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His Highness the Maharaja of Mysore

K. V. IYER, D.P.H.E.

VYAYAMA SHALA

AND

PHYSICAL CULTURE CORRESPONDENCE SCHOOL

BANGALORE CITY

INDIA

PHYSICAL TRAINING THROUGH CORRESPONDENCE

LESSON I.

"HUMAN BODY IS CAPABLE OF IMPROVEMENT, SO LONG IT IS CAPABLE OF MOVEMENT."

YOUR REQUIREMENTS:-You desire to lasting Health and a good physical development? Then, you will have to satisfy two conditions: Self-confidence and work. "Doubt and Self-distrust" are barriers to success. Work, regular **HARD-WORK**, is the **ONLY** way to acquire good health and a sound body.

Start on this course of training with full hope and confidence. If you have any physical defect, it may not be entirely the fault of your physique or of your system. Quite often, it is due to ignorance of laws of Health. Sometimes, to indifference or abuse. The phenomenal physiques, of which the world has record, were only normal, even sub-normal in the beginning. But they were trained on rational lines and kept taut with regular exercise. You should feel quite confident in yourself, that however much unlikely it may appear to you just now, you will with patience, perseverance, and whole-heartedness, build for yourself a magnificent body, under my **PLAN** and **DIRECTION**... no doubt yet, with **YOUR HONEST** effort as well.

PROGRESS CAN ONLY BE MADE WITH EFFORT:-To achieve success in any line, there is one very necessary qualification, and it is **WORK** - Work in the sense of real effort. The payment of your fee, the possession of this literature, the mere reading of these instructions and exercises, all this is wasted if you are not prepared to **WORK**. The directions I shall furnish you with, and the exercises I lay out for you, occupy but little of your time. I promise to make them as interesting as possible for

you. You must try to understand me, and follow the instructions. If at the close of this lesson your chest and neck do not show an appreciable increase, it will be evident that you have NOT put enough effort and enthusiasm into your work. Once again, you see, that work... HARD WORK, can alone give you the desired Physical development. "No pains, no gains."

THE WELL-DEVELOPED CHEST:--To ensure a lasting Health and to insure length of life, a well-developed chest is the first necessity. A well-developed chest does not merely mean as many an enthusiastic Body Culturist believes it to be--thick muscles (pectorals) covering the fore-part of the chest, and muscles on either side of the upper back(Latissimus-dorsi), which the strong-man usually displays in the act of expanding his chest, to create an awe in his onlookers. A well-developed chest actually means a well-formed rib-box, housing full-grown lungs within. A broad and deep rib-box with the sturdy growth of lungs within, and not developed out of proportion with the other parts of the body, can be termed a well-developed chest. The muscles that support the rib-box with the lungs within, also shield them against weapon and weather. Besides, they also add much to the curves and contours of the body-beautiful.

A true expansion of the chest is caused by deep inhalation (act of breathing the air into lungs), and not by expanding the muscles on the chest and on the upper-back. This inhaled air, in its turn, expands the rib-box.

In an average healthy person, this expansion of the chest, when measured just below the Nipple-line, shows an increase of not more than two inches from the normal measurement. You should not be misled when you hear or read about the big gulf of a difference between the normal and expanded chest (measurement), of any physical culture celebrity. That, usually, includes the measurements of the well-flexed pectorals, the well-brought-out Latissimus-dorsi and several other muscles of the upper-back.

Speaking generally, a well-developed chest means, well-developed lungs too. Suppose a few breathing exercises are prescribed to develop your lungs, while you persevere in the practice, you will be surprised to see your rib-box becoming broader and deeper of its own accord. This should assure you of the development of the lungs within.

To start with, I want you to understand the great importance of the lungs in the acquisition of one's health, vitality, and

endurance. In every kind of manual labour, Physical exercises, games, or sports, the lungs have to bear a considerable strain, on account of the quick interchange of GASES (Carbon-di-oxide to Oxygen). We are all aware of the various pulmonary diseases (diseases of the lungs), amongst which, Tuberculosis, Pneumonia and Asthma alone are carrying away millions of our young men and women to an early grave.

Hence, for a person in quest of health and a sound body, a strong pair of lungs is of the foremost importance. This purifying chamber of the life's stream, viz., blood, has to be brought to a perfect condition, to insure one against any future pulmonary disorders, and ensure his system with an abundant and continuous supply of arterial (oxygenated) blood. A short note on the Anatomy of the Lungs and Physiology of the Respiration, will, I hope, not be irrelevant. Attention please!

THE LUNGS: The inhaled air passes down the Trachea (Wind-pipe) in the throat. It goes down through the two branched out Bronchi, into the numerous bronchial tubes, of both the right and the left lungs. At last it reaches the spongy elastic texture at the end of each minute bronchial tube.

WHAT THE LUNGS DO: Air, with its precious constituent, Oxygen, is the first thing needful, for the preservation and continuation of life. Oxygen, contained in the inhaled air, purifies the blood in our lungs, brought there, laden with impurities from all parts of the body in the course of circulation. When the blood starts on its course of circulation, it carries with it, nutrition that is got from the digested food-stuffs. This, it has to distribute to all parts of the body in proportion to the demand created. Having completed this task, the blood carries with it, back again, broken down tissues, waste matter and poisonous gases; all produced through various active processes of the working of the internal organs and muscles. The dead cells and other waste products of the Body are thrown out of the system, in various forms, by the kidneys and the skin. The poisonous gases are carried to the lungs to be got rid of. The blood laden with all these impurities is called the venous-blood. The vessels that carry this venous-blood are called veins. The colour of the venous-blood is dark red. When the oxygen in the inhaled air, in the lungs, exchanges its place with

the dissolved Carbon-di-oxide (to be breathed out) in the venous-blood, the blood becomes arterial-blood (pure bright red-blood) again. This purified blood resumes its course of circulation again. If this natural process be hindered or slowed down, the general growth of the body suffers. Various diseases crop up as the result; and it may be fatal.

A pair of strong lungs are an asset to a physical culturist, who, on his road to build up a robust physique, hastens, with the destruction of the weak cells of his body, building them up again and again, each time stronger and healthier than before.

RESPIRATION, ITS PHYSICAL AND CHEMICAL ASPECTS:

THE RESPIRATORY MECHANISM: Respiration consists of, alternate expansion and contraction of the Thorax (Rib-box) by means of which air is drawn into, or expelled from the lungs. This, is a muscular action which is both voluntary and involuntary. The number of respirations in the normal healthy adult, ranges from 14 to 18 a minute. In children it is more. It varies with different conditions, such as, work, exercise, rest, health or disease. When the chest cavity is enlarged through inhalation, not only is the air sucked into the lungs, but more blood is also sucked into the lungs. More blood is also drawn into the big veins (Superior and Inferior Vena-cava). These big veins empty themselves into the right auricle of the heart.

THE CHEMICAL CHANGE: Lungs are the seat of interchange of gases. The oxygen of the inhaled air, exchanges its place with the Carbon-di-oxide gas. This carbon-di-oxide was brought there in a dissolved state in the blood. This blood is called Venous (impure) blood because it contains various waste products of the body besides this carbon-di-oxide gas. The heart pumped this venous blood into the lungs to get it purified. This process of interchange, is one of the diffusions of gases, and is partly due to the pressure of the Alveolar air in the lungs. The blood that courses into the lungs to get purified, brings with it, about six per cent of Carbon-di-oxide and exchanges itself with about the same percentage of oxygen. This interchange cuts down the acidity of the blood,—the off-shot of muscular metabolism (action of Movement and heat), and transforms the blood into its original, alkaline state. The oxygen in the inhaled air, is

carried through the blood, to all the tissues of the body, in the loose compound known as 'OXYHAEMOGLOBIN'. During the process of combustion the tissue-elements dissociate this loose compound and utilise the oxygen.

Want of oxygen happens either as the result of heavy exercise or of diminished oxygen pressure. Normally a person takes into his blood about 400 c.c. of oxygen every minute; during sleep, about half of this quantity, and in violent exercises near about 3,000 c.c. every minute. This is exactly the reason why you should never withhold your breath during exercise. You should perform your exercise, where you can have plenty of air and light. Bear in mind, always, that under no circumstances whatsoever, should you hold your breath during exercise. You will be putting your heart and lungs to great strain and danger if you ignore this advice.

During a vigorous contraction of muscle the blood-flow through it is for a moment retarded. Over a considerable time of continued vigorous contractions, this retardation is very much increased. Nevertheless, the retardation leads to want of certain amount of oxygen, and probably, this may be one of the causes of the Lactic-acid output (which will be explained at length in one of your latter lessons). And probably the acid itself draws the blood supply automatically to the muscle, by relaxing the walls of the arteriole.

Physical Exercise is the commonest cause of 'Dyspnoea' (heavy and forced breathing). A great increase in the respiratory activity happens within a few minutes of the commencement of vigorous exercise. This is doubtless due to the spread of impulses from the motor-cortex in the brain to the respiratory centres. This influence causes the acceleration of the heart too. It is a matter of experience that an individual can do the same amount of muscular work, heavy exercise or athletics, with less exertion after some training. This is partly due to the fact that the trained person has lost the extra weight in his body, and mostly because, he has now learnt to use his muscles to advantage.

THE DIFFERENT TYPES OF BREATHING:—Three different kinds of breathing may be recognised: Abdominal, Supra-costal, and Intra-costal. In the first, the movement of the abdomen is most prominent. In the Supra-costal, the action of the muscles which expand the upper part of the chest is prominent.

In the Intra-costal type, the muscles working upon the lower part of the chest,--from the seventh rib down--are those chiefly involved. Although all the muscles of the thorax are involved to some extent in all these types of breathing, the principal action is dissimilar in each of these three types.

The abdominal type is the most marked in children. The grown-up man, naturally breathes, in the abdominal type combined, to an extent, with the Intra-costal type. In woman, the most natural form is the Supra-costal with insignificant Intra-costal breathing.

SUPER EXPANSION OF THE CHEST:--It is difficult to determine the relationship existing between chest expansion, and the qualities of health and physical efficiency. The index of expansion represented in inches, denoting the normal chest as compared with the fully expanded condition, definitely means nothing; for, it is often largest in the consumptive. A person suffering from Pthisis (Tuberculosis of the lungs), is known to have greater expansion between the normal and the expanded chest, than a healthy individual. This is due to a collapse of the chest commonly seen in the consumptive.

The necessity of bringing about the expansion of the chest from within, simultaneous with the Supra-costal expansion--(caused by making the pectorals, latissimus-dorsi and the muscles of the back, develop and stand out),--is the main object of this lesson.

THE CARRIAGE OF YOUR BODY:--Constant attention to hold the body erect and the chin in, will help you acquire a manly chest soon. You are naturally ambitious to develop a broad, manly chest, but you may be shy of exciting undue comment, walking with chest held out. If you harbour ideas of this sort and fear ridicule (for maintaining an erect body and a broad chest) your efforts to build up physique, will amount to little or nothing. Supposing people round about you, joke about your 'CHESTY' attitude, keep quiet, till you have gained in strength and development. They will learn to respect you for your abilities and may even approach you for advice and guidance, to repair their own broken physiques. Why be shy and timid about a right thing? A slovenly fellow who goes about in a slouchy manner at all times, can never develop into an imposing example of manhood.

Here is an excellent tip which will give you a deep, broad chest without much effort. This exercise needs no special place, apparatus or time. It is mmch so simple and yet so certain of the result, that it will make you disbelieve the measuring tape, when next you will measure your chest, after a fortnight. Not only will this exercise develop your rib-box and the lungs, but it also corrects the carriage of your body so strikingly, that friends around you will be amazed at your sudden and quick physical well-bearing.

You must put this exercise into practice at once. Take a short walk every morning or evening for about half-a-mile or so. If you are living in the country, so much the better. If in a city, you had better choose the least crowded part, or a garden to practise this exercise. But remember that you must be alone...Quite alone while doing so.

Now, while walking, inhale (Breathe-in-air) deeply filling the lungs to UTMOST CAPACITY, as you take the first three steps. Just suppose that your lungs are divided into three chambers. With each step you take, you breathe in the air to fill up one of these chambers. This inhaled air should fill each chamber, to bursting. With the first step you take, you should fill up to entire capacity of the lower chamber. The second step should fill up the middle chamber, and the third step, the top-most.

This inhaled air is held within the lungs, for the next three steps you take. You must see that during this retention not a speck of air escapes from the lungs. During the next three steps, you start exhaling the air, relieving the lower chamber with the first step, mid-chamber with the second step, and top-chamber with the third.

This process must be repeated (for the next three steps. You inhale again as before, retaining the inhaled air the next three steps, and exhaling thoroughly the next three steps. Continue this procedure), for two furlongs, the first two or three days, to begin with. Persons with weak lungs and weak hearts, should commence with 100 or 150 yards and increase the distance very gradually.

The normally healthy person should increase the distance from two to four furlongs, within the course of a week or so, and maintain it for a month at least. The maximum distance should never exceed three quarters of a mile. When this

exercise has been kept up in regular practice for a few months, a four step-pacing (four steps inhalation, four steps retention and four steps exhalation) may be tried, commencing again with two furlongs and gradually reaching the maximum of half-a-mile in this case.

The deep inhalation and the lengthened retention of this inhaled air, in this exercise, if correctly performed expands the rib-box, making it bigger, comfortably to house the lungs and the heart, which also grow bigger and stronger with the exercise.

Man does not use a quarter of his lung capacity for breathing during his normal daily life. It is only under strain or prolonged physical labour, or exercise, he calls more lung space into action. He should learn to utilise more of his lung capacity, for the maintenance of his health. If people only learn how to breathe properly, it will save them from pulmonary (lung) diseases, the most relentless of them being tuberculosis.

This 'Walking-Breathing' exercise, is excellent for building up and strengthening the lungs and the heart. It is highly beneficial to those who are suffering from Bronchial troubles and Asthma. People who are suffering from Bronchitis and Asthma must pay particular attention towards thorough exhalations. It does not matter if this forced exhalation provokes a bad spasm of cough. The provoked cough will force the locked up phlegm out of the lungs, thus clearing the bronchioles. It will force out from the lungs, the locked up and vitiated air, which was causing all the suffering. Persistent effort and practice will in the long run cure even the chronic sufferer. This exercise should not be done in cases of Phthisis (tuberculosis of the lung).

While at this exercise, you observe that you are obliged to maintain a straight-spine and a high chest. With every breath, you breath in life, energy, and health. Your blood gets fully oxygenated and you will bubble with vigour and vitality.

Take it from me that when you can finish the $\frac{1}{2}$ mile with the four step-pace, you will have a heart and lung that a race horse might envy. People with extremely weak hearts should begin this exercise, with a two-step-pace only. Do not be over-enthusiastic in the beginning and overdo things like

that funny person, who drank all the six doses of medicine at one gulp to get well quicker, while the doses of medicine had been definitely prescribed to be spread over a whole day.

When you have practised this method of breathing for some time, it will have become easy to do, and while you walk the busiest streets, to your office, to your work, or back home, you will not draw the attention of the passer-by or the person beside you.

This sort of walking is tonic, especially when one is fatigued at the end of a busy day. Practise this exercise at once and you will be astonished to note the change. Diligent practice of this with the following others I have drafted for you, will do more to expand and improve your chest than anything else I know of.

MILITARY DIPS ON FLOOR. (Study Fig. 1.)

Study carefully the various positions of the body one by one, till you have MEMORISED them all. Observe that the legs are together, elbows close to the sides of the body, palms placed against the ground in line with the shoulders, the knee, thigh, abdomen, waist and head all kept above the ground in a trim straight line. Now push yourself up, breathing in deeply,

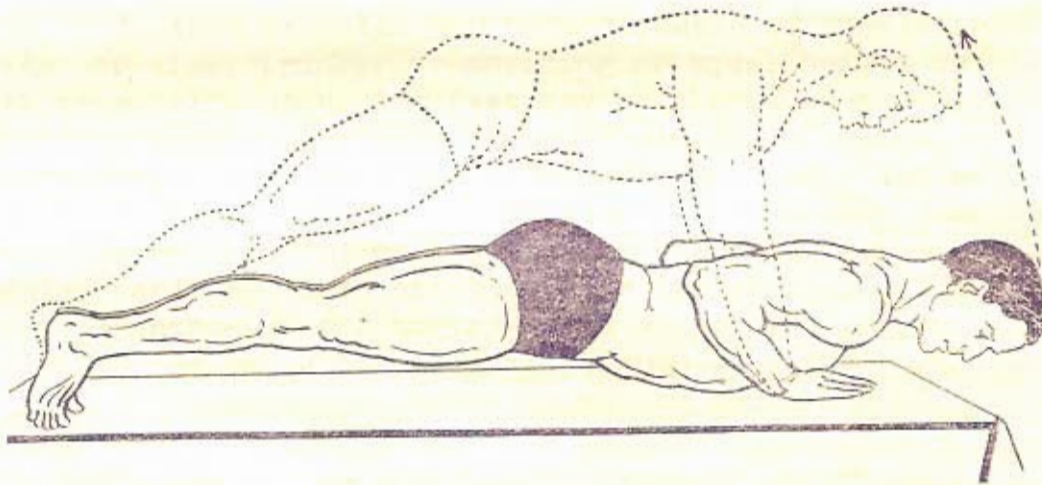


Fig. 1

until the arms are perpendicular. Your waist must not sag. Your body from head to foot must be rigid and straight, your arms quite perpendicular (observe dotted line figure). The only difference between 'Dunds' and the 'Dips' is: in the dips you push up the entire body (head to foot) keeping the

spine rigid and straight; while in the 'Dunds', you raise only the upper body, waist upwards. 'Dips' necessitate the holding up of the waist line, which calls the muscles of your abdomen and the small of the back to flex. After pausing a second or two, you go down to starting position again, exhaling. Repeat this as many times as you can. Rest a minute or two and then repeat the 'Dips' again. As you gain in strength, and get used to this exercise, increase the number of repetitions at each stretch.

Generally, the beginner has a tendency to lift up his head and let the waist sag down while pushing up. Hence, particular attention should be paid TO KEEP THE HEAD LOW THROUGHOUT THIS EXERCISE.

People who are either too weak or too heavy, find it difficult to push up from the 1st position to the 2nd position as indicated by the dotted line. An average healthy person must be able to do 15 to 20 movements (up and down) at a stretch.

When you can do these MILITARY DIPS ON FLOOR, twenty times or more at a stretch, you had better stop doing them and do the 'DIPS BETWEEN THE STOOLS'.

EX.-2. DIPS BETWEEN STOOLS. (Study Fig. 2.)

To do this exercise you need a couple of stools, or boxes, or steel trunks, or anything of equal height to place both your palms upon. The feet may be placed on a window-sill, or upon anything of almost the same height as the other two. A bit higher or lower does not matter much. Usually the higher the leg height, the more strenuous the exercise becomes, as more weight of the body is thrown on the shoulder muscles, and the 'push up' becomes a little more difficult. It is advantageous for the advanced student to increase the height of the leg-stool gradually, when he finds the 'Stool-dips' are becoming easier and he can do more than 20 of them at a stretch.

The palms are to be placed firmly on the stools, at least an inch or an inch and a half from off the edges. The distance between the stools should be a bit more broader than the width, of your shoulders. The feet are to be placed together against the window-sill, or a box, or stool. Once again study Fig. 2 closely and observe the distance between the pair of stools and the leg stool. See that every position

of your body exactly corresponds with that in the illustration. Do not make any mistake. Study limb by limb, the toes, the legs, the trunk, the palms, the chest, the elbows, the head, and especially the WAIST and the HIPS. If you are certain that everything is right with your position, push up to arm's length exhaling, until your arms are straight (to the dotted line position). (Take care, the waist shall not sag!) Pause for a second. Go down to the starting position inhal-
ing deeply. Pause for two seconds and push up again exhaling. (Attention! a straight spine must be maintained throughout as in the former exercise.) On no account should the head be lifted up or thrown backwards, as this will automatically relax the muscles of your abdomen and let the waist sag.

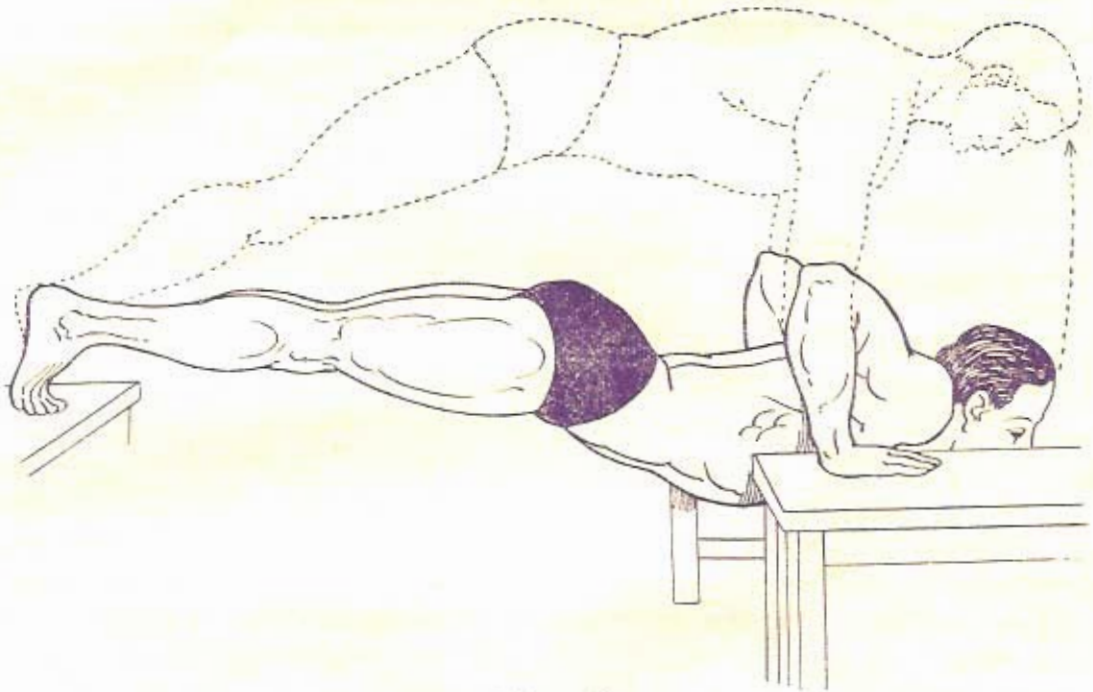


Fig. 2

Repeat the movements as many times as you can. Rest, and then repeat. Again and yet again. Those who cannot perform at least 15 Floor-dips must not try stool-dips; such people should stick on to the Floor-dips, until they are able to do the minimum number required—15 to 20 at a stretch.

I am of opinion that this exercise—'Stool-dips'—is the best amongst the apparatus-less exercises. It is my favourite. It has never failed to produce good results, if persisted in, and done correctly. The more one persists in, the

better the results. It easily ranks among the best exercises, if it is not the best itself.

My own ardour for this exercise, has never yet abated and it never will. If you are desirous of building up a strong and muscular physique in the quickest possible time, you must do at least eighty to one hundred 'stool-dips' every day (in 5, 6 or 7 stretches). This exercise will give you a splendid development in the Pectorals, Deltoids, Triceps, Latissimus-dorsi, Trepizius, Erector-spine and Abdomen too.

Note:— A few people while doing the 'push ups' in the dips, widen their elbows too much, and this puts the entire strain upon the pectorals and the anterior portion of the Deltoids. If the elbows are kept close to the body throughout, it will not only benefit the above-mentioned muscles, but also the triceps and the posterior-deltoids too. In the beginning you may have to widen your elbows a bit while 'pushing up', but very soon, you must learn to keep the elbows closer to the sides of your body and keep them there while 'pushing up' or going down. Let me repeat the warning, that the head should be kept down (not raised up, or thrown back), while performing the 'dips'.

If you can only keep up the 'Walking-Breathing' exercise and the 'Stool-dips' nothing more is needed to give you an all-round development in the chest, shoulders and back. The Heart gets quite strong and you will feel you have grown big, broad, and strong very soon.

And yet, there is another exercise which will give you a lot of endurance and lung-power. It is universally known as 'BAITAKS'. Every Indian youth is familiar with this exercise, in conjunction with another as familiar exercise, known as 'DUNDS'. 'BAITAKS' are not difficult to perform. It is a very good exercise for the legs if correctly performed. It is practised in every TALIM (place of physical training in India), in one or many forms.

Leg exercises are more strenuous than 'dips' for this reason: that the legs being situated farthest away from the heart, the blood supply takes a longer time, and a larger supply of blood is also needed to reach that extremity. The heart has to work fast, and pump more blood. The faster the heart works, the faster the lungs have to work too. This heavy working of the lungs and heart,—unless overdone,—gradually

makes them bigger and stronger for the effort. The rib-box, commonly termed as the chest, grows bigger and 'broader' in size and shape.

However ridiculous it may sound, it is yet an established fact, that exercising the legs, strengthens the lungs and the heart. Amongst the great wrestlers of India, there goes a saying 'Chathi Phookne Liyae, Baitak Karow' (to swell up the chest, perform 'Baitaks'). Even the great physical culturists, strong-men, and Weight-Lifters of the West, agree with this saying. To develop great strength and stamina, the big weight-lifters perform quite a number of 'deep knee bends' or 'leg-squats', with heavy bar-bells placed across their neck and shoulders. This exercise they say, builds up their chest, lung-power and endurance as no other exercise can.

Personally I think, the acid-test of real physical strength is the 'power to endure'. 'Staying power' they call it. Every Athlete, Strong-man and Sportsman, knows the full value of this 'Endurance'. 'Endurance' scientifically explained, means: the metabolic changes in the muscle-tissue at work, and its Glycogen content, being correctly balanced with the continuous supply of oxygenated blood, (through the working of the heart and lungs). This can be achieved, only through regular practice. For instance, tomorrow when you start upon these exercises, (unless you have already been doing something in this line), you will certainly feel, that you get out of breath, very soon, and cannot even do the stipulated minimum number of movements. Provided you have the will to persist (I hope you have), you will, after a time, perceive that you can do that amount of exercise, with ease and comfort, which in the beginning was beyond your capacity. This should prove to you, that your muscles, your heart, your lungs, all have learnt to work in co-operation, ably assisted by the various nervous systems of the body.

'Baitaks' are being practised in this country in various forms. The most common amongst them is done as follows:— The principal movement in this exercise is the full bracing up of the knees, while you stand as high as possible on the toes.

First, you stand straight, perfectly-straight, with arms hanging limp at your sides, feet six to eight inches apart. To start with, you stand on your toes, and then taking a small hop of three to four inches in front of you, you quickly flex

your knees and flop down to the ground sitting on your toes exhaling quickly. While flopping down, you either flex your arms at the sides or swing them in front of your chest, to add momentum to the movement. Within a fraction of a second, you shoot up straight like a bolt, quickly straightening the knees and inhaling deeply; very deeply. When the legs are vigorously stretched straight, they are automatically drawn back a few inches, every time to the same position from where they started. The shooting up must be done with a sudden jerk; never slowly. Both the knees are quickly braced up. All the muscles of the thigh and calf go suddenly into an Intense state of rigidity. Do not forget to inhale to the point of bursting every time you stand up and straighten the knees. Exhale quickly as you sit down on your toes. While doing this exercise, do not look down on the ground. That upsets your balance and foot work. Keep on looking ahead steadily, revetting your mind on four things (1) to exhale while flopping down on your toes, (2) to inhale to your utmost every time you straighten up, (3) to keep always on the tip of your toes, (4) to tense all the leg muscles well and to brace up both the knees each time you straighten up.

I need not repeat that if any one of these four rules is relaxed, the effect of the 'Baitaks' is entirely lost. 'Baitaks' must not be done too quickly or too slowly. If you pay due attention, to the exhalations, and inhalations, the working of the heart (oxygenation of the blood), the expulsion of carbon-di-oxide caused through muscular activity, the replenishment of the blood to the muscle tissues, everything will be carried on automatically and the heart will never be put into strain.

I have drafted this course with one strong intention and that is, to build and strengthen your heart and lungs and not to break them with crude and unscientific training. For a person who wants physical training, in as concise a form as is possible—only these two exercises the 'dips' and the 'Baitaks' are enough—to give him a good constitution and physique. In India the major part of a wrestler's training, constitutes these two exercises—the 'Dunds' (dips) and the 'Baitaks'. It takes 2 to 2 1/2 seconds to do a 'Baitak' correctly. You had better commence with 20 to 30 'Baitaks' at a stretch, and gradually increase them to 40 or 50 in the course of a fortnight.

Once again, the cautions may be repeated. When you straighten up;—you have to stiffen your thigh and calf muscles,—stand on your toes as high as possible and hold the arms stiff and straight at your sides,—keep the chest lifted up and filled with air,—the abdomen drawn in and the back straight as a shaft.

Usual mistakes committed while doing the 'Baitaks' are (1) not standing on toes; (2) not bracing the knees up to the required degree; (3) looking not ahead; (4) last and most important, not inhaling enough air into the lungs, as you straighten up.

Finally let me tell you, if with each intake of breath, your lungs are not filled up to bursting limit, the 'Baitaks' lose their value. If with each straightening of the legs, you do not rise on your toes, inhale deeply and flex your thigh and calf muscles into intense rigidity, the 'Baitaks' become worthless—ABSOLUTELY WORTHLESS.

After performing a stretch or two of 'Stool-dips' or 'Floor-dips' rest a while, and perform a stretch of 'Baitaks'. Rest and repeat them both again in the same manner. Once again, repeat as before. This method is much better than doing 'dips' separately and the 'Baitaks' separately. This will sum up six stretches of 'dips' and three stretches of 'Baitaks'. As you get used to 'Baitaks', you should be able to do 30, 40 or 50 at a stretch. There are big wrestlers in India who can do 500 to 1,000 at a stretch; but their's is a mechanical way and they do not flex the thigh and calf muscles while straightening the legs. It will not be possible for them to do so many if they flex these muscles. Due to this incomplete flexion of the thigh and calf muscles, the wrestler's thighs, though bulky, usually lack shape and the muscular separations. Their calf muscles are also poor in comparison to the massive bulk of their thighs.

NECK:— If face be the index of mind, the neck is certainly the index of vitality. A full and well-grown neck is a sure expression of strength, of exuberant health and vitality; while a thin scrawny neck suggests the opposite qualities. One can cleverly hide signs of his or her advancing age on the face, with regular massage, make-up or cosmetics; but a look at the neck and the throat shows up the truth.

A well-formed neck is not a fatty-neck cumbered with folds of fat in the cervical region and with a double or treble chin in front. Such necks have known little exercise and are a result of over-feeding, ease and luxury.

A well-developed neck gives an excellent setting to the face, even if it has no chistled features. Even a beautiful face loses charm if the neck be thin and scrawny.

Exercising the muscles of the neck ensures a vigorous circulation of blood in the Carotid-arteries which carry blood to the brain. It also strengthens the cervical nerves. A strong neck and a broad back go together. There must be as much action of the muscle as possible, in every exercise for the neck. It is not enough that the muscles act against great resistance. There should be a complete movement of the neck, involving an amount of stretching of the muscles. This greatly adds to the suppleness, strength and development of the muscles of the neck. As the muscles grow stronger, more resistance has to be applied.

THE MUSCLES OF THE NECK:— The muscles of the neck involved in the following exercises are: first, the 'Trepizius' and the 'Splenius-Capitis'. Both these muscles are situated in the back of the neck. They carry on the downward and upward movement of the head. Second, the 'Sterno-Cleido-Mastoids', the thick muscles running from the top of the Sternum (the centre breast-bone) to the back part of the ears on either side of the neck. This muscle helps the movement of the head from side to side. Third and last, the three 'Scalenus' (Scalenus-Anterior, Scalenus-Medius and Scalenus-Posterior) muscles, which help the head bend sideways.

Ex. 4:—for the 'TREPIZIUS' and the 'SPLENIUS-CAPITIS' muscles.

Study Fig. 3. This exercise can be done either in a sitting or standing position. Only, the spine should be maintained straight. Interlace the fingers of your palms and place the palms right on the topmost back portion of your head, with the fore-arms held close to the sides of your head, and elbows pointing forward. Throw your head back. Make certain that the head cannot be thrown further back. Now attend to what I say. The head perhaps likes to remain in that position, but you will have to pull it strongly forward with your palms. All the while the head resists the pull vigorously. It is

a tough fight. But the arms succeed in pulling the neck forward till the chin is pressed over the chest: and the neck cannot be pulled further down-wards. Hold it there, under pressure for two seconds (observe the dotted line figure). Now comes the change. The palms keep the head down under pressure, but the neck now becomes powerful



Fig. 3

and pushes back the palms to the starting position. Once again, the palms pull the head down. Again it resists back. But the fight goes on and the muscles involved in this fight (Trepizius and Splenius-Capitis) get the stronger for it.

One forward and backward movement for the neck should be counted as one full movement, and you should begin with 8 such full movements. Gradually increase the movements to 10. This should not take more than 3 minutes.

Now please notice the position of the shoulders in the illustration and do not overlook this important point in the exercise. Here is another, equally important: maintain a straight spine.

Keep the shoulders always low. The moment you raise them (I fear you will), while pulling the neck down, the effect of the exercise is altogether lost. Know that, to exercise a muscle, it must first be stretched to its full length and then made to contract to its limit. In this exercise the Trepizius and the Splenius-Capitis muscles are made to stretch out fully, when the head is pulled down; and they are made to contract strongly, when the head is carried as far backwards as possible under a strong resistance.

'Spine erect' has already been sounded more than once and I shall not caution you again. So also about keeping the shoulders as low as possible throughout this exercise. This helps to stretch and flex fully, the involved muscles, (Trepizius and Splenius-Capitis).

An exercise can be called an exercise, only when done with great care and precision. Some persons have a gift for doing everything with the utmost care and precision. But it is a very small percentage; not so much as even 5. There is no order, or precision worth the name, in the daily lives of the remaining 95 of us. These qualities are more inherited than acquired. Quite a number are positively ugly and dirty in their work. Yet these can be remedied to a certain extent. But it takes hard training.

Ex. 5:—for the 'STERNO-CLEIDIO-MASTOIDS'. Study Fig. 4.

Turn your face well to the left. Apply the pressure of your right palm, firmly against the lower right jaw. Turn the face completely to the right, strongly opposing the movement with the pressure of your palm (acting well-against the right jaw). Note the dotted figure which depicts the completion of the movement. Remove the right palm now, and place your left palm firmly against the lower jaw. Turn the face left resisting the movement as strongly as before. This completes a full movement. Begin with 8 full movements. Increase and progress as in the previous exercise. Take the same amount of time as you took for the last exercise.

TAKE CARE NOT TO LET YOUR BODY MOVE ALONG WITH THE MOVEMENTS OF THE NECK. THIS IS IMPORTANT. TURN THE NECK FULLY EACH SIDE. KEEP THE CHIN ALWAYS DOWN AND DO NOT THRUST IT FORWARD OR UPWARD.

If these movements are done correctly and with enough resistance, the mastoid muscles will gain shape and bulk. They add quite a lot to your personality.



Fig. 4



Fig. 5

Ex.:--6 for the 'SCALENUS' muscles. Study Fig. 5.

Bend your head completely to the left. Place your right palm firmly against the right Temporal-bone (space just above and between the ear and the eye) and move the head to the right, resisting the movement strongly throughout. (Observe closely the dotted arrow mark which denotes the path of the movement and the dotted figure which denotes the Completion of movement.) Now, remove your right palm and place your left palm against the left Temporal-bone and move the head back to the right, resisting strongly as before. Begin with 8 full movements. Increase and progress as before. Do not let your body move along with the movements of the neck.

Perform all these three neck exercises correctly, steadily, slowly, and completely. THE SPINE SHALL BE HELD STRAIGHT and not move or twist even a wee-bit either to left or right. KEEP THE BREATHING NORMAL, THROUGHOUT.

You have now come to the end of your first lesson. It will benefit you much to go through this lesson as often as you can. Your memory will be refreshed about the various physiological explanations detailed in this important lesson. Every time you read, you will learn something new, something important, overlooked or missed at first. Unless a person is suffering from some acute organic trouble, this lesson is bound to give one with normal health, at least a couple of inches in chest and an inch in neck, in about two or three weeks time, provided he exercises as directed. CONCENTRATION is a necessary element in all phases of study and practice, and without CONCENTRATION success is an empty dream. I began by saying, "NO PAINS-NO GAINS". This is specially true with regard to Physical Culture.

Practise this lesson regularly for a fortnight. Observe one day in the week as a complete rest day. Be moderate in your exertions at the beginning and gradually gear up your effort. Pause a minute or two to recover breath and to rest your heart. (Breathe deeply during these rest periods. This is more important than exercise itself.) That will be between one exercise and the other, and not between movements of the same exercise. This allowance of rest should not be a liberty for prolonged relaxation. Do not take more rest than is absolutely necessary. Prolonged rest cools down the body and thwarts the effect of exercise.

Exercise can be taken in the mornings or in the evenings, a time most suitable and convenient to you. It benefits you to take a tepid or warm-bath some 5 or 10 minutes after the exercise. If a tepid-bath cannot be had, or, if you are used only to cold-baths, a cold-bath may be taken 10 minutes after the exercise. A glass of warm milk or any other warm nutritious beverage after the bath, aids recuperation and the replenishment of the tissue-loss, which has occurred through exercising. Eight to ten almonds, (shell and skin removed), nicely ground and added to the milk, would contribute to the necessary protein efficiency (muscle-building part of the food). People who desire to reduce body-weight, should take nothing but water, if they feel thirsty after the exercises.

There is pain in the muscles, always at the beginning. It will be more pronounced if you are exercising for the very first time. You need not be alarmed at this muscular soreness.

Every Athlete, Sportsman and Physical Culturist has passed through this pain and discomfort the first few days. But it wears off soon. A light massage with any ordinary oil, followed by a good hot-water bath, is soothing in all such cases though the pains persist for three or four days in the beginning until your limbs and muscles get used to the exertion.

You have to practise regularly for a fortnight, all the exercises given in this lesson and include them with the exercises in the next lesson when you get it. Let me know how much progress you make in a fortnight from to-day.

I have supplied to you in this lesson the best material possible for the foundation of your future physique. The plans are here and I shall not let you want anything. Start your work right now and go ahead.

No structure can be sound and safe, unless the foundation is well laid. The material must be the choicest and workmanship good. The foundation must set in well. Then, the structure can stand firm, in whatever way you desire to build it, else, it crumbles down before long. Here is your first lesson. Take it with this layout and construct the foundation of your physique, as well as you can. Let me see your artistic capabilities.

When you enrolled for this course, you did it with the definite intention of building a good physique. So you will. I shall guide you as best as I can. I shall place before you, all the knowledge you require about physical culture, to help you build up a good physique for yourself and later on to help others in your turn. With each lesson, you will learn much useful theory—'theory which is essential and of immense value'. I want you to know that this theory is ten times more valuable to you, than the mere practical portions (exercises) of your lesson. If you fail to understand the theoretical portion of your lessons, you will be getting only a very small portion of the benefit. Go through it again and again, until you know every word of this lesson. It is only then, that you will realise its full value. You will know what exactly you are doing and why. The theory teaches you the correct method of doing the exercises. It is only here that most people fail...in the correct application—in the right method of doing the exercises. I have been warning you repeatedly,...if you do not understand the theory and the correct method of doing

the exercises, no matter what you do, and however much you do, the efficiency gained is not so much as a tenth of what you can achieve.

I have expended much time and labour, in drafting these lessons. I have tried to make them useful. Every one of your future lessons will be brimful of information. More and more interesting and informative.

I would suggest to you to draft a regular time-table, and mark on it, the number of repetitions in each exercise you daily do. You will then have a method to aid you. You will know, when you have to increase the number of movements, to reach the maximum number of repetitions in the stipulated time.

Start your daily exercises with the neck movements first. You must feel that the muscles involved in those exercises are stiff and aching when you have finished the three Neck exercises. This is to be the real test in every exercise you do. The muscle, or group of muscles involved, must be aching by the time the particular exercise is completed. Anything less than this, is only half done, or half-heartedly done. After finishing the three Neck exercises, do a stretch of 'Baitaks' (30 to 40). Follow this up by two or three stretches of 'dips' ('floor' or 'stool' whichever you can begin with) 10 to 15 repetitions at each stretch. After this, do the 'Baitaks' again, and follow up with another two or three stretches of 'dips'.

I have always found the beginners, take too much time to finish the exercises. So, I shall indicate the maximum time allowed for each exercise; also the maximum period of rest between exercise and exercise. No Neck exercise (however slowly done), must take more than 3 minutes to finish the maximum number of 10 complete movements. The rest allowed is not more than a single minute between one exercise and the another. Hence, to complete the three Neck exercises with rest intervals, you take not more than 12 minutes in all. Granting that you are able to do all the 50 'Baitaks', and all the three stretches of 'dips' (a maximum of 20 each); and calculating that it does not take more than 3 1/2 seconds to do a 'baitak', (or a 'dip'), it takes 6 1/2 minutes to finish 50 'baitaks', and 60 'dips' (in three stretches). Since these two exercises are rather strenuous, I would allow 5 minutes as the rest time between these exercises. The whole duration

comes to 11 1/2 to 12 minutes. A similar next stretch would take 12 minutes. Altogether it comes to 37 minutes to finish the maximum number of movements in all the exercises, including the repetition of exercises in this lesson. You, as a beginner, must not require more than 30 minutes, since you will not be doing the maximum number in each exercise. If you exercise in the morning, see that you do not start on an empty stomach, nor on a loaded stomach. Take a small glass of milk or some other warm beverage, you are used to in the morning. If you must take your 'chota' (morning tiffin) start exercises half an hour after that. Take a tepid or warm-bath 5 or 8 minutes after the finish of the exercises. Take a warm glass of milk, to which you may add eight to ten almonds, well-ground, mixed and sweetened with sugar, after the bath. This is unnecessary if your 'chota' is substantial. Any other nutritious beverage, such as, Horlicks or Ovaltine, may be taken in place of milk. In case you are taking your usual meal within an hour or so, you better abstain from taking anything.

Those desirous of reducing their body weight, should take exercise on an empty stomach, and should not take any beverage after it. They may drink water, or butter-milk, to allay thirst. They should abstain from all fat-producing foods, such as, milk and milk-products, heavy starches and sweets. It is better that heavy people take their exercises, with a thick woollen sweater on, to induce abundant perspiration.

Those desirous of adding weight and muscle, should feed well. They must take at least 1 1/2 to 2 lbs. of milk daily. 10 to 15 almonds may be well ground and added to the milk to make up for the protein deficiency in their daily diet. They must take, potatoes, tomatoes, butter and butter-products, pulses and grams, vegetables and greens. An egg or two can be taken raw or half-boiled, if the person so desires. The non-vegetarian can take his usual dishes and milk as an extra item.

Persons who cannot 'afford' the extra milk and good diet, must be content with what little else they can get. The induced appetite naturally calls in for little more quantity and will absorb all the Nutrition it can get out of it. The Human body is a wonder; its mechanism, still more wonderful; and nothing is wonderful as its working.

I shall talk to you more fully on diet in your next lesson, telling you what is good and bad for you with regards to your diet.

For all difficulties in following this lesson, write to me at once. But please remember to enclose enough postage whenever you need a reply. I wish you good luck.