

eyebrows. It is illustrated in Fig. 9. It may be practised as a part of Siddhāsana² or independent of it.

Like the Nasal Gaze, the Frontal Gaze is a fine exercise for the mind. But the advice and caution given in the case of the former are equally applicable to the case of the latter. Hence they should be carefully borne in mind by the enthusiastic student of Yoga.

UDDIYĀNA-BANDHA OF THE RAISING OF THE DIAPHRAGM

Uddiyāna is an exercise of the diaphragm and the ribs. When expressed in a popular³ language its technique may be described as follows.

As this Bandha is practised either in sitting or in standing posture, the student poses himself as shown in Figs. 10 and 12 respectively. In these pictures, hands are shown to be resting either on the knees or on the thighs. This position of the hands enables them to be firmly pressed against their support and thus to fix upon the muscles of the neck and the shoulders. Having taken this posture the student secures the deepest possible expiration by vigorously contracting the front muscles of the abdomen. The chest also stands contracted. While the breath is held out, the muscles

1. Described later on in this chapter.

2. Described later on in this chapter.

3. This Bandha has been subjected by us to a very large number of X-ray and other experiments, many of which have already appeared in Yoga-Mīmāṃsā. Hence we are in a position to give a detailed scientific description of its technique. Looking to the popular character of this publication, however, we have sketched its technique in the simplest terms possible.

of the neck and the shoulders are fixed up by firmly pressing the hands either against the knees or against the thighs as the case may be. Then a vigorous mock inhalation is attempted by raising the ribs and by not allowing the air to flow into the lungs. Simultaneously the front abdominal muscles are completely relaxed.

The fixing up of the neck and shoulders, the vigorous mock inhalation preceded by the deepest possible exhalation, and the simultaneous relaxation of the contracted front abdominal muscles, these three actions complete the technique of Uḍḍiyāna. Automatically⁴ the diaphragm will rise upon and the abdomen will undergo a pronounced depression, producing the concave appearance shown in Figs. 11 and 12. A slight forward bent of the trunk will be helpful in securing greater abdominal concavity of Uḍḍiyāna.

When the student finds that he can no longer hold his breath out comfortable, he relaxes his neck and shoulders, lets go the ribs and slowly starts inhalation, allowing the abdominal depression to be effected gradually. When inhalation is completed, one round of the Uḍḍiyāna exercise is finished.

In Sanskrit, Uḍḍiyāna means raising up and Bandha means *contraction of particular anatomical parts*. This exercise is called

4. The pressure changes in the chest and abdomen which are responsible for this automatic abdominal depression, have been detailed in Yoga-Mīmāṃsā in places too numerous to be quoted here. Zealous students of Yogic physiology may read the *Scientific Sections* of Vols. III and IV of the journal.

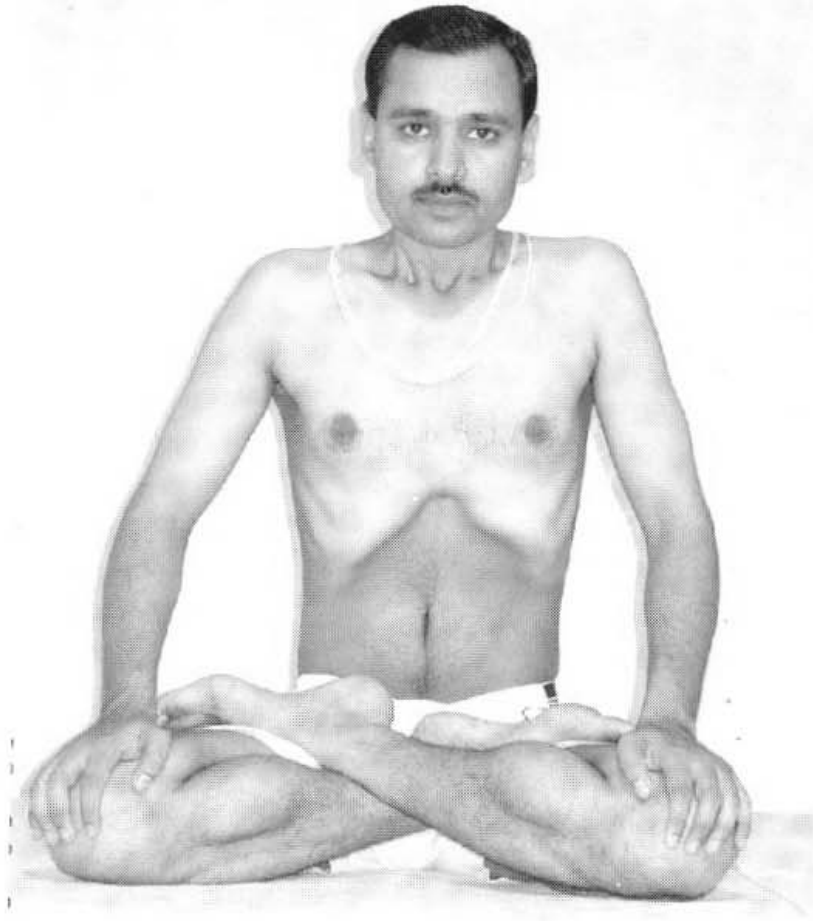


Fig. 10. - Uddiyāna Dr̥ṣṭi in Sitting.

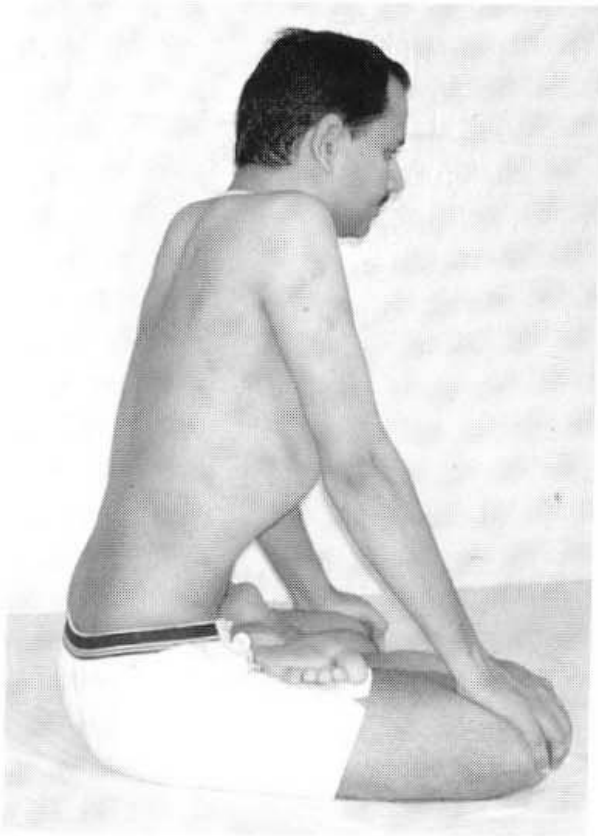


Fig. 11. - Uddiyāna Dr̥ṣṭi in Sitting (*Side View*)



Fig. 12. - Uddiyāna in Standing.

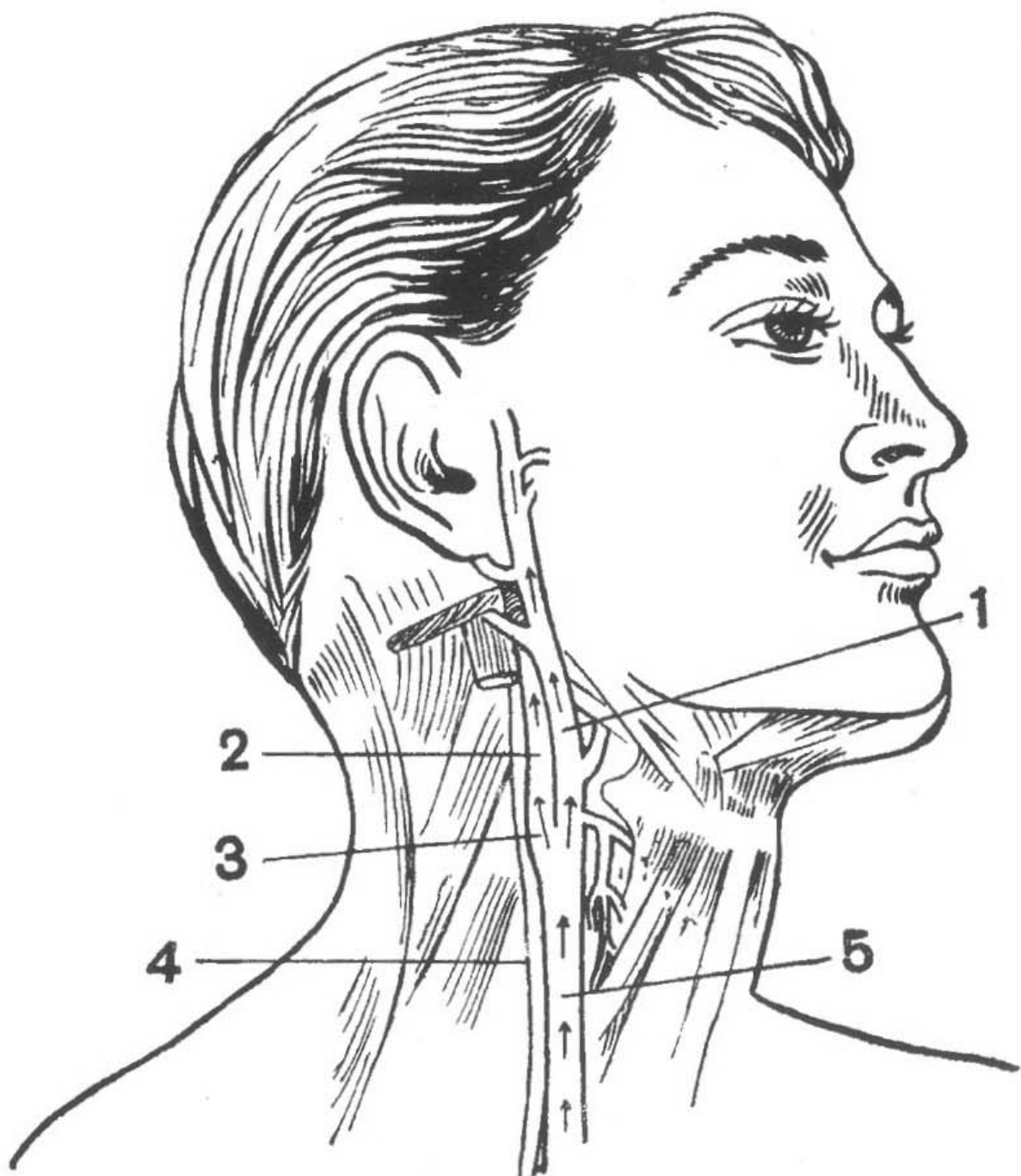


Fig. 13. - The Carotids Exposed

- (1) The External Carotid
- (2) The Internal Carotid
- (3) The Carotid Sinus
- (4) The Vagus Nerve
- (5) The Common Carotid

Uḍḍiyāna-Bandha because the muscular contractions described above enable the spiritual force⁵ to rise up. Anatomically this Bandha may be called Uḍḍiyāna because it raises the diaphragm.

Uḍḍiyāna is a very fine exercise for the abdomen. Its therapeutical value against constipation, dyspepsia, liver troubles, etc., is very great. Its spiritual worth is greater still.

Caution -- People suffering from circulatory or serious abdominal troubles should not take to this exercise on their own responsibility.

JĀLANDHARA-BANDHA OR THE CHIN-LOCK

कण्ठमाकुञ्च्य हृदये स्थापयेत् चिबुकं दृढम् । H. P. III-70

बन्धो जालंधराख्यः अयं जरामृत्युविनाशकः ॥

बध्नाति हि सरोजालम् आधोगामि नभोजलम् ।

ततो जालंधरो बन्धः H. P. III-71

(kaṇṭhamākuñcya hrdaye sthāpayert cibukam dṛḍham/

bandho jālandharākhyah ayam jarāmṛtyuvinaśkah)

(bandhnāti hi sirojālarn adhogāmi nabhaojalm/

tato jālandharo bandhah.....)

Translation

After contracting the throat (one) should tightly fix the chin on the chest. The name of this Bandha is Jālandhara. (Fig. 14 and

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5. This force is locked up in the lower region of the abdomen. Uḍḍiyāna is one of the different exercises capable of letting loose this force and making it travel upward along the spine.

15). It prevents old age and death. It is called Jālandhara because it presses on the arteries going to the brain and also arrests the downward flow of nectar issuing from it.

The Name

In Yoga literature Bandha which literally means a *tie* is a word applied to various muscular contractions and relaxations that are expected to influence the vascular nervous and the glandular systems. When we presently discuss the technique of Bandha, we will find that it influences the arteries supplying blood to the brain and also presses on a particular nerve having various physiological effects.

The Technique

When it is said that the throat is to be contracted, what is intended really is the closure of the two vocal cords which are situated in the larynx. A reference to Fig. 3 will show the position of the larynx. We have to close these cords when we hold our breath. Along with the closure of the glottis which means the open space between the two cords, one has also to tighten muscles of the neck. One then bends his head as best as he can and presses his chin on the chest as firmly as possible. In short this is the technique of this Bandha.

Jālandhara may be practised at any stage of the respiratory movement. But in Ābhyantara Prāṇāyāma it is to be effected after deep inhalation except in Mūrcha Prāṇāyāma where its continuation is advised even during Recaka. Of course during this Recaka the vocal cords will have to be slight relaxed.

Anatomy and Physiology of Jālandhara

It will require a large number of laboratory experiments carried through years and years before the physiological and psychophysiological effects of Jālandhara are scientifically investigated. These effects are so vast and varied. We will, therefore, satisfy ourselves here with a few observations which are known to modern physiology and apply them to Jālandhara. This effort will, however, be sufficient to understand the main physiological effects of this Bandha.

For this physiological study we have to take into account certain anatomical structures. They are (1) The Internal and external carotid arteries, (2) The carotid sinus, and (3) The sinus nerve. We shall consider them one by one regarding their location, structure etc.

(1) The internal and external carotid arteries : A reference to Fig. 13 will show that these arteries lie in the neck and are branches of the common carotid. These two arteries mainly responsible for bringing blood supply to the brain. They are situated on both the sides of the neck. If we throw back our head and put our thumb on the right side of the neck just below the jaw-bone and the forefinger similarly on the left side, we will feel the pulsation of these arteries.

(2) The carotid sinus is a dilatation present at the bifurcation of the common carotid artery Fig. 13. It is usually restricted to the first part of the internal carotid. The walls of this sinus are so thin, that they yield very easily to the pressure applied to it either internally or externally.

(3) The sinus nerve is a branch of a cranial nerve coming from

the brain. Rising below the skull it descends on the internal carotid artery and is distributed to the wall of the carotid sinus. The sinus nerve is a presso-receptor, that means, a nerve which is stimulated by internal or external pressure. In the case of the sinus nerve the external pressure can be applied to it by pressing the carotid sinus by using the thumb and the forefinger as stated under (2) above

After noting a few anatomical points, we now study the physiology of this Bandha.

If pressure is applied externally to the carotid sinus, the sinus nerve is stimulated and nerve impulses travelling to the brain bring about a condition that cannot be distinguished from sleep. According to some physiologists a genera trance-like is induced in the brain. This stimulation also slows down the heart.

The physiological phenomena described in the last paragraph were known to the old Yogins. For inducing loss of awareness and ultimately to realise the blissful and pure Brahman, they advised this very stimulation of the carotid nerve. Their name for this nerve was विज्ञाननाडी (vijñānanāḍī), that is, the nerve of consciousness. We quote in this connection Śiva Saṃhitā, line V-55 and 56 here which are as follows :

विज्ञाननाडीद्वितयम् अङ्गुलीभ्यां निरोधयेत् ॥ V-55

सिद्धे तदाविर्भवति सुखरूपी निरञ्जनः । V-56

(vijñānanāḍīdvitayam aṅgulībhyāṃ nirodhayet)

(siddhe tadavirbhavati sukharūpī nirañjanah)

When translated this would stand in the following form.

(The Yogin) should press with his two fingers the two carotid nerves (on the two sides of the neck). When (this practice) is perfected, blissful and pure Brahman reveals itself.

Now in the case of Jālandhara, the closure of the glottis, the tightening of the neck muscles and the sharp bend of the neck in pressing the chin on the chest, all contribute to exercise considerable pressure on the carotid sinus, so that the carotid nerve gets stimulated. When by constant practice this Bandha is perfected, its effect on the brain becomes accentuated and a trance-like condition may supervene. It is to be noted that in some person the carotid nerve is so sensitive that even a slight pressure may wipe out consciousness and also slow down the heart. When Jālandhara is maintained, not only in Kumbhaka but also in Recaka, it should bring about stupor as is claimed in Mūrchā Prāṇāyāma. For achieving the results stated in the Śiva Saṃhitā 'विज्ञाननाडी निरोध' is to be practised with concentration and for months and years.

Some Technical Considerations

In discussing the technique of different Prāṇāyāma we have advised students not to Practise Kumbhaka without Jālandhara. This advice is given for the following reasons.

When breath is held for a long time after deep inhalation the air inhaled has a strong tendency to rush out. Even if the glottis is kept closed, it is forced open under pressure of the pent up air and elastic recoil of the lungs. The result is that the air rushes through the eustachian or auditory tubes to the internal ear and leads to various disorder. These tubes start in the pharynx Fig. 3 and lead

to the internal ear. They remain closed ordinarily, but open owing to the rushing air, if the mouth is closed as is generally done during Prāṇāyāma and particularly during Kumbhaka. Jālandhara because of the tightening of the whole throat and the sharp bend of the neck prevents the onrush of the air, even if the vocal cords give way and the glottis is opened. So no doubt the closure of the glottis is the first line of defence against any mischief to the ear due to Kumbhaka but Jālandhara serves as the second line of defence. It is always desirable to be doubly protected.

MŪLA-BANDHA OR THE ANAL CONTRACTION

Mūla-Bandha is an exercise which mainly consists in forcibly contracting the anal sphincters. It also requires the perineum to be closely pressed by the heel, as illustrated in Fig. 18 and as described later on in this chapter in the technique of Siddhāsana.

Mūla-Bandha may be practised as a part of Siddhāsana or independent of it.

There are two anal sphincters, one internal and the other external, situated at the end of the rectum. Both are formed by circular muscles, the external sphincter constituting the anus.

Although the anal contraction alone goes to form Mūla-Bandha, in contracting the anus one necessarily contracts the whole pelvic region. Hence virtually Mūla-Bandha is an exercise of pelvic contraction.

This Mūla-Bandha is intended to work upon the central and sympathetic nervous systems through the nerve terminal in the anal sphincters. It is called Mūla-Bandha because it first concerns

itself with the lower ends of the nervous system in the human trunk.

Caution -- A mistake in the practice of this Bandha leads to hard constipation and upsets the digestive system. The genitals are also involved in this direction and a mistake in its execution may result in some trouble in that direction also. Hence students of Yoga are advised to proceed systematically into this practice.

PADMĀSANA OR THE LOTUS POSE

This pose is called Prāṇāyāma because it is imitation of the lotus that the hands and feet are arranged in this Āsana. Padma, in Sanskrit, means a lotus. Possibly the two feet placed on the opposite thighs represent the lotus leaves, and the two hands arranged one above the other stand for the blooming lotus. Fig. 17 illustrates the full pose.

The student first takes his seat with his legs fully stretched out. He then bends his right leg in the knee-joint and folding it upon itself, sets the same in the opposite hip-joint, so as to make the foot lie stretching at the root of the thigh with its sole upturned. (Vide Fig. 16). The other leg is similarly folded and set in the opposite hip-joint. He adjusts both the heels in such a way that they almost meet in front of the pubic bones and each of them presses on the abdominal portion adjacent to it. (Vide Fig. 17). Then on the heels thus brought together, the left hand is spread out with its back touching the heels and its palm upturned. The right hand is placed upon the left in the same manner. The eyes are directed to the nose-tip as described on p. 23 and the Chin-Lock is formed after the manner indicated on pp. 25, 26. With the

Anal Contraction treated on p. 29 the technique of the Lotus Pose is completed. It is needless to add that except for the neck, the spine is to be maintained erect.

The most important features of Prāṇāyāma are the two Bandhas-Jālandhara and Mūla. As these are to be cautiously practised, it is always desirable, for the student of Yoga, first to pick up the Bandhas and then start with this pose.

Caution -- In India many people are desirous of sitting in Padmāsana for their daily prayers. We advise these people to assume the Lotus Pose without the Bandhas, If they have not already picked them up successfully. When practised without Bandhas, this, Āsana may be continued for any length of time, provided one can sit in it all the while without any sense of discomfort. The advice and caution given in the notes on these Bandhas, also hold good in the case of Prāṇāyāma. if the student is anxious to go through the complete techniques of this posture.

SIDDHĀSANA OR THE ACCOMPLISHED POSE

The pose is called Siddhāsana because it is a favourite of the accomplished Yogins Siddha, in Sanskrit, means an *adept*.

The student first taks his seat with his legs fully stretched out. He then bends his left leg in the knee-joint and folding it upon itself, sets its heel tightly against the perineum. (Vide Fig. 18). In order to get the perineum clear for his purpose, he has first to hold up his genitals with the left hand, for the right hand is occupied in setting the heel in its proper place. The sole of the left foot should be closely in touch with the right thigh. No attempt should be made to sit on the heel. This is a wrong procedure, because pressure is to be exerted on the perineum and not on the anus. The adjusted

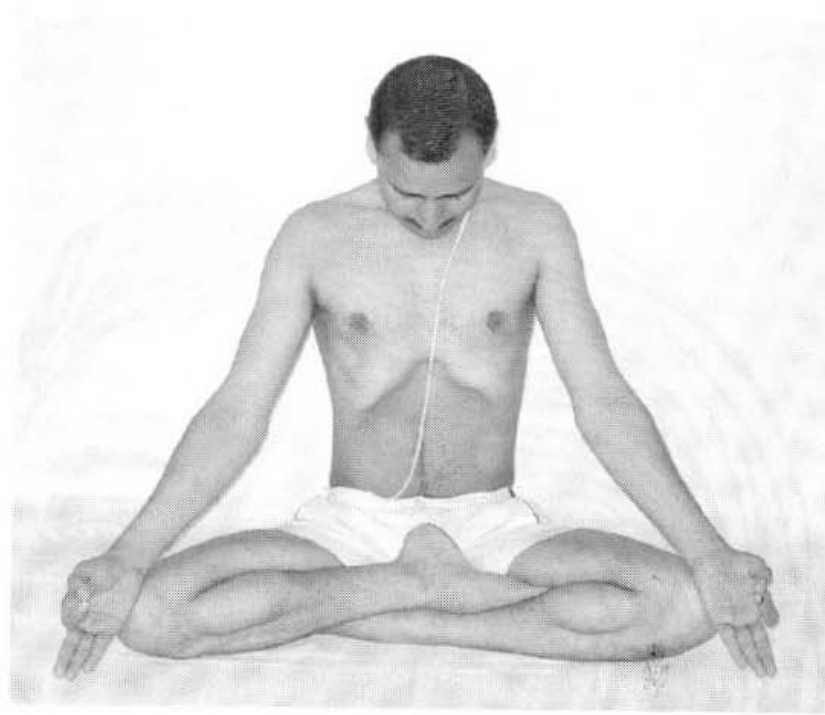


Fig. 14. - Jālandhara- Bandha or the Chin-Lock (*Front View*)

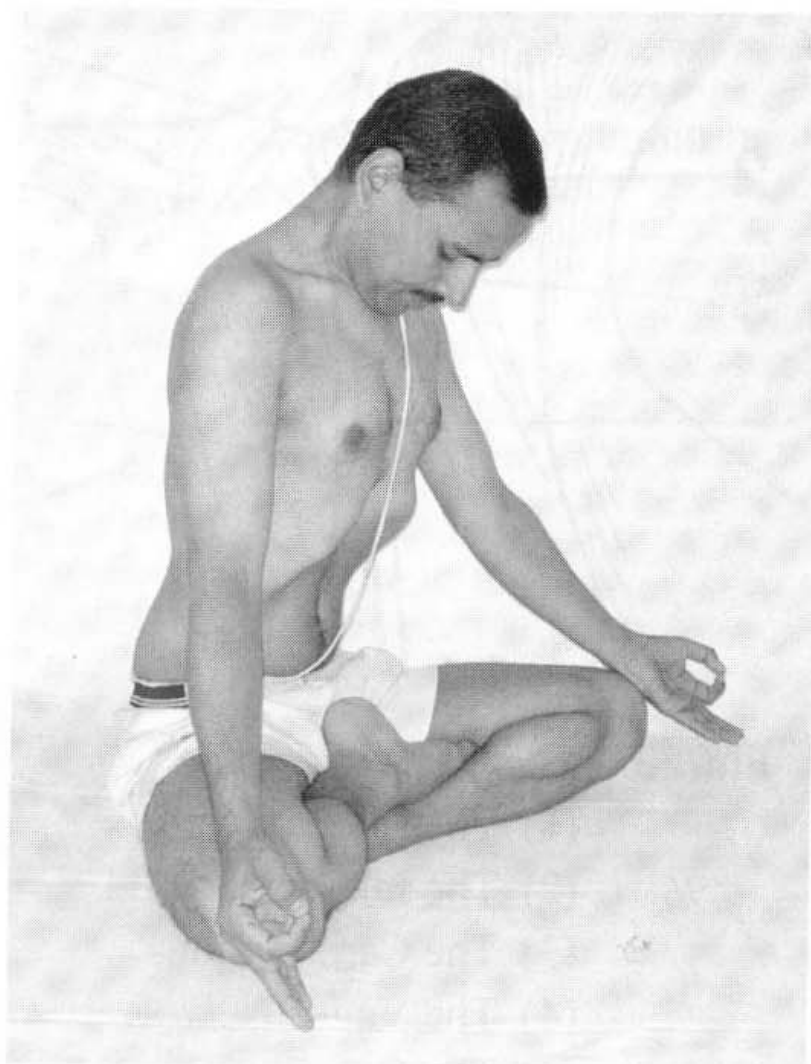


Fig. 15. - Jālandhara-Bandha
or the Chin-Lock (*Side view*)

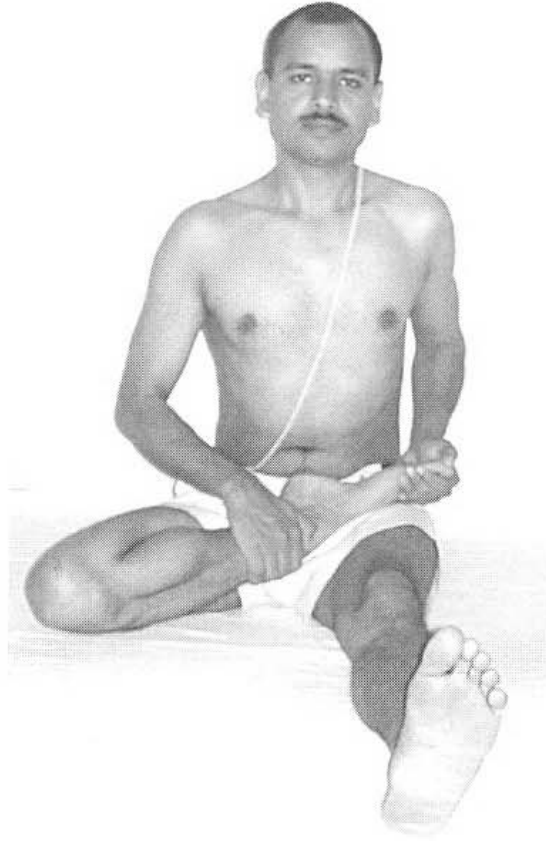


Fig. 16. - Preparation for Padmāsana

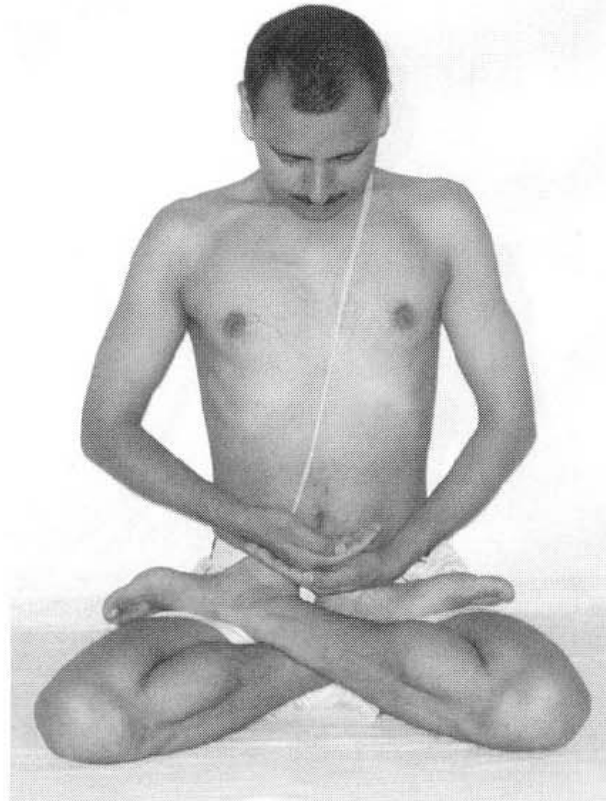


Fig. 17. - Padmāsana or the Lotus

heel should feel the hard touch of the bones on the two sides of the perineum. After the left leg is given its proper position, the genitals should be arranged within the space available between the left thigh and the left calf. This being done the right leg should be folded after the manner of the left, its heel being placed against the pubic bones just above the penis. (Vide Fig. 19). The right sole should spread along the left thigh, the lower border of the right foot being thrust between the left thigh and the left calf. Care must be taken not to hurt the genitals. Generally they can be accommodated below the right heel. But if they cannot find sufficient space there, the testes may be lodged there and the penis may be made to lie outside the folded legs. Under no circumstances should undesirable pressure be put upon any of the organs concerned.

The chin is set against the chest, just in Padmāsana, to form Jālandhara-Bandha. The eyes, this time, do not, however, gaze at the tip of the nose but are directed between the eyebrows, as described on p. 23 securing Bhrūmadhya-Dṛṣṭi for the student. Except for this bent of the neck the spine is to be erect.

The hands and fingers may be arranged as shown in Fig. 19 or the hands may rest on the knees, touching them with their palms.

The pose should be developed gradually avoiding every possibility of uncomfortable pressure. The period of time given its daily practice should increase slowly.

Note -- In some of the vernacular books on Yoga, the pose is said to affect the sexual power adversely. So far as our experience goes, there is little evidence in support of this view, in the case of healthy persons. It is however, desirable not to exceed an hour's practice, without special permission of an expert.

This and the preceding Āsana are principally practised for spiritual culture. When rightly advised they are also available for purposes of physical culture and therapeutics.

SVASTIKĀSANA OR THE AUSPICIOUS POSE

This pose is called Svastikāsana because it involves crossing of the legs which is looked upon by the Āryans as auspicious. In Sanskrit, Svastika means *auspicious*. In classical Sanskrit the word Svastika is used even for the *crossing of the hands*. The reason is that the mysterious symbol Svastika is mainly represented by two lines crossing each other at right angles. Hence positions involving the crossing either of hands or of legs are also called Svastika. Fig. 21 which illustrates Svastikāsana, clearly shows how in this Āsana legs cross each other above the ankles.

The student starts by stretching out his legs on his seat. Then he bends one of his legs, say the right, in the knee, and folds it on the thigh, just as in the case of Siddhāsana. But there is a difference in the ultimate position of the foot in this pose and in Siddhāsana. In the latter position the heel is set against the perineum, whereas in Svastikāsana it is to be set against the opposite groin, so as to allow the corresponding sole to be in close touch with the opposite thigh. (*Vide* Fig 20). Then without disturbing the position of the heel, the student raises the toes of his right leg with his left hand. Simultaneously he folds his left leg upon the thigh in such a way that the big toe of his right leg may project itself above the calf and the thigh between which it is held, and the left heel may be firmly set against the right groin. The toes of the left foot are inserted between the right calf and the right thigh already folded

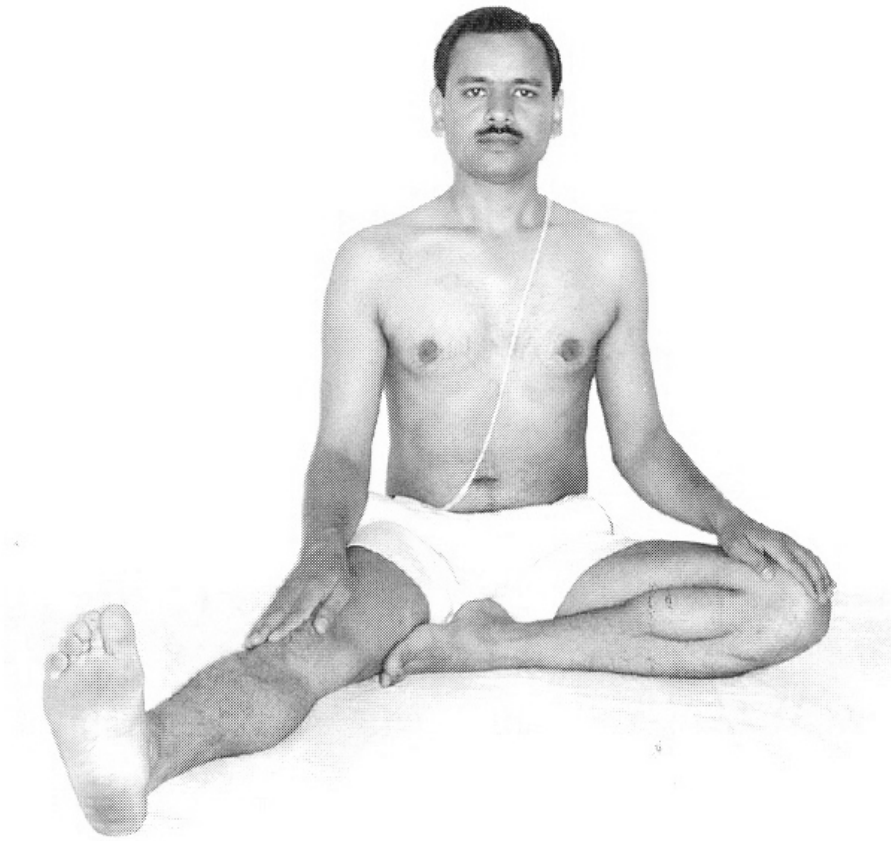


Fig. 18. - Preparation for Siddhāsana.

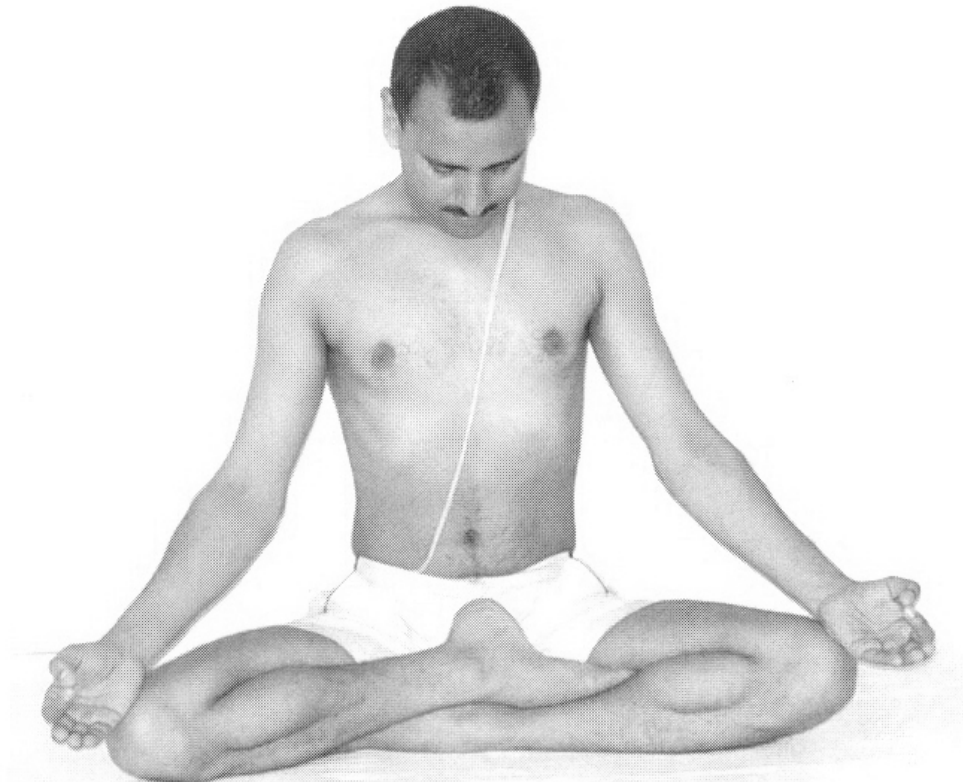


Fig. 19. - Siddhāsana or the Accomplished Pose.

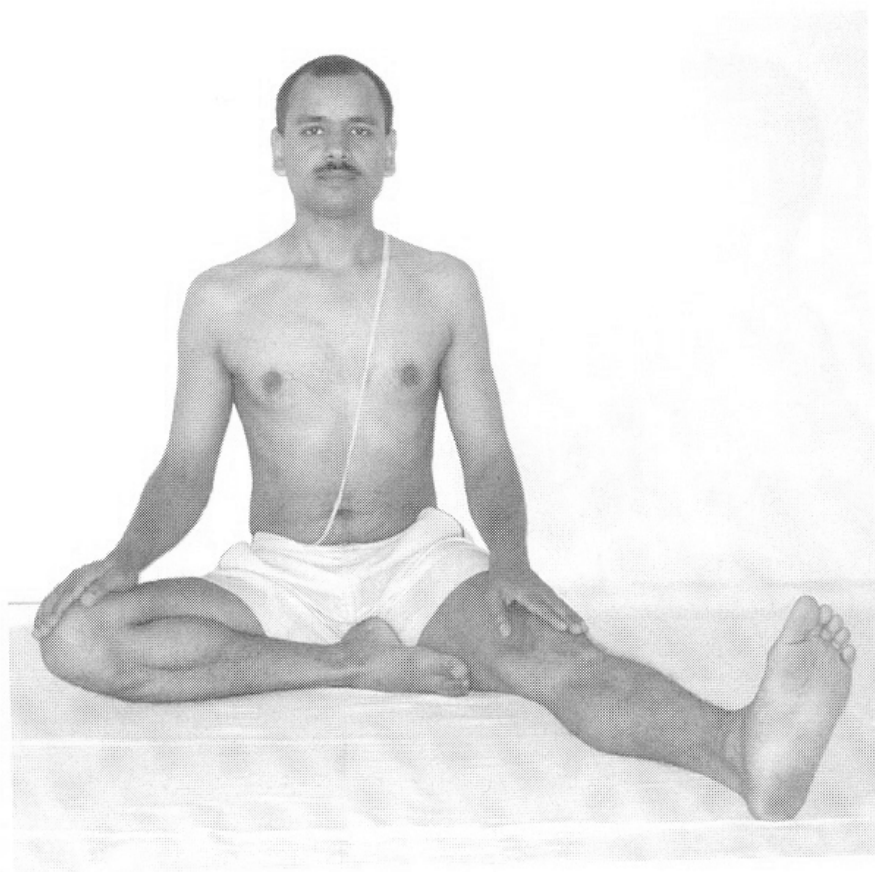


Fig. 20. - Preparation for Svastikāsana.

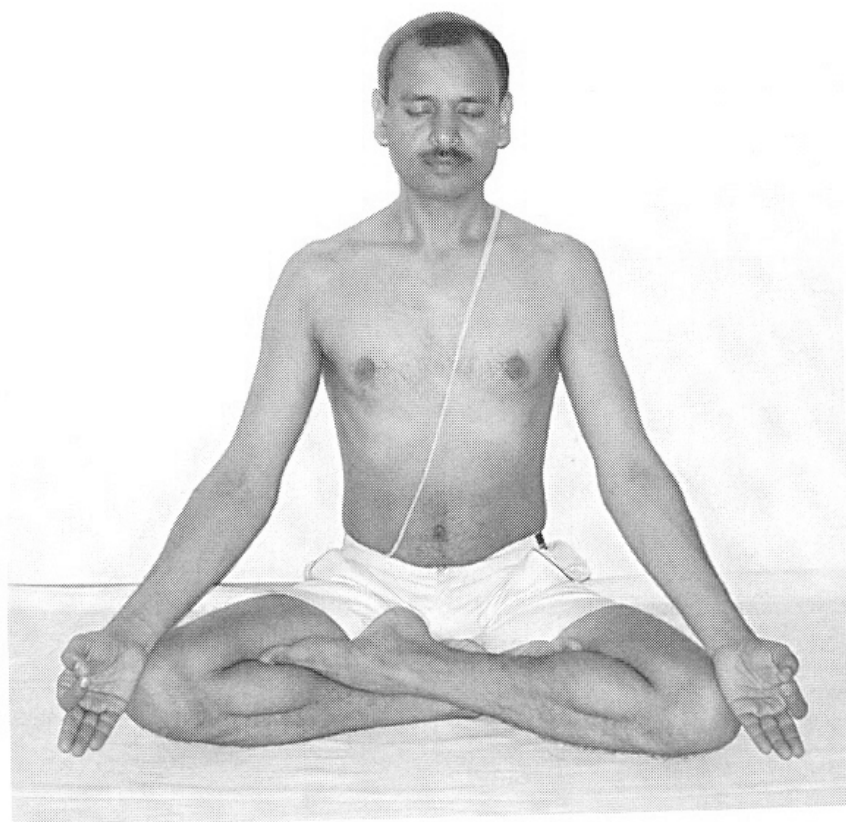


Fig. 21. - Svastikāsana or the Auspicious Pose.

upon each other, allowing only the big left toe to lie free. (*Vide* Fig. 21). Needless to say that in this position the sole of the left foot stretches above the right thigh touching it closely all along. In this pose the legs should be made to cross each other just above the ankles, so that all unpleasant pressure on the bones will be avoided. When the legs are properly adjusted a sort of foot lock is prepared which one finds very comfortable, and capable of being maintained for a considerable length of time.

The spine is to be kept erect. No attempt is, however, to be made to throw out the chest. Svastikāsana is a meditative pose and as such requires to be maintained for a long time. Any attempt to give an artificial bent to the vertebral column is likely to involve a strain.

The arms may hang loosely from the shoulders and rest on the knees covering them with their palms. Or they may be stretched out a little further so as to rest the wrist on the corresponding knees. In the latter case the hands are formed into what is called Jñāna-Mudrā⁶ in Yoga. Fig. 21 illustrates the full pose.

A third way of arranging the hands is shown in Padmāsana. (*Vide* Fig. 17).

Instead of starting with the right leg, the student may start with the left. He might then go through the whole technique, introducing corresponding changes throughout.

6. The technique of this is given in the next chapter under the subheading 'Mudrā.'

The eyes may either be closed as illustrated in Fig. 21 or either the Nasal Gaze or the Frontal Gaze may be practised. (For the two Dr̥ṣṭis see respectively Figs. 8 and 9).

All over the lower extremities the flexors are greatly contracted and pressed.

This circumstance coupled with the passive condition of all the muscles of the lower extremities maintained for a considerably long time, interferes with the free current of blood circulation. That being the case, the pelvic region gets a larger blood supply from the bifurcations of the abdominal aorta.

The larger blood supply mentioned above tones up the coccygeal and sacral nerves.

SAMĀSANA OR THE SYMMETRICAL POSE

This pose is called Samāsana because in its performance all the parts of the human body are symmetrically arranged and a perfect balance maintained. In Sanskrit, Sama means *symmetrical*.

Guptāsana is another name given to this pose. In Sanskrit Gupta means either well *protected or secret*. The pose looks to be called Guptāsana because in executing it, genitals are well protected under the heels of man. Or it may be that the Āsana was practised secretly by a particular school Yogins and continued to be their secret possession, till it became known to others and hence acquired this name.

The only difference in the technique of this Āsana and the previous one, lies in the arrangement of the heels. In Svastikāsana the right heel is pressed against the opposite groin and also the

left. But in the Samāsana the right and the left heels are to be set against the pubic one, that is, the bone just above the penis. This is done as follows. While the right leg is being folded on the corresponding thigh, the student holds the heel in his right hand and the toes in his left. Then he turns the heel upward and the toes downward and arranges the foot in his front in such a way that the heel passes against the pubic bones, the sole is turned up, and the upper surface of the foot touches the ground. (*Vide* Fig. 22) Care must be taken at this time to see that the genitals are placed against the heel in such a way that no pressure is exerted on the testes. The other leg is similarly folded and the other heel is placed upon the first heel, pressing against the pubic bone. The toes of the other leg are to be inserted between the calf and thigh of the first leg. (*Vide* Fig. 23).

The arrangement of the hands and eyes in this Āsana admits of as many varieties as in the previous Āsana. The spine is to be maintained erect and the whole body to be kept in balance.

So far as could be observed up to now from the physiological point of view, Samāsana seems to have the same effect upon the muscles, blood-vessels and nerves as Svastikāsana.

Note - As in this pose the space below the heels is just sufficient to accommodate genitals of the normal size, persons who are suffering from hydrocele etc., should not attempt this Āsana.

CHAPTER III

PRĀṆĀYĀMA IN GENERAL

Place of Prāṇāyāma in Yogic Curriculum

THE course of Yogic study is divided into eight parts. Āsana constitutes the third part. A student of Yoga passes on to Prāṇāyāma after mastering Āsana. In the present chapter we propose to treat this fourth item of the Yogic curriculum in general, details of the different types of Prāṇāyāma being reserved for separate chapters that follow. Again in the present Chapter we shall first give a general idea about Prāṇāyāma and then discuss a few technicalities common to all varieties of Prāṇāyāma.

Meaning of Prāṇāyāma

Prāṇāyāma¹ means a *pause in the movement of breath*. In Sanskrit Prāṇa- means *breath* and Āyāma means a pause. In modern literature on Yoga, Prāṇa, even in the compound Prāṇāyāma, has

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1. In the language of the later Yogic literature Prāṇāyāma is called Kumbhaka. It is interesting to note here that Patañjali does not use the words Recaka (Exhalation), Kumbhaka (Pause) and Pūraka (Inhalation) anywhere in his Sūtras, although he does refer to these actions. His oldest commentator Vyāsa, who lived in the first century, A.D., also does not use the terms Recaka, Kumbhaka in Pūraka. This circumstance clearly shows that this nomenclature was introduced at a later date. Tracing the history of the development, of not only these terms but many others used in the Yoga Śāstra, would be a fruitful research problem for a student of Yogic literature.

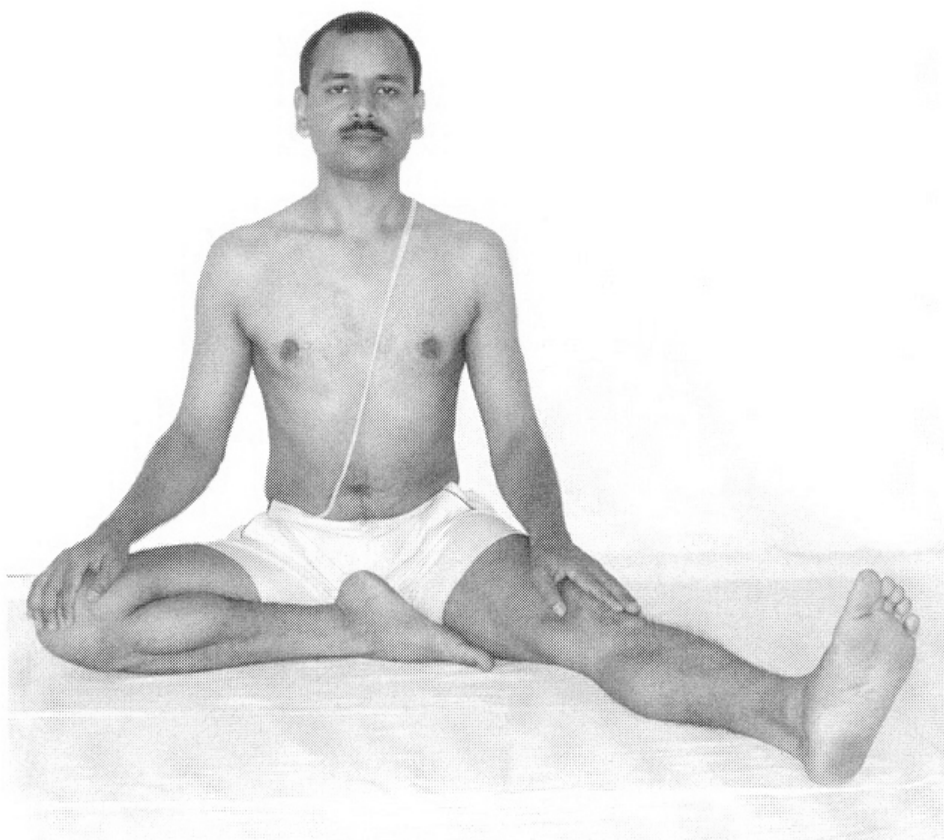


Fig. 22. - Preparation for Samāsana.

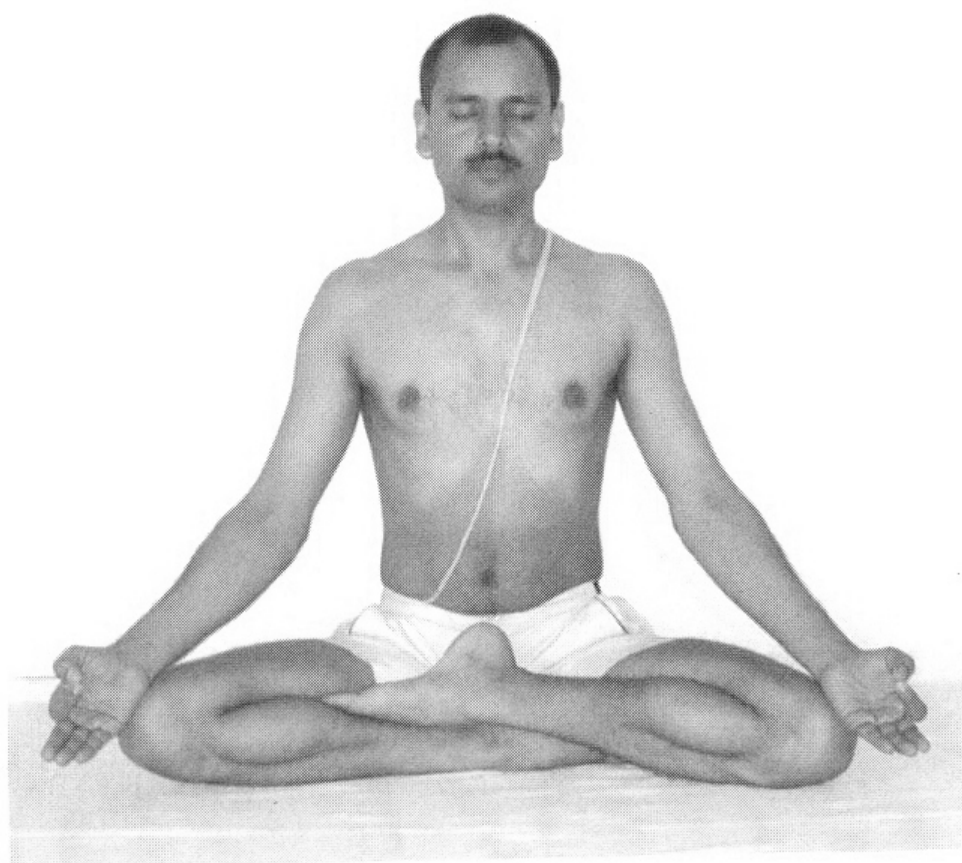


Fig. 23. - Samāsana or the Symmetrical Pose.

Fig. 24. - Correct standing
Position for Ujjāyī.

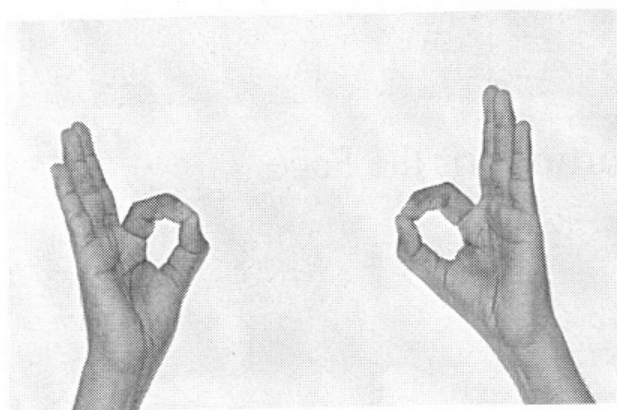
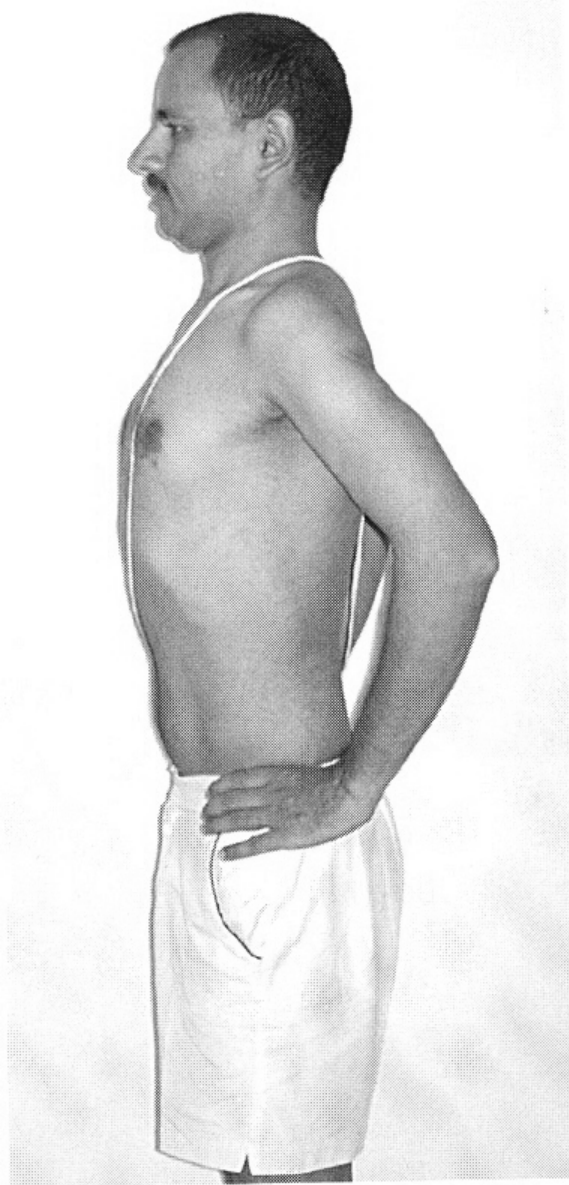


Fig. 25. - Jñānamudra or the
Symbol of Knowledge.

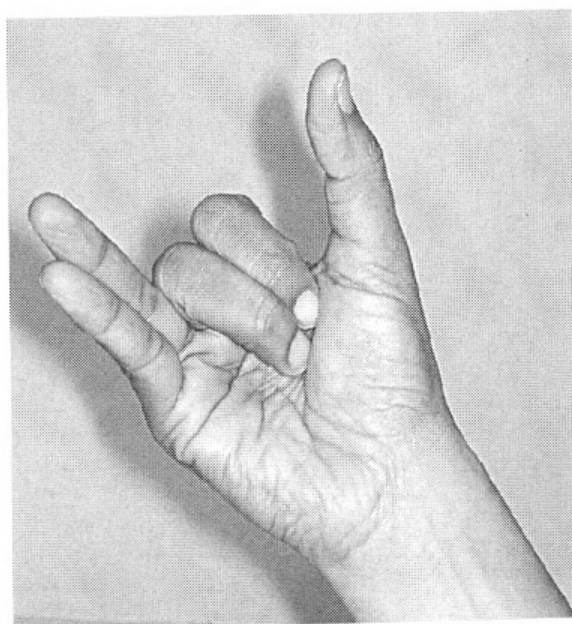


Fig. 26. - Preparation for
Closing of the Nostrils.