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by Japanese methods*

Harrie Irving Hancock

By H. IRVING HANCOCK

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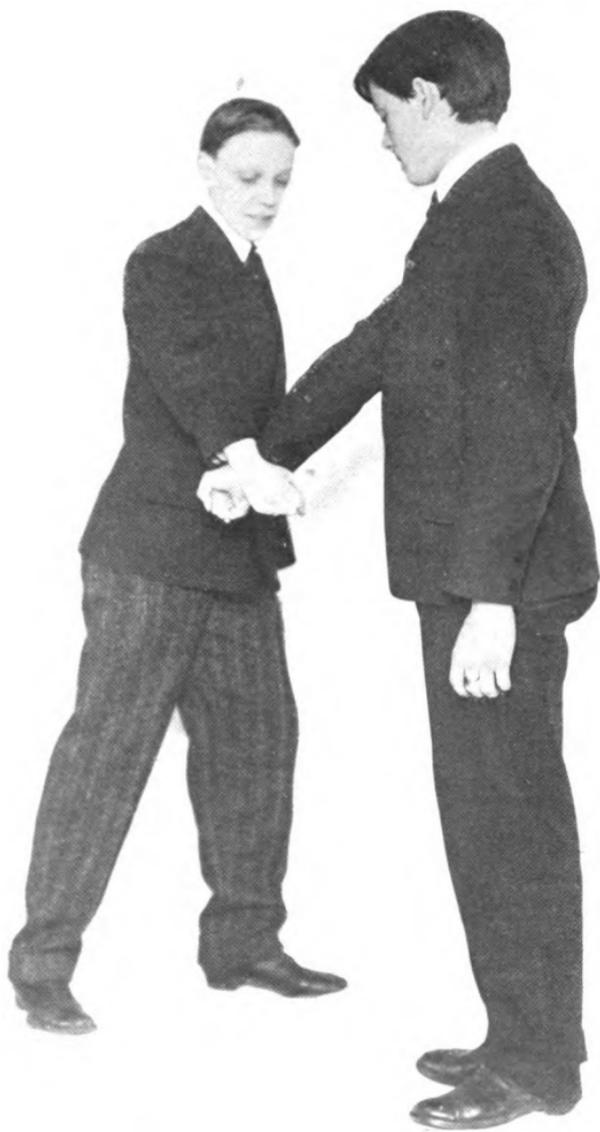
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No. 1. RESISTANT WRIST WORK, THE FIRST LESSON IN "JIU-JITSU."



Physical Training for Children

By Japanese Methods

A Manual for use in Schools and at Home

BY

H. Irving Hancock, M.D.

Author of "Life at West Point," "Japanese Physical Training,"
"Physical Training for Women by Japanese Methods," etc.

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A. B. Phelan

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INTRODUCTION

THESE few pages are addressed directly to those who have in charge the physical training of children, and it is urged that the subject matter be read through to the pupils themselves. Yet it has been the aim of the author to make the contents of this volume so plain and simple that the boy or girl of reasoning years will find it possible to instruct himself or herself and a companion.

Why should the Japanese physical training system, *jiu-jitsu*, be taught to our young people? The answer is a ready one, and easy of comprehension by one who has had even the most ordinary opportunities for witnessing the feats of strength and endurance of Japanese athletes. Travellers have brought us, from time to time, wonderful tales—and none of them exaggerated—of the strange and marvellous system of gymnastics in vogue among the

people of Japan. Some eight years ago the author began his study of *jiu-jitsu* under the guidance of Japanese friends in this country. Afterwards, in Japan, he studied under such famous adepts as Matsuda, Yako, and Inouye—a redoubtable triumvirate of muscle-trainers. Upon his return from Japan the author went again under Inouye's tutelage when that master came to this country for a while to lecture and to teach.

Six weeks of instruction the preliminary strength-producing training of *jiu-jitsu* will yield better results in muscle, endurance, and agility than will the same amount of time per week spent in a gymnasium throughout a whole school year. And the same six weeks of drilling in *jiu-jitsu* exercises will accomplish more than may be looked for from years spent at the light calisthenics taught in many of our schools.

If this should seem to be an extravagant claim, let us examine some facts of very recent history. In Japan every soldier, sailor, and policeman is obliged to take the government course in *jiu-jitsu*. When the allied armies of

the civilised powers marched against Peking in the summer of 1900 it was discovered that the soldiers of our regular army were second among all the troops in point of endurance in the field. But the Japanese were first, and proved their ability, day after day, to out-march our troops by fifty per cent. Through the earlier weeks of hostilities with Russia, in this year, Japanese troops marched twenty-five miles a day through the most bitter weather. Under the same circumstances our soldiers would consider fifteen miles a day a satisfactory average. As *jiu-jitsu* is the only physical training that the Japanese soldier receives it is evident that it is this system which gives him the greatest endurance to be found in the world.

The course laid down in this volume is intended to take up a school year. The feats should all of them be mastered thoroughly in less time than that, but it is advantageous to have considerable time to spend in reviewing the work. The amount of time spent in physical training during the week varies greatly in the schools. It is well worth the while to give

from twenty minutes to a half an hour daily, but where this is impossible it is advised to give at least twenty minutes a day on three days in the week. This amount of time spent in instruction can be made to suffice if the pupils can be persuaded to practise out of school hours. And much can be done in the way of urging the young people to try the feats in recess time.

Necessarily many of the feats described cannot be performed in the aisles between the desks. But this need be no bar to thorough training in *jiu-jitsu*. Nearly every large school building has a hall in which graduating exercises and other exhibitions are given. This hall can be used by the class when training. School buildings of any size have basements that are used as indoor playgrounds in stormy weather, and here the exercises may be taught. There is plenty of space also in the broad corridors. Best of all, in the milder weather—that is, in September and October and in May and June, the young people can be marched into the school yard and there drilled to the best advantage of all in the purer out-door air.

The especial attention of the physical instructor or class teacher is directed to Chapter III., in which are given several forms of exercises that will be found of great value to children who are too weakly to enter at once into the more rigorous exercises taken up by their stronger schoolmates. Chapters VII. and X. are intended by way of brief lectures for occasional reading to the class.

As soon as one set of exercises has been mastered, and a new set taken up, it is not intended that the old feats be abandoned. On the contrary, in each practice bout some of the old movements should be taken up along with the new, giving a continuous review of all the work that has been mastered. It is suggested that the instructor will find it an excellent idea to number each of the drills in the order in which they are described. A marginal note stating the average amount of time required for a movement will be of great assistance in making a selection of the old exercises that are to be taken up with the new.

There are no separate exercises for boys or girls. Both boys and girls have posed for the

illustrations published herewith, but this was done merely in order to lend greater interest to the depiction of the work.

It is highly undesirable that the *jiu-jitsu* training should be dropped from the school course after one year of drilling. On the contrary, it should be kept up as long as the boy or girl remains at school, should be carried into the college or university, and then onward throughout life. But, after the first year of training, the student has the advantage of understanding the system, and of being able to skip about among the exercises as his inclination and his own bodily needs suggest.

Since it is likely that the term *jiu-jitsu* will be heard more and more in this country as time goes on, a hint is offered as to its pronunciation. It is natural to say "joo-jitsoo," but the Japanese call it jew'-jitss. The accent is on the first syllable. The double "s" is given with a slight hissing sound, and the final "u" is not expressed at all.

H. IRVING HANCOCK.

NEW YORK, April 9, 1904.

PHYSICAL TRAINING FOR
CHILDREN
BY JAPANESE METHODS

PHYSICAL TRAINING FOR CHILDREN BY JAPANESE METHODS

CHAPTER I

WHY PHYSICAL EXERCISE IS NEEDED IF ONE
IS TO BE HEALTHY—THE JAPANESE SYS-
TEM OF TRAINING THE BODY—WHAT IS
MEANT BY “RESISTANT MUSCLE” WORK
—THE FIRST FEATS TO UNDERTAKE

WHY should it be necessary for one to take physical exercises? Why should health and happiness depend upon doing this? If one does not care to train the muscles of his body why should he be expected to do it, and why should he suffer through not doing it?

The answer to these questions may be stated very simply.

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While the needs of the body are many, the most important requirements of health—given here in their order—are air, water, food, and exercise. A human being cannot live more than a few minutes when air is denied him. He can live for a few days without water, and for a considerably longer period without food. In a mild enough climate he can live without clothing or shelter. It is possible, also, to live without physical exercise, but, in this case, the human being does not act wisely.

Training of all of the parts of the body is not merely advisable; it is necessary if the human being is to bring his body to the highest state of health. Just as air, water, and food are needed to keep the life in the body, so is exercise of the parts of the body.

It is the mission of the stomach to prepare the nourishment in food for the making of new blood. In the lungs this blood is purified by breathing in air, the oxygen in which burns out the waste material of blood. Then the heart is required to pump the purified blood through the body. This process is called the

The First Feats to Undertake 3

circulation of the blood. What good does the circulation of the blood accomplish? The answer is that every portion of the body is undergoing decay at every moment in life. The nourishment that the blood, vitalised by the stomach and the lungs, and pumped through the system by the heart, carries to every minutest part of the body, gives the force that enables the human, or lower, animal to remain alive.

The basis of life is the cell. This is the most minute part of animal organism. The cell forms tissue, the tissue forms fibre, and, from the start with the cell, the muscles, nerves, skin, hair, nails, bones, teeth, and all of the other parts of the body are formed and are kept alive.

It is the circulation of the blood, rich in nourishment, that accomplishes all of this continual building up of the body. Then what part does physical exercise play?

Muscular exertion of the right sort, and in not too excessive amount, forces the lungs to take in deep breaths of air. It will be noted, after examining the veins of the body—the

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channels through which the blood returns to the lungs—that the veins show a bluish tint. This is because the blood flowing through the veins is impure. When this blood is returned to the lungs air is gulped in, and the oxygen that is in the air burns out the impurities. The blood, purified by oxygen, and enriched by the nourishment that has been prepared by the stomach, is sent again through the body in order that it may replace more cell-decay.

The proper exercise of the body is needed in order to give the muscles of the stomach strength enough to enable them to perform their offices in digesting food and providing the blood with the nutriment, or repair material, that it must carry through the system, and to enable the digestive glands to perform their proper offices. The deep breathing that should accompany all muscular work is needed for the purpose of purifying the blood that is to be sent back to repair all waste tissue in the body.

The heart is a great mass of muscles. The heart never stops its work until life ceases.

The First Feats to Undertake 5

When an organ is composed of so many muscles they should receive constant training. Yet, just as one should not exercise until he has made his back or shoulder muscles lame, so one should not give the heart more exertion than it can endure without discomfort.

Exercise, then—always with deep breathing—accomplishes these results: It gives exercise to the heart, the most enduring and serviceable organ of the body; it supplies the lungs with the pure air that is for burning out the waste—*dead*—material that is in the blood. Exercise of the body also strengthens the muscles and the digestive apparatus of the stomach, and enables that organ to perform its functions with greater effect.

At the same time, the strain upon other muscles increases their power. Even the slightest form of bodily exertion turns some material into waste. This waste is consumed by the oxygen that goes through the body with the blood. The oxygen burns, and the blood supplies the repair. When exercise is not carried to too great an extent the result is that it kills dying cells of the body and replaces

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them with new ones. Thus the vitality of the body is increased. There is new life in the place of that which was passing.

From this it will be understood that any use of the muscles induces waste of the dying material in them, and that the re-vitalised blood supplies new and better material. For this reason every proper exercise makes the muscles increase in their power. Every time that muscles are used more than they should be it means that these muscles have been overworked, and that the processes of decay and repair have been used to excess. Overworked muscles do not promote health. When lame or stiff muscles result from exertion it is a certain sign that too severe work has been performed. In other words, the muscles have been abused.

Most pupils of ordinary strength are inclined to be guilty of over-exertion when performing gymnastic work. The danger signals are easily discernible. If there is palpitation or shortness of breath it is an indication that heart and lungs are being overworked. If there is lameness or stiffness of any of the

The First Feats to Undertake 7

muscles it must be understood that those muscles have been overtaxed. Any form of physical work that has been carried to the point where it causes palpitation, shortness of breath, or uncomfortable muscular feeling is to be used afterwards in a less degree. Sometimes it is advisable to drop a certain exercise for days. No pupil who feels bodily distress should hesitate to drop out of the class. Such action is not to be regarded as a confession of weakness, but rather as an indication of common-sense.

At least twenty-five hundred years ago the Japanese practised a system of physical exercise known as *jiu-jitsu*. At that time, and until very recently, the art of *jiu-jitsu* was known only to a privileged class of men in Japan. They were known as the *samurai*. They held a position corresponding to that of the knights of Europe in the Middle Ages. The *samurai* alone were permitted to fight, the men who were not of this noble rank being allowed to accompany an army only as carriers of burdens. As the *samurai* were not always employed in war, and as they could not engage

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in any business, much attention was devoted to the feats of physical training that would make them more efficient in battle. And so the art of *jiu-jitsu* happened to be invented, and was passed down to the *samurai* through century after century. The women of the *samurai* class took up the work also, so that no Japanese man could expect to be stronger than the woman of his own rank, unless he happened to be larger than she.

The essential principle in this Japanese system of physical training is to be found in what may be called the "resistance of muscles." In most of the exercises it is necessary for two pupils to work together. The pressure of one pupil's muscles must be resisted by the use of similar muscles in the other pupil's body.

In this volume, for the sake of convenience, one pupil will be designated often as the "assailant" and the other as the "victim." It should be understood that when the assailant is stronger he should not force the victim to a victory that will be too rapid. Nor should the victim employ strength enough to make the assailant's victory impossible. The assailant

The First Feats to Undertake 9

should employ just enough strength to force the victim slowly to defeat; the victim should employ just enough strength to make victory difficult.

The simplest form of resistant work is to be had when two pupils stand, facing in opposite directions, at each other's right sides. The arms are extended slightly, but with the clenched fists just below the waist-line. The right wrists of the two are crossed at the inside of the arm. The arms should be held as rigidly as is possible. Then the command is given:

“TRAVEL!”

At the word of command the pupil who has been chosen as aggressor should walk slowly around his victim, applying all the strength in the wrist to the task of swinging the victim around. The victim stands with his heels together. He pivots on his heels as he is forced around, but does not allow the heels to become separated. The victim does no walking, confining himself to swinging upon his touching heels as he is made to move around. The arms should be kept straight and rigid while

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the exercise continues. At the end of the exercise, and when both pupils have taken deep breaths, they should cross the wrists not employed before, and should swing around as before, the one who was lately the victim becoming now the aggressor.

No matter how far the pupil has advanced, this resistant wrist work should be undertaken at the beginning of every practice bout. Each pupil should be, in turn, aggressor and victim, with the wrists of both hands opposed in turn—right against right and left against left. The one who is selected as aggressor should be allowed to swing his victim around, but with great difficulty.

The exercise, just as it should be started, is shown accurately in photograph number one.

The next exercise that is to be undertaken is where two pupils stand at each other's right (or left) sides. They face in opposite directions. If at the right sides, the pupils "hook" each other's arms at the elbows, as is shown in photograph number two. At the command "TRAVEL!" the one who has been selected as the aggressor walks slowly around the victim,



No. 2. HOOKED ELBOWS, RESISTANT — "TRAVEL" AND "PIVOT."

The First Feats to Undertake 11

forcing the latter to turn. All the while the victim pivots on his toes. The victim yields gradually; he must give enough resistance, but must not defeat the assailant.

The number of times that the victim may be turned around will depend upon the strength of the average contestant. When the instructor is satisfied he gives the command "HALT!" Then the pupils take several deep breaths. At the command "RESUME!" the pupils hook elbows again. This time they use the arms not employed in the first performance of the feat. Thus, if right elbows were hooked the first time, the left elbows are used the second time. The work is to be performed with as much resistance as the victim is capable of; but the aggressor, if much stronger, should not employ more force than is needed for victory.

Each pupil, in a practice bout, should employ both arms in "travelling" and in "pivoting." This will give four bouts in all, and this one form of exercise will take up much of the instruction time given in one day's lesson. Between each attack the pupils are expected to breathe heavily and deeply.

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Next in order simple holds are to be considered, along with simple swaying movements. Photograph number three shows one of the back or side holds, but it affords an accurate idea of all of the work of this nature. The two pupils stand either at each other's right or left sides, and facing each other. The assailant clasps his hand over the victim's side that is farther from him. The clasped hands should rest at the waist-line. Now the victim bends over as far as is possible to the side on which the aggressor's hands are clasped. At this point the assailant does little more than to support the bending victim.

When the victim has bent over as far as may be, against the rather slight resistance of the aggressor, the command "UP!" is given, and the victim tries to resist being pulled to erect position. Both strength and weight should be employed in this resistance on the part of the victim. If the work is done properly, under the eye of a careful instructor, aggressor and victim will share about equally in the benefit to be derived from this form of exertion. In this exercise rapidity of movement will defeat



No. 3. BACK-HOLD FOR RESISTANT BENDING.

The First Feats to Undertake 13

the result that is desired. The bend should be a slow one, with but little difference in the amount of resistance between the pupils. The assailant should let the victim over very slowly, and with straining of muscles on the part of each. The victim should not allow the aggressor to pull him up to standing position without considerable effort.

Now, it will be well, after deep breathing of course, for the two to change places, and the victim becomes assailant. It is well also to change sides. Thus, if the victim in the former case was allowed to go over to the right side, on the second attempt the new victim should be allowed to go over to the left.

After a study of the foregoing descriptions it will not be difficult to understand how the holds for backward and forward bendings are to be employed. With the backward hold the victim is clasped around the waist, the assailant holding his fingers interlaced at the small of the victim's back. The victim bends backward as far as he can without losing his balance. The aggressor resists as much as is needed. At the command "UP!" the

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assailant tries to bring his companion to erect position, the victim resisting with muscle and weight.

Another form of this work is to be found when the two pupils stand facing in the same direction, but with one directly back of the other. The one at the rear, who is to act as the assailant, throws his arms around the victim and clasps his hands in front of the latter's abdomen. From an erect position the victim should bend slightly backward without resistance. When this position has been taken the victim begins to bend forward, the assailant employing resistance enough to make the motion difficult. But the assailant, no matter how strong, must take care not to defeat the victim. When the latter has bent forward as far as he can go the assailant should bring the victim back and over to a bend backward, the victim resisting with strength and the use of his weight.

At all times, in all of these exercises, the pupil must remember the need of *slow, resistant work*. There must be no hurry, nor can there be any lazy use of the muscles. Every muscle

The First Feats to Undertake 15

employed must be used with considerable strength, the only care taken being that the stronger student does not make victory impossible for the weaker. When this caution is observed the weaker pupil has a good chance of bringing his muscular development gradually up to the standard of strength possessed by his opponent.

Where private schools or gymnasiums are equipped with baths it is well for the student, very soon after the end of the lesson, to go to the shower or the swimming pool. The bath following exercise should be a cold one. It is best, first of all, to take a rapid sponging under the shower. This should be followed by a plunge and a short swim. After that drying, through the means of brisk towelling, is in order. Not all young people can endure the shock of the cold bath. In that case the bath will have to be of the temperature demanded by the condition of the individual student.

When exercise is repeated at home by public-school pupils the bath, in one form or another, is always possible, and parents should enforce its use.

CHAPTER II

THE "STRUGGLE" IN ITS VARIED FORMS

NOTHING gives more zest to school-room or gymnasium work than does the form of exercise named in the heading of this chapter. It is a kind of work, too, that makes quickly for strength. In one form or another the struggle should be employed in every lesson in gymnastics.

Briefly explained, the struggle is a form of work that exercises every important muscle from the top of the neck down to the feet. When properly done this style of exertion will exercise the entire body with the exception of the head. The basic principle is that the student exerts all of his bodily strength and the full force of his weight against his opponent. Of course this general statement must be modified by the warning that, if there be much difference in the strength of the contest-

ants, the stronger must not employ his fullest powers, but must make the weaker companion work. It is permissible for the stronger pupil, when the aggressor, to use all, or nearly all, of his strength. When the weaker pupil is the assailant, the stronger must use just enough strength to make victory hard of attainment.

The simplest form of the struggle is found when two pupils face each other with arms outstretched sideways, the hands on a level with the shoulders. Now, let the two pupils clasp hands, interlacing fingers with each other's. Next, each step backward, so that the bodies slant against each other. The chests should touch so that the heart of one pupil is pressed against that of the other, while the head of one is at the side of the other's head.

Now spread the feet as far apart as they will go. The next step is for the one who has been designated as assailant to push the victim across the floor. The contest should be a stubborn one, the power employed to be limited only by the strength of the weaker contestant. Of course, the assailant, when

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stronger, should not exert undue pressure, and when the victim is the stronger the victory should be allowed through gradual yielding. When the struggle has been carried across the room there should be a pause for deep breathing. Then assailant and victim should change places and repeat the exercise.

When the struggle is done with intensity, and victory is difficult, there is a tendency to get in closer touch and to press the abdomens together. This should be forbidden at all times. There is another tendency—to get one's feet too close together. The watchful instructor will prohibit this also. Nearly all of the benefit that is to be derived from the work will come through a close observance of the directions just given, and the careful instructor in physical training will watch every detail of performance.

As children have much animal matter and a minimum of lime in their bones they are able to derive benefit from other forms of the struggle that could not be employed as well by older people. For children a very interesting and valuable form of the work is shown in



No. 4. A "STRUGGLE", WITH OPPOSING HANDS CLASPED.



photograph number four. Here the pupils face each other and bend slightly forward. The opposing hands of the contestants are clasped, with the fingers interlaced. At the start the hands should be on a level with the waist-line, or slightly above. At the command "START!" the pupil who has been chosen as aggressor should push the victim slowly across the room. The feet should be well apart, but the contestants will discover just how far apart it is necessary to have them. The struggle should be continued until the designated distance has been covered. Then, after breathing, the struggle should be repeated back to starting point.

This exercise is one that calls for strenuous work. No harm can possibly result from the work if the instructor is on the alert to see that no pupil carries the exertion to a point that causes panting or palpitation. The benefit to the arms—to the wrists most of all—is great.

As a variation the pupils should be instructed to clasp right hands only, and to repeat the struggle. The same work is to be done

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also with left hands opposed. Then the right hand of one contestant should be opposed to the left hand of the other, and the push repeated. Both instructor and pupil are to remember, at all times, that the right side should never be exercised at the expense of the left. In fact, in the beginning, it is well to give the left side rather more work. The man or woman of proper physique should have as much strength in the left side of the body as in the right.

The form of the struggle just described may be duplicated in many ways. Hands may be clasped over each other's heads, and the struggle may be employed. In this case the feet should be far apart, and the bodies of the pupils slanting toward each other. No parts of the bodies except the hands should touch. Then the pupils may bend over as close to the floor as they can go with comfort, and the feet a little more close together. With hands clasped as in the foregoing they may struggle, but this will be found to be rather hard work.

A form of the struggle that is difficult for people of adult age, but one that is easy of

accomplishment by young people, is found in the back-to-back struggle. In this the two pupils stand with their shoulder-blades touching each other's. The hands are extended sideways, on a level with the shoulders. Each contestant clasps the other's opposing hands, and the fingers are interlaced. Then, with a slight backward inclination of the body of each, and with feet somewhat apart, the assailant pushes or pulls the victim across the floor. No parts of the bodies below the shoulder-blades should touch.

This form of struggle, being a difficult one, should be carried on only for a short distance. It is important that, after breath has been secured, the assailant and victim change places and repeat the work. The idea of the exercise, as to position, is depicted very accurately in photograph number five.

The struggle may be varied again by having the two contestants stand back to back, bodies touching from the shoulder-blades to the small of the back. Both pupils stand very nearly erect, leaning just slightly toward each other. The elbows are out at the sides; fists are

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clenched and held against the breasts. The feet are but a little way apart. Every muscle of legs, body, and arms is made as tense as is possible. At the command "START!" the assailant slowly pushes the victim. After the stop, and when enough breath has been inhaled, the same feat should be performed in the opposite direction.

In this last exercise the resistance should be as stubborn on both sides as is consistent with the strength of the opposing pupils. The back is greatly benefited, as are also the muscles of the leg. The outstretched elbows may be employed against those of the opponent, and the bodies of each should sway from side to side. The shoulder-blades of each should be brought well into play through a wriggling movement of the trunk.

Just by way of varying this back struggle, and making the exercise more amusing, as well as an excellent test of strength, the pupils should stand facing in opposite directions, but side by side. One presses his nearer shoulder against the other's, and a struggle across the floor follows. At this time the feet cannot be



No. 5. THE BACK-TO-BACK STRUGGLE.

far apart; one foot must follow the other as progress across the floor is made. The trunks of the bodies of the contestants will touch somewhat, but this contact should be avoided as much as is possible. And again it is necessary to caution each student to see that the left side of his body receives at least as much of the benefit of this exertion as does his right side.

By way of change, in another practice bout, the assailant stands just behind the victim. The latter bends slightly forward, in order to be able to offer more resistance. His heels are rather close together, but not touching, and his toes are turned outward. The assailant throws his arms around the victim's waist, clasping his hands at the front of the victim's abdomen. Now, the assailant attempts to draw his companion backward, the latter yielding inch by inch, first on one heel and then on the other. There should be swaying of the body as one of the victim's heels goes back toward the other.

Where weights are about equal the victim will have the advantage, provided the aggressor

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does not attempt to pull his comrade back by a sudden jerk. The work is to be done very slowly and resistantly, and no attempt at a backward jerk is to be permitted by the instructor. At all times the clasp of the assailant should be firm and the pull *even*. The assailant may use his feet in any position and in any form of motion that he finds to be necessary to victory, but the victim should not change from the starting position of his feet any more than is needed for letting one heel "inch" behind the other, and his toes must be pointed outward until the struggle is completed.

This task may be performed also in the reverse way, by having the assailant clasp his hands, from in front, around the small of the victim's back and struggling backward, but this method of work will not be found as interesting or as beneficial. But a very good way of varying the work is found when the aggressor faces his victim at his side and clasps his hands at the victim's other side. Then the struggle begins, the assailant endeavouring to pull his victim along. The latter is permitted



No. 6. PUSHING THE VICTIM BACK WITH RIGHT OR LEFT HANDS CLASPED.

to bend slightly toward the side on which the comrade's hands are clasped. The struggle is to be made a slow and stubborn one, and care must be taken not to wrench the victim off his feet.

The single-hand resistant work, where the two pupils face each other, has been described already, and is shown in photograph number six; but there is another and more excellent variation of this work that should be taken up in this connection. The contestants face each other and clasp right hands, the arms being held out nearly horizontally in front. Each contestant employs his left hand in clasping his own right wrist. Then a slow, stubborn struggle begins, the assailant doing his best to push his comrade backward across the floor. Victory must be allowed to be made possible in the end, but progress across the floor should be slow. Then the employment of the hands is reversed, so that each uses his own left hand for the clasp with the other's and his right hand to encircle his own left wrist. The struggle is then repeated back to starting point.

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Photograph number seven depicts a kind of struggle that should be employed once in a while. The aggressor crosses his arms in front of him, with the right arm over the left. With his right hand he takes a hold at the right side of the victim's neck. His left arm he places at the other's left side of the waist. The victim takes a similar hold. Then the victim is forced gradually to the left. After a pause, with breathing, the return struggle is made, the one who was recently victim becoming assailant now.

It has been remarked already that some one form of the struggle should be used in every tour of exercise. The particular kind should be left to the choice of the instructor, some heed being paid to the apparent preference of the pupil. But all of the struggle work herein described should be attempted during the course of a month.

When the exercises described already have been carried on for four consecutive weeks the student will be astonished at his increase in health and strength—always provided that the work has been done with zeal. Yet, while it



No. 7. THE POSITION FOR RESISTANT SIDE-SWAYING.

is recommended that pupils carry on the work outside of school-room or gymnasium, it is to be urged that the effort be not made to an extreme. Aching muscles show that this has been done. Lameness or soreness of any kind proves that living tissue of the body has been burned. It is the sole aim of exercising and breathing properly to burn out only the dying tissue.

Nor should the pupil forget, even once in a while, to breathe deeply and heavily between each of the exercises. It is the oxygen in the air that burns dying, and therefore useless, tissue.

A hint to the instructor will be of value in increasing the effectiveness of the work. When there is a large class it is impossible for the teacher to note the work of each pupil. The work may be slighted; or, no matter how much zeal is employed by the student, the work may be done in the wrong way. It is advised that the instructor note those of the pupils who display the most intelligence. These should be selected as monitors. In a class of fifty young people there should be at

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least two monitors, who are to move about through the class and see to it that every member is doing the work in the right way. There should be created a feeling of honour in being a monitor, as he who is thus selected knows that he is looked upon as being efficient in gymnastic work.

The monitor should be a young person of authority. He should move constantly in and out between the couples of contestants, and should say, for instance:

“Hold your arms straight.” Or: “Resist more.” “You are using too much resistance. When using that form of struggle do not allow any portions of your bodies except the chests to touch.” “Go to a window and breathe deeply.” “You are panting. Stop the work, and do not return to the class until you are called.”

It is in this matter of panting that monitors should be instructed to be most careful. If the panting be slight, a few deep breaths will remedy the trouble. But when there is continued trouble with the breathing the sufferer should be ordered to take a long rest. In some

cases it is well to order the over-zealous pupil out of the class for the remainder of the bout. When the exercises are done properly there will be, in the case of normally healthy youth, no necessity for panting. A weak child should be allowed to take part in only a few of the exercises until strength has been developed.

Every student should be encouraged to take, at home, some of the exercises that he has been taught in the school-room or in the gymnasium. The same caution against over-exercise should be offered. If a long tour of physical work is given daily in the school more exercise at home is not needed. Play will supply the needed addition in the way of bodily exertion.

But on Saturdays and Sundays, when school is not in session, the pupil should practice with another at home, and preferably in the yard, where the air will be purer than in the house. If the exercises are taken in the house the windows of the room should be open.

When muscular work is undertaken at home it should be borne in mind that it should be begun at such a time that it will end at least

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an hour before the next meal is eaten. Nor should exercise be attempted until at least an hour and a half after a meal.

Proper exercise is needed every day in the week. Sunday is devoted to religious duties, but the building up of a healthy body is a proper observance of religion. We should try, at all times, to possess bodies that are strong and healthy enough to please Him in Whose image we were created.

CHAPTER III

THE NEED OF LIGHT EXERCISE IN ALTERNATION WITH THE HEAVIER—SAMPLE WORK OF THE LIGHTER KIND

IF left to themselves, in the following out of any system of exercise that appeals to them, young people will take to, and remain at, almost invariably, the severer forms of physical work. It should be the constant aim of every instructor in a school to see to it that the severer forms of exercise are varied by the lighter ones. And it is equally the duty of the instructor to impress upon the pupil, at all times, that whatever muscle-training he attempts outside of the school should be followed along the same lines of varying light and severe feats.

Some pupils, because of natural weakness, will not be able, at first, to take up any of the severer work. These pupils should be kept

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wholly upon the lighter work until their gradually improving physical conditions make it possible for them to take up the severer work by very slow degrees.

In this chapter will be described lighter exercises that students in normal health may use in alternation with the harder work — work at which the weaker children should be kept at almost exclusively until greater muscular development has been acquired. These light forms of exercise will consist mainly of bending and swaying. Where the drill is taken merely as a rest from more strenuous work the students may be about evenly matched in strength. But where these exercises are employed for gradually strengthening a weaker pupil, that one should be always the victim until greater strength has been acquired, and the aggressor should be a student of normal strength who will be capable of handling the victim with ease and consideration.

The first drill of this kind that fully meets the requirements of *jiu-jitsu* is found when the victim faces the instructor. The aggressor stands at the left of the victim. The latter

extends his left hand so that it is about on a level with his waist-line. The aggressor seizes the victim's left hand at the wrist with both of his own hands clasped around it. Now, the aggressor permits the victim to bend over to the right as far as the latter can with comfort. In case of great weakness the victim must be careful to avoid dizziness. As soon as the victim has gone over to the right as far as is consistent with comfort, then the aggressor should pull his companion slowly back to erect position, the victim holding back in such a way as to give all of the dead-weight resistance possible.

With students of ordinarily good health this feat may be performed as many times as the instructor deems necessary for the purpose of rest from severer work. Of course the aggressor must work from the victim's right side as well as from the left; and when both contestants are reasonably strong, assailant and victim should change places frequently. But, where one of the contestants is decidedly below the average of endurance, and is forced to be the victim at all times, then the friendly aggressor

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should change frequently from the victim's left to right side.

This drill may be varied, with interest and profit, when the aggressor permits the victim to bend over as far as possible to the right side, as already described, and then gradually brings the victim to erect position, and then over to the left side, the assailant slowly moving back a step or two and sinking to the left knee in such fashion as to pull the victim well over to the left. With a weak victim the feat stops at this point and is repeated at the opposite side of the victim. But where both contestants are reasonably strong the victim should slowly pull the aggressor to his feet, and bend over in the opposite side from the latter.

Now comes a variation of the work that would not do at first for a very weak pupil, but it is excellent light work for two healthy contestants. The victim bends over until the right hand touches the floor at the side of the body. Now the assailant seizes the victim's extended left hand, clutching it with both hands around the wrist. Slowly, and with all of the dead-weight resistance that can be em-

ployed, the victim is dragged to an erect position. When this exercise has been thoroughly mastered it can be improved upon, as has been already suggested in another feat, by having the aggressor move backward a step or two and slowly go down upon one knee, forcing the victim to bend over toward him. And, when this can be done with ease, the victim should pull the aggressor up to his feet, and over toward him as far as may be done.

There is still another form of light side-swaying that may be employed to advantage as a variation. The victim faces the instructor, while the assailant stands facing the victim's left side. The latter contestant extends his left arm sideways and with the hand considerably above the top of the head. The aggressor employs both hands in securing a grasp from below of the wrist of this raised arm. Now, the victim is allowed to bend over to the right as far as he can with comfort, and the aggressor pulls his companion back to an erect position, the latter of course resisting all he can with his dead weight. And this form of the exercise can be gradually improved

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upon by the use of the same general principles already explained. Care must be taken that both sides of the body are equally exercised—for it cannot be impressed too often upon the student that the left side of the body should be in every respect physically equal to the right. Enough has been said already to indicate to any instructor just how far this style of work should be carried by an unusually weak pupil. Where both students are strong enough the feat should be carried eventually to the point where the aggressor steps backward and slowly sinks upon one knee, as in the foregoing, and compels the victim to bend over him, the latter then forcing his companion to an erect position.

There is a variation in this last exercise that should not be attempted by a weak pupil. This is performed by the victim standing with one hand extended sideways about eight inches from the leg. All of the muscles of this arm must be held as rigid and tense as it is possible to make them. The assailant seizes the wrist with both hands. Now, the victim is allowed to bend over as far as may be away from the

assailant, but the former must not forget even for an instant to hold his seized arm in as rigid a position as he can. When the victim has bent over as far as he can the aggressor pulls him back to erect position. This exercise, too, is to be gradually improved upon by the addition of all of the succeeding steps suggested in the foregoing forms of the work.

The same general principles are to be applied to bending backward. Here the victim and aggressor face each other. The former extends one arm forward in such manner that the hand is about on a level with the abdomen. The assailant seizes the proffered wrist with both hands, and allows his companion to go over backward as far as he can with such support. Now, the aggressor pulls his victim to erect position, the latter resisting by dead weight. The very weak student can carry the work to this point, provided it does not cause dizziness. Students in ordinarily good health can give to this work all of the added variations that have been explained.

When this work has been done with equal benefit to both arms, and assailant and victim

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have changed places, the reverse form of this exercise may be attempted. Here the victim stands holding one arm backward, with the open hand about on a level with the waist-line. The assailant clutches the wrist with both hands, allows the victim to bend forward as far as he can, and then pulls him back to erect position. In time, the variation of pulling the victim over the aggressor, the latter sinking upon one knee, may be added, but of course this must not be attempted when the victim is far below the standard of normal strength.

Next, let the two contestants go to the floor, facing each other, and each upon his left knee. In this position the right arm of each is extended and the hands clasped. The assailant allows the victim to bend over as far backward as he can without discomfort, the latter then resisting the movement to pull his trunk and head erect. The aggressor, no matter how much stronger he may be, is expected to achieve the victory very slowly, but with a gradual, firm pull.

After this, the contestants may kneel each

on the right knee. Now the left hands are clasped and the work is done over again in the same fashion. When both pupils are reasonably strong the work should be done with strain and vim, yet slowly. A pupil below the average of strength should be the victim always—*never* the aggressor.

For the final step of this work let the two contestants sink to either knee, though each must employ the same—each on the right knee, or each on the left. Now the arms are crossed so that right hand clasps right, and left hand the other's left. The swaying is done in identically the same manner as in the case of the single-hand work.

In the reverse of this work, when the victim sinks upon one knee, with his back to the assailant, who is also upon one knee, the arm opposite to the knee upon which the victim rests is thrust backward and is seized by the corresponding hand of the assailant—thus the left hand by the left, or the right by the right. The victim bends forward as far as his companion can let him, and then the latter pulls the victim to the position of head and trunk

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erect. Except where one of the students is too weak to permit of the extension of this exercise the movement should be continued until the victim has been pulled as far over backward as he can go with comfort and safety. The victim should perform the work with both arms, and when each contestant is in good health victim and aggressor should change places as soon as both arms of the former have been employed in this feat. The work should be done always slowly and resistantly, but with vim and intelligent purpose.

Sideward swaying, with each contestant on one knee, is an excellent form of this style of exercise. The victim, resting on the left knee, should face the instructor. The assailant, also resting on the left knee, faces the left side of his companion. The victim extends his left arm to the aggressor, who seizes the wrist with his right hand. Then the victim is allowed to bend over to the right as far as he can, after which the assailant slowly brings his companion's head and trunk back to erect position, the victim resisting as much as he can by dead weight and by the employment of some muscu-

lar strength. After this the same work is tried at the right side of the victim, and each is upon his right knee, the victim extending his right arm, which is seized at the wrist by the assailant's left hand. In both cases healthy pupils may continue the movement until the victim is drawn well over toward the aggressor. Then assailant and victim change places, and do the work on both sides. The weak pupil must never be pulled farther than an erect position of trunk and head.

In all of the kneeling work just described there is some danger of losing balance. This will prove a matter of no moment to healthy contestants, but care should be taken by the aggressor not to destroy the balance of a weak pupil.

An easier feat for the victim is where the latter seats himself on the floor, with legs extended, and facing the instructor. The aggressor kneels on the left knee, facing his companion's left side. The victim's left hand is extended to his companion, who seizes the proffered wrist with his own right hand. The victim, not employing his right hand for

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balance or for any other purpose, but allowing it to rest idly in his lap, is allowed to bend as far to the right as he can, and then is pulled up to erect sitting posture. In the case of healthy students the movement may be continued until the victim is pulled well over to his left side. Then the exercise is reversed by the assailant resting on his right knee at the victim's right side and employing his own left hand to clasp the right wrist of the victim. Perform the exercise as before.

While the victim is seated on the floor there is a mild form of exercise that is of gradual but decided benefit in strengthening the legs. Let the victim balance himself by resting the flat palms of his hands on the floor just back of the body. He should now raise his left foot a few inches from the floor, and the assailant should seize the ankle of this foot with both hands. The latter now attempts to press the left foot around to the left as far as it will go, the victim combating this pressure by resistance to the right. Care must be taken not to throw the sitting contestant off his balance. As soon as the foot has been carried as far to

the left as it will go, the assailant attempts to return the foot to the starting point, the victim all the while resisting by pressure to the left. Then the right foot and leg are handled in the same manner. In the case of pupils of average strength this movement culminates in an exercise wherein the assailant lifts both of the victim's feet, holds them together, and swings the feet alternately from left to right as far as they will go in either direction. The victim resists by pressure in the direction opposite to that in which his companion is trying to force him. Healthy students may carry on this work with considerable vim and amusement, but this exercise with both feet seized should *never* be employed upon a weak victim. It goes without saying that a weak victim should never be thrown off his balance. Even a healthy victim should not be needlessly or roughly over-thrown.

It is not possible to explain any more clearly than has been done just how far the exercises described in this chapter should be carried on by the pupil who is considerably below normal strength. The physical instructor or the class

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teacher must pick out all of the weaker ones under his care, and must exercise eternal vigilance in the effort to make sure that these pupils take only such exercises, and carry them only to such an extent, as will gradually increase the subject's strength and fit him by degrees for the somewhat more arduous feats.

In communities where a physician is employed as the physical director in the schools it is wholly advisable for the physical instructor or the class teacher to call his attention to the weaker ones in order that he may determine the exact physical condition of the pupil and order just the exercises that may be undertaken by each weak pupil profitably and without harmful fatigue. In smaller communities, where there is no regularly organised department of physical instruction for the schools, it is advisable that the parents of a weak child employ the family physician to attend a bout of exercises in the school in order that he may determine just what forms of exercise will prove of value in building up slowly the muscles of his weak little patient.

And now just a few words of heartfelt sym-

pathy and advice for that most forlorn of little ones—the boy or girl who keenly realises that he or she is away below the physical standard of his or her companions, and that joining in the sports of more fortunate young people is out of the question. There is no sin in being weak when you cannot help it, but it is a crime against yourself to remain weak when the path to health and strength is pointed out and you refuse to follow it.

The methods by which Japanese boys and girls are taught to make themselves ever stronger and more capable of endurance may be followed with the utmost certainty of better health and more energy by boys and girls anywhere—always provided that the child is not afflicted by a wasting and incurable disease. Any boy or girl who cannot, at the outset, take up some of the milder forms of *jiu-jitsu*, and very gradually go on to harder exercises, is physically unfit to attend school at all.

The pupil who is away below the standard of strength for his age will be astonished, after earnest but gentle work throughout a school year, at observing how much firmer his muscles

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are, and how greatly increased his general vitality is. This will be especially true when the work is kept up faithfully, but not too arduously, during the long summer vacation. Japanese *jiu-jitsu* furnishes by far the swiftest road to the building of strong muscles and the utmost vitality. No matter how weak he may be at the outset of a school course in *jiu-jitsu*, the weakling pupil who is not afflicted by incurable disease will find himself, after two or three years of earnest application, up to the general standard of strength possessed by the boys and girls of the same age with whom he associates.

In all of the *jiu-jitsu* work, there are three rules that must be observed by healthy and weakly pupils alike. They are:

- (1) *Moderation!*
- (2) MODERATION!!
- (3) MODERATION!!!

CHAPTER IV

THE POLE WORK

THROUGHOUT the entire course of *jiu-jitsu* work but one piece of apparatus is required—the pole. In Japan the pole is of tough bamboo, but in this country, where bamboo is not so easily obtainable, a pole of any fairly hard wood will answer the purpose as well.

As to the length of the pole, that depends altogether upon the average height of the pupils using it. As a general rule it may be laid down that the length of the pole should be not less than within two or three inches of the height of the pupil. The diameter of the pole, for fairly well grown students, should be about an inch and a quarter. For very little people the diameter may be a little less; but the pole should never be of a wood so soft that it will bend, in the exercises to be described.

It might almost be said that this pole work is a whole gymnastic course in itself, but this

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statement must not be misunderstood. The pole must not be used until all of the work described in the preceding chapters has been thoroughly mastered and performed over and over again. The employment of the pole drills before the muscles have been hardened sufficiently for the successful performance of these feats, results in hurrying the pupil along too rapidly and without the gradual, rational development and hardening that every muscle in his body should have as a sound basis on which to build the pole work.

But when all of the foregoing feats are familiar to the pupil through faithful and somewhat long practice he will find a vim, snap, and zest in these feats with the pole. And he will find out more. He will learn that, with the taking up of the pole his muscles, which heretofore have been hardening slowly, will now show rapid development within a fortnight or so if the pole work is indulged in for a few minutes every day.

Overhead pole work is shown in photograph number eight, which depicts the finish of the feat. It is important, first of all, that the in-



NO. 8. OVERHEAD POLE WORK. THE FINISH OF THE FEAT.

structor or class teacher should understand thoroughly just how the position is taken at the start, and how every detail of the feat is performed. The two pupils stand facing each other, with feet spread a little apart. They grasp the pole, held horizontally over their heads as high as it will go. Each has his right hand on the outside of the other's left, and a few inches from the ends of the pole.

At the word of command the pupil who has been chosen as assailant bears the pole slowly down to his right side, at the same time pushing the other end upward with his left hand. The victim resists this attempt with just enough pressure to permit a grudging victory. Naturally as the forcing over continues the assailant bends to his right side and the victim to his left. After a little while the pole is held perpendicularly between the two contestants. Now the real work of bending begins, for the end of the pole held by the assailant's left hand is forced over toward the floor at his right, and this motion carries his right hand past his abdomen over to his left, and the end of the pole held by the assailant's

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left hand is forced over until it touches the floor. Photograph number eight shows the exact position that is reached at this point. During the execution of this drill the hands must not be shifted from their original positions on the pole.

Now that the assailant has succeeded in making his left-hand end of the pole touch the floor, the victim must retaliate by twisting the pole up overhead in exactly the same fashion, and bring his own left-hand end of the pole to the floor on the other side of the bodies of the contestants by employing exactly the same tactics, and now it is the assailant who gives just enough resistance to make victory difficult for his victim.

There is one point about the return in this overhead pole work for which pupils must be on the lookout, and over which the instructor should exercise strict supervision. When the victim retaliates by twisting the pole over to his own right side it must be seen to that as the pole goes up and over, it is held horizontally and is as high over the heads of the pupils as it was at the start of the exercise. It will be



No. 9. TRAVELLING AND PIVOTING WITH THE POLE.



held there but a second or two during the struggle, but it *must* reach this overhead point in the upward and overward movement. Students, if not watched and made to follow out the instruction with strict discipline, are likely to bring the pole, on the return, no more than chest high—and thus much of the benefit of the performance is lost.

When both assailant and victim have succeeded in making the left-hand end of the pole touch the floor, a pause should be taken. Now deep breathing should be indulged in for at least thirty seconds, and instructor and class monitors should make it a point to see to it that every pupil who has taken the exercise is breathing fully and properly.

By this time every pupil, of course, is thoroughly familiar with the resistant wrist work described in Chapter I. and illustrated in the first photograph. A drill very much like the wrist work, but performed with the pole, is shown in photograph number nine. Here the two students face each other, holding the pole as at the start in the overhead work, with the exception that the pole is held horizontally

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just below the abdomen. The pupil who has been selected to fill the rôle of victim stands with his heels together and feet at an angle of about forty-five degrees. He is to pivot—that is, to turn slowly upon his heels as the assailant forces him around. The assailant “travels.” At the word of command the assailant walks around to the victim’s left, the latter resisting, but always pivoting as the assailant gradually gains the victory. The latter continues to travel until he has swung his companion’s body completely around. Then assailant and victim change places.

It is to be borne in mind that in this form of the pole work the assailant always walks around the victim’s *left* side. When contestants change places in each bout it will be understood that both sides of the body receive equal exercise and strain, providing the drill is gone through faithfully and with enough resistance on the part of each contestant.

After an interval for proper breathing the contestants should pass on to another form of pole work, the point of victory in which is illustrated by photograph number ten. At



No. 10. SINGLE-HAND POLE WORK OVERHEAD.

first glance it looks as if the assailant, employing both hands, could have things all his own way with the victim, who uses only one hand. But such is not the case.

If the victim is to use his right hand in this feat, then the assailant stands slightly to the left of his companion, and they face in opposite directions. The two contestants hold the pole horizontally on a line with the abdomen and about six inches from the body. The assailant, at the outset, takes hold of the pole with the back of his left hand downward and the back of his right hand upward. The victim takes hold of his own end of the pole with the right hand only with its back upward. As the exercise progresses each of the three hands employed will have its back shifted gradually to the opposite side of the pole.

At the word of command the assailant tries to raise the pole slowly upward over the victim's head, and to place it over back of the head and down a little below the level of the shoulders at the back. The victim, employing only his right hand, should resist this attempt. The instant, however, that the assailant gets

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the pole up over his companion's head, and going down behind it, victory is assured. As a final sign that he has conquered, the assailant should force the victim, still retaining his hold on the pole, to turn completely around.

Now the victim should employ his left hand just as he did his right before, and the assailant should stand at his victim's right side. After an interval of breathing the two contestants should change places, and the new victim should have his arms exercised in turn in the same manner.

It is highly important that the instructor see to it that the assailant always stands on the opposite side of the victim's body from the hand employed by the latter. Thus, if the assailant should stand at the right of the victim when the latter is employing his right hand in resistance, the benefit of the exercise would be wholly lost.

It is time, now, to take up another drill in which travelling and pivoting with the pole are performed as is shown in photograph number eleven. Here the two contestants face each other, holding the pole in the usual manner for a two-hand grip and about on a level with the



No. 11. THE BENDING TRAVEL AND PIVOT WITH THE POLE.

waist-line. When the word is given the two contestants bend forward as far as they can, the pole still being held horizontally. The pole should be below the knees of the contestants. When the word is given the assailant walks around at the victim's left, the latter resisting and pivoting until she has been turned completely around. It is not necessary to repeat this work at the victim's right side, as the same advantage is gained if the aggressor and victim change places at once and go through the exercise again. But this work should be done with the utmost vim, although slowly. The resistance of the victim should be energetic and resolute; when the victim is much the stronger of the pair, just enough resistance should be given to force the assailant to work hard for victory.

There is a variation of this feat, and an excellent one, that may be employed. In the same position as before let each contestant hold the pole with the right hand only, and let the assailant walk around to the victim's left until the latter's body has been once more turned completely around. In this drill it is

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permissible, and perhaps advisable, for both contestants to hold the pole with left hands, and for the assailant to travel around the victim's right until the latter pupil has been forced to make the usual complete turn.

In this travelling and pivoting, with the pole held so close to the floor, there is a great tendency among indifferent pupils to evade the benefits of the work by merely wheeling easily around without making real use of any of the muscles that should be strenuously employed. It is for the instructor and the monitors to keep close watch, and to make sure that none of this looseness of execution goes undetected or uncorrected.

All of the travelling and pivoting work with the pole may be performed by pupils of the age of five or six. The bones of very young children are so supple and pliable that the travelling and pivoting work will be of decided benefit. It must be left to the instructor to decide, from the average strength of his class, whether the overhead pole work should be taken up by very young children. Pupils of the age of nine or ten, if in reasonably good



**No. 12 FORCING THE POLE, HELD OBLIQUELY, UNTIL LOWER END
 TOUCHES THE FLOOR.**



health, should be expected to do all of the pole work. If it is found inadvisable to introduce the pole work into every practice bout for at least six or eight weeks, when this stage of exercising is reached, it should be used in its entirety in at least two practice bouts a week for a much longer time. Lack of attention to the pole work, or failure to make the most serious use of it will result in the loss of much of the benefit that will accrue from patient, persistent application of the *jiu-jitsu* rules for making muscle.

Pupils should be encouraged to practice all of the forms of pole work in play hours outside of school, with the necessary warning against overdoing and the caution that the two contestants should be as fairly matched in strength as is possible.

With these parenthetical remarks I will pass on to a description of the kind of pole work that is shown in photograph number twelve. The pole is held by both hands of each contestant just as in the case of the two-hand overhead pole work. The pole, however, is held obliquely between the two contestants

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as they stand erect and facing each other. The lower end of the pole is held a foot or more from the floor at the victim's right side, and the victim has his right hand nearer that end of the pole. The upper end of the pole is past the left side of the victim's head, and the assailant's right hand is nearer the upper end of the pole.

At the command the assailant tries to force the lower end of the pole down so that it touches the floor and is held there, the victim, of course, resisting the downward pressure by an upward one. Next the work is reversed so that the pole is forced down to the floor at the victim's left side. Then assailant and victim change places, and the work is gone through with once more. Naturally some side bending is necessary to the attainment of victory.

When this work is rightly done it builds strong muscle rapidly. But both the illustration and the text must be studied carefully until the whole idea is mastered.

A variation of exercise that need not be attempted in every bout where the pole is used, but which will produce better results the

oftener it is used, is one in which the victim has decidedly the better of it. The contestants face each other, standing erect, and each takes the usual two-hand hold on the pole, which is held horizontally and about breast-high. At the word the assailant tries to push the pole, always held horizontally throughout the feat, down below the level of his knees. The victim resists by an upward pressure. No matter how the pole is held at the outset it will be found necessary for the assailant to shift his hands gradually to an over-hand hold. The victim will find the under-hand hold more useful. If it is found impossible for the assailant to bring the pole down the victim must yield slowly, and just enough to make gradual victory possible.

After breathing, the two contestants start by bending over, with the pole just below the knees, and the assailant must gradually bring the pole up breast-high and in a horizontal position. It will be understood that now the assailant will require an under-hand hold, while the victim employs an over-hand hold.

Another form of pole drill is had when the

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victim stands with his hands just back of his head and clutching one end of the pole. The assailant stands at his left, facing in the opposite direction with both hands on the other end of the pole. Now the assailant travels around to the victim's left, the latter pivoting until he has been forced to make a complete turn on his heels. Then the work is repeated by the assailant travelling around to the right of the victim, and forcing the latter to pivot. Again victim and assailant change places, and repeat the work at either side in turn. Care should be taken that in this work the pole is not pressed too severely against the back of the victim's neck. A light pressure against the neck, however, while it should be avoided if possible, will not result in injury. Instructor and monitors should be on the watch for too severe pressure against the victim's neck, and the latter has an easy remedy of his own in letting go of the pole if he finds that any pain is being caused in his neck.

There is but one more kind of pole work that the author would suggest for use at the present stage of instruction, and this not only be-

cause it is an excellent muscle-maker, but also because it adds some amusement to a bout. Here the two contestants kneel on the floor at the right or left side of each other. The victim takes an over-hand hold of his end of the pole, and remains kneeling throughout this exercise. He allows the assailant to take an under-hand hold of the pole and to raise his end without opposition from a few inches to a foot off the floor. Now, at the word, the struggle begins. The assailant strives to rise gradually until he has the pole in a perpendicular position with the victim's end touching the floor. Of course, when the victim has decidedly the better of it, he must make some gradual, though grudging allowance, to his companion.

It should be borne in mind at all times that, no matter how far the pupil has progressed beyond the present stage of instruction, frequent and arduous returns to the pole work should be encouraged—even compelled. Once the pole work has been reached, and mastered, it should never be wholly discontinued from the *jiu-jitsu* training.

CHAPTER V

TUG-OF-WAR DRILLS

SO much benefit is to be derived from the various tugs-of-war that they should be begun at this stage of the instruction. At first, a few lessons may be given up wholly, or almost wholly, to the tugs, until their principles and methods of execution have been thoroughly mastered. After that, one or two of the tugs will suffice for a practice bout, and I shall describe so many different forms of this work that there will be a great variety from which to choose. Monotony will thus be avoided.

First of all, our old friend, the pole, is to be called into use, in the kind of work that is accurately depicted in photograph number thirteen. Right here the instructor's attention should be called to the two pupils. While the pose is absolutely correct, neither pupil is making the proper amount of effort. This is what



No. 13. THE FIRST FORM OF TUG-OF-WAR WITH THE POLE.

may happen, at times, when the instructor and the monitors are not vigilant. One pupil is walking serenely backward, and the other is following without resistance.

Unless the tugs-of-war are executed with great vim their employment is useless!

Study the position, however. Each pupil has her right hand well up toward the centre of the pole, with an overhand hold. The left hand is near the extremity of the pole, and the underhand hold is used. Each bends over for the tug. The victim is close to one end of the room. When it is not possible for the tug to be carried the width or the length of the room, there should be a designated point from which the victim starts, and another at which the assailant stops. These drills make ideal work for out-of-doors, especially when the contestants can exercise on grass.

At the word of command the assailant starts to drag the victim along. Both contestants must bend well forward, with heels firmly set. There must be all of the resistance on both sides that can be properly employed, and the conquest must be made a hard one for the

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assailant. When the limit of the tug has been reached the late victim must drag the companion back to starting point.

Shod feet are certain to slip more or less on the school or gymnasium floor. On the grass there will be a much better purchase for both contestants. At home it is well for both contestants to remove the shoes and perform all of the tugs in the stocking feet. It may be a trifle hard on the stockings, but much better purchase for this kind of contest will be obtained. Old stockings may be used for this purpose, or very cheap ones may be bought for this especial need.

Now, study the boy and girl shown in photograph number fourteen. Here they stand with right sides slightly inclined toward each other. Right hands are clasped, with backs upward; the fingers are tightly interlaced, and the thumbs crossed. In this case the boy is the assailant. He throws himself backward, while the girl leans slightly forward in order to get a better purchase for resistance. At the word of command the boy drags his companion the designated distance, but the girl is not ex-



No. 14. TUG-OF-WAR WITH RIGHT HANDS CLASPED.



pected to allow him to have things all his own way. She throws the weight of her body and whatever muscular strength she can into the scale. Of course, if she is so much the heavier and the stronger that he cannot make her move, then she must, while partially resisting, yield just enough to make his victory possible. When the limit of the tug has been reached she drags the boy back to starting point in the same manner.

Next the left arms of both are exercised. When, as is usually the case, the right side is better developed than the left, the instructor should order rather more left-hand work than right. But, in time, this precaution will not be needed, as the whole tendency of *jiu-jitsu* is to develop both sides of the body so equally that there is a perfect balance of strength.

In order to give variation in the work the pole may be taken up once more. In this exercise the contestants face each other, with arms extended forward. This pole is held horizontally, and about on a level with the chest. In taking the pole the hands are placed as in

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the overhead pole work described in the foregoing chapter. In the struggle that follows, when the contestants will be obliged to bend a good deal, and to twist not a little, it may not be always possible to keep the pole just chest-high or exactly horizontal, but this should be done as nearly throughout as is possible.

Now comes the word of command, and the assailant starts to drag his victim across the stretch. Every bit of snap possessed by either pupil should be brought out. The work should be so stubbornly done that exhilaration and enthusiasm are caused thereby. When the stretch has been covered the late victim drags his companion back to starting point.

Another but more difficult form of the same work is found when the pole is held on a line with the abdomen at the start of the tug. All through this exercise every effort must be made to keep the pole at the level of the abdomen.

Increasingly difficult is the third form, where the pole is held horizontally at a line between the abdomens and knees. In this case victory is almost impossible when the pupils are evenly matched, unless the victim yields grudgingly.

Now, for more downright hard work. Stand back to back, with the hands backward on a line with the small of the back. Each pupil grasps the pole near his own end of it, each taking the hold that he finds he can make most useful. Each bends forward, the assailant in order to get better leverage, and the victim that he may obtain better purchase for resistance. At the outset the assailant will need to place one foot slightly in advance of the other; generally his companion will find it safer, at first, to place the heels close together, and afterward shifting them as need dictates.

Then the word of command is given, and, if the contestants are at all evenly matched, there should be battle-royal. A short stretch is all that is needed for this work, as it is not desired to tire either contestant, and it must be borne in mind that each must be permitted to retain breath and strength enough when it comes time for the victim to retaliate by dragging the other pupil back to starting point.

There is all-around benefit in this exercise when full energy is used. As soon as the tug begins it will be discovered that arms and legs

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are tense. The thighs and back come in for their full share of play, and much is gained for the muscles of the neck, especially at the back of the neck. The abdominal muscles come in for a less degree of employment, but to the wrists is imparted that peculiar combination, found in advanced *jiu-jitsu* students, of great flexibility and steel-like muscles. The knees, also, gain in flexibility and strength.

As a simple variation, and one more easy of execution, the pupils stand back to back, as before, but with the hands held over the head, and slightly in advance of the forehead. With these differences, the pole is grasped as before. While the tug is going on, the pole must not be permitted to touch the head of either pupil, and all tendency to lower the pole to either shoulder of either contestant must be avoided, for there is a separate exercise now to be described that covers the shoulder work.

With the pupils standing back to back, allow the pole to rest over the right shoulder of the assailant, and over the left shoulder of the victim, holds to be taken as before. When the stretch has been covered, and the late assailant

has been dragged back to starting point, the exercise is then reversed by the assailant holding the pole on his own left shoulder and resting it across the victim's right.

One more form of tug-of-war with the pole will be sufficient. In this the contestants face each other, the pole being held horizontally over their heads. Each takes a two-hand hold of the pole just back of his head, and the tug is performed, with retaliation. Each pupil bends slightly backward during the exercise for reasons that already have been made clear.

A more difficult tug with the hands than any described so far is shown in photograph number fifteen. In this feat the victim stands sideways at the assailant's back. The victim's left hand is placed over the assailant's right shoulder, and the latter contestant seizes the proffered hand, with fingers of the engaged hands of each interlaced. Now, the assailant bends quickly forward, forcing his companion to bend over with him, and the struggle over the stretch begins. When the distance has been covered, assailant and victim change places, now employing the hands not engaged

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before, and the drag over the stretch to starting point is made.

When desired, both hands of each contestant may be employed at the same time. This affords a tug that calls for the use of a great deal of muscular strength, and should be used once in awhile. At the outset awkward pupils will find the two-hand back tug beset with difficulties, but when the work can be performed skilfully it will be a muscular achievement that is well worth the trouble of acquiring.

Next, put the contestants side by side, facing in the same direction, and with their bodies only a few inches apart. The assailant's left hand is raised over his head, and so is the victim's right. These hands are clasped with fingers interlaced. At the word of command the drag over the stretch is begun. Throughout the hands are to be kept over the head; they must not be permitted to drop down.

Once in awhile, during a bout, it will be found of advantage to change this last exercise somewhat by extending the engaged arms laterally, with the hand on a level with the shoulder. The same hand clasp is taken.



No. 15. TUG-OF-WAR WITH HANDS CLASPED OVER THE ASSAILANT'S SHOULDER.

This exercise is a rapid muscle-maker.

There must be little or no bending to the side; the arms must be kept as nearly horizontal as is possible, the bodies erect. The assailant, if he is using his left hand to clasp his opponent's right, takes a side step to the right, endeavouring in the tug to drag his left foot after it, and thus to gain the victory step by step, and with a great deal of strain on the muscles employed, the victim resisting this progress all the while. Then the return drag is made, the late victim employing his left hand with his opponent's right.

The next form is practised when the contestants stand side by side and clasp hands that are held on a line with the waist-line. The muscles of the arms engaged must be held as tense as is possible, in order that the hands may not be moved very far from the proper position during the tug.

One more form of tug-of-war with the hands will be enough for the student. The contestants stand as before, but a little nearer each other. The hands, now, are held four or five inches from the leg, the insides of the wrists crossing, the back of each contestant's engaged

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hand nearer his opponent's leg, and the clasp is taken with fingers interlaced. The arms must be held in place with the utmost tenseness of the muscles, as it is undesirable that the hands be changed in the least from the starting position throughout the drag over the stretch. Of course the late victim carries his companion back over the stretch. It will be necessary for the assailant to move his outer foot a very little at a time, and following it up with the other foot—a process familiar to boys as “inching.” When victory is found to be impossible the victim is expected to yield a little at a time.

By the time that the course of instruction has gone this far the pupil must be taught to do a most important thing—to *think for himself!* He must begin to study the *why* of every exercise—that is, provided he has reached the age when he can be expected to reason clearly. For instance, after any given exercise has been performed, the instructor, addressing one of the pupils, should inquire:

“In the last exercise in what part of your body did you feel the most strain?”

“In the small of my back, I think,” the pupil may answer.

If this reply be correct, the teacher should then ask:

“Where was the next greatest strain?”

“In my wrists, and from there up to the elbows.”

“Did you feel any strain at the back of the knee?”

“A little, as I remember.”

“Then observe more closely on that point the next time you take up that exercise.”

“Yes, sir.”

“Now, in what part of the body do you consider that your muscles are weakest?”

“In my wrists.”

“Do you try the exercises for strengthening the wrists outside of school hours?”

“Not particularly.”

“Will you do so after this?”

“Yes, sir.”

“Do you know all of the exercises that exercise the wrist?”

“I think so.”

“Describe some of them.”

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And so the examination may go on. Pupils who appear to take the work too easily and indifferently should be subjected especially to such quizzes. The pupil who always shows enthusiasm and snap at his work is likely to absorb very rapidly an intelligent idea of what he is doing and why he is doing it.

At about this stage of the work, it will be well, too, for the instructor to give to pupils who are old enough to understand a clear, simple idea of the principal muscles of the arms, legs, and torso, with the names of these muscles and their uses in the human anatomy. For this purpose charts showing the human body and its muscles may be hung on the wall, or if the class is provided with text-books on physiology the illustrations in the book may be studied. In the *jiu-jitsu* class it will be sufficient to devote three or four minutes of every training bout to this knowledge of the locations, names, and uses of the muscles. It will be sufficient to gain knowledge of one muscle each day that exercise is given, and, occasionally, instead of studying another muscle, the time may be devoted to a rapid but searching

review of what has been taught already concerning muscles. It is suggested that the instructor have no appointed days for these reviews, but that he endeavour to catch the pupils unawares.

After the muscles are well understood the principal bones of the body should be taken up, and their locations, names, and uses learned. The instructor should explain how exercise, through increasing the circulation of the blood, makes the bones larger, healthier, and stronger than they would be were no exercise taken.

Just how much of this instruction as to muscles and bones should be given in the *jiu-jitsu* class should depend upon the completeness of the course, if there be any in physiology. Where the training in physiology is reasonably thorough the pupil may be asked to bring from the latter study explanations of the benefits to be derived from *jiu-jitsu*. Or, he may remember the results of his *jiu-jitsu* work, and seek to analyse and explain them when reciting in physiology.

The decision on all these points must be governed by other school conditions, and must

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be left to the advice of the teacher and the action of the local school authorities. But the more of physiology that can be blended with *jiu-jitsu*, the more instructive, as well as the more entertaining, will both studies become to the pupil.

CHAPTER VI

STRENGTHENING THE BACK

THERE are many boys who show outward signs of splendid muscular development. They can throw a missile over a great distance, and with accuracy. Their hardened arms look to be in the pink of condition. Their legs are, to make use of a common expression, as "solid as rocks." These boys are swift runners, and it is generally impossible to wind them, no matter what the speed, in any short sprint.

This sort of boy will play with enthusiasm and energy through all the innings of a baseball game. In the fall he will tramp for miles, if he knows there is a good clump of nut trees to be discovered. He will spend hours in gathering nuts, and will think nothing of walking home again, unless the result of the day's outing is a basket or a gunny-sack that is too heavily filled for him to carry.

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Yet assign this same youth to the task of sawing and splitting wood through a Saturday forenoon, or compel him for the same length of time to hoe or to pull weeds in a vegetable patch, and he comes in at noon so lame and stiff that he cannot return to an afternoon's work. He will lie down for the afternoon, or will mope around the house, complaining. Then his parents, or other well-meaning relatives, will remind him of his athletic prowess, so cheerfully achieved, and will deride him because the same amount of energy spent in actual work, tires him out.

Yet there is a reason why the healthy, muscular boy can play baseball with less fatigue than he can perform out-of-door manual labour. Except football there are few out-door sports that entail great strain on the back. Here is the secret. The boy seems strong, *but the muscles of his back have not been developed in keeping with those of the other parts of the body!*

Far more frequently is this the trouble with girls, even with those who seem most robust and healthy. How often, among the women

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around us, do we see those who go through life complaining of backs that ache at frequent intervals.

The muscles of the back are as important to the possession of perfect strength as any that may be found in the human body.

An illustration of this may be taken from my own experience. Several years ago the author was interested in a manufacturing concern. A barrel of oil was delivered at the factory. It was necessary to hoist it to the second story. The truckman, one of the employees, and the author attempted this work. Ropes were made fast around the barrel, and a hook attached to the end of a single-pulley rope was caught in the ropes. Barrel and contents weighed a little more than five hundred pounds. We three tried to hoist the barrel. At the first attempt we got it some two feet clear of the ground. The second effort sent it up about a foot higher. The third time we got it a little over our heads, but had to let it down in haste, and were thankful that the heavy barrel did not land *on* our heads.

At this trying time I saw a Japanese, who

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was one of the officers of the company, walking slowly toward us. I called to him and asked him to come and help us. Smiling, he strolled up to where we stood panting.

"Let go of rope," he suggested. "*I* put it up."

We stood back, too astonished to protest. But, with the smile still on his face, that little Japanese, smaller than any one of us, took hold of the rope, and slowly, steadily, the barrel went up until it was in position to be swung in at the second floor. Then, without a sign of breathlessness, and with the same smile, the Japanese turned to us, with the words:

"That was easy."

It certainly looked so, but the truckman, who was accustomed to hard work all day long, stood by looking on with staring eyes and wide-open mouth.

On another day I was standing with my Oriental acquaintance in front of a grocery store, where a truckman was unloading barrels of flour, and a clerk was rolling them into the back of the store. There were several men in the group, and the Japanese was coaxed into

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telling of some of the feats of strength that are easy for his countrymen to perform.

"Can you do such things?" asked one of the bystanders.

"Perhaps," was the quiet answer of the Japanese.

As the bystanders looked at the rather small build of the Oriental some of them laughed.

Flushing slightly, but without a word, the Japanese walked over to where one of the barrels of flour lay. He picked it up, walked steadily to the back of the store with it, stood it in place, and walked unconcernedly out to the sidewalk. The tone of the men in the group changed in an instant. Any little fellow who could pick up such a load, and walk off with it, commanded their respect.

That was before the author had begun the study of *jiu-jitsu*. Now he understands how both feats were accomplished. To be sure, there was some little amount of knack required in the performance of either feat, but the foundation of success lay in the possession of perfectly developed and thoroughly hardened back muscles. Any American boy, by careful

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attention to the principles of *jiu-jitsu*, and by constant work at its exercises, should be capable of duplicating either feat by the time that he has reached manhood.

Many of the exercises that have been described already have much to do with the toughening and strengthening of the muscles of the back. Some especial hints along this line will be given, however, in this chapter.

Take a good look at the work that is shown in photograph number sixteen, study the description thoroughly, and see how splendidly the backs of both contestants are exercised. There is not a muscle in the back that is not brought into play.

At the start, the two pupils stand facing each other. The assailant clasps his hands, with fingers interlaced, around the back of the victim's head, and just at the base of the brain, the victim allowing his own hands to hang limp at his side. Next, the assailant draws the victim forward and down, the aggressor gradually bending one knee lower and lower until it touches the floor, and when the assailant has reached this position the victim's head must be



No. 16. THE HOLD BACK OF THE HEAD, THE VICTIM BEING FORCED OVER FORWARD.



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as close to the floor as it is possible to bring it.

It should go without saying, of course, that the victim uses all of the muscles of his back and neck in an effort to resist this pulling down of the head. The aggressor must not be permitted too easy a victory. Now comes the hardest part for the victim. He must slowly force his head upward, until, at last, he stands erect, and has also forced the assailant to his feet. Then, after a few deep breaths, assailant and victim exchange parts, and the work is performed again. This is excellent work for two boys or two girls to practise out of school hours, though never to excess. Stop at the first sign of breathlessness or palpitation, and do not try the exercise again in that bout.

There is a far different kind of feat that is of great value when the pupils wear gymnasium suits, or it can be practised in ordinary clothing on the carpeted floor at home. The victim lies on the floor, flat on his back. The assailant, standing at either side of his companion, bends over and secures a firm hold under the latter's shoulders. Now the aggressor begins to lift

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the prostrate contestant, the former stepping slowly backward as he gradually succeeds. The victim does nothing but hang as dead weight, and the feat is finished when the aggressor has the other standing in erect position. This is work in which the victim receives a little benefit to the back and the aggressor a great deal. This is equalised when assailant and victim change places for a second attempt. One such performance for each is enough in any one practice bout.

Next, let the aggressor drop to the floor on one knee. If it is his left knee, he uses his right arm and hand in the feat that is now to be described. If he drops upon the right knee he should use his left hand and arm—all this in order to preserve better balance. The hand is held as high as it will go in a slanting position, upward and forward. The victim stands, with his hands resting on his hips, and back to assailant. Now the victim bends slowly backward until the space between his shoulder-blades rests upon the supporting palm of his companion. This support secured, the victim bends farther and farther back, until he has

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gone as far over as the aggressor can safely support him. When this point is reached, the assailant slowly pushes the victim back to a standing position.

In turn the assailant employs the hand, arm, and knee that were not used in the previous movement, and the work is done over once more. Then, after proper breathing for a few moments, assailant and victim change places, and the work is done exactly as it was before. Like many of the other exercises, this work can be overdone; at first, two movements for each of the contestants will be enough to introduce into any one practice bout.

Now, by way of variation, let one of the pupils bend forward until his finger-tips touch the floor near his toes, the knees to be bent as little as is possible. The assailant, standing behind, clasps his hands around the other's abdomen, and slowly raises him to erect position, the victim hanging as dead weight. This exercise may be carried farther if the victim promptly extends his arms laterally and horizontally. The assailant grasps his companion's wrists, bends the arms slightly backward, and

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then gradually forces the victim over backward, the aggressor sinking slowly upon one knee. It is a strong victim, indeed, who can pull the assailant back to his feet from this position, and, generally, it should not be attempted, the release being made when the assailant touches upon one knee.

It is good work for the aggressor when the victim lies face downward on the floor and is slowly lifted to his feet. Here the former takes a hold under the latter's chest, and, by stepping slowly backward, gradually accomplishes the raising. The victim, who gains nothing from this, can secure his share of the benefit by becoming assailant in turn.

A rather difficult form of exercise for the back is undertaken when the victim lies face downward upon the floor. The assailant, standing at his side, clasps both hands under the abdomen and tries to raise the victim's trunk and legs clear of the floor. As the latter is lifted from the floor he uses his hands and toes to sustain himself a little, but otherwise hangs as dead weight. When the victim has been raised as far as is possible, the aggressor

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gradually shifts to a side-hold, in such fashion that the victim is turned completely over, and now the assailant has a back-hold. As the victim is turned he throws one arm over, in order that he may have some support from his hands. From this position the aggressor gradually—very gradually—lowers the victim to a position of lying flat on the back—and the feat has been performed. This is a somewhat trying movement, as the aggressor must employ a great deal of strength, and the entire exercise must be conducted with slowness and deliberation. Haste robs the work of all the benefit it would otherwise have.

When the pupil must exercise by himself he may do so by making use of a substitute for the exercise just described. Let him lie flat on his back. His feet should be slightly spread, while his hands should rest on the floor a little above the shoulder-blades. When the right position has been acquired—and this will be ascertained after a few trials—let the pupil attempt to raise his body clear of the floor, resting only upon his heels and hands.

At first this will be all the student can do.

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By degrees, however, if the work is attempted moderately from time to time, the pupil will find that he can sustain his body in this position. When this stage of partial success has been reached, let him attempt to walk forward and backward on his heels and the palms of his hands. One or two steps in either direction will be enough for a beginning, but after a few days the healthy pupil will find that several steps can be covered in this way.

Should the student of *jiu-jitsu* prefer to make a somewhat easier beginning, he may lie face downward, using his toes and his hands on which to rise. Then follow with walking backward and forward, as in the preceding movement. But this face-downward form of the exercise, while it may be done once in a while, is rather too easy for the youth with a normally strong back.

There is a form of back work, employed by some American athletes, which the author has never seen taught in a Japanese school, but is strictly in accordance with *jiu-jitsu*. It will be found of use to the student of this volume.

Let the student stand with his back to a

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closed door, and a foot or more away from it. He should throw his hands back over his shoulders until they touch the door. Now, sliding his hands down the door a little way at a time, the pupil is able to bend over backward a little, and a little more, until his hands touch the floor. Resting here an instant, the pupil should raise himself to starting position by moving his hands upward against the door until he is able *gradually* to bring himself to starting position.

When this movement has been repeated in several succeeding practice bouts, the pupil should prepare himself for the acme of this style of exercise. Let him stand out on the floor, away from the support of door or wall, and bend over in precisely the same manner, gaining all the aid he needs from his own muscles, especially those of the back. At first, it is well to use a mattress or other pad, but after a few trials the pupil will disdain any such aid to confidence, and will perform the feat easily and naturally on the hard floor, bending over backward slowly until his hands touch his heels, and then rising as gradually to erect position.

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The boy who performs this last stage of the feat successfully, and without hurry, need have no misgivings as to the strength of his back. Yet this statement must not be taken as meaning that the need of exercise for the back is past. Exercise for this part of the body, as well as for all others, should continue as long as life lasts. Yako, the famous Japanese instructor of *jiu-jitsu*, took the exercises all through his life, from the time when he first started as a boy. Now, at nearly the age of eighty, he will go out upon the floor and vanquish the best of Japan's young experts in any kind of combat, and seemingly without effort.

But it must be remembered that all of this back work is intended for the use of boys and girls in good health. Weakly pupils must be put through the exercises described in this chapter, if at all, with the greatest care on the part of instructor and companion. The exercises must be made very, very light indeed, for the naturally weak pupil. When very light work is undertaken, however, there is the certainty that in time the sickly pupil will have a

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somewhat stronger back, and may then proceed to work that is a trifle harder.

When there is any affliction of the back or the spine, the instructor or class teacher should call the parents' attention to the matter and urge that the family physician be asked to attend a practice bout in order to decide whether his little patient may do any of the back work; and, if so, to prescribe just how strongly it should be done.

CHAPTER VII

DEEP BREATHING, FOOD, BATHING, AND CLOTHING—HOW ALCOHOL AND TOBACCO RUIN HEALTH AND SPOIL THE ATHLETE

PERFECT health is not gained, or kept, by physical exercise alone. Many other factors are needed in the building up of the body and in keeping it constantly at its best pitch.

The vast importance of deep breathing has already been explained. Just how deep breathing is accomplished need not take up any of the space given to this chapter. Any pupil ought to be able to discover for himself how to breathe so deeply that the fresh air goes all the way down to the abdomen. This breathing should be performed without any perceptible raising of the shoulders. Every physical trainer, and nearly every class teacher, can instruct a class in the proper method of breathing. It is to be borne in mind that deep

breathing is not to be employed merely when exercising, but at all times.

On first rising in the morning throw the bedroom window wide open, if it has not been so all night, stand right at the window and spend quite a little time in taking deep breaths of the pure air of early morning. Do not sleep in a sealed room at night, but have one of the windows open, even if but a trifle, at top and bottom.

Did any of you ever stop to notice closely a labourer working industriously with a pick or sledge-hammer? Every time he strikes he gives vent to a "huh!" If you ask him why he does this, probably the best reason he can give will be that it makes his work easier. So far he is right; the gasping-out of "huh!" does lessen the strain on his body, for instinct, rather than knowledge or reason, has taught him how to breathe deeply when engaged in laborious work.

If any labourer will allow you to rest one hand on his abdomen while he swings the pick or sledge-hammer, you will be able to note how far he carries his deep breathing.

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It is not the author's purpose to go very deeply into the subject of food in this volume. The members of the Anglo-Saxon race are heavy users of meat, and are firm believers in three hearty meals a day. The Japanese, on the contrary, use very little meat, and cattle are comparatively rare in their country. The Japanese eat poultry to some extent, and eggs, but neither the fowl nor its product is eaten to the same extent as in the United States or in England. On account of the scarcity of cattle, milk and butter are but little used, although both are excellent foods.

Rice is the staple food of Japan. Cooked in one form or another, it is served at every meal. Barley and beans are much used. Fish is eaten freely throughout the empire. When possible fresh fish is eaten, but dried fish is used also in every household. The waters that surround the Land of the Rising Sun yield a great variety and abundance of fish, and the people are so fond of this kind of flesh that fishing is one of their greatest industries. The foreign traveller, approaching the coast of Japan for the first time, is tempted to wonder if every

family in the land does not own at least one fishing junk.

Vegetables and fruits in Japan are about the same as those that we are in the habit of raising, and of these the Japanese eat freely, both in the natural and in the cooked state.

Light eating is the rule in Japan. An American or an Englishman is not likely to be satisfied with native Japanese meals until long practice has taught him the benefit of eating lightly. It is noteworthy that Japanese men and women who do heavy manual labour, and who have to carry the noon-day meal with them, do not eat heartily at the end of the morning's work. A little bit of cooked rice, some fruit, or something equally light, is eaten at noon, followed by a heartier meal at night after the day's toil is over.

People of all classes in Japan drink very freely of water. At least a gallon a day is looked upon as a very proper amount to consume. This water is cool, but not iced. True, in Tokio, and in some of the other large cities where the foreigner has gained a foothold, there is considerable demand in summer for little

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cupfuls of shaved ice covered with some flavoured syrup—a mixture very similar to that abomination known to children in this country under the name of “snow-ball.” But the great mass of Japanese people have yet to acquire the habit of eating such harmful stuff.

Water is used most freely on the skin, for the Japanese are a nation of bathers. Nearly every man, woman, and child in the land has at least two baths a day, and in summer more baths than this are often taken. The Japanese inclines to hot baths—hotter than we could endure, but the cold bath is much enjoyed. In this country the best system of bathing calls for a cold bath every morning on rising. The bath should be of short duration, and should be followed by the brisk use of a coarse towel all over the skin. The warm bath should never be taken when one intends to go out-of-doors. The best time is at night, just before one is about to retire. Before leaving the tub, turn on the cold water, and remain in the bath until the water becomes as cold as can be endured. Then step out of the tub, rub down well, and go to bed.

There are some constitutions that cannot stand a cold bath. Young people who are troubled in this way should turn a little hot water into the morning bath, but should take the bath just as near cold as possible. Tepid water will generally satisfy those who cannot endure an absolutely cold bath. Sooner than take a morning bath that is really warm, it is better to take a short sponge bath with cold or tepid water, this to be followed by brisk towelling. Students who start free perspiration by exercise out of school should take a sponge bath with a brisk rub-down, and, if the underclothing is not dry at the end of this bath, fresh underclothing should take its place.

As for clothing, it should never be too heavy, nor yet too light to interfere with the normal temperature of the body. One should never wear clothing that makes him too warm, or chilly, when performing the ordinary movements of the body. The clothing should be as free and unrestricted as possible, in order that the air may have free passage over all portions of the skin. In mild weather, when one

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can do so unobserved from outside, it is well to imitate the Japanese by removing all of the clothing and taking an "air bath" by sitting naked for from half an hour to an hour. Reading, or any other occupation that does not call for bodily activity, may be taken up.

Corsets are in such general use among American women and girls that it seems almost hopeless to say a word against them. Nevertheless they are a menace to our women who hope to obtain more symmetrical figures by the use of them. It ought to be enough to know that our artists, and students in our art schools, when painting the female figure, will never employ a woman as a model if she wears corsets. The corseted figure does not, and cannot, come up to the requirements of art.

Corsets should never be put on a girl in the first place. If she never wears them she will grow to womanhood with a much more perfectly developed waist. Her vital organs, too, will have derived vastly more benefit through unrestricted breathing. The whole tone of health and of strength will be better if the girl never begins to wear corsets, and if she con-

tinues to refrain from them after she reaches womanhood.

Few Japanese women wear corsets, except those who belong at court, or to the families of high officials of the empire. These women are brought much into contact with European and American women, and consider it necessary to wear European dress, including the corset. And these Japanese women, when arrayed in all their foreign glory, and contrasted with their more natural sisters of the lower classes, are the most grotesque spectacles imaginable. It is quite conceivable that, many and many a time, these high-born women hasten to their private apartments and revel in the unrestricted comforts of the native dress.

Some of the Japanese women, who become somewhat imbued with the notion of the corset, improvise one of their own. A part of the Japanese native costume is the *obi*, or long, broad sash that is tied around the waist. Some women tie this sash so tight that its effect is that of a corset, but the practice has not gained much ground.

In the use of alcohol the Japanese are most

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temperate. Until the Americans opened Japan to the world the only form of alcoholic beverage known to the natives was a very mild rice wine known as *sake*. It would require a great quantity of this beverage to intoxicate one. Beer, liquor, and wines such as are known to us are seldom found in Japan to-day, outside of a few large cities where foreigners congregate and live.

During his stay in Japan the author saw hundreds of white men who were intoxicated, but he did not see one drunken native. Even *sake* is not used as a daily beverage but is served in small quantities at ceremonials or on occasions of rejoicing, and the guests return home as sober as they came. The only Japanese who use alcohol frequently are the few who have thought it praiseworthy to imitate the foreigner's vicious habits.

A few American scientists have attempted to prove that alcohol is to be regarded as a food. Their contention is based upon the claim that when alcohol is administered in small doses, and at not too frequent intervals, it is oxidised and taken into the system, producing heat and



No. 17. LIFTING ONE CONTESTANT FROM A KNEELING TO AN ERECT POSITION — THE START.



energy just as real food does. But real food strengthens the body, and leaves no after effect except a natural hunger by the time that the proper hour for the next meal has arrived. Alcohol, after its first effect has passed off, leaves the system, even when but small quantities are taken, in a state of depression.

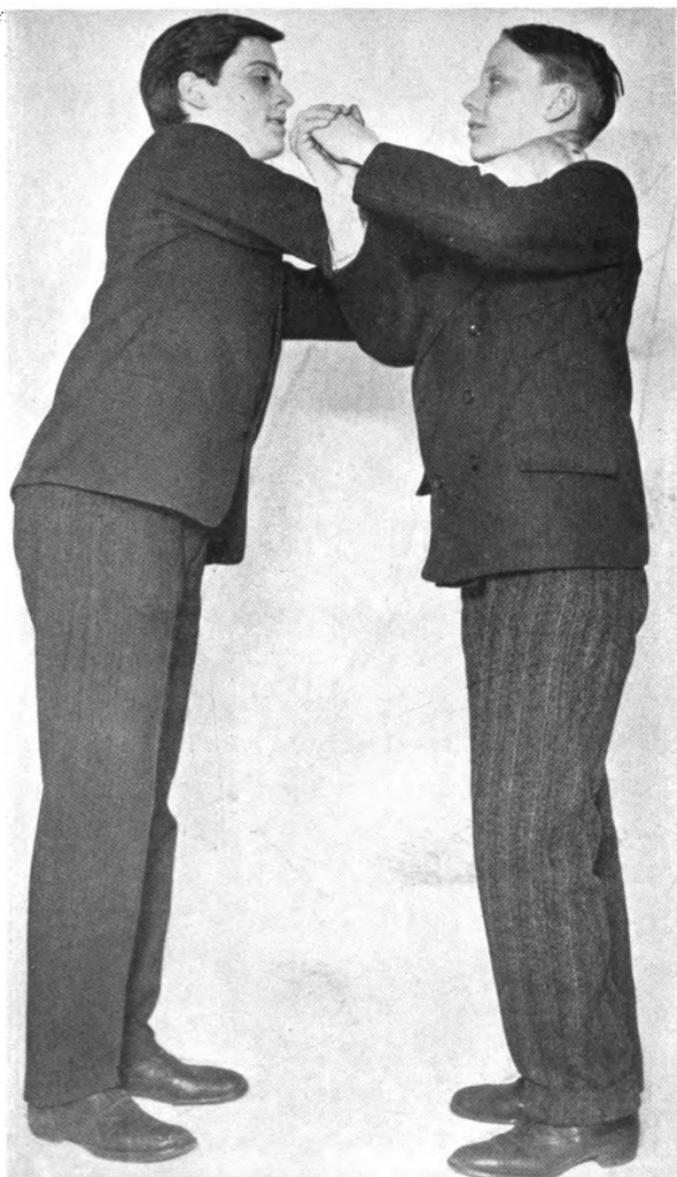
In the sense that we use food to build up and nourish the body, preparing it for the best and most continued efforts of which it is capable, alcohol is nothing like a food. In medical works it is described as a *poison*, and this definition exactly suits the case. Antidotes are given when too much poison is taken into the system. There is a long course of antidotal treatment for alcoholic poisoning. Did any one ever hear of antidotes for toast, milk, eggs, beans, broth, and the like? Twenty-five hundred years ago the Japanese were wiser on this subject than most of us are to-day. They invented a mild wine that could not intoxicate unless taken in enormous quantities; they used it only on special occasions, and then in but small quantities. To-day, with the exception of a few who have become contaminated

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through misplaced admiration for foreigners' evil ways, the Japanese are no nearer to drunkenness than they were six hundred years before the dawn of the Christian era.

When the author, through an interpreter, asked Yako San, the oldest and most noted *jiu-jitsu* instructor in Japan, what he thought of alcohol, his answer was: "Bad stuff; make man wild beast." Nor did the opinion of any other native teacher of *jiu-jitsu* differ on this point. Yako San, after nearly four-score years of life, averred that he hardly knew the taste of even *sake*. Serious students of *jiu-jitsu* in Japan look upon the smallest quantities of alcohol as a foe to perfect bodily condition, and few of them use it at all. In this country, when athletes are training for any event, the first move of the trainer is to cut off the use of alcohol and tobacco.

Alcohol over-excites the heart; it stabs the kidneys; it causes the liver to enlarge; it affects the respiration, and causes dimness of sight. It lessens the growth of healthy flesh tissue and of the bones. It affects the joints and thus causes gout. It weakens the whole



No. 18. THE THROAT-HOLD THROW-OFF.
An excellent exercise and a handy trick of self-defence.



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much of the vicious and criminal classes. Without having any statistics at hand on the subject, the author is prepared to affirm that ninety-five per cent. of the crimes of violence that came under his notice were committed while the perpetrators were under the influence of alcohol. Only here and there was a criminal encountered who was not an habitual user of alcohol in its various forms.

The drunkard starts with the first drink!
The boy or girl, man or woman, who has never taken the first sip of an alcoholic beverage—*and who never will*—is safe from one of the most blighting curses that has ever come upon humanity.

Tobacco is not as dangerous as alcohol, but it was never intended to be absorbed into the human system. The Indian, who was the first grower of the weed, used it only for ceremonial purposes. When visitors came from another tribe on an amicable errand, the lighted pipe was passed to all who sat around the fire. Each took a few whiffs, and passed the pipe to his neighbour as a sign that peace hovered over the deliberations. The pipe was smoked



No. 19. BENDING THE VICTIM'S WRIST OUTWARD AND OVER AS FAR AS IT WILL GO.
An exercise that makes for strong arms and incidentally hardens many muscles.

in the same manner at the beginning of the councils of the tribe—and that was all. It remained for the white man to discover that tobacco was to be smoked almost continuously during every day in the year.

Like all true narcotics, tobacco, when used persistently, seeks out the weakest portions of the body and renders them weaker. The will-power becomes less and less as the existence of the tobacco habit lengthens. The heart is affected, and palpitation, or worse trouble, follows. The first few times that a boy smokes he is likely to be made deathly sick. That should show him the poisonous nature of the drug. But, after awhile, the boy finds that he is able to smoke with nausea at less frequent intervals. Tobacco is slow and insidious in its effects. One may smoke for years without discovering that he has done himself any harm. But let him try to break off the habit now. He finds that he cannot sleep; his nerves have gone to pieces; he is absolutely wretched until he takes up with tobacco again. And, if he takes it up again, he shortens the distance between himself and the grave.

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Tobacco has become the master ! No matter how much the man may pride himself on his stubborn will he cannot break the shackles that he has forged for himself at the tobacconist's. The only cure for the habit, now, is a long course of special treatment under circumstances where he cannot get tobacco in any form. And, during the earlier period of the cure the tobacco-user will suffer torments that cannot be described. Insanity and death have been known to result from efforts to get rid of the long-fastened tobacco habit.

In Japan there are millions of men and boys who do not use tobacco. Most of the men who do use it carry small pipes that contain only enough tobacco to afford three or four whiffs, and the pipe is used but a few times during twenty-four hours, but it must be admitted that among the younger generation in the larger cities of Japan the American cigarette is creeping in to an extent that bodes no good to the future of the race. Many of the older statesmen of Japan are beginning already to concern themselves as to how the threatened tobacco evil may be curbed in their country.



No. 20. AN ADVANCED FORM OF RESISTANT WRIST WORK.
Employing many muscles of the body, especially of the abdomen and lower back.

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I asked a native guide of mine, in Tokio, if he used tobacco.

“Why?” he asked in surprise. “I am studying. I wish to know something? Why spoil my brain and become fool? Why make my body weak when it is strong? Once, down at Yokohama, I saw some pigs. Some one offer them tobacco, but they not touch it. Why should I make myself worse than pig?”

CHAPTER VIII

FEATS FOR RAPIDLY STRENGTHENING THE WHOLE BODY OF THE ADVANCED STUDENT

IT is quite proper for one who has slowly, faithfully, and thoroughly mastered all the steps in *jiu-jitsu* that have already been laid down to style himself an advanced student—this with the proviso that, in addition to practising all of the exercises sufficiently, he has followed out the suggestions that have been given for right living.

In this chapter many exercises will be described, and will be very fully illustrated. None of these are exercises that an eager beginner should take up at the outset. If the beginner commits this blunder before his muscles have been sufficiently hardened by diligent practice at all of the foregoing feats, he will reap disappointment and muscular punishment.



No. 21. BACK BENDING WITH RESISTANCE WHEN THE FORWARD DRAG IS ATTEMPTED—THE START.



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It will be noted that nearly all of the movements that are now to be described, work particularly upon the muscles of the stomach, back, and abdomen. But they do more; they exercise the entire body to a greater or less degree. The advanced student will find no difficulty in mastering rapidly all of the feats that are given in this chapter. If he has been taught to think as he exercises, the pupil will have no difficulty in comprehending just what good is derived from the performance of each movement.

Only a glance is needed in order to understand what the two girls shown in photograph number seventeen are about to do, and the exercise need never be forgotten. The victim kneels, allowing her arms to hang limply at her sides. In fact, the whole pose of the victim is one of limpness and inertness. The assailant does all of the work. The latter places her hands under the victim's shoulders, securing a good grip, and then the work begins. It is the assailant's task to drag the victim upward until she stands erect on her feet, the latter doing nothing beyond hanging as dead

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weight. Breathing will be needed after this has been performed; then victim and assailant change places and the feat is repeated. Once for each contestant is enough in a practice bout, although at home it may be practised many times in succession, provided deep breathing is done after each attempt, and if the work stops the instant that either student feels fatigued.

Now comes a feat that will afford a little diversion from "dry" instruction. It is a performance that may be freely translated from the Japanese as the "throat-hold throw-off," and may be found handy by many a boy when he finds himself too severely pressed in defending himself. It is really one of the lighter tricks of combat in *jiu-jitsu*, but as it enables a boy to defend himself without injuring his adversary it may be safely introduced here.

Let the assailant seize his companion by the throat with both hands, taking pains, of course, not to employ a hold severe enough to strangle. The victim clasps his hands just below the abdomen, throws both arms swiftly to the left, continuing the movement upward and over to



No. 22. BACK BENDING WITH PUPILS SIDE BY SIDE AND HANDS CLASPED OVERHEAD.



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the right—and the throat-hold is broken as if by magic. In photograph number eighteen the victim is shown with his clenched hands up at his left and just in the act of throwing them well over to the right in trick of releasing himself from his opponent's throat-hold.

At first, until the idea has been thoroughly gained, which should not require more than three or four efforts on the part of each pupil, it is better that the work be done quickly, as if actual combat were on. But the greatest benefit in training is found when this throw-off is done slowly and with resistance on both sides. If any discomfort is caused by the throat-hold, the lapels of the victim's jacket may be seized instead, but in this case the assailant will have a hold that it will be much more difficult to dislodge. In this latter case it may be necessary for the assailant to yield gradually, the victim going through the movement in a very slow and decidedly resistant fashion.

Another form of light combat work may be had by beginning with the back-of-the-head hold that is illustrated and described in Chapter

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VI. The assailant seizes his companion by this latter hold. The victim "ducks" down, liberating his head by a wriggle, and then rises quickly, seizing the assailant by the throat, the latter then employing the throw-off. At first this combination work should be done rapidly, until the whole idea is mastered. Then it should be done slowly and resistantly, with the exception of the taking of the holds, which should be done nimbly.

An excellent form of drill for twisting the arms and bending the body is shown in photograph number nineteen, where the position at the finish is depicted. In this the victim extends her left arm so that the hand is about on a line with the abdomen. The assailant seizes the proffered wrist with the right hand. At the start the victim's palm is downward. The assailant closes the fingers of her engaged hand over the back of the victim's wrist, the thumb pressing into the front of the wrist. A good grip must be taken. Now the assailant twists the victim's wrist upward, then over and outward, forcing the captured wrist down as near to the floor as is possible. After this the



No. 23. STRENUOUS WORK FOR DEVELOPING SHOULDER, BACK, AND ABDOMINAL MUSCLES.

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other hands are engaged in the same fashion, after which assailant and victim change places, and the work is repeated.

The danger of taking up advanced work at too early a stage in the training may be well illustrated in the case of the exercise just described. It would be easy enough for the enthusiastic beginner to learn how to do this last work, but what would be the result? The muscles of the wrist, as well as of the whole arm, would be lame and stiff afterwards. The sides would ache, and there would be soreness and pain in the back, especially at the lower end. The beginner who went through this drill a few times would feel like lying abed all next day. But for the advanced student this work can have no disagreeable features. His muscles are so hardened that he will find himself able to perform the drill time after time in the same practice bout, and all without any other after effects than the addition to muscular strength.

There is a companion movement that is illustrated by photograph number twenty. Here the two contestants stand facing each other,

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and extend hands forward nearly horizontally, the victim proffering his left hand and the assailant seizing it with his right, the over-hand hold being taken as in the preceding exercise. Now the victim bends forward as far as he can go, the assailant bending with him. Next, the latter tries to lift the victim's hand upward to starting position, the latter resisting. When victory has been secured the assailant tries to force the victim's hand downward. Then the other two hands of the contestants are engaged, after which the rôles of assailant and victim are reversed. In the execution of this feat it is permissible for the assailant to use the under-hand hold on his companion's wrist, but generally the preference should be given to the over-hand hold.

In the next feat the contestants face each other, the victim with the left hand extended horizontally forward, and the assailant with the right in the same position. The hands, palms downward, are clasped with fingers interlaced. Now, the victim bends slightly backward, throwing the engaged hand over until it rests on the shoulder blade, the assail-



**No. 24. RESISTANT FEAT THAT EMPLOYS EVERY IMPORTANT MUSCLE
IN THE BODY.**

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ant bending slightly forward to accommodate the position. Now both of the engaged arms are held as tense as possible. The assailant drags the companion's captured hand up and over the head, and then forward. As a finish the assailant bends backward, pulling the contestant forward. Then the other hands are engaged. It follows that, after these two movements, assailant and victim reverse places and repeat. All through this work the greatest possible muscular tenseness must be employed in the engaged arms, and the clasp of the hands must be firm—so firm that to a beginner the grip would seem to be crushing. The starting position is shown in photograph number twenty-one.

Useful back bending may be accomplished by the strenuous use of the movement that photograph number twenty-two illustrates. In this the pupils stand side by side, or nearly so, and facing in opposite directions. The nearer hands are clasped overhead, with fingers interlaced. The assailant must bend the victim over backward as far as the latter can go, the victim employing all possible resistance. Then

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the victim rises gradually, and forces the assailant to starting point. Or, the movement may be carried farther by the victim, on regaining erect position, forcing the assailant over. Then the other arms of each must be similarly employed. As much of this work as time will permit should be introduced into nearly every practice bout at first, and pupils should be urged to repeat it during recess time.

It is a strenuous bit of work, intended especially for developing the shoulder, back, and abdominal muscles, that is shown in photograph number twenty-three. At the beginning the pupils stand facing each other. The victim bends her head and shoulders slightly forward in order to aid her companion in securing the proper hold. This hold is rightly taken when the assailant crosses her right arm, as close to the shoulder as possible, over the back of the victim's neck from the latter's right side. The assailant's arms are thrust under the victim's shoulders, and the former's hands clasped in front of the victim. Care must be taken, in securing the starting position, that the aggressor's right arm is over the back of the com-



No. 25. ATTACK ON THROAT AND CHEST — STRONG RESISTANT WORK.



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panion's neck, and not allowed to cross lower down, as at the shoulder-blades or on the back.

As soon as the position has been rightly secured the assailant begins to bend slowly downward, forcing the companion forward toward the floor, the latter all the while firmly resisting the downward pressure. The first half of the movement ends when the assailant has sunk down upon one knee. The second half begins when the victim starts to rise, hampered by the aggressor's dead weight, and ends when starting position has been reached. Then the victim turns assailant, and the movement is gone through with once more.

It is to be urged upon the instructor, and to be impressed upon the monitors that nearly all the benefit is to be derived from starting right, with the assailant's upper right arm across the back of the victim's neck. Nor is the position of this arm to be allowed to shift at any stage of the movement.

Next in order should be the exercise that photograph number twenty-four makes clear. Here the two contestants face each other, the victim allowing his hands to hang limply at his

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sides. The aggressor throws his right arm around the small of the other's back, at the same time using his left wrist to press against the victim's throat. The latter pupil is now forced over backward as far as may be done, and then the victim returns to erect position against the resistance of the assailant. The assailant's hands are used in the reverse way in the next attack, and then the victim turns assailant and exercises both sides of the new victim's body.

There is a variation of this work in which the assailant stands facing his victim's side—either side. The right hand is thrown around the farther side of the victim's waist, the left wrist against the nearer side of the victim's neck, and a side bend is forced, similar in all other respects to the back bend.

Photograph number twenty-five illustrates work in the same class. The contestants face each other, the victim steadying herself by resting her hands on the aggressor's hips. Necessarily the contestants are at close quarters. The assailant places the outer edge of her right forearm against the throat of the



No. 26. NECK AND BACK MOVEMENT CALLING FOR MUCH RESISTANCE.

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victim, and the edge of the left forearm against the victim's chest. Back bending, with the return of the victim to starting point, and with abundant resistance on the part of both pupils, finishes the exercise, after which the use of the arms is reversed, and then the victim turns assailant for two more of the movements.

Next in order comes a neck and back movement that calls for strong resistance. As is shown in photograph number twenty-six, the assailant stands behind the victim. He takes hold of the latter with his finger-tips pressing on the throat and the thumbs pressing in the back of the neck just at the base of the skull. As soon as this hold has been obtained the victim bends forward, without resistance, to the position that the photograph depicts. Now begins the work. The victim tries to remain bending forward, but the assailant endeavours to pull him over backward as far as he can. When victory has been achieved the victim attempts to bring himself slowly and stubbornly back to the position illustrated.

Then vary the exercise by having the contestants face each other. The aggressor takes

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hold by pressing his thumbs against the victim's throat, and the finger-tips resting at the back of the neck just at the base of the skull. The victim is allowed to bend backward, then, resisting, is pulled forward and over. The victim then returns, the assailant resisting, until the victim is bending well over backward.

One of the most difficult of all the feats of this class, when the opponents are fairly matched, is that which photograph number twenty-seven illustrates. Again the pupils stand facing each other. The assailant places his hands firmly over the victim's shoulders. The aggressor's finger tips must take firm hold back of the shoulder, while the thumbs press in at the front. Now the assailant is expected to force the victim down, the latter stubbornly resisting, until he is compelled to sink upon one knee. This is by no means an easy performance for the assailant.

Then comes work that is equally difficult for the victim. Without any aid from his hands he must force his way to a standing position, and the aggressor gives him very stubborn opposition. It is easy for the assailant, now,



**No. 27. FORCING THE VICTIM TO ONE KNEE, AND THEN, AFTER RISING,
TO THE OTHER KNEE.**

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and correspondingly hard for the companion who is trying to rise.

From the foregoing it is possible to evolve several other exercises, but it must be borne in mind that all must be strictly in conformity with *jiu-jitsu* principles. In other words, the same sets of muscles must be exercised, and in the same degree, and there must be obstinate resistance on the part of both contestants. The pupils who lead the class in this Japanese athletic work may be depended upon to hit upon some novel and effective substitutes, and the instructor should do all in his power to encourage this line of thought and invention of substitute exercises.

At this stage of the work, too, pupils should be encouraged to try the feats as actual tests of comparative strength.

A few trials will enable any student to select the companion who comes nearest to being his physical equal. Then there is great sport in store for all who have made right use of the training through the school year.

As the summer begins pupils who live near bodies of water where bathing is permitted

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will find *jiu-jitsu* a perpetual source of amusement if the more difficult feats are performed on shore in the intervals between bathing. Two or three determined struggles between well-matched contestants, then a dip and a short swim, to be followed by more Japanese work and more swimming. There is a zest to the work than cannot be had when the entire body is covered with clothing.

Yet one caution must be given. When this work is attempted at the edge of stream or lake, there must be a full amount of deep breathing before the return to the water is made. Nor should any contestant return to the water if he feels the slightest cramp or strain in any of his muscles.

When the swim and the various struggles are through with, and each student has had a brisk rub-down and has dressed himself, he feels refreshed, exhilarated, and ready for anything that calls for the effective employment of muscle. There is a feeling of real, new life!

CHAPTER IX

MORE ABOUT RESISTANCE OF MUSCLES—EXERCISES THAT EMPLOY IT TO THE UTMOST —SUMMER OUT-DOOR SPORTS

BEFORE passing on to a description of additional feats for use by two contestants the author wishes to go back to that vital principle of *jiu-jitsu*, the proper and emphatic resistance of one set of muscles by another. This may be accomplished best, of course, when there are two students working together, but there are numerous resistant exercises that may be performed by the student when he is obliged to work alone.

This idea may be simply explained if the student will clench his fists, cross the insides of his wrists, and hold his hands at the right hip. Now, the drill calls for the hands to move upward toward the face, up over the head, and down to the left hip. At the start the right

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wrist must be underneath, and it continues so up to the finish at the left hip. And here is where the resistance comes in: The right wrist must force the left wrist up until the overhead position has been passed. The left wrist must resist by a downward pressure against the right. After the overhead position has been passed the left wrist takes up rôle of assailant until the left hip is reached, and it will not take the bright pupil many seconds to understand why this is so.

On the return movement from the left hip, overhead and down to the right hip, the left wrist is first victim and then aggressor. But, if this exercise is reversed, and the start is made from the left hip, with the right wrist on top, then the left wrist becomes the aggressor at the start and then victim.

In raising and lowering the arm two different sets of muscles are employed—one for raising, and the other for lowering. Here is an excellent opportunity for resistant muscle work. Let the right arm hang at the side, clenching the fist. Tense the arm as rigidly as possible. Now, bring the fist up until the upper arm ex-

tends horizontally forward and the forearm is perpendicular to it—in other words, that favourite with boys when “showing muscle.” But, while bringing the arm up with all of the muscle energy possible, resist the upward pressure by a corresponding pressure downward. That is, while striving hard to bring the arm up by one set of muscles, strive almost as hard to make the arm stay down through the employment of the other set of muscles. If the work is done thoroughly and intensely the fist will tremble and shake, at first, as it is being brought up. But it is splendid work for the arms, and rapidly makes the muscles more “like steel.”

Exercise the left arm in the same way. If at this stage of the training the left arm has not become the muscular equal of the right arm, give the left arm rather more of this work than the right receives. When the principle of this arm work is thoroughly understood both arms may be employed at the same time. There are many other ways in which similar work can be performed. For instance, hold one clenched fist, or both out sideways and on

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a level with the hips. Bring the arm, or arms, up sideways, resisting the upward pressure by a downward one. Or, start with clenched fist, or fists overhead, and bring the arm, or arms downward, either in front or sideways, keeping the knuckles of the fist uppermost. Return to starting position with the resistance reversed. Stand with arm, or arms, horizontally forward, fists clenched. Swing arms as far backward as they will go, but do not move the trunk of the body. Resist the backward movement of the arm, or arms, by a forward pressure. Return to starting position, resisting the forward movement by a strenuous pressure backward.

Clasp right and left hands, fingers interlaced, just in front of the heart. Pull the left hand over to a corresponding spot in front of the right chest, but use so much resistance with the left hand that the right hand has to do its hardest work. Then pull the right hand back to starting position, and reverse the resistance. With fingers again interlaced, let the clasped hands rest in front of the abdomen. Employ the right hand in pulling the left up to a level with the top of the head, then return to start-



No. 28. TWISTING EACH OTHER'S WRISTS OUTWARD AND INWARD.
There are three excellent forms of this exercise.

ing point, with drag and resistance reversed. In all of these exercises keep the muscles of the arms as tense as is possible. Much depends on the tenseness of every muscle in the arms.

I have offered suggestions enough, now, for resistant muscle work that the pupil may carry out by himself. If he makes an intelligent study of them he will have as perfect an idea of the resistance of muscles as can be obtained. He can improvise many other exercises to which the same principle applies.

Now we will pass on to advanced exercises in which two pupils contest. Photograph number twenty-eight shows wrist twisting. The assailant has clasped her left hand around the victim's right wrist, the engaged hand of each, at the outset, being about on a level with the chest. The assailant twists the companion's wrist a trifle upward and outward, doing it smartly and firmly, and the victim, of course, resists this attack. Then the assailant twists the other's wrist slightly upward, over and inward. Next, the other hands are engaged in the same manner.

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There are really three forms of this exercise. Both hands of each contestant may be employed at once, the assailant grasping each of the victim's opposing wrists at the same time, and twisting them outward and inward. The third form of the exercise is where the contestants cross forearms and the double hold is taken by the assailant, whose right hand now grasps the victim's right wrist, and the left hand the other's left wrist. The same outward and inward twisting of the victim's wrists is performed.

It is in fact, possible to extend this work to nine movements. The arm or arms, may be held slantingly upward in front of the body, with the hands a little above the top of the head, and all three of the exercises suggested may be gone through with in this position. Or, the hand, or hands, may be held forward, a little below the abdomen and the same work can be executed. But the first three movements, with the engaged hands held chest-high, are to be given the preference, the other forms to be used only to vary the monotony of exercise.



No. 29. RESISTANT NECK WORK.

The two girls shown in photograph number twenty-nine are practising what is known as resistant neck work. Each leans forward slightly toward the other. Each may seize the other by clasping hands at the small of the other's back, or one may employ this clasp and the other may take hold of the companion's shoulders. The head of each is bent decidedly forward, and each must use the left side of her neck in crossing the left side of the other's neck. *The necks must cross.* For one contestant to press the cheek against the other's will not suffice.

Now the contestants, without resistance, bend the heads over to one side. The one whose head is lower becomes the assailant, and endeavours to press the victim's head completely over to the other side. When this has been done the vanquished one turns assailant, and the work, with strong resistance, is carried back to starting point. This exercise is one that should be repeated frequently, and, by this time, the students should be able to perform the feat in a vimful way that would tire beginners at the first attempt.

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There is but one variation to this work that is of any value. Let the assailant stand with her right side in front of the victim. The aggressor seizes the victim with both arms around the latter's waist and hands clasped at the victim's right side. Now the aggressor bends her head and presses the right side of her neck firmly against the victim's throat. The victim is allowed to bend her head well forward without resistance. When this position has been taken the assailant forces the victim's head erect, continuing the movement by pushing the head as far backward as it can be made to go. When this point has been reached the victim turns assailant, and forces the companion back to starting point.

It will be understood that, when the assailant prefers, position may be taken with the left side toward the victim, the assailant's hands being clasped at the former's left side. It is well to exercise both sides in turn.

The next feat to be described is one in which success is rather difficult, but it should be possible to the advanced student. The two contestants stand side by side, but facing in



No. 30. A DIFFICULT SHOULDER-TO-SHOULDER STRUGGLE.

opposite directions. The arms of the contestants that are between the bodies hang at the sides. The two opposing hands are clasped tightly, and the opposing arms and shoulders are pressed against each other. While the muscles of the engaged arms are to be tensed from one end of the arm to the other, the greatest tenseness must be at the wrists. There must be stiff pressure between the engaged shoulders.

As soon as the position has been properly secured the assailant must press and twist the head and trunk of the victim over sideways. As soon as the latter has been pushed over as far as he can be made to go, the victim becomes assailant and executes a similar movement against his companion. Photograph number thirty explains the exercise.

Then, by way of variation, let the assailant place the front of his shoulder against the front of the victim's shoulder, the position in all other respects being the same as in the last exercise. The movement to be executed now is a backward and forward swaying movement, with much resistance on both sides. Each

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contestant is to be forced backward as far as possible, and then forces his companion backward. This drill may be carried on continuously until each contestant has been made to bend backward several times, but it should be done slowly, with all possible strength of aggression and of resistance.

Among the last of the exercises to be described is one in which the travel and pivot are again employed. As is shown in photograph number thirty-one, the assailant stands sideways in front of the victim. The former throws the nearer arm around the latter's neck, taking what is known in ordinary speech as a tight hug.

As in nearly all other pivotal work the victim stands with her heels together and the feet at an angle of forty-five degrees. When the position has been taken the assailant begins to walk slowly around the victim, forcing the latter to pivot, although with determined resistance. When the assailant uses the left arm for the hug the travel is taken around at the victim's left, and *vice versa*. Both arms of the assailant must be used in this fashion before



No. 31. TRAVELLING AND PIVOTING WITH THE NECK-HOLD.



the victim turns aggressor and repeats the work. In this work all of the benefit depends upon the amount of resistance that the victim is able to give. The utmost limit of opposition must be employed. In this feat the assailant has the natural advantage, for which the victim must make up by the use of stubborn resistance.

Now comes the acme of all of the *jiu-jitsu* preliminary training work. Again the pole is called into use, and, in order that the full idea of this drill may be acquired it will be necessary to take a long look at photograph number thirty-two. This drill should never be attempted by a pupil who has not gained complete mastery of all the exercises that go before.

One contestant stands behind the other. The pupil in front takes the pole and allows it to rest over either the right or the left shoulder, seizing the pole with the hand belonging to the same side of the body. The pupil in the rear employs both hands to grasp the pole. At first the pupil who has the single-hand hold is allowed to bend forward, after which the

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contestant in the rear endeavours to pull his companion over backward. In the next drill the pupil in front bends over backward, and then against the resistance of the other, attempts to bend forward. If it looks as if the contestant with the two-hand hold had the advantage the leverage afforded by the other contestant's shoulder must be taken into consideration, and will be proven quickly when the work is begun. Both shoulders of one contestant should be exercised thoroughly in this fashion before victim and assailant change places.

Such work would produce sad lameness in a beginner's shoulders, but to the advanced student, who should have broad, sturdy shoulders, covered with layers of well-developed muscles, the drill will be mere sport.

As the school year nears its close, and the early summer comes on, it is but natural for the Anglo-Saxon boy to long for the out-door games and sports that belong to the season. Nearly all of these are highly beneficial, and work for the promotion of health. But the boy who has faithfully and honestly studied



No. 32. THE ACME OF "JIU-JITSU" MUSCLE-MAKING — BENDING WITH THE POLE.

and applied his *jiu-jitsu* training throughout the school year will be astonished at finding how superior he is, physically, to the boy of his own size and weight who has not had the advantage of the same training. The *jiu-jitsu* boy will find himself an athlete whom it is hard for one of his own size to beat.

And, besides being stronger and having more agility and endurance, the *jiu-jitsu* student will find that all of his faculties that have to do with physical exertion have been so vastly improved that he picks up any new game or sport requiring bodily strength, speed, and lightness much faster than he did before he took up the Japanese style of training.

In so far as they can practise sports and games followed by the boys, the girls who have been faithful to their instructor will discover the same seemingly marvellous results. Any form of endurance that a girl is called upon to exhibit will be manifest at the end of a school year's instruction in *jiu-jitsu*.

Of all out-door sports for the summer season the two best are rowing and swimming. Both call for strong resistance to the muscles, and

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therefore are strictly in line with *jiu-jitsu*. Unless accompanied by older persons who are thoroughly at home in the water no boy should attempt to row until he knows how to swim well. There are many boys who do not know how to swim. Such a boy should be regarded as a freak, and treated with derision by his comrades. The boy of eight who cannot learn readily how to swim, when the opportunity to learn exists, is almost certain to be a physical coward. Physical cowardice seldom exists when a sound, well-trained body has brought out self-confidence.

Make the boy or girl strong, and see that self-confidence is developed to the highest pitch, and swimming will become as easy of attainment to the subject as it is to a dog or a beaver. The boy or girl who learns at eight, and who has frequent opportunities for practice afterward, should be able, by the time that the age of ten is reached, to swim from four to six hundred strokes without fatigue.

In rowing, it is strongly advised that, as soon as rowing with one hand has been mastered, the pupil always afterward make it a

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point to pull two oars. This balances the strength of the body, and brings every muscle into important play. The boy or girl who has the opportunity should make a point of rowing at least an hour every day, the first hours of daylight affording the best time for this exercise.

Base-ball, cricket, and golf are among the best of out-door exercises, the latter being especially desirable work, as it forces the employment of the very valuable exercise of walking. Tennis is an ideal game, for it trains the brain and the eye and makes for the agility of the body. From a physical point of view croquet is a very stupid and unimportant game, its only claim to recognition being that it takes the player into the open air, and all the other games and sports do this and more.

On the subject of walking a whole chapter could be written by itself. The boy who cannot walk distances that most boys nowadays regard as being very great need not look upon himself as being a real athlete. Many a boy or girl will gasp when I state that an ordinary distance for a day's tramp should be fifteen

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miles. Begin in moderation—say five miles a day, at first, and gradually add to this until it is found possible to make fifteen miles between sunrise and sunset without the least feeling of fatigue.

When this point has been reached there is rare sport in store for boys who love to be out-of-doors and to show that they are strong and enduring. Let a band of boys get together for a two-day tramp. Starting soon after sunrise, and each carrying enough food for the trip, and a water-bottle, let the march be started for some farming town that is known to be fifteen miles distant. Half of the distance should be covered in the forenoon, and there should be a rest of considerable duration in the heat of the middle of the day. If there is a place for bathing at the halting point, a brief rest should be taken, then a short swim, and after that the noon meal. The afternoon part of the day's tramp should wind up at some farm-house. A lot of tidy, well-behaved boys, each of whom can contribute ten cents, will find the farmer willing enough to give them deliciously soft beds on his hay-mow.

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In the morning, if there is a swimming-place handy, there should be an early dip, followed by breakfast and the beginning of the tramp home. After awhile the boys will find themselves well able to face a three-day tramp, covering each day fifteen miles. Girls, properly escorted and guarded, should be able to build up to the same point of endurance.

In Japan the students are sent out frequently for a tramp lasting a week or a fortnight. It is to them a period of sheer enjoyment, yet they frequently go twenty or more miles in a day. In a country as rich in history as Japan is there are many points to be visited and studied. There are shrines and temples, scenes of famous battles, industrial centres to be visited, rare landscape gardens to be inspected, and a host of treats of all kinds for the trampers. Sights of great interest are to be found by parties of boy and girl pedestrians in this country. As horses and cattle are somewhat rare in Japan the hay-mow does not offer itself as a lodging place there, but the students are allowed to sleep in temples and monasteries, and in public buildings. The

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Japanese do not go in much for sprinting or long-distance running, but the soldiers of the empire have an odd march in double-time that resembles a dog-trot, and students on the road often break into this step and keep it up for at least two or three miles.

Every boy and girl should get all of the glorious good that is possible from out-door life in summer. But *jiu-jitsu* should not be neglected for other forms of activity. All of the exercises that have been taught should be gone over during a fixed period each day, and it should be the aim of the young student to have the exercises selected for a given practice bout harmonise toward a definite result to be gained that day. The advanced student will know how to choose feats that are in keeping each with the other.

CHAPTER X

MUSCLE-BOUND AMERICAN ATHLETES—MISTAKES THAT THE JAPANESE AVOID— LAST WORDS TO PUPILS

ONE of the evil results that frequently attend the work done in American and British college gymnasiums is that many a promising athlete, after a brief, brilliant career as a muscular marvel, finds himself muscle-bound. Then he is obliged to drop out of athletic events and give place to younger and less-experienced athletes who will, in time, suffer from the same misfortune.

What is that condition known as being muscle-bound? It is a strange affliction, and might be called, with justice, a malady. The muscles become larger, and, at first glance, suggest tremendous power. But their real power has gone. The vital principle of elasticity is lacking in such muscles.

The cause? The most common one is excess

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of training. The college or other young man who is trying to make a strong man of himself does not stop when all his physical indications point to the fact that he has had exercise enough for one day. He is training for endurance, and believes that he is securing it through doing a great amount of heavy exercise in one bout. The muscles are sadly over-taxed. True, they grow larger, but at the expense of that elasticity without which muscle is of little value.

Your American athlete will proudly double his arm and show you great knots of muscle. The upper arm, especially, is "bumpy." Thick, swelling pads of muscles adorn his back. They are found on his upper leg and thigh. If this man is addicted to excessive exercise, watch him for a few years, and you will find that he no longer takes pride in his condition. He has joined the ranks of the muscle-bound.

There is another cause of this unhappy physical state that does not receive as much attention as it should. Muscle-binding often starts in the practice of feats that pull too heavily on

the tissues. The result of such work is a slight tearing of the muscle. It may feel stiff and sore, but not enough so to warn the young athlete that he should rest, and that he should exercise more lightly when he resumes. Nature does her best to repair these slight tears, and the result is a slight unbalancing of the injured muscles that, in time, works serious mischief. Were the young athlete to tear one of the ligaments of a leg so seriously that he could not move about, except on crutches, he would accept the warning, but the slightly torn muscle goes unheeded.

The Japanese athlete does not exercise as severely as does his American counterpart. Preliminary training in *jiu-jitsu* involves no serious danger to muscles, tendons, or ligaments. All of these parts are strengthened by the work. True, the Japanese, when he has reached the stage of advanced combat work, sometimes has occasion to tear a ligament, "break" a muscle, or snap a tendon, and he does it with the speed of lightning, leaving his opponent helpless. But this is done only when a master of *jiu-jitsu* finds it necessary in

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defending himself. In learning these tricks of combat no part of the body is ever injured; in the feats that are intended simply for the training of the muscles the Japanese employs far less than his full strength. It is only when making comparative tests of strength and endurance with another student that the Japanese employs his full strength.

As a result graduates in *jiu-jitsu* do not know what it is to become muscle-bound. Yako, the grand old instructor of Japan, now nearly four-score years of age, and still an instructor and exhibitor, when asked by the author about muscle-binding, looked puzzled. He had heard about such things from foreign visitors, but had never seen a case. He had but the vaguest comprehension of the subject, but asked many eager questions, shaking his head slowly as the answers were translated to him. Yet Yako San has been one of the most famous instructors in Japan ever since he left his teens. Every day he is on the floor, exercising as often as it is necessary to take hold of a pupil, and he has never known what it was to be muscle-bound.

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Inouye San, another noted instructor, known throughout the length and breadth of the empire, is now a man well past forty, who has trained thousands of students. For months at a stretch he has spent from ten to twelve hours a day on the floor of his school, exercising almost continuously with pupils. He is a short man, of compact, solid build. His flesh is so hard that it suggests iron; it is impossible to make any impression upon it. He can smile at a blow in the face that would carry an American athlete off his feet. Yet Inouye San is not muscle-bound, never has been, and never will be. He understands the parts of his body and their uses too well to abuse the most insignificant of them. He will take hold of an opponent as gently as if he were handling an infant—and the next instant that opponent is on his back on the floor, uninjured and unable to comprehend why or how he fell.

It is true that in some of the exercises described in foregoing chapters the pupil has been directed to use all, or nearly all of his strength in the contest. But when this advice has been given the feats are of a nature that

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will not result in binding the muscles even if full strength be employed. And it must be remembered, too, that none of these movements are used day after day, but only at intervals in the work.

In general it should be borne in mind that, while the exercises are to be executed with vim and snap, it is not wise to use one's strength up to the limit of endurance. He who exercises firmly, but with only a wise expenditure of strength, will have sound and reliable muscles that will never become bound, but which, in the moment of need or emergency, will respond to demands upon them to their fullest power.

The author has been asked frequently what part track athletics play in Japanese physical training. Strictly speaking, they play no part whatever. Track athletics, as we understand them, were unknown in Japan until that country came in contact with the Anglo-Saxon peoples. But the graduate of a Japanese school is in splendid trim to pick up the track work quickly and effectively if he so chooses. So far, however, the Japanese have made no

track records in this country, and that because of their lukewarm interest in such sports. There are many Japanese in our colleges who, if they would set their minds seriously on the subject, would soon show some surprising track work. But the Japanese is content with his own ancient and long-developed system of bodily training. He is aware of its superiority, and has only to see the kind of work that our athletes do, and its results, to convince him that he will continue to be satisfied with *jiu-jitsu*. Japanese men are decidedly the reverse of boastful. They do not care for display. Hence they do not care for our gymnasium or track work, and when an American athlete, or his British brother, contends that our system is the best in the world, the Japanese smiles and answers, "Oh, yes, certainly."

It is not to be gained from the foregoing that the American youth is to be dissuaded from taking up track athletics. Far from it. The Olympian games should be attempted by every healthy youth, but they should never be made, at any stage of athletic work, the whole of the training during that period. Even

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while track work is being practised, the young athlete who has had the muscle-training of *jiu-jitsu* should keep up the latter work, and should not allow it to become secondary to the track. For girls, too, a very fair amount of track work is advisable.

Let the student of *jiu-jitsu* be not discouraged if, at the end of a school year faithfully devoted to bouts of the work, he is unable to show an arm twice the size it was at the beginning of the course. It is to be remembered that a large and knotty, "bumpy" arm is not the surest indication of strength. Muscular power is tested best by the force with which a blow can be struck, and by hauling and lifting capacity. The average Japanese graduate in *jiu-jitsu*, while certain to be a powerful and enduring little man, will show a rather small arm, especially above the elbow. It is to the forearm that the greatest effort is directed. As the work goes on this lower part of the arm should increase both in size and in hardness.

The observing pupil can discover for himself how he is being benefited as the course goes on. From time to time he should tense either

arm, and feel all of the principal muscles from the wrist to the elbow. After a few weeks the wrist should be very firm. If it is not, increase the amount of resistant wrist exercise. From the wrist on up to the elbow the principal muscles should stand out when the arm is tensed, and these muscles should grow harder every week, even though the forearm be small even to the point of delicate appearance.

At the same time the muscles of the leg should be watched. Both the upper and lower leg, when tensed, should feel "as hard as rocks." If the exercises are taken frequently enough, and in strict accordance with the directions, these results in the arms and legs should be highly gratifying after a few weeks of practice.

In the back, too, good results should be looked for at about this time. When the arms are doubled, with the clenched fists close to the shoulders, with arms tense and elbows thrown well back, the muscles that run downward between the shoulder-blades (known to anatomists as the rhomboid muscles) should stand out prominent and hard, and the scapular

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muscles, running over the shoulder-blades, should show up well, though not as heavily as the rhomboid muscles. At the small of the back there will be no particular evidence of increase in muscle, but increased strength here will be shown by greater ability to lift and drag, with absence of weakness or pain from so doing.

How long is it needed to make a boy or girl in ordinary good health thoroughly strong through *jiu-jitsu* training? One school year will work wonders to the faithful pupil, especially when the work is practised frequently out-of-school. So little time can be given to physical training in school that every boy and girl is strongly urged to practise the work at home every day, first selecting a fairly-matched mate.

But it is not to be understood that practice during one school year will make the pupil permanently strong. The first year of practice but prepares the way. The work should be kept up at school and at home all through the following school years. It should be taken into college and practised there. *Jiu-jitsu*, in-

deed, should be kept up as long as life lasts. It will insure improved health through life—mental health as well as bodily. It will do a great deal to ward off disease. It will make for activity, keenness, and endurance in any walk of life.

As the whole course laid down in this volume can be mastered thoroughly in the first school year in which the student takes it up there is this advantage when the same training is resumed in the next higher class: The student, having passed through the course once, does not need to keep to the exercises again in their sequence. He can skip about at will, or at the instructor's discretion, picking out groups of exercises from the various chapters, and exercising only in that group during the coming bout.

Intelligence is needed when the graduate of the first year's course selects the groups of exercises when practising in higher classes. It should be the constant aim of the instructor to aid and develop this intelligence. In a little while it will be found possible to leave it to the competent pupil to select his own groups of

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exercises for coming bouts. At the start of such selection, if practicable, it will be well for the instructor to require the pupil to select a group of feats, submit them to the instructor, and explain his reasons for the choice of movements.

Little urging will be required to keep the boy who loves to be STRONG at the work, once he has discovered how quickly *jiu-jitsu* builds up the muscular strength. It will be harder to keep such a boy away from the work than to keep him at it. The instructor, or class teacher, should never lose sight of the importance of rigid questioning of pupils as to whether they are over-exercising. With pupils who show indolence in the execution of the work it is equally important to question searchingly as whether they perform any of the feats out of school hours, and whether they do so with sufficient vim.

The preparation of this little volume has been long and arduous. It was undertaken with an earnest purpose, and no pains has been spared to place every essential of bodily training of the highest and most satisfactory kind

between these covers. The author will feel that he has been of great service to his kind if his efforts result in making the next generation stronger, more cheerful, and happier than the present.

THE END

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