YOGIC ASANAS

BY

V. G. RELE

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YOGIC ĀSANAS

for

HEALTH AND VIGOUR

(A Physiological Exposition)

BY

V. G. RELE, L.M.&S., F.C.P.S.

FOREWORD

BY

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FOREWORD

This is a concise treatise dealing with Yogic Āsanas, the well-known poses which form an essential part of Yogic physical culture. Dr. V. G. Rele is to be congratulated on the clear exposition and the sound physiological interpretation which he has presented here. The value of the book is considerably enhanced by the inclusion of a number of photographs. These along with the description of technique of various exercises should prove most valuable guides to those who desire to learn and practise them. In these days when there is a universal realisation of the need of improved health through physical training, this book would meet a real need, and I wish it every success.

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PREFACE

THE primary object of this book is to impress on the reader how the vicissitudes of middle life react unfavourably on health and how the practice of *āsanas* mentioned in the Yogic literature of India counteracts this tendency towards ill health. *Āsanas*, as a means of physical culture, are growing in importance both in India and abroad, particularly amongst the cultured classes. The educated men and women, who always demand a rational explanation of things put before them, naturally show a sense of diffidence in accepting as gospel truth all the claims made for *āsanas* by the ancient Yogic seers: they will be convinced only if the *modus operandi* is explained to them in a scientific and rational manner. In this volume it has been my endeavour to show the physiological importance of the *āsanas* from my personal experience in the practice of them. I hope it will be acceptable to the highly scientific mind. It seems almost certain that the Yogic seers, who designed the *āsanas*, knew the physiology of the body in all its aspects and though they knew hardly anything of modern methods of experimentation, yet they had their own bodies to experiment upon and succeeded in learning a good deal. The *āsanas* must be rightly practised to appreciate their true value and to realise the claims made out for them that "they rejuvenate the body, prevent premature ageing, maintain eternal youth and defy death". However ambitious the claims may seem to be at first thought, they are capable of full realization.

Though it is possible to practise *āsanas* with the help of photographic illustrations and learn the correct technique and stages with the help of books, it is advisable—in the beginning at least—to practise them under the guidance of one who has gone through the whole course of poses himself. There is a knack of doing these exercises correctly which can be learnt better from an expert than from a book, however well it may describe them.

V. G. R.

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I. INTRODUCTION

PRACTICAL APPLICABILITY OF YOGIC ĀSANAS AS A MEANS OF PHYSICAL CULTURE

So many enquiries have been made, particularly from overseas readers of my previous work, the "Mysterious Kundalini", about the practicability of Yogic *āsanas* as a system of physical culture, that in response to them I have written this book describing the true significance and the correct technique of a few Yogic *āsanas* which can be practised as a system of physical culture easily at home and without the help of an instructor. The ultimate aim of all *āsanas* is to prepare the body to achieve that tranquillity of mind which is necessary for the realization of the Supreme or God-consciousness. The practice of *āsanas* conserves energy, whether voluntary or involuntary, and this is utilised, by other Yogic practices, to steady the mind for realizing a definite object which may be in view—be it worldly or spiritual. Those who are highly materialistic may not have a very spiritual end in view, yet they also may usefully practise the Yogic *āsanas* for their physical well-being if for no other reason than to make their body fit for the usual avocations of life, and increase their powers of endurance and resistance against the ravages of diseases, and above all, in order to gain that buoyancy of spirit which always denotes a sound mind in a sound body. Yogic physical culture, unlike the many Western systems of physical culture, does not make a pretence of merely developing the superficial muscles of the body, but the exercises do make them healthy and strong, particularly

the trunk muscles, by requisitioning their help to tone up all the involuntary organs of the body which are mainly concerned with such processes as digestion, evacuation, circulation, respiration and secretion, and through them the autonomic nervous system which regulates their activities. This is then the main difference between Yogic physical culture and the other systems of physical culture approved of in the West. The latter are mainly concerned with the superficial visible development of the body while the former is mainly concerned with the toning up of the invisible activities of the body including the mind which regulates the well-being of the whole body through the intricate nervous system. All this is achieved with a minimum expenditure of time and energy.

ĀSANAS AND THEIR ESSENTIALS

The elaborate rules about the preparation of food and the observance of correct diet, about personal behaviour and environments which are recommended to be observed while practising the *āsanas* which are prescribed in Yogic literature are sure to prove confusing to a modern student of Yoga as it is not possible to observe and follow them in detail. Moreover they are chiefly meant for those who practise *āsanas* for spiritual ends. All that one needs to bear in mind whilst practising the *āsanas* is moderation in everything that he may be accustomed to do and enjoy, be it physical, mental or moral; but it would be best to avoid and eschew completely from our daily life all those things which may be grouped under vices. The latter undermine the body which we are trying to build or rejuvenate by Yogic physical culture. As regards food, about which many enquiries are being made, no particular food or

any special dieting is necessary. Let it be vegetarian or mixed though meat is not essential. But it must be wholesome and easily digestible. It must be taken in just sufficient quantities to satisfy the pangs of hunger and not to overload the stomach. All alcoholic drinks should be completely given up and other stimulating drinks such as tea, coffee, etc., should be avoided as far as possible. The expression "as far as possible" is advisedly used because in European countries they form a part of the daily diet of the majority of people. Again moderation in smoking should be observed very rigidly. Yogic exercises may be practised at any time of the day but mornings are preferable as one is always fresh on rising and the stomach and intestines are empty. At any rate these exercises should not be undertaken on a loaded stomach. At least two hours should elapse after the last meal before the *āsanas* are practised.

Yogic physical exercises need no appliances either for developing the muscles or for concentrating the mind on the exercises. In Yogic *āsanas* the concentration of the mind is almost automatic. To achieve the final Yogic pose of an *āsana* certain muscular movements have to be made which automatically fix the mind on them. Yogic *āsanas* are not gymnastic exercises, in which the trunk and the limbs are made to move rhythmically; but they are special poses and their chief benefit lies in retaining them for a certain fixed time without discomfort. The longer the time of retention of a certain posture, the greater the benefit derived.

Without doubt Yogic exercises assure a normal individual of his physical well-being; but they are also

both curative and recuperative in action. They are excellent remedies against dyspepsia and chronic constipation, and correct a faulty action of the liver. Certain *āsanas* are well suited for increasing the metabolic activity of the body by increasing the secretions of the endocrine glands and are thus helpful in reducing fat especially in the case of stout people. They also tone up the neuro-muscular tissues. As a recuperative measure, when health has been shattered after a long continued illness, these exercises will brace up the body quicker than any other system of physical culture. In fact, however weak physically a person may be, as long as he has no organic disease, he may start practising *āsanas* in order to gain energy and weight proportionate to his or her height by toning up the neuro-muscular structure of the body and stimulating the appetite. For him it is only a question of choosing a set of *āsanas* and grading them according to their severity, their retention time and their successive repetition at one sitting. Age, sex and race are no bars against practising Yogic exercises. It is better to commence the practice of *āsanas* at an early age, at a time when the activity of youth and the suppleness of the muscles would help in achieving a perfect pose within the shortest time possible. Children above eight years of age should be allowed to practise some of the *āsanas* at least. Let the children first watch the elders going through them and they will ultimately start practising the exercises themselves as a matter of fun. To their elders' surprise they will often acquire the perfect pose in a shorter time than the former may have taken and even retain it longer.

After the age of 45 when one is not generally accustomed to taking any physical exercises the practice of Yogic *āsanas* may prove rather discomforting at first. The rigidity of the muscles begins to manifest itself after that age. Certain muscular movements produce a discomforting sensation of stretching of the muscles. The spine loses its elasticity after the age of 45 and its bending in all directions plays an important part in all the Yogic *āsanas*. Yet this ought not to deter an elderly person from undertaking the practice of Yogic physical culture. These obstacles can be easily overcome if the *āsanas* are practised in stages. The latter, however, are not mentioned in the Yogic literature of old. They help in reaching the final pose, and they also give a preliminary training to the muscles concerned in maintaining it. The Yogic seers were only concerned with the final pose–no matter how it was achieved. It may take a longer time for an elder person to reach a perfact pose but it would be worth it. Regularity and persistence should be observed in practising the exercises but on no account should the *āsanas* be done hurriedly or violently. If you are pressed for time, reduce the number of repetitions of each exercise and the retaining time of the pose. Women should suspend all the Yogic exercises during the periods of menstruation and of pregnancy. Whichever set of *āsanas* is selected for practice never change its order and adhere to that set tenaciously, till you have mastered all the exercises of that particular group. Try to do the whole set at one sitting, and endeavour to retain the final pose for a longer and longer period every day. The time of retention can be easily measured mentally by counting numbers,

by repeating *mantras* of one's selection, or by concentrating on one's own respiratory rhythm. These essentials should be kept in mind if one wishes to reap the maximum beenfit from the practice of *āsanas*. The *āsanas* also have a spiritual significance and prepare one for the practice of the further and more advanced branches of Yoga.

For deriving full benefit from *āsanas* a well-ventilated and well-lighted room, devoid of all furniture, except perhaps for a full size mirror in which to watch the movements, should be chosen. For seating on during the practice there should be a carpet, quilt or a rug over which a clean white sheet should be spread and the latter washed daily. Before going in for Yogic physical culture exercises one should get oneself examined thoroughly by a competent medical man in order to be quite sure that no organic disease exists. He should get himself weighed and note down the measurements of the chest and abdomen and of the height to compare them with subsequent measurements which should be taken fortnightly.

There are about eighty-four *āsanas* mentioned in the old Yogic literature of India, a mastery of which helps a Yogi to open the gate of *Samadhi* (final emancipation) and achieve *siddhis* (miracles). But only a few selected *āsanas* are really useful as Yogic physical culture exercises. Some *āsanas* require a sitting position, some a lying-down posture either supine or prone, while others require a standing position. One has to select from these a certain number to form a set which could be practised within a long or short period of time according to the time one wishes to devote to the physical well-being of his body. In the

description of *āsanas* repetitions of the poses in their various stages are advised. These should be enacted with a proper interval of rest. When one is able to retain a pose for about a minute without discomfort, the number of repetitions should be decreased and later on completely abolished as soon as the maximum retention time of the full pose is reached. I have selected, the following *āsanas* which may be practised as a full course by any one in good health. If a shorter course is desired one may practise only those *āsanas* marked with an asterisk.

THE NAMES OF ĀSANAS

Sanskrit.	English equivalent.	Maximum time of retention in minutes.
* *Shirshāsana*	Topsy-Turvy Pose	6
* *Bhujangāsana*	Cobra Pose	4
Ardha-Salabhāsana	Half Locust Pose	2
Shalabhāsana	Locust Pose	½
Dhanurāsana	Bow Pose	2
Halāsana	Plough Pose	1
* *Sarvāngāsana*	Shoulder Stand Pose	3
* *Matsyāsana*	Fish Pose	2
Viparita-Karani	Pelvic Pose	3
* *Paschimatanāsana*	Back-stretching Pose	1
Ardha-Matsyendrāsana	Spine-twisting Pose. Each	1
Yoga-Mudrā	Colon-toning Pose	2
* *Uddiyāna*	Abdomen-retraction Pose	2
Nauli-kriya	Rolling the Recti Pose	2
* *Shavāsana*	Corpse Pose	6
Padmāsana	Lotus Pose	10
Siddhāsana	Accomplished Pose	5

II. MIDDLE AGE

THE BOGEY THAT DETERIORATES HEALTH

Before describing the correct technique of *āsanas* it would be advisable for the reader to be acquainted with the sequence of causes that deteriorate health, particularly in the middle period of life.

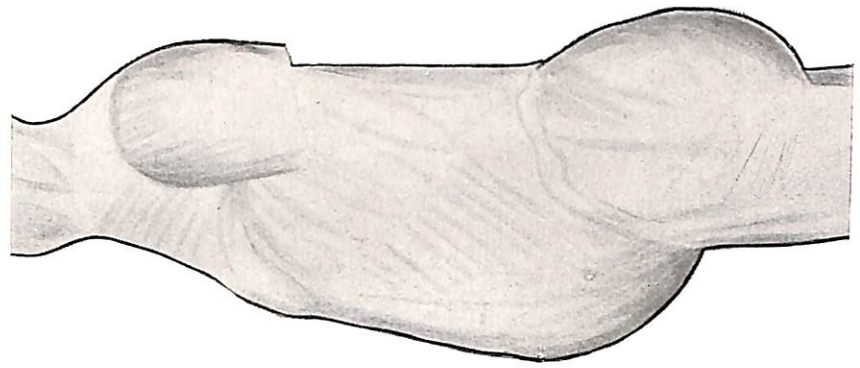
One of the vital things that maintains good health, at all ages, is the elasticity of the body which gets lessened with advancing years. By the time we reach the beginning of middle age the body is fully developed, the bones are thoroughly hardened and there is a natural tendency towards an increasing rigidity of the body. Middle life which extends between the ages of 35 to 55 in the tropics is considered to be the mature period of life. This spring time period of our existence, with all its eventualities and possibilities, if physically neglected, sows unconsciously, the seeds of a premature breakdown of the bodily tissues. For the majority of men this is a period of an intense struggle for existence and the neglect of the physical fitness of the body is either a thing which cannot be helped or a thing which is due, perhaps, to lack of time or opportunity. It is during this period of life that special efforts have to be made to maintain the elasticity of youth and improve the tone of both the mind and the body, if the best is to be got out of life.

After the boisterous and irresponsible activities of youth a man at last reaches this plateau-period of life and settles down to become a useful member of society. He has found out by then the ways and means of earning

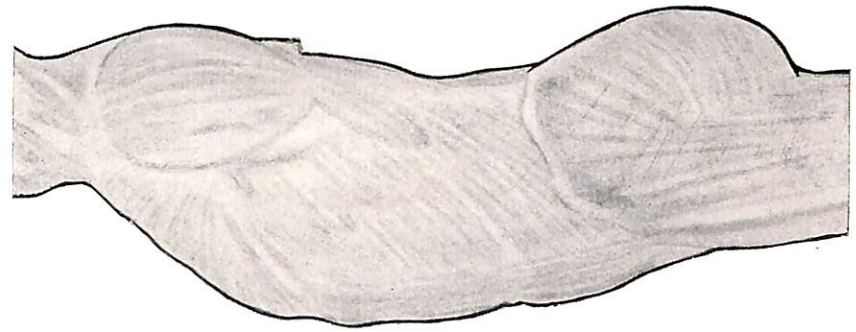
a living and supporting those who are dependant on him. He has to undergo many hardships throughout his daily life which sap his vitality and strain every vital organ in the body to meet the extra demands made on them. The man's mental and physical peace is disturbed and the buoyancy of his spirit lost. His desires only too often remain unfulfilled. The sentiments of envy, fear and hate take a hold over him. The instability of modern life, the ceaseless agitation, daily uncertainty, coupled with the sense of a lack of security, all give him an anxious time, causing his mental and physical peace to be disturbed, making him lose the buoyant spirit of his early years. Anxiety seems writ large on his face manifesting itself by a change in features, hair and demeanour. The head slacks forward. The brows become wrinkled, the muscles of the face often become drawn, thus changing the youthful anatomy of the face to that of anxious old age. The chest is hollowed out due to a forward droop of the shoulders. The spine loses its backward arch. The abdominal wall gets relaxed and are thrust forward by the heavily loaded intestines. Gray hair become noticeable or even a thinning of individual hair and finally of the total crop, probably leading to ultimate baldness. The springiness of the tissues that characterises youth has now been lost; and under the pressure of moral and social obligations the physical well-being of the body is neglected and no care is taken to retain that elasticity of tissues so characteristic of youth and vitality and so very necessary for good health and bodily fitness. It is a mistake to suppose that an average person experiences a deterioration of his health during middle age because he has to cope

PLATE I

CONTOURS OF THE BODY



UNHEALTHY



HEALTHY

with so many disadvantages of life in spite of himself. Probably his rich neighbour suffers as much if not more. Under a false sense of comfort the latter courts breakdown of his physique by his own free will. Affluence makes him leave those active habits of mind and body and make him slothful and pleasure-loving. He leads a sedentary life, indulges in the pleasures of the table, rides in cars instead of walking and keeps far too many servants and labour-saving contrivances to increase his comforts and avoids all physical movements as much as possible.

There is no reason why an average man and even one in affluent circumstances should not enjoy perfect physical health so very necessary for work or play by keeping his vital organs in a condition fit enough to carry on perfectly their unceasing work even during periods of physical strain or during the physically inactive period of middle age.

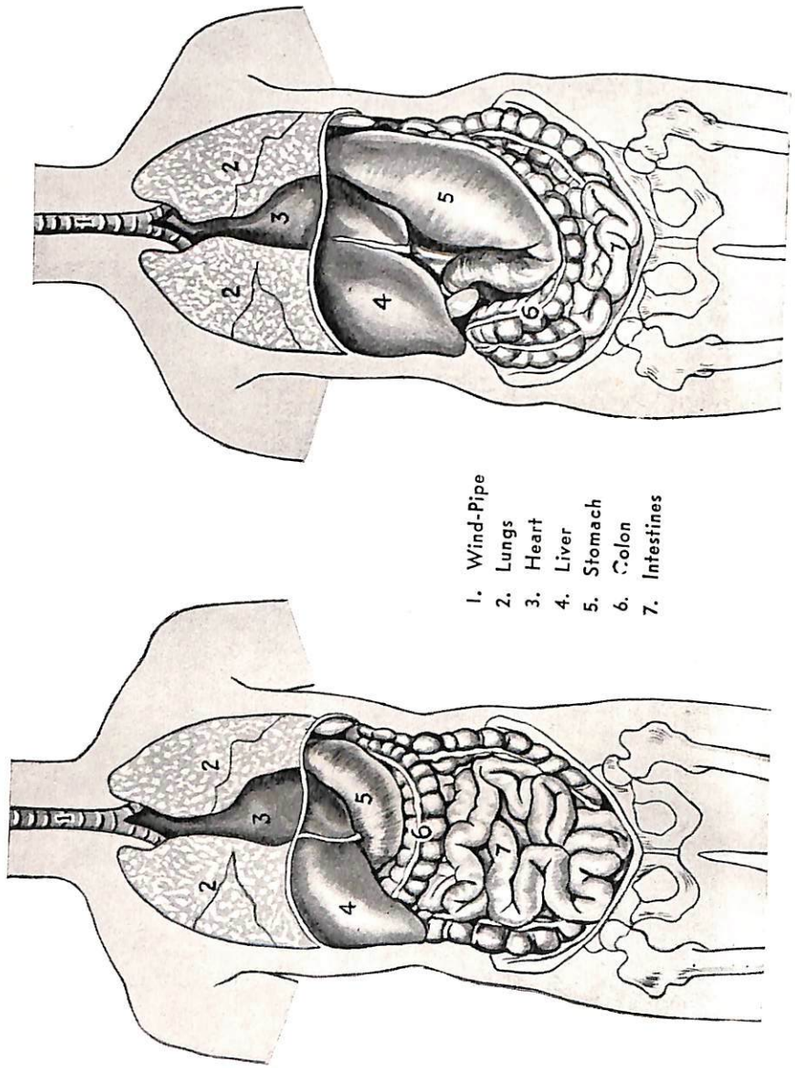
Unfortunately the activities of the respiratory, circulatory, digestive and secretory systems are not under the regulation of our will so that we could adjust them according to the demands we may make on these systems. These activities are routine and automatic and are solely under the mechanical regulation of the nervous system over which we have no voluntary control though it is intimately connected with that part of the nervous system under the control of our will (voluntary). As long as these automatic organs carry on their functions in unison, within physiological limits, we are hardly aware of their existence. The harmonic correlation of their activities gives us a feeling of peace. But a "rift within the lute"

occurs when the activity of an organ begins to decline. It cannot then keep pace with the activities of the other healthy organs and so the rhythm of the body is disturbed. Even if the organ shows no signs of actual disease it at least points out the fact that all is not well within the body. In short that it is not in good health.

It is a well known fact that our environments, faulty diet, indoor and sedentary occupations, unhygienic surroundings, the hurry and stress of modern life, our emotions and sorrows, all upset the proper functioning of our involuntary organs long before any other tissue in the body and affect the mind to make it lose its psychic balance. They have a certain amount of reserve energy which is exhausted by the time we pass beyond the threshold of middle life, and the first system to decline under the stress of middle age activities is the digestive system whose hollow viscera receive the least toning up from the flaccid abdominal wall, the muscles of which are no longer subjected to contraction to keep up their elasticity. The middle-aged man takes his meals hurriedly, often they are merely bolted down without proper mastication, in order to be punctual in his office duties or business engagements. Calls of nature are often suppressed due to lack of time thus leading to a stretching of the walls of the bowels so as to accommodate the accumulated waste matter and this interferes with their normal peristaltic rhythm. The effects of all these culminate in a faulty digestion and a defective bowel action due to the enfeebled musculature of the neglected intestinal tract. Usually the chief site of the trouble is the large intestine or colon for it is here

PLATE II

ABDOMINAL VISCERA AND THEIR POSITIONS



that the peristaltic wave of the bowels exhausts itself to its maximum limit. This results in constipation—the precursor of the majority of illnesses that human flesh is heir to—which is either ignored or met by doses of patented pills or purgatives. These for a time certainly relieve the constipation but it is like whipping a jaded horse to action without properly grooming it. This is a wrong thing to do. We must tone our intestines and make them once again perform their former rhythmic movements. The ultimate result of neglect on our part is that the intestines become mere flaccid hollow tubes stretched and filled with the waste matter of many days which, not being evacuated regularly from the body, forms a suitable nidus for putrefactive processes. The flaccid intestines under the load of waste matter sink down as far as possible to the lowest part of the abdominal cavity—the pelvis where their crowding impedes any peristaltic activity. In medical parlance it is entroptosis which favours chronic constipation. With entroptosis the stomach which is really a receptacle for food for digestion is also stretched thus impairing its motility. The semi-digested food stagnates in it for a longer time than normal and promotes fermentative processes generating gases which dilate the stomach. Its tone is thus lost by stretching. This stagnation of food produces heart-burn due to the irritation of the mucous lining of the stomach and causes indigestion. The dilation of the stomach necessitates in its turn more intake of food to satisfy the pangs of hunger as the latter is appeased only by pressure of food on the walls of the stomach. This is a physiological fact.

The generation of fermentative and putrefactive processes in the stomach and large intestine respectively produces many poisonous substances in excessive quantities which are beyond the capacity of the liver either to neutralise or hold back. The liver, which acts as a refinery for all the absorbed products of the digestive tract, soon gets choked up with these poisonous putrefactive substances and so allows them to escape into the blood stream and from thence these poisonous substances are circulated to every part of the body producing symptoms of auto-intoxication. They are manifested by a tiredness of feeling, heaviness on waking, headaches, sleeplessness, giddiness, mental depression, irritability of temper and a host of other symptoms.

These absorbed poisons, sooner or later, completely damage the circulatory and nervous system. Of the circulatory system the blood vessels bear the greatest brunt. They lose their elasticity and get thickened and hardened. The healthy condition of the heart and the blood vessels is a necessity for the correct maintenance and nutrition of organs and tissues by keeping them in constant action. The pumping movement of the heart drives the blood stream into the blood vessels which are distended and the blood exerts a certain amount of pressure on their walls. This pressure brings about a recoil action of the healthy elastic arterial walls and so propels the blood forward step by step due to the dilation and contraction of the blood vessels. In this way the blood carrying the nutrient material with it is taken forward to every tiny nook and corner of the body feeding the tissues and maintaining

the balance of the metabolic processes. The loss of elasticity of the arterial walls with the added disadvantages of general lack of physical fitness and flabby tissues causes the pressure in the vessels to become abnormal. It tends to fall and the system in its attempt to readjust this overreaches itself and so sends the pressure up too high. This rise of pressure above the normal goes on unsuspected till a sudden fit of giddiness while at work disables a man for the time being or he suddenly drops down dead with a fit of apoplexy. The giddiness makes him seek medical aid, his blood pressure is measured with a special instrument and the true facts are at last known. Thus the devil of "high blood-pressure" unconsciously makes its appearance in the prime of life at a time when one is full of hopes of a greater and better future. His high blood pressure puts him completely out of action and brings on premature ageing and an early breakdown of his whole system. To prevent this, blood-pressure measurements should be taken regularly during middle age and a record kept of them for estimating one's general fitness just as a record is often kept of our weight and temperature whenever there is sufficient reason for doing so. This will enable a person to take suitable precautions and ward off the attacks of apoplexy, etc., and escape their consequences.

There is a natural tendency for an accumulation of fat in middle age. Sedentary occupations, the intake of more food than necessary, defective elimination, a disturbed metabolism of the body and want of exercise—all these attendant consequences of middle age add stealthily to our weight by an unconscious deposit of fat in our tissues. Within normal

limits this is allowable but an excessive deposit of fat is certainly detrimental to health. It soon proves itself to be a drag on the body and demands greater and greater muscular effort to move the latter. It greatly reduces the capacity for work and so hinders progress towards betterment of one's future. The first deposit of fat occurs in those parts of the body, the muscles of which are least subjected to contraction and relaxation. The muscles of the limbs are constantly at work due to our movements. Their contraction and relaxation do not favour deposition of an excess of fat. The muscles of the chest are also perpetually on the move, though not quite to the same extent as those of the limbs, due to our respiratory activity and the movements of the upper limbs of the body. The muscles of the abdominal wall are least subjected to contraction either by internal or external actions. They have the power of contraction but by neglect they remain flaccid and so to these muscles the majority of the troubles of the middle-age are due. No doubt the abdominal muscles move backwards and forwards but this movement is only secondary in importance and is dependent on the movement of the diaphragm in respiration. It is not carried out by inducing contractions and relaxations in the abdominal muscles themselves by our own will though it is possible to do this by fixing the diaphragm as during suspension of respiration. Even this automatic backward and forward movement is hardly noticeable in the lower part of the abdominal wall, that is, between the navel and the pubic bones, because of the forward pressure exerted by the flaccid intestines, overloaded with waste matter crowded in that part. Hence this is a suitable place for the

accumulation of fat where it lies undisturbed from any movement and so produces a rounded bulge, popularly called a "bun", in the lower part of the abdomen. From there it spreads upwards near to the pit of the stomach and the surrounding area producing the well-known pot-bellied appearance. Simultaneously with this deposition of fat there occurs locally a gradual deposit of fat round about the internal organs often obstructing their functions. Other favourable sites for an accumulation of fat are near the hips. They, like the abdominal wall, are least subjected to contraction. The accumulation of fat in that particular area is more marked in women than in men. The truth of this is embodied in an aphorism which says that "after forty, men put on weight in the front and women at the back". In both men and women, the accumulation of fat is the direct result of defective digestion, unnatural absorption, the lack of proper elimination and want of exercise.

With the accumulation of fat the movements of the body become slow and laboured. When the body is in such a state any manual work like lifting oneself against gravity, as in ascending staircases, puts an extra strain on the heart, the reserve energy of which thus gets exhausted by the jolts and jars of middle life. The heart, though it is the most strongly muscular involuntary organ of the body, soon gets flabby under the strain and loses its force of contraction so necessary for the maintenance of the proper velocity and pressure of blood in circulation. The strain on the heart is manifested by palpitations, and usually apparent by the puffing of the cheeks made necessary by the respiratory activity. Consequently

the vasomotor balance is disturbed and this causes the body, in addition, to be drenched with perspiration. This does not necessarily indicate actual disease of the heart, but it certainly constitutes a clear pointer to the fact that you have overdrawn your account from the body-vitality and that all further activity must be suspended till the accounts have been properly adjusted once again. If these warning symptoms of disorder of the heart are disregarded, a sharper warning is soon sent in the form of venous stagnation leading to congestion of the liver, the kidneys and the abdominal viscera. The derangement of these organs is indicated in the "salient symptoms"—as Sir Leonard Williams puts it—of glycosurea (diabetes), albuminurea and the rise of blood pressure. These bring one to the very verge of physical bankruptcy.

This deterioration of health ultimately so lowers the resistance of the body that it becomes easily susceptible to chills and seasonal changes, any one of which may develop into an acute illness probably necessitating much expenditure of money and resulting in shattered health, and compulsory absence from all work or business. Thus the majority of men and women find it difficult to keep healthy during the middle period of life; but those who remain so, retain all the elasticity of their youth throughout the whole period. They are gifted by nature with a healthy constitution and we may call them, truthfully, the favoured few of God. The prevention of the deterioration of health is better and wiser than trying to get fit again after a breakdown. The above-mentioned symptoms accompanying middle life may not portend actual illness but they

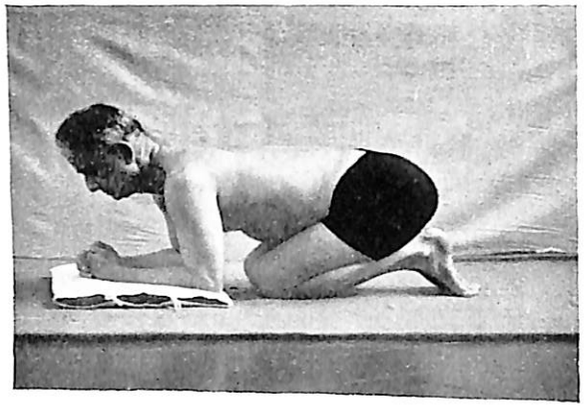
certainly make one feel ill at ease. They are warning signs of premature ageing which must be avoided, not by the use of quack nostrums, but by the practice of graduated exercises suitable to middle age conditions, so that the real springtime of life—the middle age—may radiate health, happiness and prosperity all around.

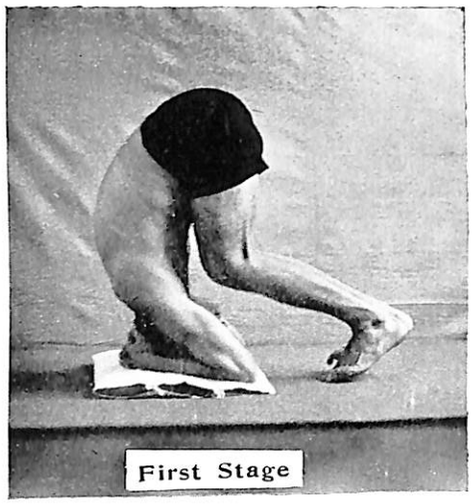
III. THE WAY TO KEEP FIT

OR

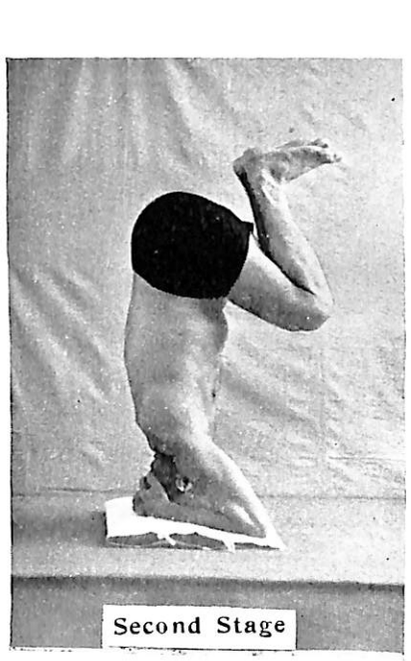
THE TECHNIQUE AND PRACTICE OF ĀSANAS

PLATE III
SHIRSHĀSANA AND ITS STAGES



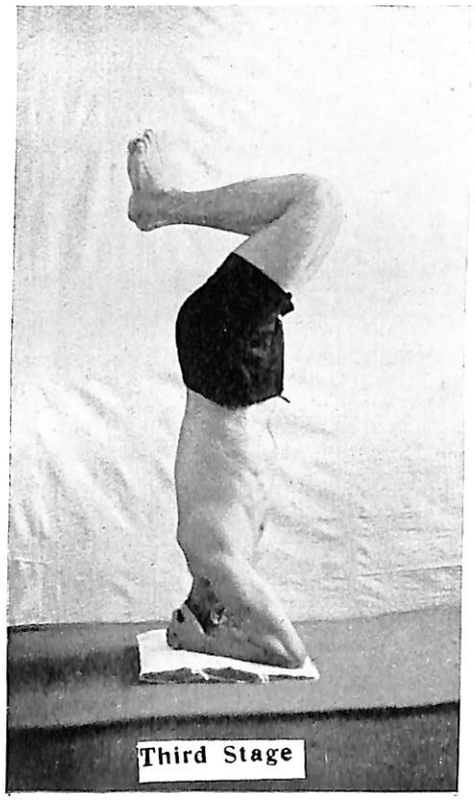


First Stage

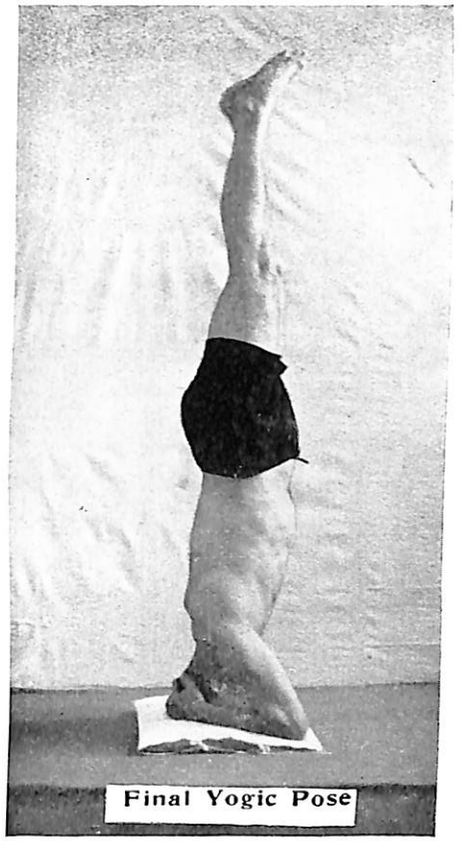


Second Stage

PLATE III (Contd.)
SHIRSHĀSANA and its STAGES



Third Stage



Final Yogic Pose

SHIRSHĀSANA

(THE TOPSY-TURVY POSE)

This is a favourite *āsana* of the Yogis and is spectacularly beneficial in its effect. It is said that the practice of this *āsana* leads one nearer to the spiritual consciousness; though no mention of this purpose of *Shirshāsana* is made either in *Gheranda Samhitā* or *Hatha-Yoga-Pradipika.* In this pose there are no contortions of the trunk or contractions of the abdominal muscles which are so necessary to awaken the dormant *kundalini* and according to the Yogic tenets one cannot aspire to gain that spiritual consciousness without awakening the *kundalini.* This, however, does not detract from its value as a physical culture exercise. It has also other indirect advantages. It tones up all the systems of the body, particularly the nervous system which governs the mental as well as the physical conditions of an individual. Balancing of the body on the apex of the head held vertically downwards concentrates the mind on the zero-point and keeps it steady there for counteracting the contractions of the opposite sets of muscles. It is advised that this pose be retained for a long time because of its beneficial effect of the concentration of the mind.

In this topsy-turvy pose the blood tends to accumulate by gravitation in the blood vessels of the head, which is the lowest part in this position. The accumulation of blood causes a dilatation of the blood vessels enabling

them to accommodate more blood. This dilatation of the vessels diminishes the resistance offered to the blood causing a local fall in blood pressure which thus slows up the circulation. Simultaneously with this effect, the draining by gravitation of the venous cisterns in the abdominal and pelvic regions into the right side of the heart raises the venous pressure which stimulates the heart to increase its force of contraction thus accelerating the circulation. The arterial circulation being thus stimulated and augmented, a richer supply of blood is carried to every part of the body and more particularly to the head and the trunk, they being nearer to the heart than the other parts and more easily reachable than the lower limbs to which the blood has to flow against gravity. All the vital organs located in the head and the trunk are thus filled with a large quantity of clean arterial blood and so the skin over the head and trunk gets flushed, giving a healthy colour to it and glows with perspiration. Besides, in this pose the impure blood in the veins is not allowed to stagnate in contact with the body tissues for a long time as it is continually and easily drained off due to gravitation.

Technique: *1st Stage*:—Spread on the ground a rug folded four times, or a flat pillow. Kneel on the seat, and then place the elbows and hands on the rug or the pillow. Knit the fingers together so as to lock them together. Bend the head down and place it on the ground in such a way that the back of the head fits snugly in between the hollow formed by the interlaced fingers. Keeping the knees nearer the elbows will enable you to bend the head properly and to rest the apex in its right position on the ground.

2nd Stage:—Raise the hips and the trunk by slowly sliding the toes nearer the face till they are almost perpendicular

to the ground with a slight leaning of the trunk towards the rear. This helps in lifting the toes off the ground. After practising this for three or four days successively this will at last be achieved. Then fold the thighs on the trunk and the legs on to the thighs. Straighten the back and try to establish good balance when in this position. Continue the practice of this position for a few days. When you are able to maintain this position with perfect ease for over two minutes then alone proceed to the next stage.

3rd Stage:—In this stage one has to gradually straighten out the thighs with the legs folded so as to bring them in a line with the trunk. See that the line from the centre of gravity of the body falls within the body itself. This may be achieved by arching the lower part of the spine forward when raising the thighs. If the backward tilt of the body exceeds the line of gravity you will topple over. The assistance of some other person will at times be found necessary to help in maintaining proper balance. Practise this stage for some days and only when you are able to retain this pose firmly and with ease for nearly two minutes, proceed to the next stage.

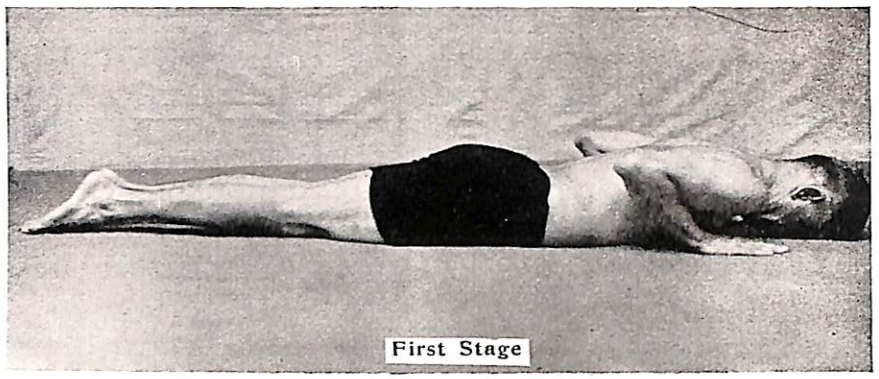
4th Stage:—Straighten the legs until the whole body is properly and comfortably balanced on the head. The secret of achieving this pose lies in avoiding all hurry and jerks while practising the different stages. Retain the pose at first for half a minute and gradually increase the time every day, till it can be maintained for from 6 to 10 minutes. Some people practise this *āsana* everyday and retain the pose for over half an hour.

As a therapeutic measure this *āsana* may be practised for toning up the nerves in cases of neurasthenia and for the cure of associated complaints such as dyspepsia, constipation, loss of energy and memory, sleeplessness and torpidity of the liver. It may be practised with advantage for the cure of entroptosis where the laxity of the abdominal walls allows the intestines to fall forwards in the pelvic region, for curing hernia, and for the prevention of wet dreams. It is said that asthma due to nervous and hepatic troubles can be relieved by a proper practice of this *āsana*.

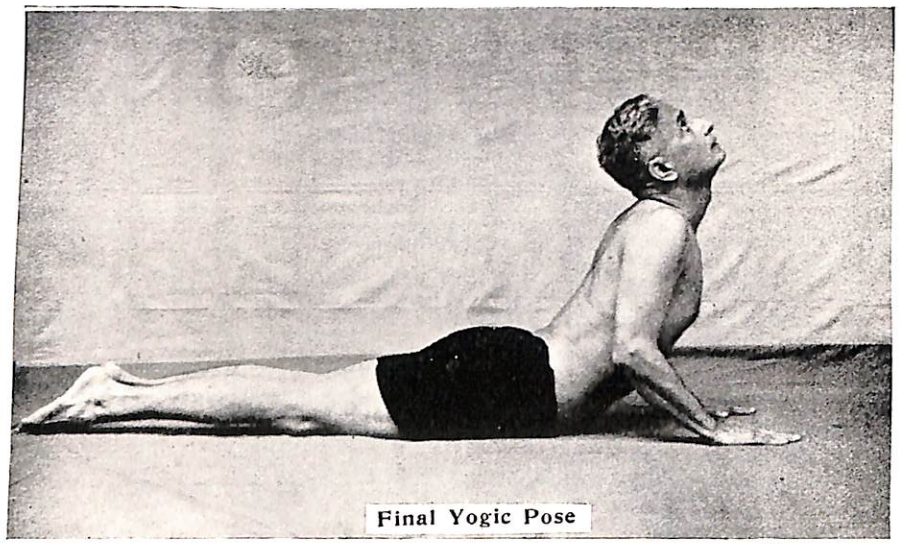
Caution:—One should not begin the practice of *Shirshāsana* on one's own initiative after the age of 50 years; but there can be no harm in continuing it even up to 65 years of age once it has been learned properly. High blood pressure is no bar against the practice of this *āsana* as long as there is no organic disease to account for it. However in organic diseases of the heart it should be avoided. In acute congestive diseases of the throat, ear or eyes the practice should be postponed till they are completely cured. If palpitation occurs during the pose it should not be practised.

PLATE IV

BHUJANGĀSANA AND ITS STAGES



First Stage



Final Yogic Pose

BHUJANGĀSANA

(THE COBRA POSE)

In this *āsana,* the body, lying flat on the abdomen, is made to assume, by raising the head and the trunk, a pose which resembles an irritated cobra (*Bhujanga*). The main importance of this pose lies in the curving of the spine backwards. To maintain the activity of youth even at an advanced age, the spine must be kept supple and elastic. As age advances the muscles of the back get stiffened and lose their elasticity. Consequently any movement which requires the use of the spine is unconsciously avoided. If at all such movements are carried out, the strain put on the muscles produces a sensation of pain and fatigue. Owing to the spinous processes of the vertebræ projecting slantingly outwards and overlapping each other it is not possible to curve the spine backward to the same extent as is possible in bending it forward; but whatever curve is obtained is enough, to contract not only the superficial muscles of the back, but even its deep muscles; and so by promoting circulation through them, which ordinarily is somewhat slow in them, their tone is improved. In the backward arching of the spine the head being raised above the trunk and bent backwards the cranial nerves are also exercised and so they will maintain their tone and activity for a long time. It stretches the muscles of the abdomen, particularly the two recti. The thoracic cavity is widened to help the full expansion of the lungs during inspiration. The intra-abdominal pressure is also increased.

Technique: *1st Stage:*—Lie prone on the seat with the legs extended and kept close to each other and with the soles pointing upwards; fix the pelvis and the knees to the ground. Once this position has been taken it should on no account be changed during the subsequent movements of the body. Touch the forehead to the ground and keep the hands near the chest by bending the elbows, the palms resting flat on the ground.

2nd Stage:—Gradually raise the head with a backward tilt and while doing so take care to see that the tip of the nose and the chin graze the ground. This helps to arch the cervical spine. When the head has been sufficiently extended backwards, try to raise the chest from the ground by contracting the muscles of the back, retaining all the time the backward tilt of the head. A further curvature of the spine from above downwards has still to be executed to produce a complete spinal arch. This is effected by raising the portion of the trunk above the navel by putting pressure on the hands and gradually widening the angle of the forearms with the elbows more and more, contracting at the same time the muscles of the back. The limit of curvature can be said to have been reached when a drag is felt near the sacroiliac joints. Maintain this full pose for a few seconds and then release it by relaxing the curves from below upwards till the body is once more in the original position.

It is not possible for a beginner to achieve the full pose the very first time. The arching of the middle part of the spine puts a severe strain on the recti muscles of the abdomen and produces pain due to the powerful

contractions of the muscles of the back. Yet by practising 3 or 4 times in succession every day the full pose can be executed in about a week's time.

While arching the different segments of the spine, inhalation and retention of breath will help a great deal.

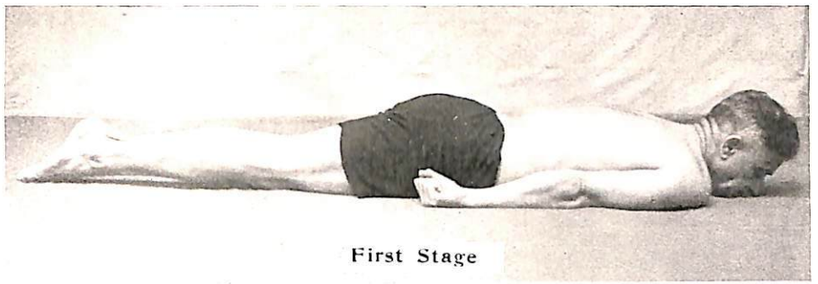
SHALABHĀSANA

(THE LOCUST POSE)

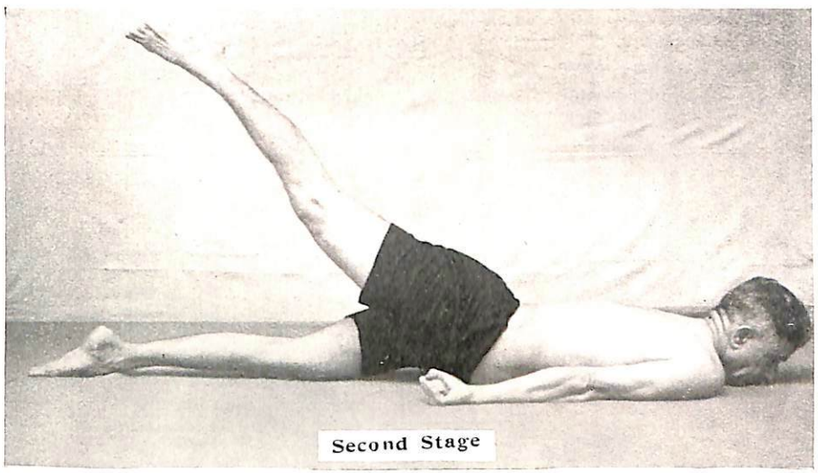
This is a unique pose where all the extensor muscles of the body are made to contract while all the flexors are relaxed and stretched. It is to be practised lying prone on the seat. This is a complementary pose to *Bhujangāsana* in which the lower part of the body is at rest on the ground while in *Shalabhāsana* the upper part of the body is in contact. To derive full benefits from this pose one should be able to maintain it for a long time; but that is rather difficult to accomplish at first as the time of maintaining the pose is directly proportional to the time one is able to retain the breath. Normally during the retention of the breath, after a preliminary inspiration, the arch of the diaphragm descends and remains flattened out. This raises the pressure in the abdominal cavity and causes the abdominal wall to protrude in order to accommodate the viscera which have been forced down by the descent of the diaphragm. In the practice of this pose the weight of the body being supported by the abdomen, the bulging of the abdominal wall is prevented. This reduces the capacity of the abdomen cramping the viscera and further increasing the intra-abdominal pressure. The increase of intra-abdominal pressure decreases the pressure in the thoracic cavity in proportion which gives more space to the lungs to expand into their full capacity during inspiration. This increase of intra-abdominal

PLATE V

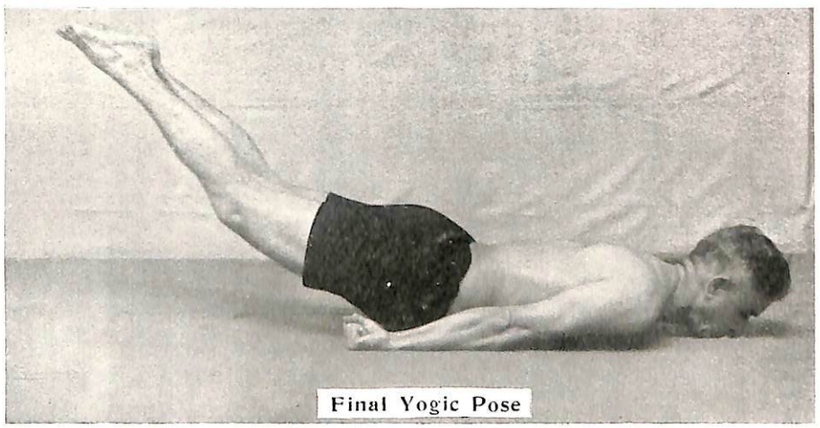
SHALABHĀSANA AND ITS STAGES



First Stage



Second Stage



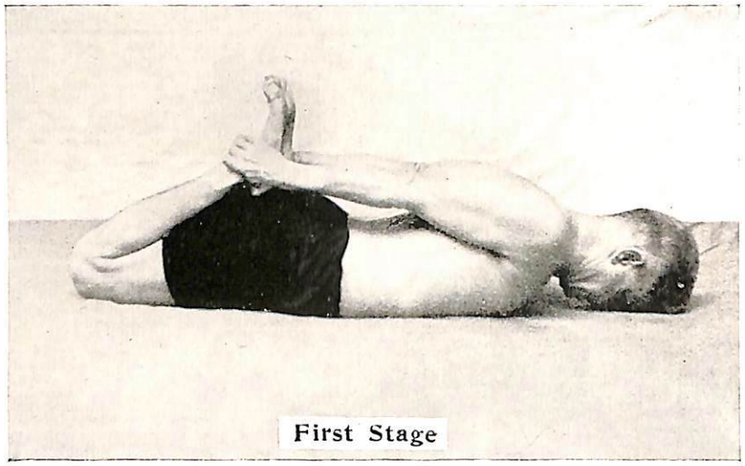
Final Yogic Pose

retention time to 10 or 12 seconds. Repeat the pose 3 or 4 times in succession.

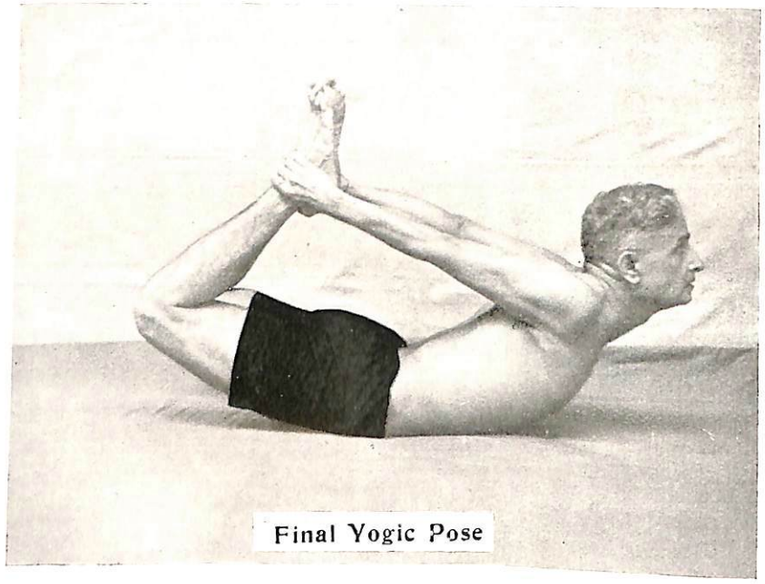
The therapeutic advantages of this pose and the bow pose are the same as those for the cobra pose. It arches the lumber spine backwards and retains the expansion of the lungs.

PLATE VI

DHANURĀSANA AND ITS STAGES



First Stage



Final Yogic Pose

DHANURĀSANA

(THE BOW POSE)

Dhanurāsana is a combination pose of *Bhujangāsana* and *Shalabhāsana*. The complete pose presents the appearance of a bow with stretched strings—the bow proper being formed by the arching backwards of the head, the trunk and the thighs, whereas the strings may be represented by the backward stretching of the arms on one side and the bended legs on the other. The knot of the strings is formed by the hands grasping the ankles. This combination of the *Bhujangāsana* and *Shalabhāsana* poses greatly mitigates the advantages and severity of each when they are practised separately. The powerful contractions of the muscles of the back are not necessary in *Dhanurāsana* in arching the spine backward as this is helped by the hands and legs tugging at each other. Nor is the retention of the breath necessary. However, as the body is made to rest on the abdomen, intra-abdominal pressure is increased to a greater degree than in the practice of the two above-mentioned poses separately, and the simultaneous raising of the trunk and the thighs backwards stretches the abdominal muscles, particularly the two recti, more effectively than in the other two poses. Another advantage of *Dhanurāsana* is that it increases the capacity of the thorax due to the steady pull exerted on the respiratory muscles, by the hands grasping the legs. This increased capacity of the thorax and the consequent decrease of pressure within it allow the lungs

to expand to their full extent thus presenting a larger area for the absorption of oxygen with each inspiration.

Technique: *1st Stage:*—Lie prone on the seat, bend the legs on to the thighs, keeping the knees close to each other. Grasp the ankles with the extended hands. Keep the mouth close to the ground.

2nd Stage: Now try to raise the head, the trunk and the knees from the ground maintaining an upward pull on the ankles by means of the hands, till a definite backward arch of the spine is formed and the weight of the body rests on the abdomen. Breathing should be normal during the practice of this pose. Maintain it for a few seconds and increase the time from 15 to 20 seconds. Repeat the pose 3 or 4 times. Once it has been mastered it is possible to massage the abdominal viscera by swinging the body backwards and forwards.

Some of the books on *Āsanas* advise a beginner to keep the knees apart in order to secure a greater curvature of the spine. This is certainly possible owing to the relaxed conditions of the anterior thigh-muscles obtained by abducting the knee (drawing away from the central line). When the muscles of the thighs are in a relaxed condition they can stand greater stretching than when the knees are close to each other. But keeping the knees apart when practising this pose is inadvisable as proved from experience. In this position, the shoulders and the knees not being in a straight line, the pull on the knees is exerted at an angle which causes unequal stretching of the thigh muscles. Even a moderate pull exerted upwards at the ankle, to secure a greater curvature of the spine, is

apt to put a greater strain on the muscles which lie on the outer side of the thighs and more particularly on the Tensor Fascia Lata. The strain is manifested by a tearing pain on the outer and lower border of the patella (knee-cap) to which it is attached as well as to other prominent points around the knee. This incapacitates the student, at least for some time, from practising this pose. Keeping of the knees close together is advised by the Yogic seers, because when tugging is effected the knees and the shoulders are in one straight line and the force is spent in the centre of the joint and so no pain is felt except that due to the stretching of the thigh muscles. By practice it is quite possible to raise the knees from the ground to about 9 inches, as in *Shalabhāsana*, without separating them.

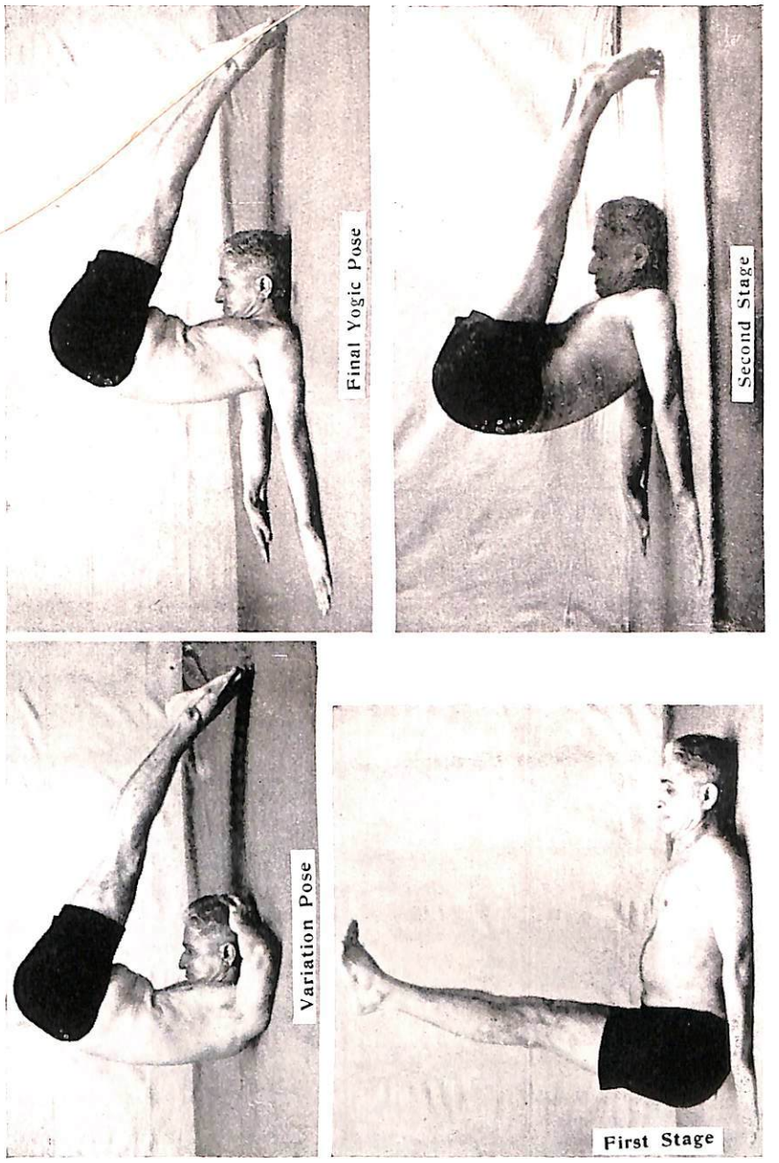
HALĀSANA

(THE PLOUGH POSE)

The completed pose of *Halāsana* resembles a plough. The extended arms are like the blades of a ploughing machine meant for making furrows in the ground. These seem attached to the sides of the body of the plough and the extended legs beyond the head due to great arching of the trunk form the propelling handles. This pose has the advantage of making the vertebral column, with its many joints, move on different segments of the arch during the various stages of the pose. It makes the spine supple and elastic and exercises all the muscles of the body, particularly the accessory muscles of the back and the muscles of the abdomen. The latter are powerfully contracted to keep the abdominal viscera well tucked up in the hollow of the diaphragm. With the stretching of the vertebral column, the spinal cord located inside it and also the nerves issuing from it are stretched, thus improving their tone and incidentally also of the muscles into which they ramify. The stretching of the spinal cord exerts an indirect pull on the sympathetic cords which lie on both sides of the spine in the abdomen and are connected with the spinal cord by nervous strands. Stimulation of the sympathetic system tones up the involuntary organs of the body. The ultimate aim of these Yogic *āsanas* is to awaken the *kundalini* (vagus nerve) which is lying dormant in *manipura-chakra* (solar plexus) and direct it through

PLATE VII

HALĀSANA AND ITS STAGES



a particular path to generate spiritual consciousness, that path being through *shusumna* (spinal cord). *Halāsana* is, therefore, designed to so tone the spinal cord as to make it fit to receive and retain the subtle unconscious impressions. Incidentally besides doing this, the health of the body is also maintained due to improved circulation, toning up of the nerves and muscles and by a proper regulation of the metabolic activity.

Technique: It is best to practise this *āsana* in three stages.

1st Stage:—Stretching and curving the lumbar spine. Lie supine on a seat with legs close to each other and the hands resting on the ground with the palms downwards; raise the legs gradually till they assume a vertical position, forming a right angle with the ground all the time keeping the hands extended by the side. Then with a swinging movement throw up the legs, raise the hips and the lower part of the trunk and simultaneously bend the legs and carry them forwards towards the head, endeavouring to make the toes touch the ground. Remain in this position for 4 or 5 seconds. At first it will be found necessary to support with the hands the lower part of the trunk when raised; this will help to carry the legs forward. With the completion of the pose the hands are made to assume their original position. At the first attempt the toes will not reach the ground but after a few days' practice you will be able to bend the legs so far forwards as to touch the knees to the forehead; when this has been achieved then an attempt should be made to make the toes touch the ground. Repeat this stage for 3 or 4 times. Release the pose by

drawing the toes nearer to the head and go through all the above-mentioned steps but in the reverse order. This position exerts a pull on the lumbo-sacral joint and stretches the lumbar spine.

2nd Stage :—Stretching and curving the dorsal spine. In this stage the toes are pushed still further from the head till the lower part of the thighs is brought opposite the forehead. In this position the pull is exerted on the lower part of the dorsal spine arch. Retain this pose for a few seconds and then release it. After a few days' practice you will be able to retain this pose for 10 or 15 seconds without feeling any discomfort.

The toes should now be pushed away still further till the upper part of the thighs is brought opposite the forehead. This is the complete *Halāsana* Pose in which the dorsal curve of the spine is achieved. Retain the pose for only a few seconds at first and then gradually increase the time to a minute. Only after you are able to do this with ease, proceed to the third stage which is a variation of *Halāsana.*

3rd Stage :—The hands which were in a passive condition are now clasped over the top of the head with a certain amount of pressure and simultaneously stretch the toes forwards to their furthest limit which is manifested by the chin pressing on the chest to produce a chin-lock and squeezing the venous blood from out of the thyroid gland.

As a therapeutic measure this pose should be practised for the cure of dyspepsia and constipation. For the cure of the enlargement of the liver and spleen in a moderate

degree it may be tried. As it increases the secretion of all the glands in the abdomen it may prove invaluable for the cure of certain types of diabetes.

SARVANGĀSANA

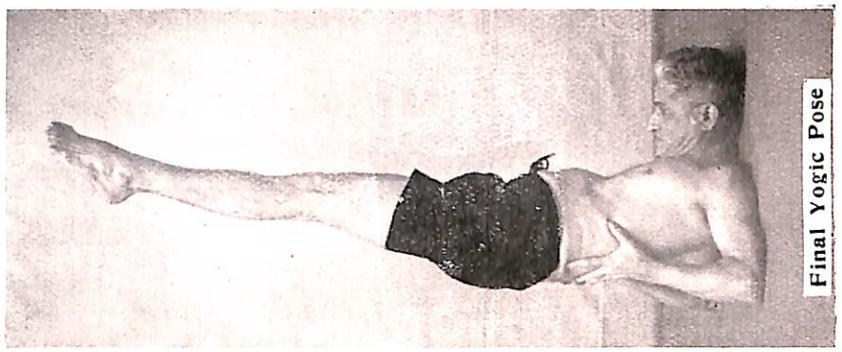
(THE SHOULDER–STAND POSE)

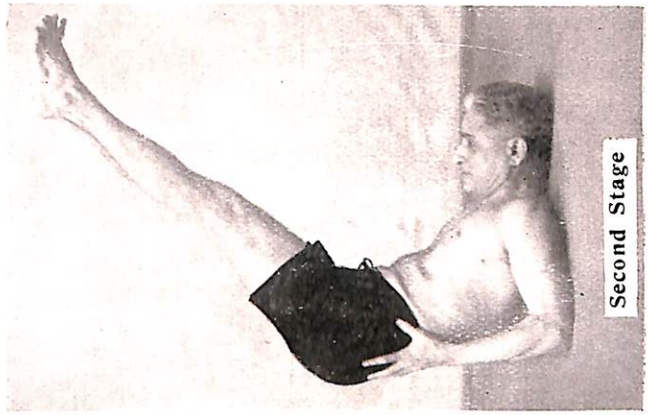
This *āsana* is also called pan-physical or all-body pose from the root meaning of the Sanskrit word "*Sarvānga*". In this *āsana* the head, the neck and the shoulders are made to remain flat on the ground and with the support of the elbows and hands, the legs and the trunk are lifted up to a vertical position so as to form a perfect right angle with the neck. This is shown by the chin coming in contact with the chest and forming the chin-lock (*Jālandhara-Bandha*). This is a cleansing and, at the same time, a reviving pose. Due to the vertical position of the legs and the trunk the venous blood drains away by the force of gravity to the right side of the heart and thence to the lungs for purification. This relieves the venous congestion of the legs and more particularly of the abdominal viscera where it is responsible for the majority of ailments of the intestines and the liver. In the parts which lie flat on the ground there is localised venous engorgement including that of the endocrine glands which are located there, *i. e.* of the thyroid and pituitary. The venous congestion of the thyroid, however, is removed by the chin-lock compressing the thyroid.

Simultaneously with the cleaning process the reviving process starts. In this pose, the chest being the most dependent part of the body, the blood vessels of the organs located in it—the lungs and the heart—get dilated. This

PLATE VIII

SARVANGĀSANA AND ITS STAGES





has the effect of bringing a greater supply of blood for oxygenation to the lungs, and more nourishment to the heart so increasing its vigour. To maintain the rapid renewal of the blood in the dilated blood vessels there is reflex acceleration of the heart caused by a draining of the venous blood by gravity into it. The rapidity of the heart's action, without a corresponding loss of tone, sends a plentiful supply of oxygenated blood through the body tissues, more particularly to the abdominal viscera and the thyroid gland, than to the legs. These being the farthest from the heart and in a vertical position, the circulation in them is against the force of gravity The effect of all these is seen in an increased secretory activity of the abdominal glands and movements of the abdominal viscera, which promote proper nutrition of the tissues. Thyroid secretion is also abundantly increased which is absorbed into the blood stream and its circulation excites the secretion of other ductless glands in the body as well as helping to maintain proper metabolic activity.

Technique: This pose is best practised in three stages.

1st Stage:—Lie supine on a seat with the legs close to each other and the hands resting on the sides with the palms downwards. Fold the legs over the abdomen and stretch them vertically so as to form a right angle with the trunk. Another way of achieving this angle is to raise the fully stretched legs gradually upwards, till they form an angle of about 90° with the ground. Retain this position for about 10 to 20 seconds without any movements of

the legs. A beginner is likely to experience some pain due to the stretching of the ham-string muscles of the thighs. Repeat this 4 or 5 times. In this stage the hands remain quite passive.

2nd Stage:—In this stage an effort is made to raise the trunk from the ground along with the legs. From the position of the legs in first stage try to throw them up with a swinging movement putting the whole weight of the body on the arms by pressing them firmly to the ground. At first you may succeed in only lifting the hips from the ground; but by repeated practice you will soon acquire the knack of throwing the legs up so as to raise the lower part of the trunk as well. Support the raised trunk with the hands placed on its sides, keeping the elbows firmly fixed to the ground. Now try to raise the trunk further and further upwards, supporting it all the time by slowly sliding the hands lower and lower on the trunk till it forms a right angle with the neck. Retain this pose for about 10 seconds.

3rd Stage:—When you are able to keep yourself steady in the 2nd stage for about 30 seconds the chin-lock should be effected by pressing the trunk forwards towards the chin till the latter is well fixed in the jugular notch. Do not raise the head to get a chin-lock. Try to keep the fully stretched legs in a line with the trunk by tilting them slightly backwards. Keep the full pose at first for about a minute and increase the time to full three minutes. The different stages should be discarded once a mastery over the pose has been obtained; then the whole pose may be practised at one sitting.

As a therapeutic measure this *āsana* is invaluable for the cure of varicose veins of the legs and trunk, for regulating defective basal metabolism, for preventing wet dreams. It also helps to maintain a proper functioning of the abdominal viscera, and will reduce abdominal fat as well, toning up the muscle of the heart at the same time. This pose should not be practised for the cure of any organic diseases of the thyroid.

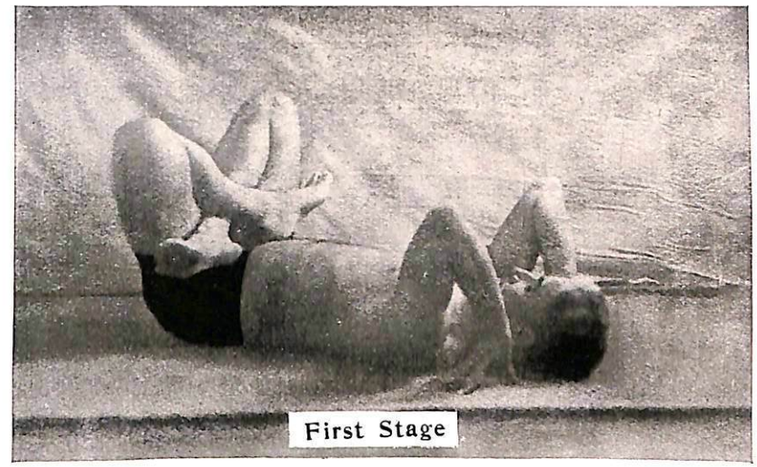
MATSYĀSANA

(THE FISH POSE)

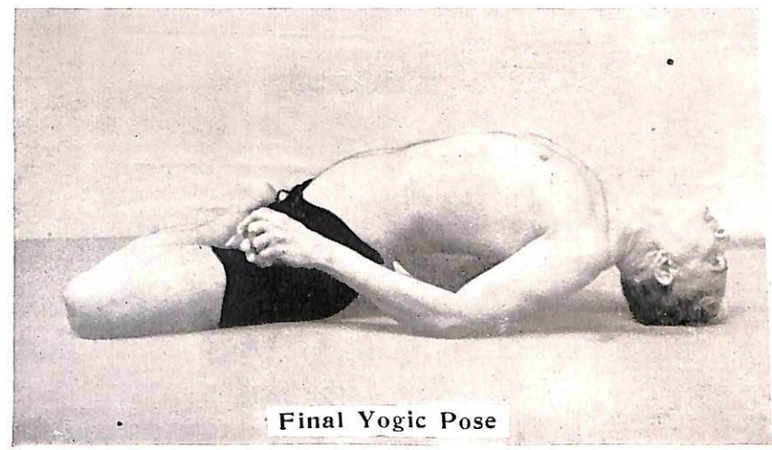
This is the next *āsana* that should be practised after *Sarvāngāsana.* In fact it is complementary to it. The cleansing and reviving of the parts left unexercised by the shoulder-stand is achieved by the practice of this pose. The venous engorgement of the neck and head caused by the practice of *Sarvāngāsana* due to the pressure of the chin-lock on the jugular veins has to be relieved. In order to drain back the venous blood from the face, skull and the brain by the force of gravity one has to put the head so far back as to touch the ground with its vertex. This is not possible without bridging the body to a certain position. In the practice of *Matsyāsana* the bridging of only the upper part of the trunk is effected so as to help the vertex of the head to rest on the ground, at the same time keeping the pelvis fixed. The foot-lock which is simultaneously practised with this pose hinders the circulation of blood in the lower part of the body. With the assumed low position of the head, the venous blood in the face, the skull and the brain is carried to the most dependent part of the head and so is drawn into the right side of the heart by the aspiratory action of the thorax and not by gravitation as in the case of *Sarvāngāsana.* This draining of the blood excites the heart to increase its force of contraction and incidentally also the number of beats; these send a richer supply of oxygenated blood to the

PLATE IX

MATSYĀSANA AND ITS STAGES



First Stage



Final Yogic Pose

face, the brain, the pituitary body located at the base of the brain and the pineal body in the middle of it. This enhanced oxygenation tones up the brain and increases the secretions of the two endocrine glands mentioned above. Another important advantage of this pose is that it opens larynx as much as possible making deep breathing possible. Incidentally the pose also develops the muscles of the back, waist and neck. It will prove very useful to wrestlers for preventing defeat by a pin-fall.

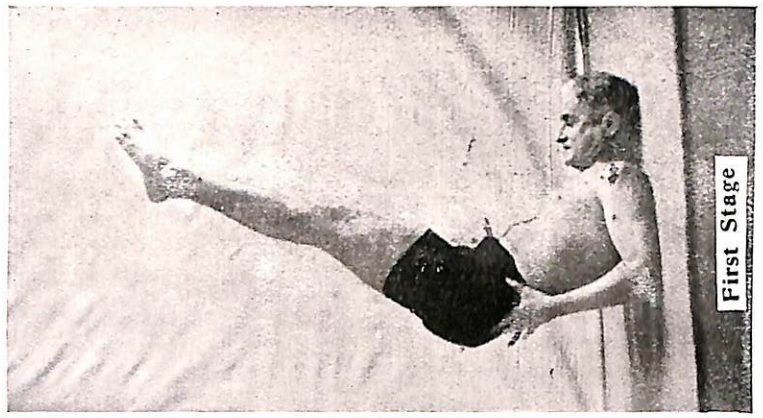
Technique: *1st Stage:*—The first essential for the practice of this pose is that the individual must be thoroughly conversant with the pose of *Padmāsana* (*vide infra p. 78*). Having mastered the latter, lie supine without releasing the foot-lock which remains vertical.

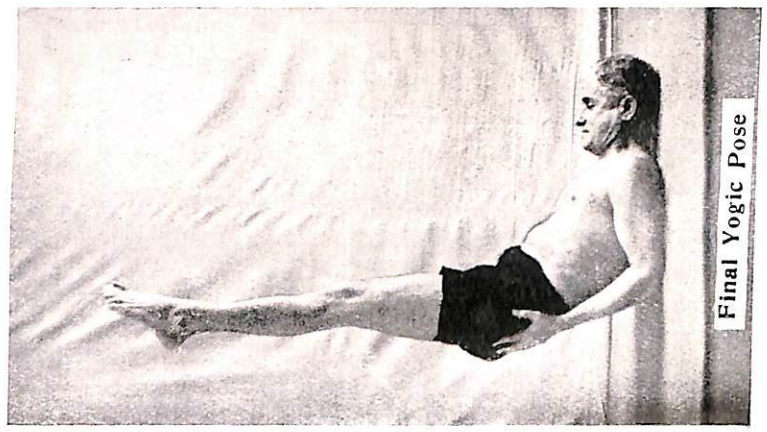
2nd Stage:—Then try to arch the spine, taking the support of the elbows and at the same time bend the head backwards so as to ultimately rest the body on its vertex at one end and on the buttocks at the other; simultaneously with the arching of body, the thighs with the foot-lock should be extended so as to rest on the ground and fixed firmly there. Another method of arching the body, which is perhaps easier, is to bend the forearms at the elbows and turn them towards the head so that the tips of the fingers rest on the ground by the side of it; then by putting pressure on them try to arch the spine. Stretch the arms and rest the hands on the thighs or clasp the toes of the respective sides by bending the elbows which should touch the seat. Retain the pose for 10 to 15 seconds and gradually increase this time everyday till a period of 2

to 3 minutes is reached. Release the pose gradually. Unlock the toes first and then straighten the head by sliding it backwards and thus straighten the arch of the body. Rest in this position for 15 to 30 seconds and then release the foot-lock.

PLATE X

VIPARITA-KARANI AND ITS STAGES





VIPARITA KARANI

(THE PELVIC POSE)

Viparita Karani, though a variation of *Sarvāngāsana*, is highly extolled in Yogic literature. The physiological significance of the pose is given in terms that are shrouded in mystery but they definitely point to the fact that the practice of this pose effects (*Karani*) a reversal (*Viparita*) and reabsorption of the secreted elixir of life (*Amruta*), so as to prevent premature ageing and defy death. This description probably refers to the gonadal secretions which very often escape out of the body involuntarily or can be voluntarily ejected.

It is a well-known fact that the testicles produce substances which help to activate the body generally and maintain health, vigour, physical stamina and other characteristics which may be summed up by the term manliness. Naturally then, the diminution of this secretion owing to old age or from frequent urges of desire to eject brings about a fall in mental as well as physical vigour. To prevent premature ageing and to replace the loss of virility, gonadal extracts of the higher male mammals are mentioned in the old Ayurvedic literature as useful medicine, on the hypothesis that if the substance produced by the gland produces virility it ought to be possible to regain it by artificial ingestion of the same substance. On this very principle the modern science of rejuvenation is based, where the testicles of young and vigorous apes are

grafted into the body of the person who has lost his physical stamina and mental vigour. The grafting once made, the grafts produce their own secretions which are absorbed into the system and so rejuvenate the body as to ward off the general consequences of old age.

Knowing the importance of gonadal secretions for the retention of physical strength and mental vigour, Yogic seers have designed the pose of *Viparita-Karani*, the practice of which increases and absorbs this elixir of life and creates that mental poise so necessary for the practice of the advanced aspects of Yoga in which the concentration of mind plays a very important part.

Shirshāsana, Sarvāngāsana and *Viparita-Karani* are circulatory poses in which there occurs a dilatation of the blood vessels of the parts which are lowest and in lesser degree of these parts which are in succession above the former. In *Viparita-Karani*, which should be practised lying supine on the seat, the pelvis is raised and supported by the hands by lifting up the legs into a vertical position but keeping the hand and the upper part of the trunk fixed on the seat. In this position the pelvis assumes a more dependent role as compared to the lower extremities. With each contraction of the heart, the blood, not reaching the lower extremities against gravity, accumulates in the pelvic region and in order to accommodate more blood the local blood vessels get dilated, and so flush the gonads which are located in that region absorbing their secretions and preventing premature old age. Simultaneously with this, the return of the venous blood to the heart by gravitation accelerates the latter to propel the blood with a greater

velocity and so stimulates the gonadal secretion. The return of the venous blood to the heart by gravitation also decreases the congestion of the accessory sexual organs, lessens the desire to eject and also prevents its unnatural escape.

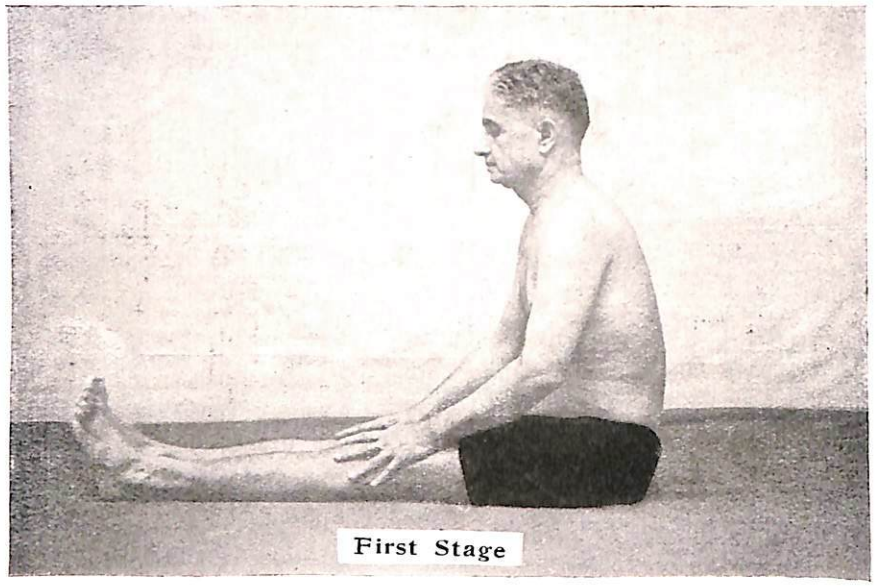
According to the Yogic texts, this pose should be retained for nearly three hours to reap the maximum benefit from it. The time of retention should be gradually increased everyday from twenty-four seconds onwards. But for a student of physical culture who has to practise this pose as one of a set of *āsanas*, the maximum retention time need not be more than three to six minutes.

Technique: This pose should be practised lying supine on the seat. The first stage for reaching the final pose is the same as in *Sarvāngāsana*. In the second stage, instead of throwing the legs upwards as in *Sarvāngāsana*, tilt the raised legs slightly towards the head, and try to raise the pelvis and the lower part of the trunk from the ground by putting pressure on the extended arms. When the former are sufficiently raised from the ground try to support the raised pelvis with the hands by bending the forearms at the elbows. Now bring the tilted legs back to their former position. In this assumed position the head, neck and the upper part of the trunk remain in contact with the ground. Hold this position for from 20 to 30 seconds and gradually increase the time of retention to a period of 3 to 6 minutes. There should be no repetition of the pose. As compared to *Sarvāngāsana* this pose is rather difficult to retain. The elbows have to bear the brunt of supporting the lower part of the body against

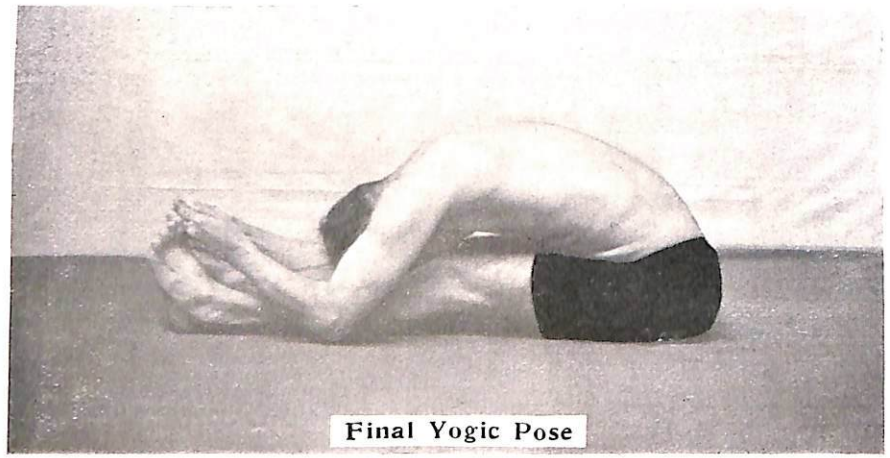
gravity as it falls as a dead-weight on them making them sore in a short time ; but by constant practice the elbows get accustomed to bear the weight.

PLATE XI

PASHCHIMATANĀSANA AND ITS STAGES



First Stage



Final Yogic Pose

PASCHIMATĀNĀSANA

(THE POSTERIOR STRETCHING POSE)

This *āsana*, as its name signifies, is practised for stretching (*tan*) all the posterior (*paschima*) muscles of the body, particularly the muscles of the back and of the posterior wall of the abdomen. This is to be effected by stretching both the legs in front and bending the trunk over them till the head touches the knee. This will be helped by grasping the toes with the hands. This pose automatically contracts the recti muscles of the front abdominal wall and so retracts them as to compress the abdominal viscera. The posterior muscles of the thighs, particularly the hamstrings, are also stretched in this pose. By bringing these various muscles into play their pliability is increased and their tone improved due to better circulation of blood through them; the indirect effect of this pose is seen in the improved circulation in the spinal cord which is essential for preventing degeneration of the nervous tissues. The compression of the abdominal viscera brought about in this pose improves their tone and starts healthy peristaltic activity of the intestines which promotes the formation of digestive secretions and cures constipation. The nerves arising from the lower part of the spine and which supply the pelvic organs are also effectively stretched and so toned up. For an average adult unaccustomed to any exercise, or for people who are advanced in age, it is not possible to reach a perfect pose even after 15 or 20 trials.

This ought not to deter them from practising this pose nor should it be left half achieved. They should proceed slowly and steadily with the practice of it. Such people being muscle-tied this exercise is likely to produce soreness of their muscles but this will soon pass off after a few days during which practising this *āsana* should be avoided; this pose may then be tried again, but care should be taken not to overstrain the muscles. The gradual arching of the back more and more everyday will make the necessary adjustments towards a perfect pose. As the pose is to be practised with fully extended knees it is not possible to reach the toes with the fingers in the beginning without bending the knees. In that case the following dodge should be tried: catch hold of the toes with the knees bended and then try to straighten the knees till they touch the ground. The extended-knee position being of prime importance in the pose, if you are unsuccessful even with the above-mentioned dodge, leave off the attempt and take hold of the legs nearer the ankles, trying to bend the body forward as much as possible without feeling discomfort. By this process the spine will become elastic and the hamstring muscles will be able to bear the strain of the stretching put on them. You will soon be able to easily hook your fingers round the toes.

Here a word of caution is necessary. This pose should not be practised if there is any disease of the abdominal viscera present or in enlargements of the liver or the spleen.

Technique: *1st Stage:*—Sit on the ground with the legs fully stretched and kept close together. Raise the

hands above the head and with a swinging movement bend the body forward, more and more every time, confine the movements to the hip joint and try to touch the toes of the respective sides. The exhalation of breath will help in bending the body forward. It is immaterial whether you touch the toes or not. Remain in this position for 3 or 4 seconds and then resume your original posture. Repeat this exercise 4 or 5 times. This stage should be practised for at least 10 to 15 days.

2nd Stage:—In this stage a definite effort should be made to clasp the great toes by bending the body still further and lowering the head between the hands. If you are still unable to reach the great toes try the device of bending the knees slightly and take hold of the toes and then try to straighten the legs to their full extent. After having achieved that, retain the pose for ten or fifteen seconds and revert to your supine position; practise this 3 or 4 times. Carry on the process for 10 or 15 days successively.

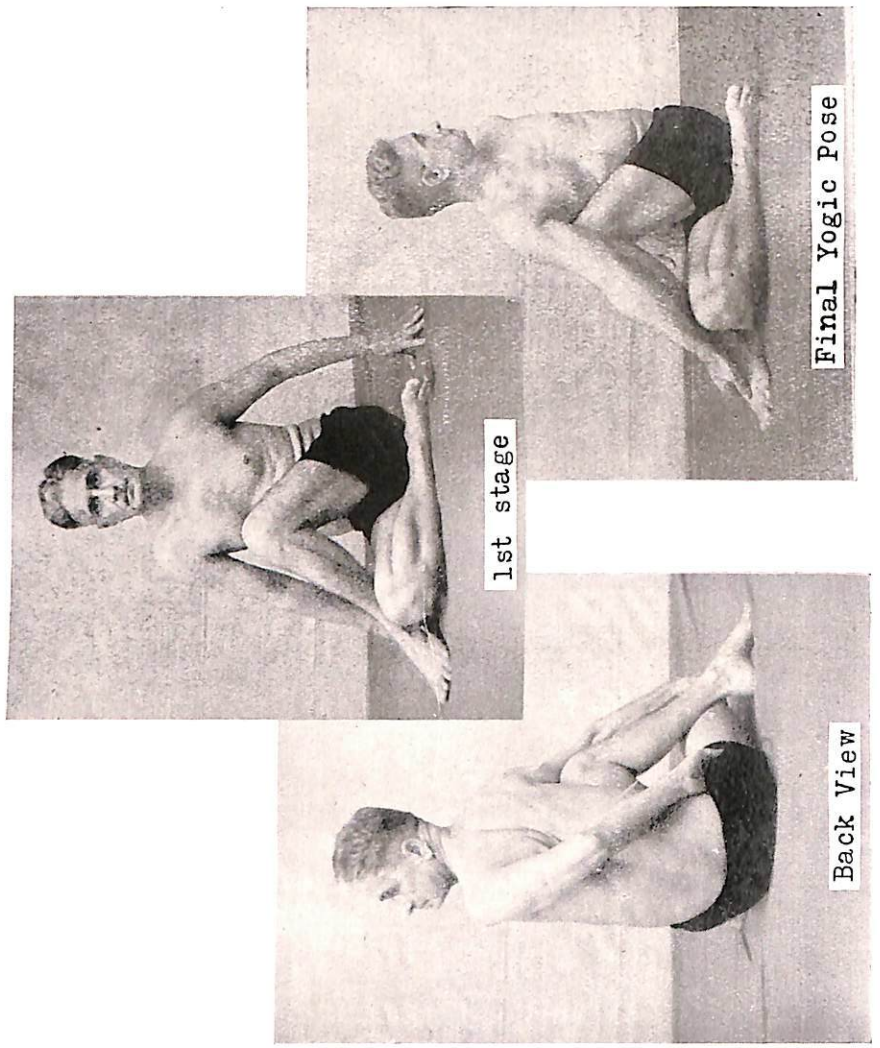
3rd Stage:—In this stage a definite effort should be made to bend the head so low as to touch the knees without raising them. To achieve this, exert a pull on the great toes by hooking the fore and middle fingers round the great toes. This stretches the posterior muscles of the legs and helps the trunk to bend further forward making it easy for the forehead to touch the knees. The shortening of the distance between the shoulders and the toes causes the hands to bend at the elbows which rest on the ground by the side of the thighs. To touch the knees with the forehead may take several days to achieve but persistent

effort will be sooner or later crowned with success. This is the perfect *Paschimātanāsana*. Retain the pose at first for 10 to 15 seconds only and then gradually increase the time to 30 and even 60 seconds. When you have reached that retention time the different stages should be done away with and the whole pose should be practised at one sitting. On no account release the pose suddenly. This must be done gradually by releasing the toes first. A sudden release may induce spasms in the overstretched muscles. Lift the head gradually from its lowered position and then raise the trunk. Remain in this position for about 10 to 15 seconds and then gently bend the knees; with the bending of the knees the pose becomes lax. *Padahastāsana* or the feet and hand pose is another variety of *Paschimatanāsana*. It is practised while standing.

As a therapeutic measure this pose may be practised for the cure of chronic lumbago, for the stretching of the sciatic nerve, as a cure for sciatica, and for toning up sluggish bowels and abolishing constipation.

PLATE XII

ARDHA-MATSYENDRĀSANA AND ITS STAGES



ARDHAMATSYENDRĀSANA

(THE SPINE-TWISTING POSE)

In a majority of the Yogic poses the contortions of the spine plays an important part. The spine is made to perform all sorts of movements that it is capable of—forwards, backwards, right and left lateral twists. The spine encases the spinal cord in its bony central canal and the spinal nerves, issuing from it through the outlets in the bony canal, spread their network over the entire body so controlling and regulating the latter's activity. On the two sides of the spine inside the body lie the two chains of sympathetic system which are connected with the spinal cord by strands of nervous tissue. The various plexuses of the sympathetic system inside the body are connected with the brain through the vagus or tenth cranial nerve, which originates at the base of the brain. Thus every spinal contortion stretches the nerves that issue from the spinal cord and the accompanying wave of stimulation spreads to the sympathetic chains and the vagus. The primary aim of the Yogic poses is to stimulate by indirect means the autonomic system which is not normally under our conscious control and thus make it impressionable to our thought. When this has been achieved one must be in a position to control its unbridled activities which may involve one in a variety of troubles. Such control can be obtained through the cerebro-spinal nervous system by the practice of concentration and meditation; hence the great

importance of maintaining the nervous system in an alert and healthy condition. The designers of Yogic *āsanas* knew anatomy as well as the physiology of the body in detail and every pose has been so adjusted as to produce a definite physiological effect.

In *Paschimatānāsana* a forward bending of the spine is executed by stretching it over the extended legs at its lower attachment. In *Sarvāngāsana* a similar bend is achieved but is executed from its upper points of attachment. In *Halāsana* the different segments of the spine—lumbar, dorsal and cervical—are made to bend forward from below upwards until the whole spine assumes a semi-circular arch. In *Bhujangāsana*, *Shalabhāsana* and *Dhanurāsana* the backward bends are prominent, while in *Ardha-Matsyendrāsana* the spine is made to twist in both the left and right directions but on its own axis. This is done by fixing the lower pole of the spine by sitting on the ground in a particular position. In the Western system of physical culture such spinal twists are never enacted. They are unique to Yogic culture and in that the latter remains unrivalled in its conception.

Technique: This pose should be practised in three stages.

1st Stage :—Sit on a mattress with the legs fully extended and placed close to each other. Then decide on the side to which the spine is to be twisted. If your decision falls on the right side then bend the left knee upon the thigh and set the heel with the help of your hands firmly on the perinium, first lifting up the scrotum. When rightly adjusted, the sole touches flatly the inner side of

the extended thigh. Care must be taken not to move the heel from this assumed position during the subsequent movements. Withdraw the extended leg and bend it at the knee placing the foot beyond and close to the left knee. Keep the foot flat on the ground by keeping the knee erect. Twist the trunk to the right as far as you can and firmly fix the left arm-pit against the inner side of the erect knee. Fully extend the arm in a supine position, *i.e.* with the palmer surface upwards and take hold of the left knee firmly on its outside with the palm or grasp the foot or toe of the leg, the knee of which is made erect. This is the most difficult part of the process. It will take some time before you will be able to grasp the knee. At first try to fix the arm-pit against the knee, with the arm extended. When you are able to do this without much strain then alone proceed to take hold of the knees.

2nd Stage:—In the first stage the lower part of the spine in the lumber region is twisted and to a minor degree the dorsal spine as well. To complete the twist of the dorsal spine, swing the right arm backwards and try to hook the fingers over the left groin. This will prove another stumbling block. You will not be able to reach the groin at the first attempt; but a few days' practice and sincere efforts to reach the groin will help you to achieve this.

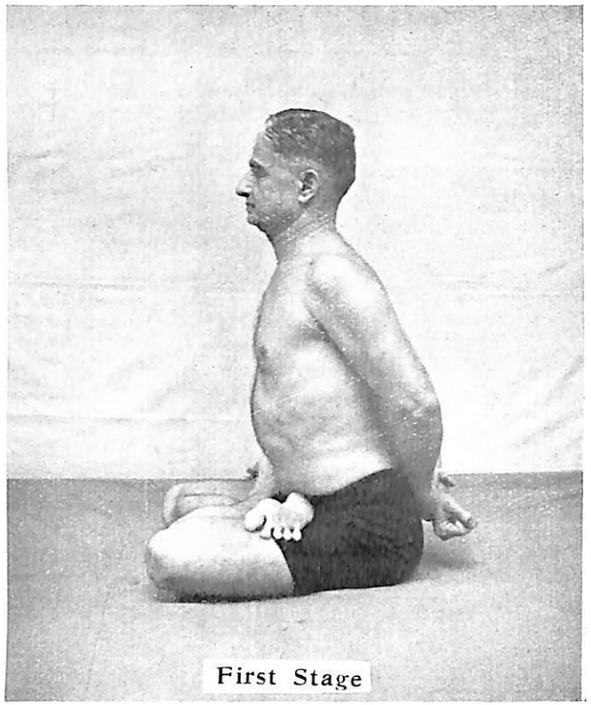
3rd Stage:—In the first two stages the dorsal and lumbar regions of the spine are completely twisted on their axis, but the cervical spine remains unaffected. To give a twist to this, turn the neck to the right side so as to

bring the chin in a line with the right shoulder. This will complete the spinal twist in its entire length.

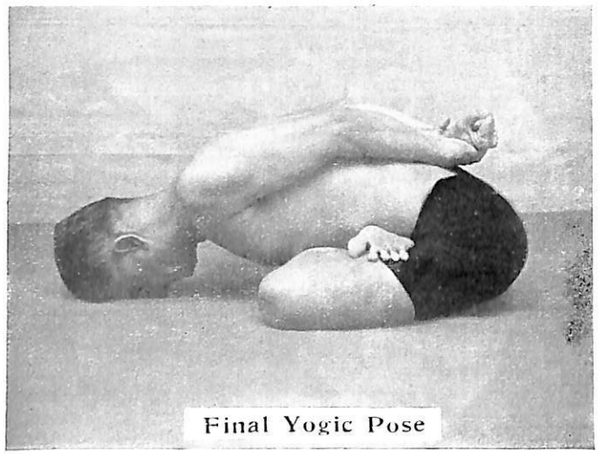
In the practice of this pose the trunk must be kept entirely erect. Similarly you may twist the spine to the left using your right extremities.

Retain the final pose at first for 5 or 6 seconds and increase the time from 1 to 3 minutes and then release the pose gradually.

PLATE XIII
YOGA-MUDRA AND ITS STAGES

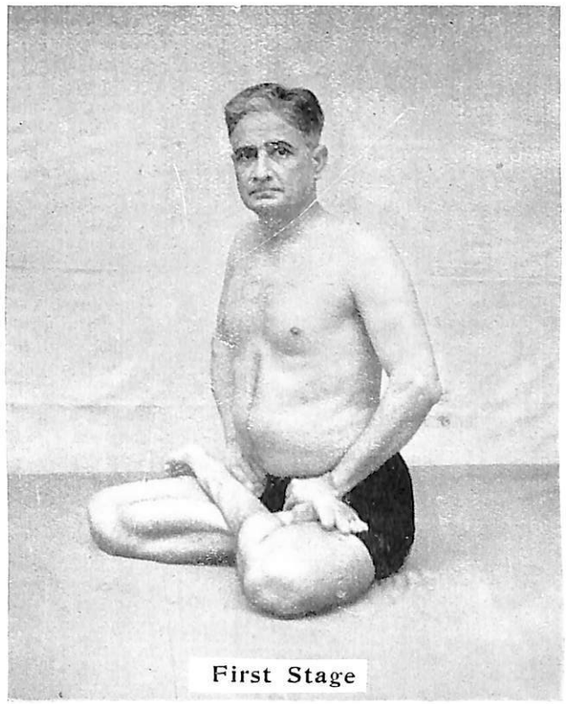


First Stage

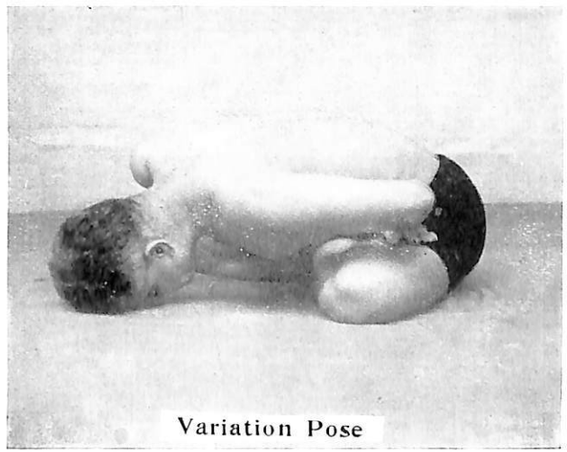


Final Yogic Pose

PLATE XIII (contd.)
YOGA-MUDRA AND ITS STAGES



First Stage



Variation Pose

YOGA MUDRĀ

(THE COLON-TONING POSE)

Yoga-Mudrā is a pose which is highly extolled in Yogic literature. Retention of this pose for a long time is supposed to awaken the dormant *kundalini*—that is to say to increase the anabolic reserve of the body by toning up the parasympathetic nerves. It is a pose which can be advantageously practised by those who suffer from chronic constipation due to the atony (flaccidness) of the intestinal walls or by those who have to press the palms of the hands in the right iliac region at the time of defecation to help the residual mass to move past the ileo-colic sphincter. Though the hollow viscera in the abdomen forms one continuous tube, it has on it certain catchment tracts, controlled by valves or sphincters which open and allow its contents to pass forward, when they have finished their assigned functions. The first catchment area is the stomach. It has a valve at its upper end which opens by the peristaltic activity of the gullet induced by the passage of food, allowing the latter to drop into the stomach. The food is not allowed to pass into the next catchment tract, the small intestines, by a valve at the other end of the stomach till the stomach has digested certain food-stuffs and made the whole mass sufficiently liquid by the churning movements of the stomach wall. Then the valve opens and allows the liquid mass intermittently to enter the intestines. In

the upper part of the small intestines the remnants of the food stuffs not acted upon by the digestive secretions of the stomach, are digested and the whole mass is propelled further forwards along the entire length of the small intestines, by the peristaltic action of their walls, which absorb the necessary nutrient materials for the needs of the body. To prevent the contents of the small intestines from passing too quickly into the next catchment tract, the large intestines or the colon there is another valve where the small intestines join the large intestines. The ileo-colic valve, as it is termed, is under a condition of constant contraction due to nervous impulses. The residue, after the absorption of all nutrition, accumulates at the valve and is pushed through little by little with each peristaltic wave into the coecum, which forms the commencement of the large intestines; in between the waves of propulsion the valve closes preventing any reflux of foecal matter from the large intestines. With a flaccid condition of the whole intestinal tract the competency of the ileo-colic valve is lost and it remains open thus transforming the lower part of the small intestines and the coecum into a common cavity. This causes stagnation of the contents for a longer time in the small intestines than is normal and produces the worst form of constipation which causes the distention of the small intestines by the reflux of the putrefactive gases formed in the colon.

The large intestines act independently of the small intestines and in them the peristaltic activity is naturally sluggish; but they are subjected to sudden

spasmodic contractions five or six times a day which propel their contents forward towards the pelvic colon; the contents are however not allowed to pass out of the body by the contraction of the anal sphincter. With a loss of tone of the walls of the large intestines these spasmodic contractions do not occur; if they do at all, they are not powerful enough to push forwards the intestinal contents. The large intestines thus become a cesspool in the body with the accumulation of many days. The main function of the large bowels is the dehydration of their contents and the longer the residue is allowed to accumulate therein the more stone-like the masses become which are difficult to evacuate: normally when sufficient accumulation occurs at the pelvic colon there is created a desire for defecation which must be promptly answered and the contents evacuated by straining to overcome the contraction of the anal sphincter. If the call to defecate is unheeded the desire soon passes away and may not recur until the next regular period arrives for opening the bowels. Thus more and more residue accumulates and distends the lower bowels; this impairs their peristaltic activity which in its turn induces constipation.

To relieve the constipation due to the sluggishness of the ileo-colic valve and lack of tone of the large intestines, the best exercise is the pose of *Yoga-Mudrā*. The position of the hands and heels in this peculiar pose, which consists in bending the body forwards at the hip-joint so as to touch the forehead to the ground, exerts a pressure at the very points which are most responsible for constipation—the region about the ileo-colic valve and the pelvic colon. Pressure at the ileo-colic valve tones up

the valve and starts the spasmodic contractions of the colon at its very commencement. The pressure at the pelvic colon starts spasmodic contractions which throw the residual matter into the rectum and its distension creates a desire for defecation. Daily practice of this pose at a particular hour will educate the large intestines to contract spasmodically near about at that hour and create a desire to open the bowels. This isolated pose is best practised in the early morning when one is just out of bed, taking care to evacuate the bladder first.

Technique: *1st Stage*:—Get in the *Padmāsana* pose with this variation that the heels are carried upwards and backwards so as to press on the abdominal wall where they touch; when you have comfortably adjusted the heels in the right places carry the hands back and grasp the left wrist with the right hand; sit erect; and slowly bend the body forwards over the heels till the head touches the ground. Retain the pose for ten seconds, breathing normally. Repeat the pose three or four times in succession. In this pose the heels exert gentle pressure on the coecum and the pelvic colon, just enough to stimulate the nerves which regulate their activity and release the tonic contraction of the ileocolic valve.

2nd Stage:—Continue sitting in the *Padmāsana* pose with the heels higher than in the *Padmāsana* pose and release the hands to grasp the heels with the hollow of the hands to create bigger balls so that the pressure on the points of the abdominal walls may be greater. Then slowly bend the body forwards as in the first stage. The little device of catching the heels in the hollows of the

hands exerts an enormous pressure against the large intestines which are effectively massaged and toned up by the movements of the diaphragm in the respiratory act. A gurgling noise due to the spasmodic contraction of the colon will be felt during the retention of the pose.

UDDIYĀNA-BANDHA AND NAULI KRIYĀ

(RETRACTION AND ROLLING POSE)

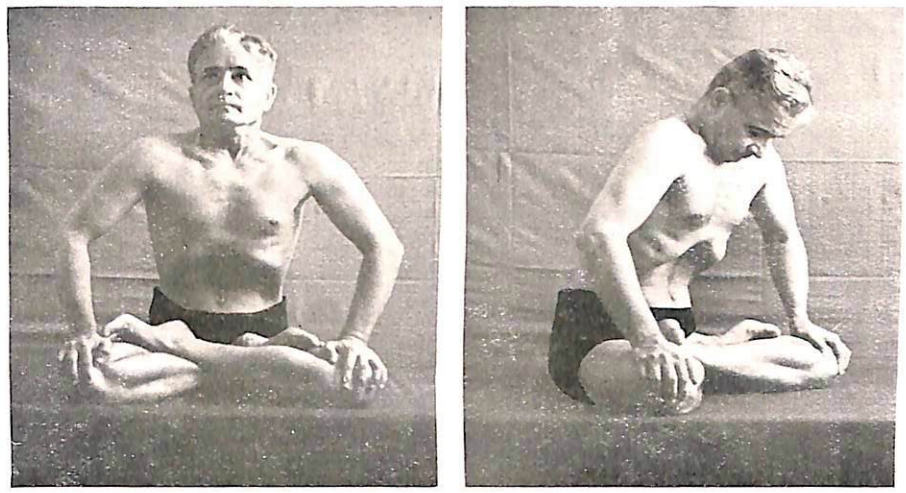
Of the many *āsanas* mentioned in the Yogic literature of old, those dealt with in the foregoing pages are quite sufficient to keep the body fit by stimulating circulation, digestion, respiration, secretion and excretion,—in other words to enable the body to carry on healthy metabolism. They develop the skeletal muscles and so give one sufficient power of endurance without putting too much strain on the heart. There are more difficult *āsanas* than these but they require the guidance of a spiritual preceptor and they are meant more for those who wish to practise the higher and more exciting stages of Yoga—*Prānāyāma, Pratyāhāra Dhāranā, Dhyāna* and *Samādhi, i. e.* breath control, nerve control, mind control, meditation and final emancipation, respectively. Besides the *āsanas* there are other exercises mentioned for the achievement of Yoga. Out of these only two could very well form a part of the Yogic physical culture system. They are *Uddiyāna-Bandha* and *Nauli Kriyā.* It is said that he who practises them regularly can master death and remain for ever young.

The literal meaning of *Uddiyāna-Bandha* is "restraint of the flying up (*uddiyāna*) impulse". Flying up impulse could only be afferent and these afferent impulses within the body are generated by the sympathetic division of the

PLATE XIV

UDDIYAN

(Front and Side View)



NUALI

autonomic nervous system, the larger part of which is located in the abdominal cavity. These impulses are katabolic or destructive in their activity but they are curbed by the impulses, from the other division of the same system, the parasympathetic—which are anabolic or preservative in their action. Thus between them these two divisions regulate the activity of the involuntary organs. Restraint of the destructive activity of the sympathetic brings into prominence the preservative activity of the parasympathetic, and in Yogic parlance this is termed the awakening of the dormant *kundalini*. We have no direct means of exciting it as it is not under our voluntary control. The ancient sages have devised methods of rousing it by the indirect means of playing with the abdominal muscles. Apart from the ambitious claims made for these exercises there is no doubt that they are the two most potent weapons available for combating the irregularities of the intestinal movements to which many of the ailments of the body can be traced. The intestinal irregularities are manifested either by nausea, vomiting and constipation or by gastric and intestinal pains and looseness of the bowels. Excessive activity of the sympathetic inhibits peristaltic activity of the intestines and produces constipation. On the other hand, an excessive activity of the parasympathetic increases the movements of the intestines and produces looseness of the bowels. In health the balance of the rhythmic activity of the intestines is maintained by these two branches—sympathetic and parasympathetic—of the autonomic nervous system, acting unconsciously though antagonistically on each other. Over-activity of one part automatically

stimulates the other part in order to counteract it. By the practice of *Uddiyāna-Bandha* the excessive activity of the sympathetic is controlled without exciting the parasympathetic, over-stimulation of which would create a vicious circle. This disturbance of harmony between the two ultimately tends towards a loss of psychic balance and may lead to mental derangement which may be manifested by anxiety, neurosis, suspicion, depression and restlessness; they are the outcome of emotional activities which are supposed to be under the control of the autonomic nervous system. The sudden retraction of the relaxed abdominal muscles, particularly of the two recti (straight front muscles of the abdomen), against the spine after their preliminary contraction in the full expiratory effort in the practice of *Uddiyāna-Bandha*, drags the intestines upwards and downwards to their utmost limit; this stretches with them the sympathetic fibres curbing any tendency towards over-activity of the solar plexus—the brain of the sympathetic nervous system—without the stimulation of the parasympathetic.

Similarly over-activity of the parasympathetic must be controlled without the excitation of the sympathetic. The principal centres governing the parasympathetic activity are located in the mid-brain and to reach it, the normal impulse of the sympathetic must be directed along the spinal cord to the brain. This is achieved by *Nauli-Kriyā* maintaining *Uddiyāna*, to curb the over-activity of the sympathetic. *Nauli-Kriyā* consists in isolating by contraction the two recti muscles from the group of abdominal muscles and rolling them clockwise and counter-clockwise. The rolling of the recti muscles both ways stretches the

intestines sideways and generates an impulse along the splanchnic nerves which pass along the spinal cord to the brains; this controls the over-stimulation of the parasympathetic at its very centre in the mid-brain.

The daily practice of these exercises not only massages and tones up the bowels to regain their normal rhythmic action, but in addition these exercises restore in a permanent and definite manner the unbalanced activity of the autonomic nervous system within the limits of normal physiological fluctuation.

Technique of Uddiyāna:—This can be practised either in a sitting or a standing position. For a beginner, the sitting position is the best. Sit in *Padmāsana* and grasp the knees. Relax all the muscles of the body and with forcible expiration breathe out the air from the lungs. This may be done in stages by making at the start a few expiratory efforts and finally a prolonged one, which will be helped by arching the trunk and bending the head forwards. When you are in this position, without breathing in any air, press the hands firmly on the knees with the elbows pointing outwards to fix the shoulders. Then make a vigorous attempt to raise the diaphragm and suck in the abdominal wall by pushing the chest forward. This, if properly done, produces a deep concavity in the abdominal wall which extends from the pit of the stomach to the pelvis. In an attempt to keep the air out of the lungs, the muscles of the neck get contracted automatically. Maintain this position till it is quite impossible to hold out the breath any longer without discomfort. Then relax the muscles of the neck and shoulders and slowly inhale to efface the concavity in the abdominal wall. Repeat this cycle 5 or 6 times.

Caution:— This exercise should be avoided in cases of circulatory disturbances and serious abdominal troubles.

Technique of Nauli:—Carry out the whole technique of *Uddiyāna* and while maintaining the pose try to isolate the recti muscles from the adjoining muscles of the abdominal wall by contracting the hip muscles; this will exert a forward pressure just above the pubic bones where the recti muscles alone have their seat of origin to the exclusion of other muscles. Whether you have hit upon the right area or not will be apparent by a feeling of soreness in that area. The isolation of the recti muscles being by contraction, it will extend automatically upwards to their points of insertion at the ribs forming a vertical rigid band standing out in the centre of the relaxed abdominal wall. Practise the isolation of the recti muscles till full mastery over *Nauli* has been obtained so as to effect it with perfect ease and without pain. The isolation of the two recti simultaneously is termed "*Nauli-Madhyamā*" in Yogic literature.

The next variation of *Nauli* to be practised is the isolation of each rectus alternately, either the right (*Dakshinā-Nauli*) or left (*Vāma-Nauli*) from the relaxed abdominal wall. To achieve this, slightly tilt the body towards the side of the muscle to be isolated by giving a lateral bent to the trunk. The rectus muscle on the tilted side is then made to contract by keeping the other muscle relaxed by a conscious effort of the will.

When a student has mastered these aspects of *Nauli* he is in a position to practise the final stage of *Nauli-Kriyā* which consists in rolling the central band of isolated recti muscles clockwise and counter-clockwise by churning movements either towards the right or the left, in which

the trunk and the hips take part. To do *Nauli-Kriyā* properly get the two recti muscles isolated, from the beginning maintaining *Uddiyāna*. Then keeping one of the recti muscles relaxed, roll out the contracted rectus muscle to its extreme side—which will be manifested by a curve on its central margin—and then relax it to resume its original position. Simultaneously with this relaxation, contract the originally relaxed muscle and roll it out to its extreme side and then relax it. This completes one cycle of *Nauli-Kriyā*. Repeat the cycles in quick succession by alternately tilting the trunk forwards and laterally to the side of the contracting muscle. To begin with one is only able to do 3 or 4 cycles during one exhalation but this number of cycles can be increased to 10 or 15 once mastery over *Nauli-Kriyā* has been established ; then the various steps are so quickly executed that an on-looker will not be able to distinguish between them.

Though the technique of *Nauli* is given here in detail, yet it will be found impossible for a beginner to achieve the final result in a few days. He will have to practise it day by day until he hits on the right method of doing it ; but he should never give up the attempt till perfect mastery has been obtained.

Caution:—*Nauli* should always be practised with an empty stomach. Though it is the best of exercises for improving the tone of the abdominal viscera yet it should not be practised in case of any chronic organic diseases of the viscera and in the case of high blood pressure. Boys and girls should not practise it before the age of puberty. One should be cautious in attempting *Nauli* after the age of 50.

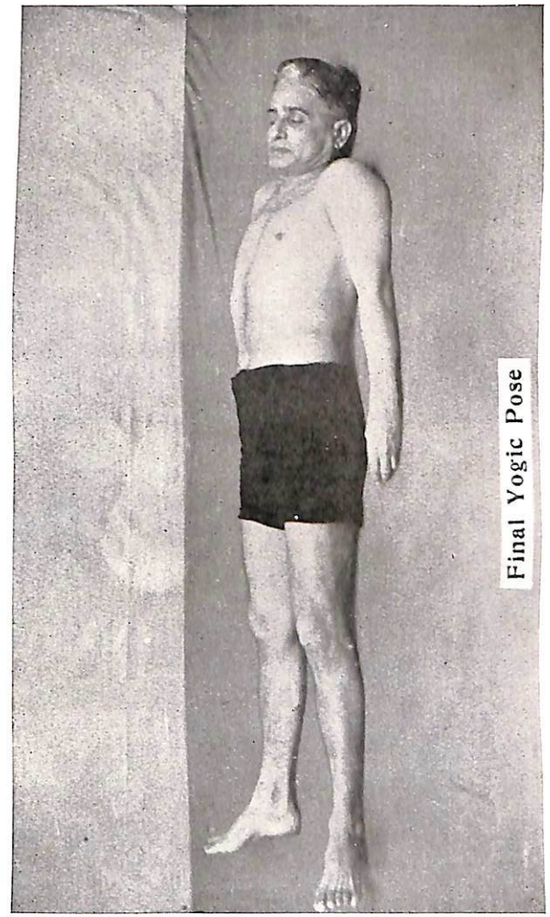
SHAVĀSANA

(THE CORPSE POSE)

Activity is the law of life and it is carried out at the expenditure of energy produced by a certain amount of wear and tear of all the organs of the body, and particularly at the expense of the voluntary muscles. During waking hours we perform all sorts of co-ordinated movements which are dependent on the contraction and relaxation of opposing sets of muscles and thus a certain amount of recuperative time is given to the muscles which are relaxed. If the contraction of a muscle is prolonged too long or carried out more frequently than a muscle is accustomed to, we feel a sensation of fatigue which is due to the accumulation of waste products of contraction. In the relaxed position of a muscle the circulation of the blood is not obstructed. The constant supply of blood energises the muscle by giving up its oxygen to it and in exchange carries away the products of metabolism, or renders them inert. The chief advantage of relaxation is that it gives in a minimum time a maximum amount of renewed strength. Sleep is a great energiser as all the voluntary muscles are then at rest and recuperative processes go on unconsciously. During sleep, the sub-conscious mind, not being under the control of consciousness, wanders away from the body. If we could obtain the same relaxation which we get in sleep by resting at will, the sub-conscious may be made to remain in the body and vitalise and control the

PLATE XV

SHAVĀSANA



Final Yogic Pose

activity of all the involuntary organs in the body. This conscious rest can be obtained by practising *Shavāsana* or the corpse pose. This *āsana* should be practised at the end of the whole course in order to recoup the fatigue that results from the practice of the other Yogic exercises.

Technique: Lie supine, *i. e.*, flat on the back with the hands and legs fully extended. Keep the feet apart by about nine inches with the toes directed outwards. This position helps to relax the muscles of the lower extremities. Keep the hands close to the body with the palms pointing upwards and with the fingers slightly flexed. The face should be turned sideways by rotating the head on its own axis. This will help to relax the muscles of the neck. To relax the face muscles let the jaw drop down by keeping the mouth slightly open. Keep the eyes closed and the body quite motionless. The relaxation of the trunk-muscles is dependent on correct breathing. The muscles of the thorax and the abdomen normally begin to relax during expiration and maximum relaxation is reached during the suspensionary period occurring between the respiratory cycles. It is not possible to suspend breathing for a long time. A short inspiratory effort followed by a prolonged expiratory one will maintain the relaxation of the trunk-muscles for a longer time than their contraction in a short inspiratory effort. Even in this relaxed position of the body the muscles still remain alert for any stimulus that they may experience, because the vitality of the muscles in the form of voluntary nerve-force is still present. The next effort should then be directed towards devitalising the muscles so as to

completely relax them in the true sense. To achieve this the nerves supplying the muscles must be made non-impressionable to both, the affarent (in-going) and efferent (out-going) stimuli. To begin with, try to devitalise a group of muscles at a time. Devitalising should be carried out in the following order. First the lower extremities, then the upper extremities, neck, face and lastly the trunk. The thought of devitalising a particular group of muscles must synchronise with deep inhalation which helps to draw the vitality of the part (*Prāna*) upwards and this is made apparent by a sinking feeling in that part. This makes the muscles non-impressionable to afferent impulses. Keep steady the vitality thus withdrawn at a point near the root of the nose by directing the gaze there with the eyes closed, and then slowly exhale. This prevents the generation of a reflex impulse from the brain and in the absence of this the devitalized part remains completely relaxed. By this process not only are all the voluntary muscles relaxed, but at the same time that concentration of the mind is achieved which is so highly prized by spiritual culturists for developing further the more advanced and spiritual stages of Yoga.

When success in relaxing the muscles of the different parts of the body has been achieved, then an effort should be made to relax the muscles of the whole body at the same time. This is the true aim of *Shavāsana*. With perfect relaxation of all the muscles of body, the breathing becomes slower and shallower and the body becomes like a corpse. Whether the body is perfectly relaxed or not can be tested by telling some one to lift after a stipulated period either the forearm or a leg to a certain height and

then let it go. If the body is in a truly relaxed condition, the limb raised will fall to the ground like a dead-weight. Retain the pose from three to six minutes taking into consideration the fact that in this pose the time seems abnormally long.

This pose, if rightly practised, is extremely refreshing after any kind of exertion and is so soothing to the nerves that sleep is often induced during its practice. This tendency to go to sleep should be checked very determinately.

As a therapeutic measure *Shavāsana* should be practised to reduce high blood pressure and for the cure of neurasthenia.

PADMĀSANA & SIDDHĀSANA

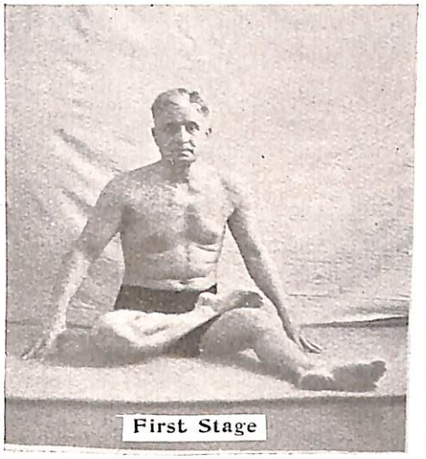
(THE LOTUS POSE & THE ACCOMPLISHED POSE)

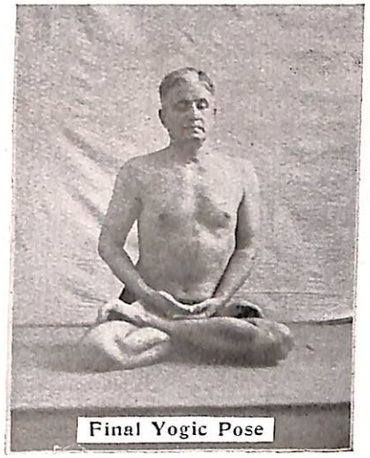
These *āsanas* have no real cultural value. But they are praised in Yogic literature for their high spiritual value. They are meditative poses. It is said that he who sits in these poses for a long time with the mind fully controlled, automatically raises himself to God-consciousness. Internal or external stimuli do not disturb him. These poses, or as a matter of fact all meditative poses, reduce the metabolic activity of the body to a minimum and therefore no violent disturbances take place in the body to upset the mind; and the mind being controlled no external stimuli would disturb it from its achievement.

I have described *Padmāsana* as a part of physical culture as it figures as a preliminary step in *Matsyāsana* and *Yoga-Mudrā*. In this pose the cultural advantage is restricted only to the lower extremities. In producing a foot-lock to resemble the petals of a lotus one has to arrange the feet in a particular way and in doing so the flexors of the lower extremities are greatly contracted and pressed. This interferes with the arterial circulation in them and consequently a larger supply of blood is directed to the organs in the pelvic region, thus toning them up and absorbing the internal secretions of the gonads (sexual glands). It is said that the absorption of the gonadal secretions control the emotions and maintains the psychical balance.

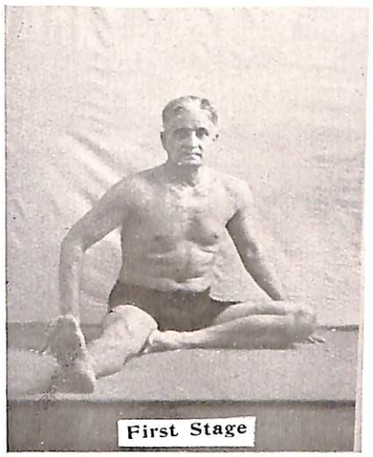
PLATE XVI

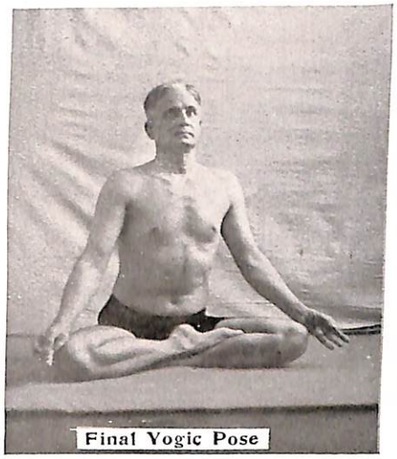
PADMĀSANA AND ITS STAGES


First Stage


Final Yogic Pose

SIDDHĀSANA AND ITS STAGES


First Stage


Final Yogic Pose

Technique of Padmāsana: Sit on the carpet with the legs fully stretched. Bend the right knee and fold the leg on the thigh, then lift the right foot and place the heel in the opposite groin. Stretch the foot, with the sole pointing upwards and adjust it to rest on the root of the opposite thigh. Fold the other leg similarly and adjust the heel and foot on the opposite groin and thigh respectively. The heels so adjusted lie by the sides of the pubic bones, pressing on the external abdominal rings. The whole process of this foot-lock seems easy to carry out at first but in actual practice when the left heel has to be taken over the folded right leg, some difficulty will be experienced, particularly by short and thick-set persons. The heel has to be raised to a certain height, after the leg has been folded, so as to cross it over the other folded leg, and adjust it in the opposite groin. In raising the folded leg, a beginner experiences pain in the knee due to the stretching of its lateral ligaments. This can be overcome by tilting the body forward so as to cause the shin of the folded leg to touch the ground and abducting or rolling out the extended leg before folding. Once the foot-lock has thus been executed, hold the trunk erect, taking care to keep the knees touching the ground. Open the left palm and extend the fingers keeping them close to each other. Adjust the hand so opened on the heels with the palm upwards. Then place the right hand similarly opened on the left palm. Bend the neck slightly forward, directing the gaze to the tip of the nose.

There are two variations of *Padmāsana* differing slightly in the placement of the hands, but the foot-lock is

common to both; the latter alone is necessary in the practice of *Matsyāsana.*

Technique of Siddhāsana: This differs from *Padmāsana* in its foot-lock. Sit with fully stretched legs on a carpet; then bend the left knee on to the thigh and place the heel firmly touching the perineum holding up the genitals, the sole remaining in contact with the right thigh. Then fold the right leg after the manner of the left and place the heel above the root of penis, in contact with the pubic bones. The genitals lying between the heels are well protected. Then extend the right foot so that the sole comes in contact with the left thigh. Tuck in the lower side of the right foot with the toes between the crevice formed by the left thigh and the left calf. This completes the foot-lock of *Siddhāsana.* The palms of the two hands may be allowed to rest on the knees or the hands and fingers may be arranged to form *Jnāna-Mudrā* (symbol of knowledge) as shown in the figure. The gaze should be directed to the root of the nose.

IV. THE COLLECTIVE PHYSIOLOGY AND THERAPEUTICS OF YOGIC ĀSANAS

DYNAMIC *vs.* STATIC EXERCISES

A youth is generally agile and active. He can bend his body forward and backward and give lateral twists to it with ease. His spine is supple and so enables him to carry out infinite movements of the body, little knowing that by this he is improving the circulation of his blood and toning up all the vital organs of the body to meet the strain that he puts on them. The flexibility of the spine in all directions gives a youth his elasticity. For the activities associated with the middle period of life we hardly make use of the spine; and its various joints, which having very little natural movement between themselves, get stiffened, preventing the arching of the body forward or backward with ease and without pain. There may not be as yet any stiffness of the joints of the extremities which are constantly on the move even during middle age. The stiffness of middle age, then, could only be ascribed to the rigidity of the spine, and to retain the latter's suppleness, one must take exercises of a suitable nature as a part of the various other activities of life in order to keep the body fit and counteract the disadvantages arising from that period of life. These exercises constitute, as it were, the oil to grease the body-machine. Walking, running, cycling, riding, swimming, golfing and such other dynamic exercises are good in their own way. As they are outdoor exercises, one inhales the ozone from fresh air and so improves the circulation of blood by

stimulating the heart; this results in a general improvement due to a better supply of blood with its nutrient elements to the different organs and tissues of the whole body. In the above-mentioned exercises, the spine is however hardly used. They are not primarily beneficial for the removal of the root cause of constipation, the source of all auto-intoxication. On the contrary, in these exercises the spine is kept erect and the abdominal muscles, which contract and relax with the spinal movements, are hardly exercised. They do not exert pressure on the abdominal viscera and tone them up to excite and increase their normal peristaltic activity. The generating cause of auto-intoxication being there, it produces early tiring and so these exercises are given up. The greatest drawback of these exercises, during middle age, is that instead of lowering blood pressure they raise the same for a time at least which is higher than normal in majority of people in the middle period of life, by bringing more blood to the periphery from the abdominal viscera which are not subjected to vigorous action. If there be any occasion to bend the trunk, while taking these exercises, it is bent as a whole by a movement of the hip joint and not by arching the spine. Besides, being taken out of doors, these exercises entail a waste of time and energy without much real advantage. An average man of limited means cannot afford them and business and professional men have hardly time to go through them. Such people require a set of exercises of a tabloid nature which they could practise

in seclusion and at their leisure and so derive maximum benefit with a minimum expenditure of time and energy.

In all the systems of physical culture, which are now in vogue, very little attention is paid to the trunk and very often the abdominal muscles are completely ignored. Their chief aim is to develop certain groups of skeletal muscles, especially the muscles of the legs and arms. The devisers of these various systems have at last realised their mistake and so they now include in their systems some abdominal exercises which develop the intrinsic power of contraction of the abdominal muscles by the help of the will. In the Yogic physical culture, which is the system of poses and as such static, all the exercises are directed towards improving the trunk and the abdominal muscles. They have been designed by the Yogic seers with the spiritual object of rousing the dormant *kundalini*. To know what that *kundalini* is I must refer the reader to my book *The Mysterious Kundalini*. To the materialist, they may be best exercises to counteract all the physical disadvantages that middle age is prone to. These Yogic poses make the spine supple and the abdominal muscles strong. They massage and knead the hollow abdominal viscera and make them regain their normal rhythm and remove constipation and with it the auto-intoxication. They lower blood pressure and burn out the unnecessary and superfluous fat, making the body slim again. Above all they improve general circulation, maintain the emotional balance and help to regain the elasticity of youth. It is said that a Yogi who practises the *āsanas* for spiritual reasons, retains eternal youth and lives beyond the usual

span of life assigned to mortals. In fact the Yogic exercises are so designed as to increase the anabolic processes of the different organs and tissues of the body; this is possible only by maintaining the tone of the involuntary nervous system, over which we have no direct control and which has its network of nerve filaments and knots (ganglia) mainly in the cavities of the trunk, *i.e.* in the thorax and the abdomen. This is done by the indirect means of massaging and kneading the organs it supplies, by the play of abdominal muscles over them, through spinal bends and twists and by breathing exercises, *i.e.* by the practice of *āsanas* and *Prānāyāma* respectively.

THE DIGESTIVE SYSTEM

One need not be an athlete in order to successfully cope with one's daily avocations and meet the strains and difficulties of the middle period of life. All that is required is a well-nourished and supple body with a flexible spine and without any organic trouble; for this, the digestive system and its mechanism must be in perfect working order. The majority of people, as they enter middle life, eat more than is necessary for the output of their energy, little knowing that it is not how much we eat but what we assimilate, that nourishes the body. Proper assimilation depends on the quality of food, its proper digestion, its absorption into the circulation to repair the wear and tear on the tissues, and also on the efficient removal of waste matter so that the process of assimilation may not be interfered with. To achieve all these things the intestinal muscles must be strengthened by suitable exercises. The hollow viscera and organs concerned in the process of

digestion—the liver and pancreas—must be massaged or kneaded by the play on them of the abdominal walls. Normally this massage is carried out unconsciously and automatically in the act of respiration. With each inspiration, the descent of the diaphragm pushes the viscera downwards and forwards against the abdominal wall subjecting them to resistance; and with each expiration the abdominal wall, due to a contraction of its muscles, is drawn inwards and upwards thus pushing the viscera against the diaphragm which recedes up into the cavity of the chest. If the abdominal wall is weak, which is generally the case in middle-aged people, this automatic massage which is supposed to keep up the tone of the viscera is not effectively carried out. The peristaltic activity of the bowels is, therefore, slowed down and this prevents the propulsion of the contents of the bowels forward and causes stagnation. In fact many of the physical disadvantages of the middle period of life can be prevented by maintaining the abdominal wall in a good condition. To keep up the tone of the abdominal muscles they should be properly and regularly exercised. They should be stretched and contracted. The stretching of the abdominal muscles can be effectively carried out by the practice of *Bhujāngāsana*, *Shalabhāsana* and *Dhanurāsana*. These poses stretch respectively the upper half, the lower half and simultaneously the upper and lower halves of the abdominal walls. As these poses are to be carried out by lying down on the abdomen, they increase the intra-abdominal pressure, fix the abdominal wall and thoroughly massage the intestines by means of respiration. Together with the stretching of the abdominal wall, there is arching

of the spine backwards which loosens the stiff spinal joints and stretches the sympathetic cords so toning up the viscera.

In the practice of the poses of *Halāsana* and *Paschimatānāsana*, the viscera and the other organs inside the abdomen are pressed firmly by extreme contraction of the muscles of abdominal wall and so they are effectively massaged against the abdominal wall by the movements of the diaphragm in respiration. In these poses the contracting and stretching of the muscles of the abdominal wall are effected by some contortions of the body. The muscles are not made to concentrate by our conscious will. But in *Uddiyāna* and *Nauli*, the muscles are made to contract and relax inherently over the bowels at the end of the expiratory act. For extreme retraction of the abdominal wall in *Uddiyāna* and its relaxation, massage the intestines upwards and downwards. This removes the dilatation of the stomach and at the same time adjusts the dropped transverse colon to its former level. In *Nauli*, isolation of the recti by contracting them with the help of conscious will during the retraction of the abdominal wall and their rolling, massage the intestines from side to side.

These poses tone the flaccid bowels, improve their blood-supply and peristaltic action, increase their secretions, stimulate the appetite and promote digestion.

The large intestines or colon owing to its fixed position is not subjected in these poses to as vigorous a massage as the small intestines. No doubt, they are toned up to a certain exetent to activate their natural slow rhythmic contractions but these are not powerful enough to propel their contents forward. They should be excited enough

to carry out spasmodic contractions which normally occur four or five times a day. This is done by the pose *Yoga Mudrā*. The practice of this pose at a stated hour educates the large intestines to go into spasmodic contractions by exerting a pressure on the coecum, the contents of which are pushed up towards the transverse colon and the sigmoid flexture, the contents of which are propelled into the rectum creating a desire for defecation and so ultimately relieving constipation.

THE CIRCULATORY SYSTEM

The other system which is very vitally connected with the nutrition of the body is the circulatory system. It consists chiefly of the heart, the blood vessels, which carry the blood impregnated with nutrient materials and oxygen to the different parts of the body, the veins, which carry the blood laden with the waste products of the tissue metabolism back to the heart, and the capillaries, a network of minute tubes which connect the arterial blood vessels with the veins. The weakest part of the whole circulatory apparatus are the veins. They have no contractile walls capable of propelling the blood against gravity and towards the heart. In order to flow up the veins the blood has to depend on the contractile force of the heart and of the blood vessels. For want of proper exercise, that force is apt to diminish under the influence of sedentary occupations, faulty and mistaken habits and ways of life. So the blood in the veins stagnates for a longer time than is necessary or normal, and produces water-clogging of the tissues thus impairing metabolism; if this condition is allowed to persist thus for a long period, it ultimately

leads to serious troubles by causing congestion of the internal organs, more particularly of the kidneys and the liver. The sluggishness of the circulation creates a feeling of depression and makes one feel out of sorts. To maintain proper circulation of the blood at its right velocity and pressure the circulatory apparatus must be stimulated to action without any particular strain being put on it. The heart, which pumps the blood through the blood vessels, though a strong muscular organ, becomes flabby as one approaches the 50th year, the time when the majority of circulatory disturbances begin to manifest themselves. The heart, by that time, has exhausted its reserve energy and when any sudden demand is made on it, there result shortness of breath and palpitations. The heart resents the extra strain that is put upon it and "cowes down its proud possessor to leave it alone to its habitual slackness acquired in the middle period of life".

As long as there is no organic disease of the heart and blood vessels present, the circulatory apparatus can be trained and strengthened by proper exercises just as it is possible to strengthen the skeletal muscles of the body. It is erroneous to think that just because shortness of breath and palpitations are produced with even slight exertion, the sluggishness of the circulatory system is best met with inaction and by becoming a permanent invalid. Certainly one should not take violent exercises to strengthen the circulatory system during the middle period of life as any such exercises would put a direct strain on the heart and raise the blood pressure. The exercising of the circulatory apparatus should be carried out indirectly, without exciting the heart to any excessive

increase of action. Is it possible to achieve this end? Yes, with the help of *āsanas* or poses mentioned in Yogic literature.

All the *āsanas* mentioned before tone up the abdominal wall and through it the viscera; due to their prone position they increase the intra-abdominal pressure without allowing the diaphragm to descend. They fix the diaphragm at a higher level in the thoracic cavity; thus the heart resting on it is massaged by its rhythmic action. This massage is still further aided by the up-rising of the diaphragm during the expiratory effort carried out during the pose. The pose of *Uddiyāna*, which carries the diaphragm to its utmost limit in the thorax, offers a great resistance to the heart enabling to be massaged effectively. The topsy-turvy poses of *Shirshāsana*, *Sarvāngāsana* and *Viparita-karani* relieve the strain on the heart by draining the venous blood towards it by gravitation. The draining of the blood produced by the practice of these poses every day for some minutes will restore the tone of the veins and relieve any congestion of the liver or the kidneys, so helping them towards efficient performance. They will cure the varicose veins of the legs and in the scrotum and relieve capillary stagnation, thus helping to restore once more the healthy metabolism of the body. These inverted poses, practised together with the abdominal ones, will cure entroptosis by displacing the intestines from the pelvic region towards the diaphragm and relieve the pressure on the abdominal rings so preventing the protrusion of the intestines through them which results in herniæ. These poses may be tried to cure small recent herniæ, for displacement of the uterus, bleeding piles and to relieve congestion of the prostrate,

In the pose *Sarvāngāsana* or shoulder stand, less blood flows to the brain but more to organs located in the trunk. The coronary arteries which carry nutrient materials to the heart, get dilated and in consequence more blood is supplied to the heart-muscles so increasing their force of contraction.

The *Viparita-kārani* pose will prove particularly useful to women. It corrects the mal-adjustments of the uterus. It will relieve the local congestion of the pelvic viscera and dilate the blood vessels stimulating the ovaries and thus will regulate menstruation and will cause pain at the periods to disappear. In men the pose causes an increase of seminal secretions and prevents night dreams. It will delay the involution processes of old age by absorption of the seminal secretions into the system and so preventing the sexual urge.

Some misgivings are sometimes entertained about the practice of these poses as regards their effect on blood pressure. One might suppose that standing on the head or lifting up the trunk and legs at right angles to the neck or that the contortions of the body in the various poses may cause rise in blood pressure. Standing on the head physiologically dilates the blood vessels and slows up the heart. These conditions are unfavourable to a rise of blood pressure. On the contrary, the blood pressure, if orginally high, will be lowered. The same happens in the practice of abdominal poses. The increase of intra-abdominal pressure necessary to tone up the musculature of the viscera, compresses the blood vessels and in order to accommodate the blood that is thus dislodged, the blood

vessels of the skin dilate, there being a reciprocal relationship between the two vascular areas through the variations in capacity of which the blood flow is chiefly regulated. The blood vessels of the skin getting dilated, the resistance to the flow of blood is lowered which thus causes a fall in arterial pressure. Simultaneously with the fall in arterial pressure the rhythm of the heart is increased to accelerate circulation, in proportion to the return to the heart of the venous blood which in its turn is proportional to muscular activity. In all forms of static exercises, muscular activity is at its minimum and in consequence, the return of the venous flow to the heart is just sufficient to excite the heart mildly enough so as not to allow the blood in the capillaries of the skin to stagnate and to maintain adequate blood pressure that is compatible with life. No fear, therefore, need be entertained about a rise in blood pressure brought about by the practice of Yogic *āsanas*. On the contrary they should be practised to lower it if there is no organic disease present in the system. The author has measured his own blood pressure and the number of pulse beats before and after the practice of *āsanas* many times. As regards blood pressure there is invariably a fall of 5 to 8 millimeters of mercury at the end of the practice. This fact is further corroborated by Swami Kuvalayānanda who conducts a Yogic physical culture centre in Bombay, the *Kaivalyadhāma*. There is an increase in the number of pulse-rate by 10 or 15 beats above the normal which itself normally varies between sixty-five to eighty beats per minute. These facts show that no extra strain is put on the heart in the practice of Yogic *āsanas*. On the contrary after

violent exercises like running, riding, cycling, swimming and even in golfing (though in a minor degree) the blood pressure shoots up to from fifty to seventy-five millimeters of mercury and the pulse beats rise to fifty or sixty above their normal as mentioned by Tait McKenzie in his book "Exercises in Education and Medicine". True, they regain their normal after 2 to 5 minutes of rest if the heart has enough reserve of energy.

METABOLISM

The next most essential thing for the proper nutrition of the body is oxygen, without which the absorbed food-stuffs will not be built up into protoplasm for the growth of the body tissues or make up for the wear and tear of the body. It is one of the generalizations of physiology that all living things require oxygen for their vital process to take place, that is, for the normal occurrence of those chemical changes in the tissue cells which are grouped under the general term of metabolism. The universal end-product of this metabolism is carbon dioxide. With each inspiration a man absorbs oxygen from the external air and gives out carbon dioxide with each expiration. This gaseous exchange takes place in the lungs between the venous blood in the pulmonary capillaries and the air reaching air-spaces or alveoli in the lungs. Thus all the venous blood, impregnated with the end-products of metabolism, becomes oxygenated and is carried to the left side of the heart to be circulated all over the body again for the metabolic needs of the different tissues. In normal breathing, all the air-cells are not activated enough to start the gaseous exchange. Though there may be air in them,

it may not be under sufficient pressure. The interchange starts in those air-cells which are subjected to compression in our expiratory act by the diaphragm and the receding chest wall. In the inspiratory effort these compressed air-cells expand once more and so suck in fresh air, thus increasing the pressure within them.

During the middle period of life, the elasticity of the lungs gets lessened together with other tissues of the body, and breathing is still further impeded by the rigidity of the chest which occurs in markedly sedentary occupations—particularly in those occupations which require sitting at a desk for a long time. Such occupations increase the number of inactive air-cells and lessen the amount of oxygen carried with the blood stream to the different tissues and ultimately lead to faulty and perverted metabolism. Uric acid, one of the products of incomplete metabolism, circulates in the blood and produces insidiously a host of ailments making one unfit both physically and psychically. Physical derangements in the middle classes are manifested by chronic head and back aches, soreness of the muscles, disturbances of sensation, eczema, neuritis, giddiness and other illnesses. Psychical unfitness shows itself in a greater irritability of the temper and despondency of feelings. Among the richer classes of people, who enjoy the pleasures of table and drink a good deal of wine or other alcoholic drinks, such disturbances result in gout and its associated discomforts.

In some people a faulty metabolic activity leads to obesity. During the middle period of life the basal metabolism—which is the energy output of an individual in a

resting stage, about twelve or eighteen hours after the last meal—is generally below par and this helps to put on fat. This is partly due to defective oxidation of food for want of exercise and partly to a deficiency of internal secretions of the thyroid, pituitary and genital glands. Accumulation of fat in boyhood is generally due to a defective secretion of either the pituitary or the genital glands; but in the middle period of life a deficiency of the internal secretion of the thyroid is responsible for it. Normally the secretion of the thyroid gland regulates and controls the rate of chemical changes taking place in the body, that is to say, the body metabolism. The different sedentary habits of life associated with advancing age cause in some individuals a diminution of this internal secretion and this upsets the balance of metabolic activity producing defective oxidation in the body and a consequent accumulation of fat ultimately leading to unhealthy obesity. The medical treatment of obesity consists of dietetic restrictions, exercises to speed up the metabolism of the body, supplying the deficiency of the internal secretions, electric baths to produce excessive sweating and remedies for an effective action of the bowels to remove constipation. Such a treatment is not without its drawbacks. It must be carried out under medical supervision and if carried to excess it might do more harm than good.

The treatment of obesity can be more easily effected by the practice of Yogic *āsanas* without resorting to dietetic restrictions or violent exercises or without swallowing anti-fat nostrums or purgative pills. The practice of digestion-improving poses, such as *Bhujangāsana*,

Dhanurāsana, *Halāsana*, *Paschimatanāsana*, *Uddiyanābandha* and *Yoga-Mudra* not only make the abdominal wall strong, tone up the viscera and eradicate constipation but these poses are also very helpful for reducing fat to a marked degree in cases of obesity, the commonest type of which is mostly alimentary in origin. In cases of obesity especially when associated with a deficiency of the internal secretion of the thyroid gland, the chin-lock effected in the practice of *Sarvangāsana* and *Halāsana* will stimulate the thyroid and increase its secretion which would be absorbed into the system and so increase the basal metabolism of the body. The excessive sweating produced by a dilatation of the blood vessels of the skin, in the practice of *āsanas*, will also prove helpful in reducing fat and this is achieved without any strain being put on the heart or resorting to electric baths.

Within a month of the practice of these poses, the fatty masses on the lower part of the abdomen will diminish and the pot-bellied appearance will gradually disappear. It is now a craze, particularly with women, to slim by resorting even to starvation but unfortunately without making any efforts to increase their metabolic activity. They avoid all farinaceous and fatty foods and eat very little. They try to derive energy for all their daily actions by burning away their accumulated fat. This deliberate starvation produces malnutrition, constipation, anæmia and breathlessness; besides this, in women, it diminishes their sexual characteristics. Slimming should only be achieved together with a proper maintenance of health. This can be done without starving, and while

following all the usual avocations, by half an hour's practice of Yogic poses. They will slim the body and in addition impart to it grace, suppleness and activity.

THE RESPIRATORY SYSTEM

Knowing that the lungs form the chief oxygenating apparatus in the body it will be realized how very necessary it is to keep them in a healthy condition for carrying out their work efficiently. The lungs are located in a close cavity called the thorax. The latter is subjected to unconscious expansion and recession due to the movements of the voluntary muscles attached to its walls for the maintenance of the respiratory activity. To get the best out of our lungs, they must have sufficient space to expand in. This is made possible only by developing the thorax by subjecting the muscles attached to it to the fullest possible contraction and relaxation brought about by an effort of the will. To completely occupy this enlarged cavity of the thorax, the lungs have to be made perfectly elastic in order that they may expand fully to open all their air cells. The elasticity of the lungs is the gauge of their healthiness Yogic physical culture achieves this desideratum.

The main object of the *āsanas* is to prepare the body for the next and more advanced branch of Yogic practice, *viz.*, *Prānāyāma*, in which the lungs play an important part. *Prānāyāma* popularly means such regulation of the breath as to develop a rhythm in the respiratory act. The rhythm may be high or low, quick or slow or any combination of these. For the realization of this purpose the lungs have to be made fully elastic and strictly disciplined

by subjecting them to compression and expansion and retention of the breath. All the Yogic exercises help in increasing the volume of respiration. The acts of inspiration as well as expiration are prolonged. They open out the air cells in the lungs fully enabling them to absorb more oxygen from the external air than in normal breathing. These *āsanas*, which are practised to train the abdominal muscles, compress the lower part of the lungs by carrying the diaphragm further up into thorax. They do not compress the whole lungs at the same time to give a better recoil towards expansion. The most effective compression of the lungs is obtained by the practice of *Paschimatānāsana* and the second stage of *Halāsana* by a contraction of the chest wall brought about by the bending of the spine forwards. During the retention time of these poses, there takes place a short inspiratory effort followed by prolonged expiratory one which are helpful in maintaining the contraction of the chest wall for a certain time. As soon as these poses are released, there is an automatic prolonged inspiratory effort under which the lungs expand and all their air cells fully open out. These two poses are particularly effective in making the lungs elastic. Three months of practice of these *āsanas* will soon prove that. The normal abdominal breathing will become less abdominal and more costal due to an increased capacity of the thorax, this giving greater space for lungs to expand fully. The full expansion of the lungs was not the only aim of the Yogic seers. Their aim was to force open every air cell and so enable them to take a better and a more active part in the gaseous exchange so that the body may get

surcharged with oxygen, and may be able to effectively burn or neutralise all the poisonous products of incomplete or faulty metabolism. The activation of the fully open air cells is carried out effectively by *Shalabhāsana.* In this pose, the prone position, deep inspiration and retention of breath for a few seconds while the legs are turned up into the air increase the intra-abdominal pressure and decrease the pressure in the thorax. This helps the lungs to expand to their fullest capacity and carry out the gaseous exchange properly. The daily practice of a few turns of *Shalabhāsana* will educate the air cells to be active on their own initiative. In this exercise the air cells are distended enough without a loss of their elasticity to maintain sufficient air under pressure. This is further aided by the practice of *Matsyāsana.* The arching of the trunk, achieved by making the latter rest on the apex of the head and the buttocks, elevates the chest and with it the lungs, gives a downward slant to the wind pipe and opens out the glottis. This has the beneficial effect of allowing the air occupying the wind pipe and the bronchial tubes—the dead spaces of the lungs since the air filling these places is not used in the respiratory process in the normal position of the body—to rush up to the air cells in the lungs and increase the intra-pulmonic pressure ; this would activate a gaseous exchange even when the lungs are stationary. In the normal vertical position the intra-pulmonic pressure being equal to that of the external atmosphere no gaseous exchange occurs in the inactive condition of the lungs.

Āsanas, particularly the *āsanas* designed to tone up the lungs, by stimulating the metabolic exchanges, have a

revitalising effect upon the whole human organism. The lay expression of vitality has now received a technical rechristening in the term "metabolism". To speed up the latter means to revitalize the former. The practice of these *āsanas* relieves any tendency towards chronic catarrah of the upper air passages and cures any chronic inflammation of the tonsils. Asthmatics have often tried them with great success. In fact such *āsanas* clear the air passages and so enable more oxygen to be taken in—a process that is most important for the body to successfully carry out all its vital activities.

THE AUTONOMIC NERVOUS SYSTEM

As far as it is known, Yogic exercises are the only means available for toning up the autonomic nervous system. It is energised by these exercises through a process of involution from the organs under its control by subjecting them to pressure and massage through the voluntary muscles. The latter in their turn are toned up by a process of evolution through the voluntary nervous system. Every *āsana* is a deliberate posture taken through the exercise of our will power and so is helpful in developing the tone of the voluntary muscles by stretching, contraction, relaxation and along with them of the nerves connected with them. The toning up autonomic nervous system results in a better functioning of the organs it controls. Digestion is improved. The circulation of blood throughout the body is stimulated on proper lines by maintaining the velocity and pressure of the blood within physiological limits. Metabolism is speeded up so as to destroy the poisonous products that may have resulted

because of its previous sluggishness. The amplitude of the respiratory process is increased by making the lungs more elastic. The psychic balance is maintained by controlling the emotions and thus a feeling of buoyancy is restored. Besides these effects produced indirectly, there are a few *āsanas* which excite the various plexuses by directly exerting pressure on them. *Siddhāsana* stimulates the perineal plexus (*Mulādhāra-chakra*), *Yoga Mudrā*, the hypogastric (*Swādhisthāna-chakra*), *Uddiyāna*, the solar (*Manipura-chakra*)—and all the plexuses in the abdomen are stimulated simultaneously by the poses which increase intra-abdominal pressure. *Halāsana* stimulates the cardiac plexuses (*Visudhi-chakra*) while *Sarvāngāsana* strengthens only the pharyngeal-plexus. The arching of the spine backwards or forwards and its twisting on its own axis has the effect not only of stretching the two sympathetic cords which run parallel along both sides of it, but also of stimulating the voluntary nerves issuing through it from the spinal cord. The brain—the co-ordinating centre of the two nervous systems, involuntary and voluntary—was not neglected by Yogic seers when they designed the *āsanas* for controlling the autonomous nervous system. If this great co-ordinating centre were to degenerate, the whole fabric of the nervous system would fail and destroy the satisfactory functioning of the other systems which are regulated by the brain. For spiritual culturists it is highly essential to maintain a healthy condition of the brain and the spinal cord. Remember, they are trying by Yogic practices to arouse the dormant force of *kundalini* which is normally latent in human beings. It is written in Yogic literature that this force when

once awakened, rushes to the brain through the spinal cord, possibly along the splanchnic nerves. If the brain and the spinal cord are not in a state to curb and regulate the awakened force of *kundalini*, a student of higher Yoga would have to suffer a variety of ailments, both physical and psychical. A physical culturist is chiefly concerned about maintaining the health of the brain and this is done by improving the circulation of blood through it. This is best accomplished by *Shirsāsana*, the topsy-turvy pose, and in a lesser degree by *Viparita-karani*.

The pose of *Shirsāsana*, if retained for a long time, is particularly refreshing. The brain, the most dependent part in this position, receives an abundant supply of blood enabling the former to carry out its regulated activities successfully and efficiently. *Shirsāsana* revitalizes the whole body and produces a healthy glow. It prevents irritability of temper, restores mental balance and energises the jaded nerves. It probably stimulates the internal secretion of the pituitary gland as well and activates the pineal gland located inside the brain.

Shirsāsana makes the senses more acute, the mind alert, and prevents the formation of cataract in the eye. As, in the practice of the majority of *āsanas*, certain particular groups of voluntary nerves are stretched by different poses, an appropriate *āsana* may be selected to cure the recurring pains of neuritis. The practice of *Paschimatānāsana* overcomes any tendency towards sciatica. Neuralgic pains of the back should be treated by the practice of *Halāsana*, *Bhujangasāna* and *Ardha-matsyendrāsana*, *Shirshāsana* and *Matsyāsana* should be practised in order to get rid of

trigeminal neuralgia. Irritability of the temper, fatigue and insomnia can be easily overcome by a regular practice of *Shavāsana;* this pose is extremely soothing to the nerves.

The skeletal muscles of the body remain always healthy as their tone is maintained by the votuntary nerves which are made more active by the practice of *āsanas.* The muscles are not merely strengthened by subjecting them to contraction and relaxation but their power of endurance and vitality is increased by educating them to maintain the poses for a longer and longer time. The practice of *āsanas* will not make a person an athlete but it will make a man healthy and increase his reserves of energy so enabling him to bear any physical strain that the activities of middle life may make him liable to. In Yogic *āsanas* we hold the master-key to health and happiness throughout life—childhood, maturity and old age.

CONCLUSIONS

I. *Āsanas* or Yogic exercises are best practised between the ages of 10 to 60 years by both sexes. They are particularly useful for keeping the body healthy during the middle period of life.

II. They do not entail much loss of time and can be practised at any hour of the day, three hours after the last meal. The most suitable time is the early morning and the next best is just before retiring.

III. They may be practised in seclusion in a well-ventilated room free from draught.

IV. They are the best exercises known for reducing fat, for the improvement of digestion and for curing constipation.

V. They do not cause rise of blood pressure; on the contrary they lower it, if high.

VI. They are both curative and prophylactic in action as far as minor ailments are concerned.

VII. They make the spine flexible, the body elastic and prevent premature ageing.

VIII. They increase the power of endurance.

IX. Above all they make the mind alert, improve concentration and help to maintain a buoyancy of spirit. In short, they create *mens sana in corpore sana* (a sound mind in a sound body).

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