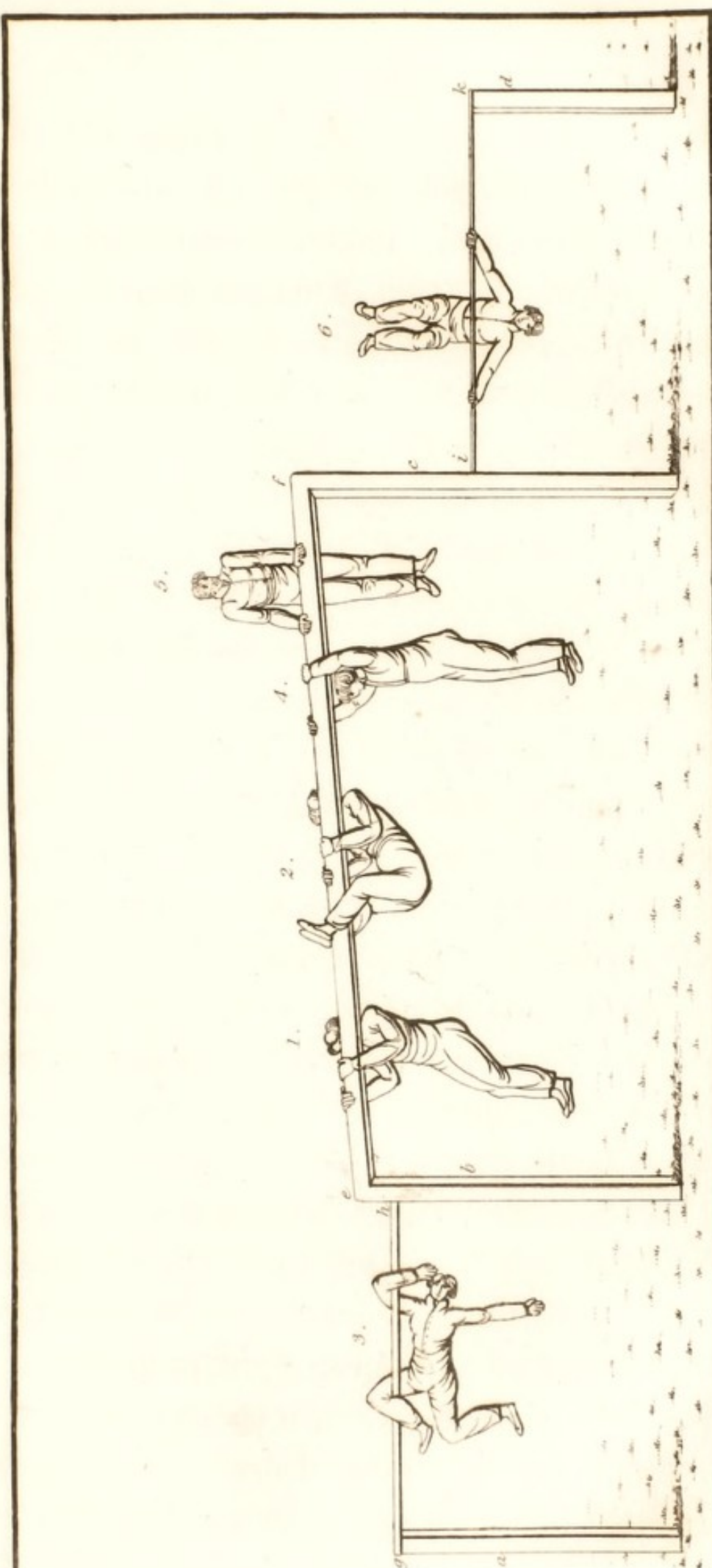
2. When in the last position, the learner makes a jump, as it were, with his hands, forward, and repeats it until he arrives at the end of the stand; whence he commences jumping backward as far as the other extremity. This and the preceding are two excellent exercises for strengthening the wrists.

3. The learner after having raised himself into the position required in Ex. 1, lowers his body so as to bring his head nearly on a level with his elbows, which must be kept exactly



over the bars. See fig. 2, Plate III. The most difficult part of the exercise follows; which consists in raising himself again into his former position. This exercise, which he should repeat as often as possible, is perhaps the best of any for strengthening the muscles of the chest, and particularly those which are connected with the shoulders.

4. As many of the learners place themselves in a row under the bar *e*, *f*, Plate IV. as can find convenient room; the tallest are nearest to the end *f*. The others who are not able to share in this exercise, help their companions up so that they may seize the bar with both hands, and then leave them in that position. Each now supports his own weight with arms at full length, as long as he possibly can; which forms the first part of this exercise. The second is more difficult: it consists in keeping the elbows so much bent, that one shoulder remains close under the bar. Since it is not in the power of every beginner to raise himself to this position, the teacher must assist him until the required height is attained; it is sufficient for him to remain there but a short time at first. The exercise is rendered more lively by letting the learners try who can hang in this







manner longest; but the teacher must prevent any one from overdoing it.

5. The hands are placed upon the bar, over opposite sides, as seen in fig. 1, Plate IV. At another time they may be placed both on the same side. The learner now draws himself so much upward, as to be able to see over the bar, keeping the legs and feet closed and stretched out. He then lowers himself to the full length of his arms, and again raises his body. This exercise is very trying if often repeated. Most persons will go through it three, six, or perhaps nine times, but few reach the eighteenth or twenty-fourth time. It must not be carried too far, for the muscles are to be strengthened, not relaxed.

These two exercises should be frequently repeated, since they wonderfully increase the muscular powers, and greatly facilitate the succeeding exercises.

6. The learner hangs with his hands upon the bar, as before, and then raises and lowers the legs alternately. See fig. 2, Plate IV. The hands are fixed on both sides, and at a little distance from each other; the elbows are very much bent; one shoulder is immediately under the bar, and the upper parts of the arms lie close to the body. The head



now sinks backward, and, at the same time, the feet are raised so as to touch each other gently over the bar. From this they again sink into the hanging position. Beginners who have not thoroughly practised the two preceding exercises, find this one very difficult: some make a preparatory swing with the feet to assist them; but this is not correct, since the exercise ought to be performed entirely through the muscular force of the arms, back, &c. It can be repeated six, nine, twelve, eighteen, twenty-four, and even thirty times. The teacher is again recommended to prevent any one from overdoing the exercise: he should remind his pupils not to be impatient, but to overcome every difficulty by practice alone.

7. Let the feet, when in the position of fig. 2, Plate IV. as required in the preceding exercise, cling close to each other over the bar, and remain as long as possible in this position. The learners try to excel one another in this exercise.

8. Suppose the body to be in the last mentioned position; viz. fig. 2, Plate IV. Throw the right arm and right leg quickly over the bar, so as to hang to it by the elbow and knee joints, as seen in fig. 3, Plate IV.



Change the position with the same quickness by throwing the left leg and arm over the bar, in order to rest the other side. Finally, the body may be made to hang by the right leg and left arm, and *vice versa*. This exercise, which is performed upon the round bars *g*, *h*, and *i*, *k*, is rendered very pretty, by the position of the body and limbs being continually varied, and is very useful as a preparatory one to climbing.

9. Suppose the body to be again in the position of fig. 2, Plate IV. Commence moving the hands one before the other, either towards *e* or *f*, and let the feet follow, either sliding along the bar, or, what is much better, alternately changing like the hands, and retaining, in some measure, a similar hold. Continue moving along the bar in this manner, as long as your strength will permit.

10. The body hangs to the bar by the hands, placed as shewn at fig. 4, Plate IV.; these are then moved either forward or backward alternately as long as possible. This exercise is faulty when the arms hang straight and slack; or when the feet, instead of being quiet and close together, are violently drawn up and down. It may be varied by the learner's placing himself in



front of the bar, hanging by both hands, and moving the latter alternately sideways.

11. When a person is in the position of fig. 3, Plate IV. it is very easy for him to throw the left leg over the bar and across the right one; then to let go the arms entirely, and hang by the knee joints only. This exercise is perfectly safe, strengthens the knee joints, and is often useful in climbing.

12. The body being in the position of fig. 2, Plate IV. the learner endeavours to sit upon the bar. The first attempts frequently fail, since some strength and agility are required. The easiest way of doing it is thus: suppose you wish, when in the position of fig. 2, Plate IV. to get up on your right side of the bar; take a fast hold by the right knee-joint, grasp firmly with the right hand, and bring the left arm over the bar so that the latter may be exactly under the armpit. From this position, the required or riding one, is obtained with very little trouble.

13. When a person is in the riding position upon the bar, it is very easy for him to turn towards the front of the bar *e, f*; viz. by supporting himself upon one thigh, while the other leg hangs down. He then moves



along the bar sideways, by raising his body with his hands, which are placed on the bar on each side of him. This exercise is very useful in practising a person to proceed a great way along a high beam.

14. The learner is in front of the bar, with his hands resting upon it, as in fig. 5, Plate IV. ; he then removes his hands either to the right or left, and supports himself, in this manner, as far as he can, along the bar.

15. Suppose a person to be supporting himself by the hands upon the bar, as before, viz. fig. 5, Plate IV. ; he then throws his head down forward, and dives, as it were ; the middle of the body rests momentarily upon the bar, the feet swing upward, the whole person turns completely round, and the feet come to the ground. This is swinging round the bar forward ; it is more difficult, but prettier, backward. Supported by the hands as before, the learner swings his feet once or twice backward and forward ; when in the last swing, he throws them quickly forward underneath the bar, forcing them upward on the opposite side, and then passes them over. See fig. 6, Plate IV. In this, he also rests momentarily with the middle of the body upon the bar, and then returns to



his first position. This swing round the bar backward is not easy at first; it requires a good deal of agility and exertion of the elastic force. The exercise should always be performed upon a smooth round bar, as *g*, *h*, or *i*, *k*. Exercises of this kind admit of numerous variations, and boys soon find them out; but the teacher should always stand by, to observe them, and to give his assistance to any one who may require it.

## CHAPTER V.

### VAULTING.

VAULTING is the art of raising the body quickly from the ground by a spring, and giving it, at the same moment, such a swing, by leaning the hands upon a fixed object, that the leap may be completed with facility. This leaning of the hands, partly to facilitate, and partly to give a right direction to the leap, constitutes the principal worth of vaulting; for, since the direction given to the body proceeds not only from the feet, as in the former kinds of leaping, but also from the hands and arms, it is an exercise which considerably augments the muscular powers and flexibility of both arms and legs, the back, &c.

Vaulting is also intended as an amusing



and easy means of mounting a horse ; leaping from, or over it, &c.; and, for this reason, are seen, upon many exercise grounds, wooden horses, the sides and backs of which are well stuffed with hair, and covered with leather. These can be procured by the teachers if they think proper, but the greater and best part of the exercises performed on them, may be also applied to the *Vaulting-Bar* ; which consists of a long round pole or bar, resting upon two, or, if very long, upon three posts. See Plate V. Two or three vaulting bars, of different heights, should be upon every exercise ground.

#### PREPARATORY EXERCISES.

These are extremely easy to those who have proceeded regularly through the exercises contained in the last chapter.

1. This is a repetition of the exercise shown at fig. 5, Plate IV. referred to in Chapter IV.; viz. the supporting of the body as long as possible by both hands resting upon the bar.

2. When in the last mentioned position ; the learner crosses one leg over the bar, and sits upon the latter, as on horseback. Sup-







pose a number of learners in this position, along the bar. Each places his hands upon it, close before him. At the word *up!* given by the teacher, each raises himself upon his hands, so that the body becomes suspended; the higher, the better. See fig. 1, Plate V. The knees should be kept stiff, and the toes pointed out. The teacher may now order them to turn their bodies, by means of the support of the hands, towards the right or left, or to swing the feet backward and forward. This is a capital exercise for strengthening the arms and wrists, and should be frequently repeated.

3. Supposing the learners in the last position, viz. fig. 1, they all move forward along the bar, by their hands, one after the other, as far as they can, and retire.

4. The learner, when in the riding position upon the bar, places both hands upon the latter close before him, and raises, by means of them, his legs and the small of the back, so as to bring the feet close behind the hands upon the seat. See fig. 2. He then stands upright upon the latter. Boys soon become so expert in this exercise, as to be able to place the feet in the above position, without swinging the legs; but it is much



more difficult for adults. Another way of doing it is, by first extending the arms high above the head, inclining the body a little backward, throwing the feet at the same time forward, and then by swinging the feet backward, and immediately placing the hands upon the bar *close* before you, you easily make the required spring to get your feet upon the seat. The return from the standing to the riding position, is extremely easy. Place both hands upon the bar, close before the feet; then let the weight of the body rest entirely upon the arms, and lower yourself gradually to the seat.

#### GYMNASTIC EXERCISES.

1. The learner places himself in front of the vaulting bar, makes a preparatory spring with the feet closed, fixes at the same moment, both hands upon the bar, raises himself, and swings the right leg over. The body is then suspended by the support of the hands, and descends gently into the riding position. The dismounting forms another part of this exercise. The learner extends the feet forward, exactly as in the 4th preparatory exercise, makes a little



swing forward, and then, by the support of the hands, it is very easy for him to swing both feet backward over the bar, and spring to the ground with them closed.

2. Vaulting over the bar, is the most applicable of all these exercises, not only as regards riding, but also innumerable natural obstacles over which we may wish to leap; it ought, therefore, to be frequently practised on the exercise ground. With a single preparatory spring, as in the last exercise, a person will very easily vault over the height of his stomach; and, soon after, over a moderately sized horse. The beginner may be allowed a run for a few paces, which he terminates in the preparatory spring, placing, at the same time, both hands upon the vaulting bar, by which means he raises his body, and throws his legs, which are kept close together, high over the bar. On the opposite side, his feet reach the ground, still closed, whilst the right hand (if he vaults with the right side foremost) quits the bar, and the left one remains. The position of the body during that part of the vault where it is exactly over the bar, is shown at fig 3. Plate V. It is difficult for beginners to vault either way; that is, as well with the



left side foremost as with the right. This is, therefore, not to be attempted until after sufficient practice in that way which the learner finds most convenient.

3. At first, a preparatory run for a few paces may be allowed, afterwards, only a spring. When the latter is made, both hands are placed firmly on the bar, and at such a distance from each other, as to allow sufficient room for the feet to be placed between them; the whole body is forcibly raised, the knees are drawn up towards the breast, so that the feet come to stand between the hands upon the seat or saddle: at the same moment the learner stands upright. This exercise can only be practised upon the firm part of the *Balancing Bar*, Plate VIII. which will be described hereafter, since the vaulting bar is so thin, that the necessary balance in the last part of the exercise would be very difficult. If in this exercise the learner does not place the feet upon the seat or saddle, but lets them pass on to the opposite side, whilst he seats himself upon it, he performs the vault into the saddle straight forward; should he, however, not sit down, but continue the leap, he then makes the vault over the saddle through the arms. The



whole of this exercise should be practised by the learners, singly, in order that the teacher may stand close by, to give any assistance that may be required. In this and the foregoing exercise, he should assist the learner until he can make the vault perfectly. He must stand on the opposite side of the bar, and, at the moment the vaulter places his hands upon the bar, he should, if the vault be made with the right side foremost, take a fast hold of his left arm a little above the wrist. This attention on the part of the teacher, in the vaulter's first attempts, not only secures to the latter a better purchase upon the bar, but gives him more confidence.

The teacher may now place his pupils in one rank in front of the bar, and let them perform the above exercises together in the following manner:—

1. The teacher gives the word of command, *mount!* He then makes the first signal by suddenly raising his hand; when each pupil extends both hands upward. The teacher drops his hand as a second signal; and every one swings himself into the riding position upon the bar; as explained in Gym. Ex. 1.



2. *Stand up!*—At the first signal, each raises his hands, as before. At the second, he stands upon the bar, as in the Prepa. Ex. 4.

3. *Sit down!*—At the first signal, the hands are raised. At the second, each places his hands upon the bar, down before the feet, and swings very gently into his seat.

4. *Dismount!* First signal; as before. At the second, each dismounts as in Gym. Ex. 1.

5. *Vault with the right side foremost.* The learners retire a few paces from the bar. The first signal; as before. At the second, they go through the preparatory run, spring, and the vault; as in Gym. Ex. 2. They then arrange themselves in a rank on the other side of the bar, and vault again over the bar after the word of command, *vault with the left side foremost!*

6. *Vault upon the bar!* First signal; as before. At the second, the run, spring, and vault upon the bar, are made. The learners now stand by the side of each other upon the bar; and, at the word of command, *left face*, each turns to the left.

7. *Sit down!* Repetition of No. 3.

8. *Dismount!* Repetition of No. 4.



## LEAP-FROG.

This exercise, which is a very common and agreeable one, is a kind of vaulting; viz. the application of the leap over a horse, to that over a man; and tends very much to promote the agility of the body. It is so well known as to need no explanation here. In the first attempts, the person over whom the leap is made, should place his body in a crooked position, with the head very much lowered, but as the players become more expert, the body should be placed in a more upright posture.

The teacher must not allow persons of very different stature to perform this exercise together; it is useless to the great ones, and the others are too weak to make a proper stand. If any are unaccustomed to it, and appear timid, the teacher should place himself by the side of the person over whom the leap is to be made, and catch the leaper by the arm, to give him the required assistance.



## CHAPTER VI.

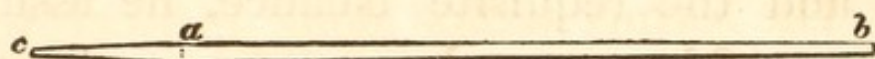
### LEAPING WITH A POLE.

THIS is a kind of vaulting, in which the leaper, instead of supporting himself upon an intervening fixed object, carries a pole with him, which he places exactly upon whatever spot he chooses. In supporting the body, during the leap, by a pole, a great deal depends upon the art of balancing, as well as the strength of the arms and legs ; notwithstanding which, the thing is much easier than it appears to be.

### THE HIGH LEAP WITH A POLE.

The best pole to be used in this exercise, is the planed stem of a straight grown fir, about two inches thick at the bottom, and

from seven to ten feet long. Such a pole naturally diminishes towards the top; but it is better to plane off the lower end a little. In the annexed figure *a b* is the natural growth, and *a c* is the lower end planed off.



#### PREPARATORY EXERCISES.

The learner, who is supposed to be already expert in vaulting and leaping, places himself before a small ditch, with a pole, which he seizes in such a manner, that the right hand may be about the height of the head, and the left about that of the hips, and fixes it in the ditch. See fig. 1. Plate VI. He now endeavours, by making a spring with his left foot, to lay the weight of his body upon the pole, and, by means of this support, to swing himself to the opposite bank. In this swing, he passes his body by the right of the pole, and makes, at the same time, a turn, so that at the descent, his face is directed to the place whence he made the leap.

The *usual faults* committed by the begin-



ner, consist in trusting the whole weight of his body too much to the pole; in keeping his body at too great a distance from the latter, and consequently losing the necessary purchase.

As soon as he can master the proper position and the requisite balance, he assumes more confidence, and may now endeavour, in the succeeding leaps, always to swing the legs higher. In proportion as he becomes more expert, he should place the hands higher up the pole, in order to have a more powerful swing.

This leap can never be made with facility and with the proper force, unless the spring, and the fixing of the pole in the ground, are made *exactly at the same moment*. To acquire this, the learner should place himself at the distance of a moderate pace in front of the ditch, raise the left foot and the pole together, then sink both together, the former in the spot where he intends making the spring, and the latter in the ditch; and swing himself round the pole, to the opposite bank. Afterwards, he should make a preparatory run of two, three, or four paces, increasing it gradually; and always observing to let the foot with which the spring is to be made,



and the pole, come to the ground at the same moment. When the learner has overcome this difficulty, he can commence practising the exercise over the leaping-stand.

#### GYMNASTIC EXERCISES.

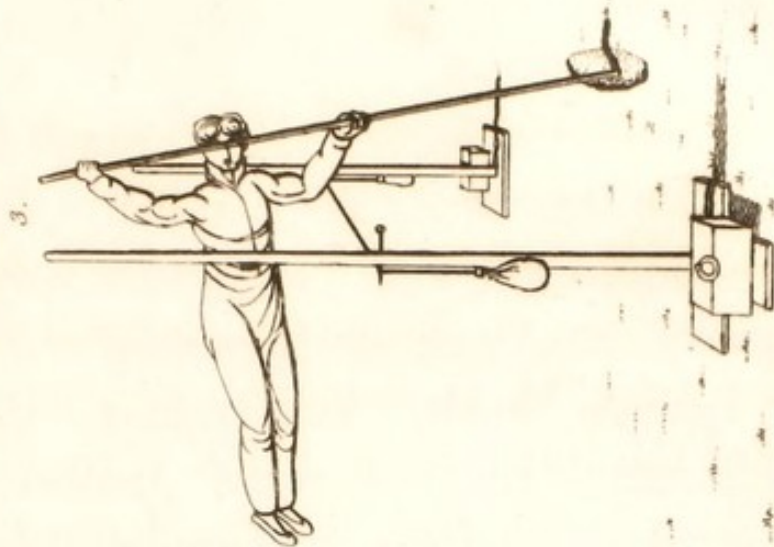
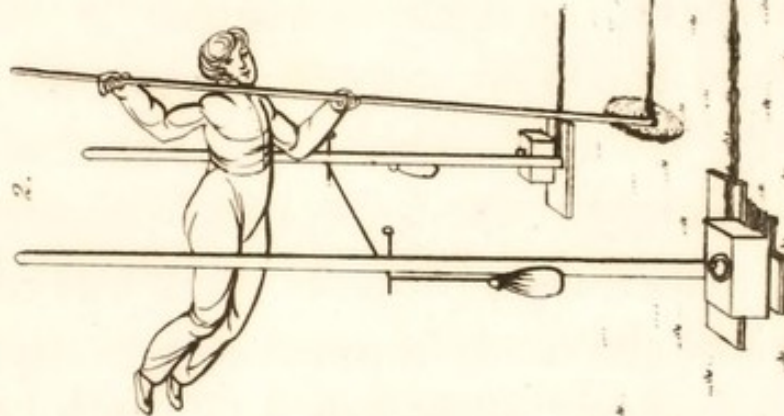
In leaping with a pole over the cord of the leaping-stand, the learner takes the pole in both hands; makes a rather quick run, which concludes with the spring and the fixing of the pole in the ground being made at the same moment; raises his whole body rapidly upward, by means of this spring and a powerful support upon the pole; and swings over the cord, turning his body round so that, at the descent, his face is directed to the place whence he commenced the leap. This is a general description of the high leap with a pole; but it will be better to explain the distinct parts into which it may be divided, as follows:—

1. *The handling of the pole*, which has already been partly explained. See fig. 1. Plate VI. It is immaterial whether the thumb or the little finger of the lower hand lies uppermost: it may be left entirely to the



habit of each individual. The upper hand *must* be placed so as to have the thumb upward. The lower hand must not lie too near the bottom of the pole; the part which it seizes must be at a height proportionate to that of the leap: for instance, if the height of the leap is six feet, this hand must be at least from five and a half to six feet distant from the lower end of the pole. The leaper is soon enabled after a little practice, to seize the pole in the proper way, from a mere glance of the height of the leap. The position of the upper hand is always regulated by that of the lower one; as this advances higher up, the former must also be raised equally as much.

2. The *preparatory run* of from 12 to 15 paces, is accelerated as the leaper approaches the cord. Upon it principally depends the success and the facility of the leap. For, since the spring can only take place with one foot, as seen in fig. 1, Plate VI., and this must arrive exactly at the proper place whence the spring is to be made, it is therefore necessary that the leaper should arrange the order of his steps so as to effect this object. If he is obliged to correct himself







by making a few steps either longer or shorter, just as he going to make the spring, the leap is rendered tame and difficult.

3. *The fixing of the pole in the ground, and the spring* must take place *precisely at the same instant*, since by that means the consequent swinging upward is performed with the greatest facility, the powers of the upper and lower members operating at the same moment. The pole is not always fixed exactly at the same place in front of the cord; in very low leaps of about four feet, the distance of one foot in front of the cord is sufficient; in higher leaps, from one and a half to two feet. The best plan is to have a small pit dug in front of the cord, (see figs. 2 and 3, Plate VI.) and either to remove the leaping stand farther from it, as the height of the leads increases, or, to let the leaping stand remain at the distance of one and a half feet from the pit, and accustom the learners to make all the leaps from it; which is not in the least difficult. The spring is made with one foot, at the distance of two, three, four, or five feet from where the pole is to be fixed in the ground. If the leaper is accustomed to keep the left hand the lowest,



he must spring with the left foot, and *vice versa*.

4. *The swinging upward* is effected by the force of the spring, the support of the lower, and the pull of the upper hand; and principally by the propelling motion caused by the quick preparatory run; which motion, being suddenly checked by the fixing of the pole, changes its horizontal direction into one of a slanting ascent, and carries the body of the leaper over the cord. At the same time, the leaper must observe this rule; viz. that the spring of the foot, and the point of the ground in which the pole is fixed, be in the direction of the preparatory run; that is, the leaper must fix the pole exactly in front of the foot which makes the spring; by no means to the right or left of it.

5. *The turning of the body* during the swinging upward, which has already been explained in the preparatory exercises, is necessary on many accounts. When the leaper is going to spring, he has his face turned towards the object of the leap, as in fig. 1, Plate VI.; but as his feet swing upward, his body must necessarily turn round the pole; and, when they have passed over



the other side of the cord, the head is still considerably on this side. Now the leaper appears as in fig. 2. In a moment afterwards the middle of his body is already on the other side of the cord, and he commences the descent, as in fig. 3. It would be impossible for him to descend in this position, otherwise than with his face directed to where the leap was commenced.

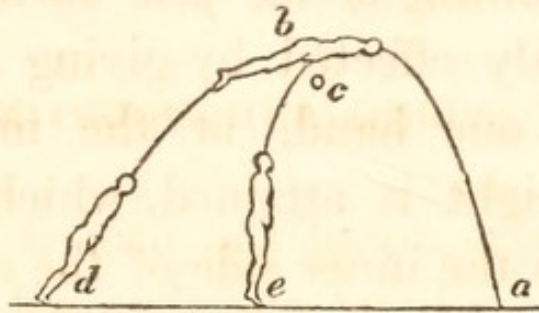
6. *The quitting of the pole during the leap,* is very easily effected by giving it a slight push with one hand, at the moment the greatest height is attained, which causes it to fall upon the inner side of the cord.

7. *The carrying of the pole over the cord,* is more difficult. In this case, the leaper must raise the pole a little from the ground at the commencement of the descent; immediately afterwards he raises the lower part of it with the lowest hand, and presses down the upper part with the other; the natural consequence of which is, that the lower end of the pole will, at the descent, point upward, and the upper end downward. This part of the exercise should be practised first in low leaps.

8. *The descent* depends entirely upon the manner in which the leap is made; if this



be perfect, the descent will be so likewise. The general fault in the descent is, that the leaper, immediately after having passed over the cord, falls to the ground perpendicularly. See the annexed figures, in which *a* is the place where the spring is made, *c* the section of the cord, *b* the position of the leaper when over it, *d* his regular, and *e* his faulty descent. The latter is faulty because it



brings him out of the balance. In order not to fall backward, he is obliged to *run* backward to *d*; if, on the contrary he descends in an equal balance to the ground, he does not move an inch from the spot where his feet touch the ground. This complete rest immediately following the descent, may be considered the sign of a perfect leap. The descent must, as already explained in the common leap, take place upon the balls of the toes, and with a proper sinking of the knees.

The position of the body is sufficiently



explained by the fig. 1, 2, and 3, Plate VI. Many learn to swing the legs so well, as to make them, during the highest part of the leap, lie considerably above the head.

In the following exercises, the teacher must make the leapers proceed gradually from one to the other: between the different heights, there are still many inches marked upon the posts of the leaping-stand, by which the cord can be raised higher and higher.

Order of gymnastic exercises in the high leap with a pole;

1. *The height of the hips.*
2. *That of the pit of the stomach.*
3. *That of the chin.*
4. *That of the crown of the head.*
5. *That of the points of the fingers; that is as high as the latter can reach.*

All these exercises are performed with the quitting of the pole.

Exercises 6, 7, 8, 9, and 10, form a repetition of the preceding ones, with this difference, that the leaper carries the pole over the cord with him.

Exercises 11, 12, 13, 14, and 15, are also a repetition of the first set, except that the leaper, between the spring and the descent,



makes a complete turn round the pole, so as to bring his face in the direction of that part of the ground, towards which the leap was directed. This turn is rendered easier by leaping a little higher than the height of the cord requires.

*Precautions*,—The principal precautions are already contained in the preceding explanation of this exercise. More attention is to be paid to the good position of the leaper, than to the height of the leaps; and the advancement to the higher leaps must be very gradual. Great care must be taken that the poles are sufficiently strong; such as make a crackling noise during the leap, must be immediately thrown aside.

#### THE LONG LEAP WITH A POLE.

Although the high leap with a pole is a most excellent exercise for the body, still that of the long leap is infinitely more useful, being applicable almost every where; particularly in a country much intersected with small rivers, ditches, &c. Beginners should practise this exercise over a ditch about three feet deep, eight feet broad at one end, and about twenty-one feet at the other,



(see fig. 3, Plate I.) and of any convenient length proportioned to the size of the exercise ground, and the number of learners. The poles should be somewhat stronger and longer in this exercise than in the preceding one; but this chiefly depends on the length of the leap, and the height of the bank from which it is made. The usual length is from ten to thirteen feet.

The handling of the pole is exactly the same as in the high leap. The preparatory run is more or less violent, in proportion to the length of the leap. The spring takes place according to the same rules as in the preceding exercise. The swinging upward is also the same, only that the curve of the leap is wider. The turning of the body may likewise be similar to that in the high leap; but it is more convenient, instead of the full half turn, to make only the quarter one. In the descent, the hand presses more firmly upon the pole; and the feet are stretched out as far as possible, in order to reach the opposite bank. This observation will be rendered clearer by a view of fig. 1, Plate VII. in which the leaper is represented as descending.

Another method of leaping over a river,



and which has an exceedingly pretty effect, is to force the body up so high by means of the pressure of the hands upon the pole, (of which one rests upon the end of the latter, or very near it,) as to swing over the top of the pole, and to let the latter pass between the legs when descending. See fig. 2, Plate VII. But few learn to raise themselves in this manner.

#### GYMNASTIC EXERCISES.

1. *The leap of two lengths of the body.*
2. *That of three lengths of the body.*
3. *That of four lengths of the body.*
4. *Persons of equal strength try to outleap one another.*

The lengths of 18, 20, 22, and 24 feet are frequently done by practised leapers.

#### THE DEEP LEAP WITH A POLE.

Neither the preparatory run nor the spring is necessary ; there is nothing in this exercise which before required the exertion of the lower members ; but that of the hands and arms is very requisite, and also a little of the art of balancing. The leaper fixes







the pole in a ditch or river, having one bank high, and the opposite one very low, at a convenient distance from the place where he stands: he seizes it with both hands in the usual way, and by slipping downward along the pole lower and lower, the whole weight of his body rests, at last, upon the pole. In this manner, he can, if the depth is considerable, for instance, two lengths of the body, slide so far down along the pole, that his head appears in a very slant direction with the head downward. When in this position, he either gives a slight push against the bank, or merely quits it, with his feet, which he swings by the side of the pole over to the opposite bank. In this, the descent is also performed upon the balls of the toes, and with a proper bending of the knees. The principal advantage in this exercise lies in the art of supporting the whole body upon a pole, without tottering. To effect this, it is absolutely necessary that the feet should be stretched out far from each other, so as to form a kind of triangle; otherwise the balance might easily be lost. The best way of practising this exercise upon the exercise ground, is by means of the flight of steps mentioned in page 27.



## CHAPTER VII.

### BALANCING.

BALANCING is the art of preserving a just equilibrium of the body, in whatever position it may be placed ; and as its application is extended to all the various kinds of gymnastic exercises, the acquirement of it is absolutely necessary.

### PREPARATORY EXERCISES.

The learners place themselves in a rank at the distance of two paces from each other ; and go through the following exercises, standing upon one leg, at the words of command, given by the teacher ;

1. *Right foot up!*—The right foot must be raised by the bending of the knee, so as to bring that part of the right leg which is between the knee and the foot, into an horizontal position by the side of the left knee.

2. *Extend the foot to the front!*—The right foot must be stretched out, as if a step was going to be made.

3. *Extend to the rear!*—The foot must be suddenly drawn back, and extended to the rear.

4. *Extend to the right!*—The foot must be stretched out towards the right.

5. *Extend to the left!*—The foot must be passed briskly along the front of the left leg, towards the left.

6. *Across the knee!*—The calf of the right leg is laid across the knee of the left.

7. *Behind the knee-joint!*—The left side of the calf of the right leg is laid close behind the left knee-joint.

8. *Seize the heel with the right hand in front!*—The right leg is raised so that the right hand may seize the heel in front.

9. *Seize the heel with the right hand in the rear!*—By bending the right knee, the heel is raised so that the right hand may seize it in the rear.

10. *Seize the heel with the left hand in front!*

11. *Seize the heel with the left hand in the rear!*

12. *Raise the foot to the chin!*—The foot



must be raised, and seized with both hands, or, when the pupil is sufficiently expert, only with the right hand, and brought up to the chin, which is lowered to meet it, by an inclination of the head.

13. *Sit down!*—The right leg must be stretched forward as much as possible, in an horizontal position; both arms and hands are also extended to the front; the body must be bent very much forward, whilst the left knee bends very gently until the learner comes to sit upon the ground.

14. *Stand up!*—The whole position of the body and limbs, is similar to that in the preceding exercise: the weight of the former rests upon the left leg, and the learner gets up in the reversed way to that in which he sat down.

In these two last exercises, the hands must not touch the ground; nor yet the right foot until the body becomes seated; and, when getting up, it must not touch it after the seat is abandoned. The first attempts are facilitated by being practised upon a somewhat slanting piece of ground; afterwards this is unnecessary. They should not be hurried; there must be no falling, nor pushing against the ground.



## THE BALANCING BAR.

This consists of the stem of a tall and straight grown fir, planed off quite round, about 60 feet in length, and placed in a level direction, see *a b*, Plate VIII. Its thickest end *a*, is supported by a post *c*, and may be raised or lowered at pleasure, by means of an iron peg, made to pass through the holes bored in the sides of the post. The stand *d*, supports the bar somewhere about its centre, which can also be raised or lowered in this place. That part of the bar from *d* to *b*, remains without support, and consequently wavers when any weight is placed upon it. The upper surface of the bar is usually about 3 feet above the ground: it may be flattened a little about a foot from the extremity *b*.

## GYMNASTIC EXERCISES.

1. The teacher conducts the pupil, by the hand, along the bar, a few times. The latter must keep his feet turned *outward*, and his body in an upright position. Little boys soon accustom themselves to walk upon the wavering end of the bar; they gradually take more courage, and learn to preserve their

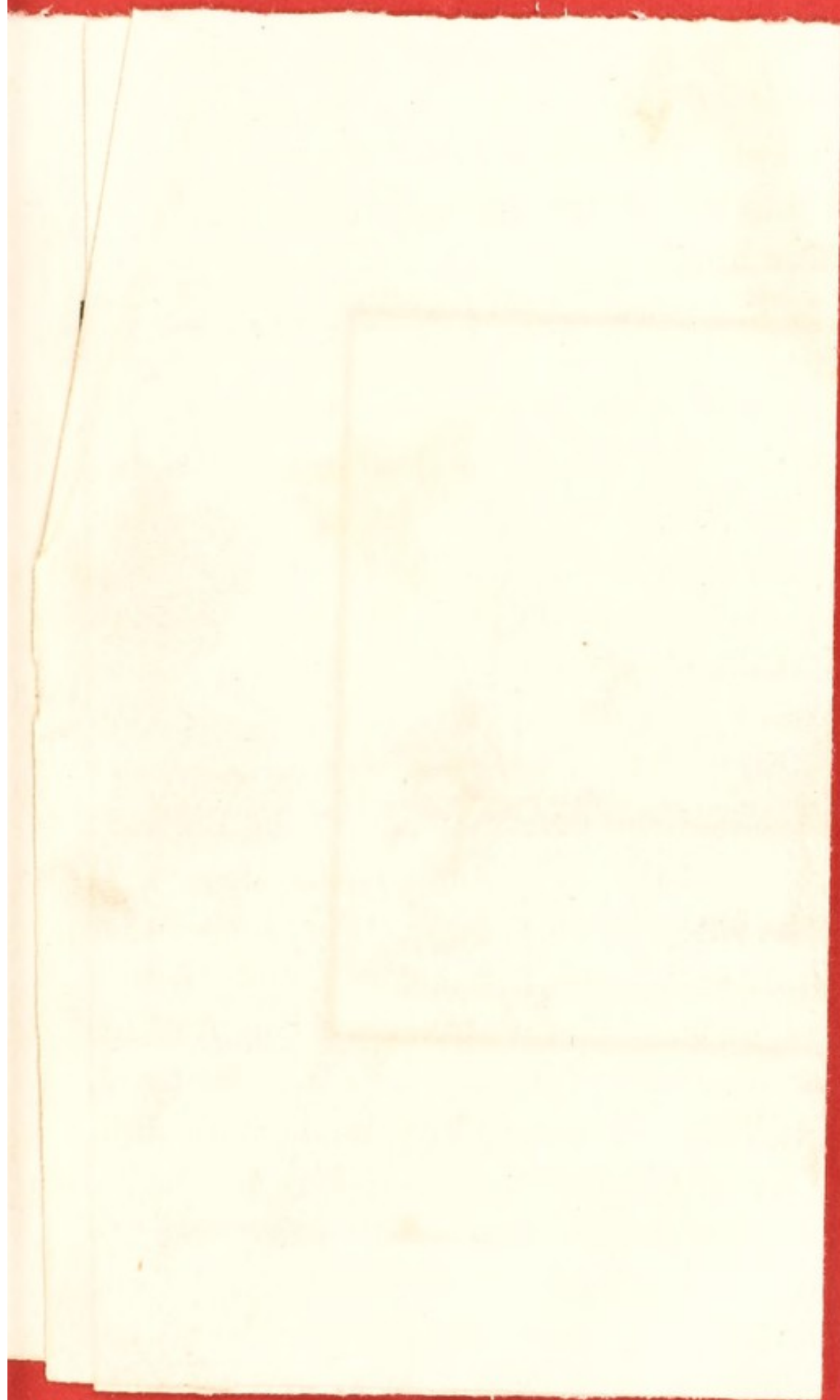


balance. After a short time, the teacher begins to give the pupil less assistance; instead of holding him fast by the arm, he now only allows him to touch the point of his finger, and at last only places his hand before him.

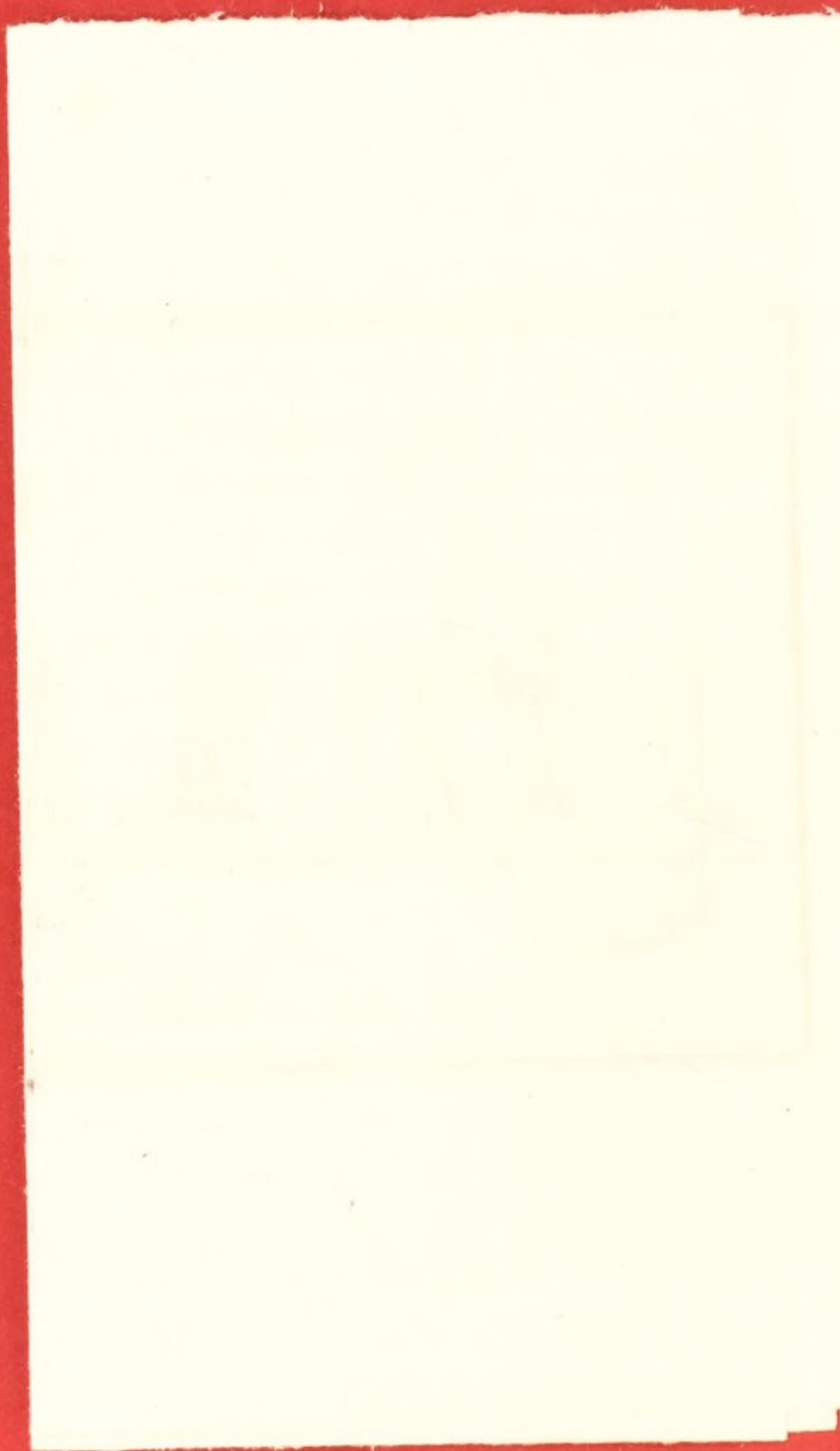
2. The learner walks along the bar, without the assistance of the teacher; (see fig. 1, Plate VIII.); who, however, remains by his side, at first, in order to observe the position of his body, and the placing of his feet, and also to assist him if absolutely required.

3. As soon as the learner is able to walk courageously along the bar, preserving a good position of the body, and also to spring off without falling, whenever he may have lost his balance, the teacher must render his walk more difficult, by placing obstacles, such as large stones, upon the bar, which he is either to step over, or to lift up; or he may hold a small stick before him, about the height of his knee, and make him step over it. See fig. 2, Plate VIII. The exercise is made more difficult by obliging the learner to fold his hands across his breast, instead of using them to assist his balance.

4. Hitherto the learner has been accustomed to walk from *a* to *b*, and to jump







off from the latter extremity; but the teacher now makes him *turn round* at *b*, and return to *a*. He ought however, to have previously learned to turn himself well upon the thick end of the bar.

5. The pupil walks backward upon the bar; an exercise which is not at all so difficult as it appears, if he have acquired sufficient expertness in the preceding ones.

6. Two learners meet upon the bar, and wish to pass each other. They hold one another fast by the arms, and advance breast to breast. Each places his right foot forward, close to that of his comrade, across the bar. See fig. 3. They count 1, 2, 3, and turn completely round one another at the word *three*, each making a step with his left foot round the right one of his comrade, as the two learners have already done at fig. IV. The two learners represented at fig. V. are turning themselves round after having placed the left foot in front; and have completed the turn, except the withdrawing of this foot.

7. This is a repetition of the fourth preparatory exercise to vaulting, applied to the balancing bar. See fig. 2, Plate V. When performed upon the wavering part of the



bar, it is an excellent exercise in balancing. The learner should, in repeating it, advance nearer to the end *b* of the bar.

8. This is a repetition of the foregoing preparatory exercises 13 and 14; viz. the sitting down and standing up on one leg, applied to the balancing bar. See fig. 6, Plate VIII. At one time, the right, at another, the left leg is lowered. When this exercise is performed at the extremity of the bar, as in fig. 6, a great deal depends upon the steady position of the body. It is necessary that the teacher should stand close by the learner, in order to assist him in case of his falling.

9. It is not difficult, when standing upon that part of the bar where the wavering is slight, to raise, by aid of the hands, one foot so high, (lowering the head at the same time,) as to be enabled to kiss the toe, as shown in fig. 7. When the learner is expert in this, let him attempt it on the wavering end of the bar, where it is much more difficult. The foot is placed upon the bar, in the direction of the latter. The learner waits until all wavering has ceased; he then raises the foot slowly and steadily, and bends forward, taking great care all the while to



preserve his balance. He seizes the foot quickly, but without making much motion, and conducts it to the mouth. Upon returning his foot to the bar, he should stand very steadily upon it.

10. Two learners meet upon the bar, and each endeavours to push the other off, by using one hand. See fig. 8. The learners must recollect they are not to give a hard blow, but rather a push, keeping the arm stiff. This exercise teaches them to maintain their position upon a narrow round surface.

11. A support is placed under the end *b*, of the bar, and the iron peg which supports the latter in the stand *d*, is removed. All the learners then walk along the bar, at the distance of two paces behind each other. This exercise instructs the learners in crossing a river or ditch by means of a long pole.

*Precautions.*---In walking along the bar, it is necessary to turn the feet outward, so as to keep them more across it than in its own direction. By observing this, the pupil is much less liable to slip. 2. As the upper surface of the bar is generally too smooth in very dry weather, the soles of the shoes



should, in that case, be damped by rubbing them upon a wet spot of ground. 3. From the nature of these exercises, it is evident that they should never be performed with violence or rashness, but rather with patience and caution. If the bar swings too much, you should wait until it is steady, before you continue what you have begun. 4. The ground about the bar should consist of sand. 5. The teacher should always stand near the beginner to give him assistance. 6. No voluntary swinging of the bar, on the part of the learners, must be allowed.

## CHAPTER VIII.

### CLIMBING AND MOUNTING.

THESE arts are of the utmost importance to both the military and the civil inhabitants of this island. The soldier who has been well taught in the gymnastic school, has an immense advantage over both his comrade and his enemy, in case of an attack upon a place difficult of access, such as the storming of a town, or the carrying of a commanding height. The sailor's life is spent in climbing, and he would always feel the benefit of early instruction in these practices. The traveller afraid of the danger or fatigue, passes rocks or mountains commanding the most beautiful prospects, which, if well instructed he might ascend with ease and pleasure, and the inhabitant of the city would sleep more



secure from the apprehension of fire, if he felt confidence in being able at the shortest notice to descend the loftiest and awkwardest elevations. Such security may be promised to him who has mastered the gymnastic art, as practised in various parts of Germany, and as taught in these pages.

#### THE CLIMBING-STAND.

This, with all its appurtenances, is represented in Plate IX. It consists of two strong posts *a* and *b* firmly fixed in the ground; 20 feet high, and about 30 feet distant from each other. They support the beam *c d*, which is strongly fastened to them. The mast *e*, is fixed upright and very firmly in the ground, and in such a manner as to pass close by the beam *c d*, to which it may be attached by means of an iron band; though this is not necessary if it be supported by the slant post *g* on the other side of the stand. To the beam *c d*, are attached the implements for climbing; viz. two poles *f* and *g*, three ropes *l*, *m*, and *n*, a rope ladder *i*, and a mast *h*. The two standing-places *o* and *p* are intended for the exercises in mounting. A ladder leads to the lower







one, and is made fast to the mast *e* ; another leads from the lower to the upper one. The firm construction of these standing places must be executed under the eye of the teacher : the upper one *p* may be dispensed with if the latter thinks proper ; it is merely intended for the purpose of strengthening the nerves of the learners by accustoming them to look down from a great height.

#### GYMNASTIC EXERCISES.

*Climbing by means of both arms and legs.*---The teacher must require the learners to be expert in the exercises given in Chapter IV., before they commence the following ones, to which they may be considered as preparatory.

1. Beginners ascend and descend the ladder which is fixed to the climbing-stand, in the customary way, until they acquire expertness and courage.

2. They descend with the back turned towards the ladder.

3. They mount and descend in the usual way, but only with one hand ; and, after a little practice, carry something in the other. See fig. 1, Plate IX.



4. The learner goes up and down without using his hands. See fig. 2, Plate IX. The ascent is extremely easy; after which he uses his hands in turning round so as to have his back towards the ladder when descending. In this part of the exercise, the teacher must always be ready to assist him.

5. Two learners meet upon the ladder and wish to pass each other. They either both remain on the front part of the ladder, and give way to each other as much as possible, or, if one of them is sufficiently expert in the two following exercises, he swings himself round to the back part, in order to let his companion pass.

6. The exercises now commence on the back part of the ladder. The learner easily ascends from step to step by advancing his hands and feet, at the same time, higher and higher.

7. The learner mounts along the front part of the ladder as usual; then swings himself round to the back part, along which he descends.

8. The learner mounts and descends the ladder upon its back part, without making use of his feet. See fig. 3. Although this exercise ought not, strictly speaking, to be introduced here, yet as we are busy with the ladder, there will be no harm in mentioning it now. It may be divided into two



parts. The first consists in taking fast hold of the most convenient rundle with both hands, and raising the body forcibly upward. At this moment, one hand seizes the next highest rundle, and immediately afterwards, the other hand does the same. Both hands again raise the body as before, &c. In the second part of this exercise, the hands seize the rundles singly and alternately; which is much more difficult, and only accomplished by practised learners.

9. *Climbing either the upright or slant pole.* The thickness of the upright pole *f*, (See Plate IX.) is from two to two inches and a half, or more, according to the size of the learners. It must be perfectly smooth, and void of splinters. Its upper end is fastened by an iron ring to the beam *c d*. The slant pole *g* must be at least three inches thick. Neither of them is made very fast in the ground, but only sunk a little into it, in order that they may be easily replaced by poles of different sizes. The position of the climber is the same in both the upright and oblique pole, and is shewn upon the latter, in fig. 4, Plate IX. Nothing must touch the pole besides the feet, legs, knees, and hands. The climber, while he raises himself with



both hands, draws his legs up the pole, as in fig. 4, then holds fast by them, and again places his hands higher up. He continues this alternate use of the legs and arms until he has reached the top. The descent is not at all difficult; it is not performed similar to the ascent, but merely by sliding quickly down with the legs, without scarcely ever touching the pole with the hands, as shown in fig. 5. This exercise is more difficult upon the oblique pole, since the hands are more affected by the weight of the body. The learners should be made very perfect in this exercise, for every one ought at least to be sufficiently expert, to slide himself down along a smooth pole placed against the window of a second or third story.

10. *Climbing the mast* is more difficult than the last exercise, for even when made of a moderate size, it cannot be spanned round by the hands. It is fixed quite firm in the ground; is from six to eight inches thick at the bottom, and thirty feet high. The learners must not be allowed to climb the mast until they are very expert at climbing the poles mentioned in the last exercise, and are able to get from that, upon the beam *c d*. All climbing succeeds best in hot weather, but



more particularly that of the mast. The position of the legs is the same as with the pole: boots are the best covering for the feet. Since the mast is too thick to be grasped by the hands, the climber must lay fast hold of his left arm with his right hand, and *vice versa*. Learners climb with much more ease and security, with naked arms, for the skin does not slip near so easily as the clothes. A climber up the mast adheres to it with his whole body, as in fig. 6, until he reaches the thinner part of it, as appears from fig. 7.

11. *Climbing the rope-ladder.* See i, Plate IX. The rope-ladder should have three or four wooden rundles to spread it out, and ought to be made so as not to twist round and entangle when used; if it has this fault, it is unserviceable.

It is much more difficult to mount the rope-ladder than the pole, the former hanging quite loose, and not at all fastened at the bottom. The muscles of the arms and hands are very much affected; for the latter must, when the learner is not sufficiently acquainted with this exercise, almost entirely support the body, which continually inclines backward. The manner of proceeding in this exercise is easy, for it is similar to ascending



a wooden ladder; but as the rope-ladder hangs perpendicularly, and is very flexible, the steps upon which the feet rest, are generally pushed forward by the unpractised, and the upper part of the body sinks out of the perpendicular position into a very oblique one; whereby the whole weight of the body becomes supported by the hands, and the exercise is rendered so difficult that the learner cannot ascend very high. To obviate this, he must always have a fast hold of the two main ropes, as shown in fig. 8, and keep the body, as much as possible, stretched out upon the ladder and upright. If the ladder is sufficiently strong, the teacher allows two or three of his pupils to get up and down at the same time; by which means they learn to pass each other. One hangs by a main rope until the other has passed him.

12. *Climbing either the oblique or level rope.*—Let a rope be fastened from one post to another, or from the beam *c d*, Plate IX., to an adjoining post *k*, and in an oblique direction. Another might also be placed in a level direction, having one end fastened at *k*, and the other to the post *b*. In either case the learner fixes himself to the rope as in



fig. 9, in the position required in Exercise 7, Chapter IV.; and advances along the rope in the way required in Exercise 9, Chapter IV. In this manner, a number of soldiers might cross a small river, with their arms and knapsacks, when other means failed.

There are two ways of using the legs in this exercise; 1st, exactly as in Exercise 9, Chapter IV., so that the feet, either in ascending or descending, move forward along the rope alternately; or one leg only may hang over the rope, and be made to slide along it; but in both cases the pressure is painful, particularly if the climber does not wear boots. The 2nd, which is the best method, is to place the sole of one foot, for instance, the right, flat *upon* the rope, and to lay the left leg across the instep of that foot; whereby the friction of the rope is removed.

13. *Climbing the upright rope.*—This exercise is shown in Plate 9, upon two ropes *l* and *m*, because the securing of the rope by the feet may be done in two different ways. It is very easy to those who are already expert at climbing the upright pole. The only difficulty lies in seizing the rope with the feet so as to obtain a firm support.

The first method is shown in fig. 10, upon



the rope *l*. Knees and thighs have nothing to do here; only the feet are employed. If the learner sit upon a chair, and cross his feet in the usual way, he will immediately perceive their proper position. The rope passes between them, and is held fast by pressing them moderately together, while the hands alternately grasp higher up the rope. Here-upon the climber, hanging by his hands, also draws his feet higher up, fixes them again to the rope, and proceeds as before.

The second method, peculiar to sailors, is shown at fig. 11, on the rope *m*. The rope passes down from the hands of the climber, along one, generally the right, thigh, not far above the knee; winds round the inner side of this thigh, along the knee-hollow and the calf, and then across the instep of the right foot, whence it hangs loose. If the climber only treads moderately upon that part of the rope where it crosses the other foot, he will, by means of the varied pressure, obtain a firm support. The exercise depends almost entirely upon holding the right leg and foot so that the rope may retain its proper winding, after being quitted by the left foot, when the hands have been raised for the purpose of drawing the body higher. This is easily ac-



quired after a few trials. In descending, the hands must be lowered alternately, as they are raised in ascending, for if the hands slide down quickly, they will be injured.

14. *Resting upon the upright rope.*—This exercise not only excites a lengthened power of the muscles, but also tends to promote expertness in dangerous situations. It is represented in Plate IX., at fig. 12, upon the rope *n*; which must be much longer than what the height requires. The climber mounts to a moderate height, and then halts; swings the right foot three or four times round the rope, so that this winds round the leg; he then entwines it, by means of the left foot, once or twice round the right one, which he bends so as to point the toes upwards, and now treads the left foot firmly upon this last winding. The pressure which thus arises between the rope and the feet, opposes the whole weight of the body. In this position, he can rest a long time; but suppose he wishes to be still more at his ease. With this intention, he lowers his hands a little along the rope, as shown in fig. 12, then holds fast with the right hand, stoops, and grasps with the left, that part of the rope which hangs below the



feet. He raises himself again, and entwines this part a few times round his shoulders, hips, and the rope itself, until he is firmly entangled.

15. *Climbing trees.*—The preceding exercises have been applied to objects made very firm and secure by art, and were therefore, after good preparatory ones, attended without danger. It is otherwise with trees: their branches frequently give a very insecure support; the nature of the wood must be considered; consequently, this kind of climbing requires, with beginners, the careful attention of the teacher. The danger does not consist in clambering up the stem of the tree, but in climbing from one branch to another.

*Precautions.*—The teacher must only allow the learner to climb up low branches at first, so that he may narrowly observe his movements. He must stand by, and warn him from the branches which appear insecure, and make him acquainted with the important rule, to support himself almost entirely by the *hands*, and not to confide too much to the feet, since they easily slip from off the branches. Beginners must not be



allowed to perform this exercise in winter, for then the withered branches are not so easily distinguished.

The different advantages which must occur to the learner in this exercise, increase with his agility and courage. He is soon enabled to pass from the branches of a tree to those of an adjoining one, and so on along a whole row. If he have had sufficient practice with the rope, he will not always clamber up and down the stem of the tree, but seize a sufficiently strong branch, which hangs low enough to be reached from the ground with his hands, and swings himself either up to, or down from it. Should this branch be somewhat higher, he can make a preparatory run, and catch it immediately after having made a spring.

To render this exercise more agreeable, and to try, at the same time, the expertness of the learners, the teacher may sometimes take them to a group of trees ; he then counts 15, and during his counting, each exerts himself to climb so high up a tree as to be without the reach of the teacher's stick ; the endeavouring to escape which excites great laughter.



## CLIMBING BY MEANS OF THE ARMS ONLY.

This is one of the best exercises for strengthening all the muscles of the chest, the arms and hands; it is a true criterion by which to judge the powers of these members, and it also augments them most effectually. We seldom find a boy who is able in his eighth or ninth year, to raise himself a little way either up the rope or pole by his hands only. The age of fourteen is generally the time when the arms become sufficiently strong; therefore some attention must be paid to this point, with respect to the learners. The best preparatory exercises are the 5th and 10th in Chapter IV. The exercise itself may be applied to the *ladder*, (as already given in Exercise VIII.,) to the *pole*, and the *rope*, either slanting or upright.

Ex. 1. *Climbing up the pole by the hands only* is perhaps easier than up the ladder, for with this the body hangs quite free, but with the former one side of the body is close to the pole, which facilitates the learner a little. See fig. 13, Plate IX. When this exercise is applied to the *upright pole*, the position of the body will be good if similar to that



represented at fig. 13. The feet hang loosely and remain perfectly steady. The climber must not be allowed to bend his knees, nor to stamp, as it were, in the air, nor to let the pole come between his thighs. There are two methods of employing the hands in this exercise. According to the *first*, which is the usual mode, both hands raise the body simultaneously; immediately after which, one quickly grasps the pole higher up, while the other supports the weight alone for a moment. The *second*, in which each hand alternately supports the body *alone*, and the other, quite free, seizes the pole higher up, in order to raise the body again, requires great practice and considerable strength in the arms. In climbing the slant pole, the position is similar to that in the 10th Exercise, in Chapter IV.

2. *Climbing the rope by the hands only* should be first practised upon the slant rope, as with it, the continual grasping higher up is much easier. The position of the hands and of the body similar to that required in climbing the pole.

It should be observed that of the preceding exercises, all those which require more strength than agility must not be kept up



too long. Strength increases gradually, its growth is not only combined with exercise, but also with the developement of the corporeal system. For this reason, such exercises should be *frequent* but *not long*.

#### EXERCISES IN MOUNTING.

These exercises require neither particular strength nor agility; they are intended to produce fearlessness, and the power of looking down from high stations, and consequently to prevent weakness of nerves and giddiness.

The teacher will have little difficulty with boys accustomed to the country, but he must pay great attention to those who come from large cities, as they are frequently weak, nervous, and timid. If any one of them is sufficiently strengthened by the preceding climbing exercises, and become bolder in climbing the pole and the ladder, he may mount the first standing-place *o*, Plate IX. If he be very timid, then even his climbing to the top of the pole will be no certain proof of his having lost his timidity, for the firmness with which the climber clings to the pole, gives him a security which renders him fearless; he may still be afraid of standing



quite freely upon the ladder or the standing-place. Such a one must only ascend higher up the ladder gradually, turn round, and sit down upon a rundle, in order to accustom himself to look down for a long time upon the ground. If he finally climbs the pole *f*, so as to place himself in the riding position upon the beam *c d*, and can look down with indifference, he may then fearlessly get upon the lower standing-place. But whoever can ascend the beam from the pole, the rope, and the rope-ladder, and can shake the fane of the mast, (see fig. 7,) may mount with confidence the upper standing-place *p*.



## CHAPTER IX.

### WRESTLING.

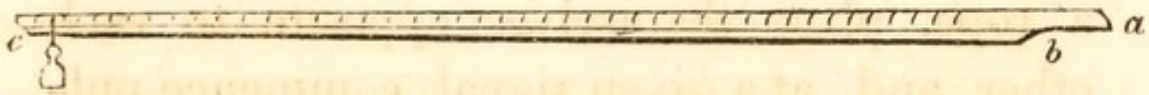
THE advantages of well regulated and temperate wrestling are felt through the whole body ; it exercises both legs and arms, excites every muscle, strengthens the chest, and circulates the blood. If we wish youth to possess courage, patience, and perseverance, no exercise is more fit for that purpose than wrestling ; nor is there one which calls forth, in such rapid and varied succession, all the muscular powers.

### PREPARATORY EXERCISES.

1. *Heaving*. This exercise is intended to strengthen the hands and arms, and may be practised, at first, with the leaping poles.

The learner extends at one time his right, and at another, his left arm, straight out, and seizes one end of a leaping-pole, which he endeavours to lift up from the ground. He should commence with short poles, and then attempt to raise longer ones according as his strength increases, and finally take a pole in each hand, and thus exercise both arms at the same time. After practising this exercise from time to time, he will find the power of his hands and arms increase wonderfully.

For more accurately determining the increasing power of the arms, a lever such as that represented in the annexed figure is used.



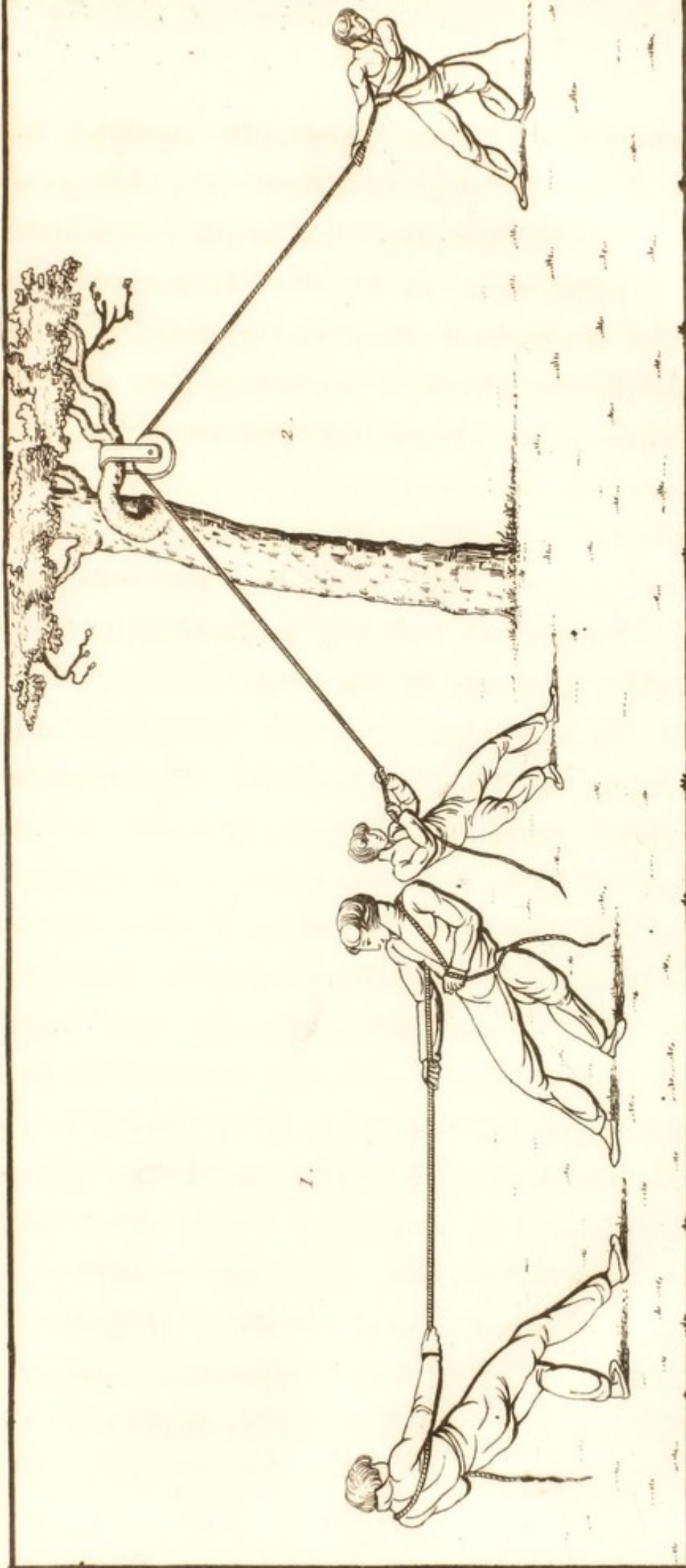
The length  $b\ c$ , may be from five to six feet. The handle  $a\ b$ , should be five inches long, and about an inch thick, and the whole lever made to taper off a little towards  $c$ . The upper surface is divided into notches, one inch distant from each other.  $d$  is a pound weight, which is rendered more or less difficult to be raised, according to the distance of the notch in which it is fixed, from  $b$ .

Two such levers ought to be used, in order to exercise both arms at the same time. The



learner holds himself perfectly upright, with the chest thrown well forward. He grasps both levers, keeping his arms extended at full length, so as to let the other extremities of the levers rest upon the ground, until the weights are attached to the proper notches ; he then raises them together slowly upward, to somewhat above an horizontal line, and gradually lowers them again to the ground. In repeating this exercise, the weight is placed nearer the end *c*; according to the increased strength of the arm.

2. *Pulling*. Two learners of about equal strength, take a firm hold of the two ends of a rope, place themselves opposite to each other, and, at a given signal, commence pulling the rope with all their force, until one has succeeded in pulling the other so forcibly that he can no longer maintain his ground. In order to vary this exercise, and to bring other parts of the body also into play, not only the hands, but the shoulders and the back should be employed: for which purpose the rope is thrown over one shoulder and passed under the arm which is to pull. See fig. 1. Plate X. The most advantageous position in this exercise, is certainly that in







pulling from the side, which immediately occurs to every beginner. The learner must never be allowed to pull by the chest.

During this exercise the teacher should make himself acquainted with the relative strength of his pupils, for the purpose of training them afterwards in the exercises in wrestling.

Another part of this exercise in pulling, which is combined with that of heaving, is shewn in fig. 2, Plate X.; where the rope passes over a pulley, about eight or nine feet above the ground. The opponents pull with all their force; for a long time, the pulley is seen to turn sometimes to one side, and sometimes to the other: at last, however, one proves himself to be the most powerful; by degrees he draws his adversary nearer to the pulley, and the nearer the latter approaches it, the less advantageous his position for pulling. Finally, he gains upon him so considerably, that his feet are raised fairly off the ground.

In this exercise the learners must strictly attend to the following *Rule*:—After the pulling has commenced, neither of the opponents must let go the rope suddenly, not even when the other is raised off the ground, as



in the last exercise ; but at the instant one of them calls out *Halt !* the other is to give way gradually. Further, as long as the feet touch the ground, the victory remains undecided. In some cases, however, the teacher may deem it sufficiently so, when one of the opponents is brought immediately under the pulley.

The first part of this exercise in pulling may be practised in a very agreeable manner by several learners at one time. Thus, the teacher arranges them into two parties of nearly equal strength, to each of which he gives one half of a long stout rope, placing the two strongest of the learners towards the middle of it, and the remainder behind them successively, according to their strength. The centre of the rope is placed over a line marked on the ground, or a narrow ditch. At a given signal, every one commences pulling his part of the rope, with all his strength ; and if the two parties are well matched, the victory is for a long time doubtful. This is decided when one party has succeeded in pulling the whole of the other completely over the boundary.

3. *Wresting a ball or a stick from an opponent*, is an exercise intended to give the hands



the power of closing firmly ; the stick, which should be quite smooth and about three feet long, serves also to exercise the arms.

#### GYMNASTIC EXERCISES.

1. *The simple wrestle, or the push.* This exercise consists merely in pushing the opponent backward, without endeavouring to throw him down. In the first attempts, the teacher must see that the opponents place themselves in a proper position, so that they may commence pushing with equal advantages ; but afterwards they may be allowed to advance upon each other as they please. They seize each other by the arms, quite close to the shoulders, and nearer to the inner than the outer sides of the arms. See fig. 1. Plate XI. With respect to the position of the legs, the wrestler inclines forward upon one, and keeps the other rather back.

If A. possess sufficient power, when in the above position, to push B. backward, and continue to do so until the latter is thrown out of the *resisting* position into a *perpendicular* one, he may almost make certain of winning the game, provided he still presses B. backward as fast as possible, and that with

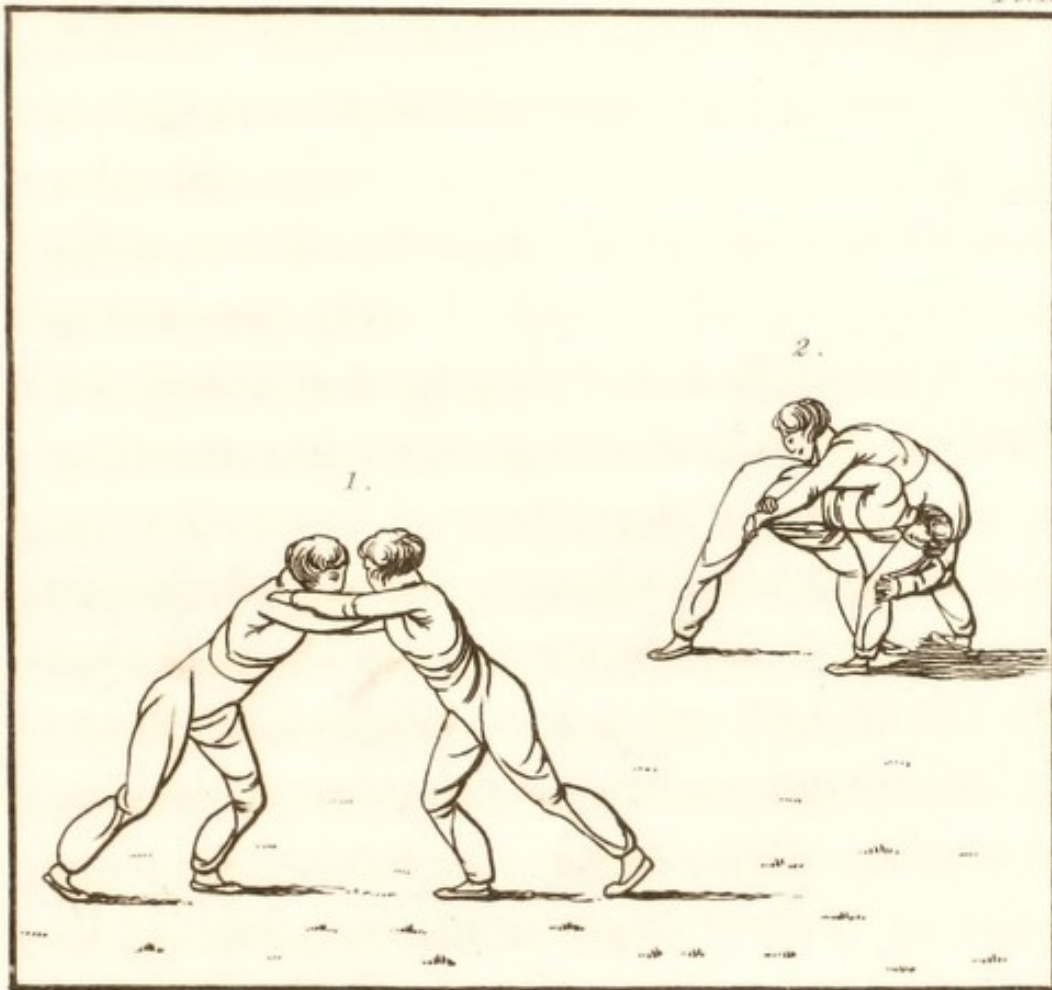


longer steps : for B. cannot step backward as quickly as A. gains upon him forward. B. must then either fall backward, or, in order to avoid this, turn himself quickly round for the purpose of taking flight.

Supposing A. to be naturally active, and B. rather heavy, he may perhaps succeed in springing quickly round the latter and seizing him from behind. But this is not easily accomplished. Otherwise he may manage to turn B. quickly round and then to seize him. In this case, he should give to that shoulder of B. which the latter presses most forward, a quick and violent push, and at the same moment draw the other shoulder towards him with his other hand, in order to turn him at least somewhat round, and by that means to spring more easily behind him.

Among several other artifices practised in this exercise are the following ; instead of seizing B. by both arms, A. rather waits for B. to seize him. In the moment that the latter rushes upon him, A. slips a little to the side opposed to that where B.'s foremost leg comes ; grasps B.'s nearest arm quickly and unexpectedly, and pulls him so forcibly towards him as to be enabled to seize him from behind. Another allowable artifice is that when

Pl. II.



W. S. sc.

seizing him in front; for even then the latter can impede A.'s farther progress by extending his arms as firmly against him as possible, bend his belly inward, and thus escape being



grasps D.'s nearest arm quickly and unexpectedly, and pulls him so forcibly towards him as to be enabled to seize him from behind. Another allowable artifice is that when

A. after having seized B. pretends to be exerting himself in turning the latter round to the right, and then instantly changes this direction to the right, in which he turns his opponent with his utmost strength.

2. *The half-wrestle, or the heave.*—In this exercise, each wrestler endeavours to fix his arms round his opponent, and to raise him as much as possible from the ground. If they are both cautious, it takes a long time before one is enabled to seize the other, for each uses his utmost exertions to keep his opponent at a distance. Hence the commencement consists of the before-mentioned simple wrestle: they push each other backward and forward until an opportunity offers for one to fix his arms round the other, and then to raise him from the ground.

The most advantageous movement is that by which A. seizes B. from behind, and then holds him fast. This, however, is no easy matter, as already remarked; for A. must first find the means of turning B. in order to get in his rear. But there is still less security in seizing him in front; for even then the latter can impede A.'s farther progress by extending his arms as firmly against him as possible, bend his belly inward, and thus escape being



lifted from the ground. It certainly appears desirable to seize both arms of the antagonist from behind, and so to pinion him; but the latter may disengage himself by striking both arms out so forcibly as to break through the other's grasp; which, though not easily accomplished, is frequently resorted to with success.

A much bolder method of heaving, which has been known to the most experienced wrestlers, from even the remotest times, is as follows:—If at some favourable moment during the contest, A. seizes his opponent's left wrist with his right hand, stoops at the same instant by a step forward with his left leg, and grasps B.'s knee-joint with his left hand; he can then, by drawing both his hands forcibly towards him, easily bring B. upon his shoulder, and not only heave him, but actually carry him off. For a more satisfactory explanation of this manœuvre see fig. 2, Plate XI.

Another part of this exercise is practised as follows:—A. allows B. to seize him by the middle of the body. The latter then holds him fast, keeping his hands locked together, and A. must endeavour to disengage himself. The best plan the latter can adopt to affect this, is to thrust his hands and lower parts of



his arms between his own body and B.'s arm, and then to force the latter's hands asunder. If A. disengages himself he is the conqueror, if not, this honour is due to B. This exercise is highly beneficial for strengthening all the muscles, particularly of the back; indeed these two extremely harmless modes of wrestling (the simple and the half-wrestle) cannot be too much recommended.

3. *The complete wrestle, or the throw.*—The object in this exercise, is to lay the opponent on the ground. Previous to the commencement of the contest, it must be settled whether the victory is to be decided by one single throw, by several throws, or by holding the opponent firmly down upon the ground. The first case is the easiest; in the second, three trials are sufficient to decide; the third is most difficult, since in this, it is not only necessary to throw the opponent, but to render him quite powerless by kneeling above him, and holding his arms down close to the ground.

As it is evident that after a little practice, the learner will easily discover when and how to take advantages over his opponent, and in what manner to profit by them, it will only



be necessary to add a few of the usual artifices resorted to in wrestling, for his farther instruction.

Suppose the two wrestlers in the position at fig. 1, Plate XI. and that one of them, whom we will name A. endeavours, by means of his grasp of the opponent B.'s shoulder, to push the latter over to the left side; B. will then resist this pressure with all his strength and labour towards the right, in order to preserve himself from falling on the left side. Now, if A. allow B. to gain a little by this means, and then suddenly change the direction of his pressure, viz. to the right, it is extremely probable that B. will fall on this side.

If A. suddenly makes his right arm free, presses forward with his right side nearer to B., places, at the same moment, his right leg behind the latter's left leg, and clasps his breast with his right arm, he can then easily press him backward or sideways, so that B. will fall over A.'s knee.

In a similar manner, A. can suddenly slip under B.'s left arm, placing, at the same moment, his right leg with the knee bent, between B.'s legs, and clasp B.'s back with his



right arm, in which case B. will fall over A.'s knee.

Suppose that B. has his right leg foremost, A. can then suddenly seize this leg by the knee-joint with his right hand, and B. must fall if A. presses down the former's right shoulder with his left hand towards the left, or backward.

4. *The mixed wrestle.*—This is the most difficult of all; for in the preceding kinds of wrestling, it was predetermined what was to take place, and the competitors acted accordingly. But in this the three kinds of wrestling are united. Each wrestler is constantly contriving either to push forward, to heave, or to throw, while his opponent is quite uncertain of his intended manœuvres; the latter must, therefore, redouble his vigilance, dexterity, and strength, in order to give, in one moment, the proper resistance which any particular movement made by the former may require. He who is fatigued first loses the game.

*Rules to be observed in wrestling.*—1. At the commencement of the contest, the wrestlers, as already remarked, either deliberately place themselves in the position at fig. 1, Plate XI. or advance upon each other.



In the latter case, no violence is to be allowed; it must consist more in a struggle with hands and arms.

2. No grasp is to be made at any part of the dress, nor at the face, hair, or neck, only at the whole body, or limbs.

3. Striking and kicking are inadmissible in regular wrestling.

4. Whenever it appears doubtful which of two wrestlers is the victor, their companions who are looking on, become the umpires, and decide by a plurality of voices. These have also the right of giving applause, of encouraging, and of immediately censuring any breach of the rules; but no one is authorized to direct the hands of the wrestlers. In the *simple wrestle*, the *push* can only be decided when the opponent is evidently unable to resist it any longer; in the *half wrestle*, the *heave* is complete if he is unable to disengage himself from it; and in the *complete wrestle*, the *throw* is determined either when one is thrown oftener than the other, or when A. throws B. without falling himself, (or at most with only touching the ground with his hands by way of support); or lastly, when one is held so firmly upon the ground that it is quite impossible for him to do any thing further.

*Precautions.*—This exercise should be performed upon a smooth grass plat. All superfluous clothing should be laid aside, and all hard things taken out of the pockets.

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