been often interpreted to mean a subtle psychic force or a subtle cosmic element. We do not think that the original Sanskrit text of Bhagavān Patañjali's Yoga Sūtras any way warrants this interpretation. In these Sūtras the word Prāṇa occurs by itself only once² and the wording of the Sūtra is so clear that by no stretch of imagination can the word Prāṇa there be taken to refer to anything except breath. In addition to this the word Prāṇa occurs

Bhagavān Patañjali is discussing the different means of bringing the mind under control. He has suggested various measures and one of them is contained in this Sūtra. The word Pracchardana would always mean expulsion and must in this Sūtra refer to breath and not to any subtle psychic force or cosmic element. Vidhāraṇa means retention. When all the three words Pracchardana, Vidhāsaṇa and Prāṇa are taken together, they irresistibly drive us to the conclusion that the word Prāṇa here refers to breath and breath alone. The Sūtras means that an alternative measure for controlling the mind, is available in the alternate expulsion and retention of breath. This is not the place for discussing as to whether this Sūtra कोष्ट्रयो वायु refers to a particular type of Prāṇāyāma or to Prāṇāyāma in general. Vyās and other commentators have explained Prāṇa occurring in this Sūtra as meaning air from the chest and thus have left no ambiguity in the interpretation of the word.

^{2.} प्रच्छर्दनविधारणाभ्यां वा प्राणस्य । P. Y. S., I 34

Twice in the Sūtras³ every time being compounded with the word Ayāma. Here again the wording of the original author, Patañjali, is very clear. He positively refers to respiratory movements. The most important commentators of Patañjali's Sūtras have invariably explained Prāṇa to mean breath, in their commentaries on the three Sūtras referred to above.

We definitely know that author of Hatha texts very often use the word Prāṇa to indicate a subtle psychic Force. But this they do when they talk of the force awakened by the proces of Prāṇāyāma and not of Prāṇāyāma itself.

Even with these authors of Hatha, the word Prāṇa as it occurs in the compound Prāṇāyāma has only one meaning and it is breath. So our conclusion is that in Yogic literature Prāṇāyāma means only a pause in the movement of breath.

3. यमनियमासनप्राणायामप्रत्याहारधारणाध्यानसमाधयोऽष्टावड्गानि । P. Y. S. II 29.

This is the first of the two Sūtras. It lays down the eight successive items of the Yogic curriculum, having Prāṇāyāma as the fourth in order. Then follows the second Sūtra to define the word Prāṇāyāma. तस्मन्मति श्वासप्रशासयोगीतिविच्छेद: प्राणायाम: । P. Y. S. II 49.

Here the words Śvāsa and Praśvāsa which can never mean anything else than the air flowing in and flowing out, make the meaning absolutely clear. गतिविच्छेदः is a pause in the movement. Thus we see that the word Prāṇa occurring in the technical word Prāṇāyāma, according to Patañjali and his commentators, means breath alone. It never indicates any psychic force or cosmic element.

Patañjali's Four Types of Prāṇāyāma

Bhagavan Patanjali notices four types of Pranayama, the distinction being based upon the nature of the pause. For instance when the pause is made after a thorough exhalation, that would constitute the first type of Pranayama. The second type of Prāṇāyāma would be available when the pause comes after a deep inhalation. In both these cases the Yogic student is required to make a special effort for holding his breath either out or in. But in the third and fourth types of Pranayama the student is not required to make any special effort for holding his breath. The respiratory movement may stop all at once, when the student wants it to stop, the pause being continued over a considerable time without any physical effort on the part of the student. This constitutes the third type of Pranayama. The fourth type is similar to the third. The only difference between the third and the fourth types, is that in the third the pause comes all at once, whereas in the fourth a similar pause is brought about by many inhalations and exhalations preceding it. The absence of effort in maintaining the pause is common to both the third and the fourth types of Pranayama.4

In the language of the later Yogic literature, the first type of $Pr\bar{a}n\bar{a}y\bar{a}ma$ is called $B\bar{a}hya^5$ Kumbhaka, the second type $\bar{A}bhyantara^5$ Kumbhaka, and the third and the fourth types are

^{4.} In stating this fourfold distinction of Prānāyāma according to Patañjali, we have followed his commentators. We ourselves have a different interpretation for the Sūtras, concerned.

^{5.} The words Bāhya and Ābhyantara alone are used by Patañjali.

called Kevala6 Kumbhakas.

Svātmārāma's Eight Varieties of Prāṇāyāma

Svātmārāma's Sūri, the author of Haṭha-Pradīpikā, the most authoritative text book of Haṭha Yoga, mentions eight' varieties of Kumbhaka which is with him another name for Prāṇāyāma. It is interesting to note that the principle of division followed by Svātmārāma in distinguishing his Kumbhakas, is different from the principle adopted by Patañjali. We have seen that Bhagvān Patañjali distinguished the different Prāṇāyāmas, according to the nature of Kumbhaka itself. But Svātmārāma's Sūri tries to make a distinction between a Kumbhaka and a Kumbhaka, not because the nature of the Kumbhakas themselves is different, but because the nature of the inhalation and exhalation between which

^{6.} Some idea of Kevala Kumbhaka can be had from what is known on modern physiology asapnea, provided it is prolonged. Apnea is defined as a transient cessation of respiration after forcible respiration.

NOTE -- Hereby we do not at all want to suggest that Kevala Kumbhaka is only a prolonged apnea. Although we know what Kevela Kumbhaka is in practice, we have not yet tried any experiments with it for understanding its physiology. And having pledged ourselves to a strictly scientific policy, we cannot make any statement that is not backed up by laboratory evidence. The physiological apnea has been stated here only to convey an idea as to what a Kevala Kumbhaka is like.

^{7.} सूर्यभेदन, उज्जायी, सीत्कारी, शीतली, भिस्नका, भ्रामरी, मूर्च्छा and प्राविनी are the eight varieties of Kumbhaka. We shall first take Ujjāyī and Bhastrikā and then the remaining six varieties.

these Kumbhakas occur, is different. Thus the technique of all the eight Kumbhakas is the same. But the technique of the inhalations and exhalations differ in every case. These differences we shall notice when we proceed to study the various Kumbhakas in this handbook.

Different Units for measuring Prāṇāyāma and the relative measures of its Component Parts

Each round of Prāṇāyāma is generally⁸ a complex act and consists of *Pūraka* (Inhalation), Kumbhaka (Pause) and Recaka (Exhalation). We want to see what units are prescribed for measuring these parts and what relative measures we should maintain among these component parts of a complex Prāṇāyāma. But before we do so we wish to touch one more point in brief.

It has already been noticed in one of the foregoing foot-notes that neither Patañjali nor Vyāsa uses the words Pūraka, Recaka and Kumbhaka. So we should try here to see what terminology they used instead.

It has already been made clear that Prāṇāyāma is the technical word for Kumbhaka, both with Patañjali as well as Vyāsa. Patañjali also uses the word Vidhāraṇa for Kumbhaka. Pracchardana which occurs in the same Sūtra as Vidhāraṇa is clearly Patanjali's word for Recaka. It is explained by Vyāsa as the forcible expulsion of the air from the chest.

^{8.} We have used the word *generally* because in Kevala Kumbhaka there is neither Pūraka nor Recaka.

^{9.} प्रच्छर्दनविधारणाभ्यां वा प्राणस्य । P.Y.S.I 34, where Vyāsa explains Vihāraņa by the word Prāṇāyāma

Now the question is what word is used by Bhagavān Patañjali for Pūraka. So far as we understand the text of his Sūtras, we are afraid, we do no come across any word for Pūraka in his work. We know the words Śvāsa and Praśvāsa used by him in his definition of Prāṇāyāma¹⁰. But we feel sure that Patañjali uses these words for the air flowing into the lungs and the air flowing out of them respectively. Pūraka is a process and not the air being inhaled. So we want a word in antithesis to Pracchardana or Recaka, which would denote the process. That word we do not find in the text of the Sūtras.¹¹ We should not by understand to mean that Patañjali does not recognize the Pūraka action. That

The question we are discussing here is very complicated. It is rendered more complicated by the successive commentators who were anxious to find up-to-date information in the Sūtras of Patañjali. Our attitude is to make the Sūtras consistent in themselves, irrespective of the later developments of Yogic exercises and Yogic terminology. We do not think that Patañjali's would be condemned as a writer of an incomplete Yogic text, simply because he does not refer expressly to the different types of Prāṇāyāma described by later writers on Yoga.

^{10.} Vide foot-note 2, Chap III.

^{11.} We know the extreme elasticity of the rules of interpretaion of Sanskrit texts. We are sure that a Pandita versed in large and rhetories will successfully prove that Śvāsa occurring in the Sūtra तिस्मन्सित श्वासप्रश्वासयोगीतिवच्छेदः प्राणायामः । means Pūraka. But we are not sure whether we will be able to explain consistently all the Sūtras of Patañjali bearing on Prāṇāyāma, from a practical points of view, and yet will interpret Śvāsa as the process of Pūraka.

action he does recognize when he refers to Abhayantara Prāṇāyāma which must be preceded after Pūraka. Our contention is that in the text of the Sūtras itself, there is no word explicitly denoting the process of Pūraka.

So we find that Patañjali's word for Kumbhaka is either Prāṇāyāma or Vidhāraṇa and for Recaka his word is Pracchardana. Patañjali does not use any word for the process of Pūraka.

Next we go to the units laid down for measuring Kumbhaka, Recaka and Pūraka. The Yogins of old were very particular about the mathematical accuracy of their processes. They were anxious to measure everything precisely in terms of time-units and space-units. We must remember that these seers and neither clocks nor any other instruments that would measure accurately very small fractions of time. So they had to depend upon time units determined by some physical action. Each time-unit was called Mātrā. The following physical actions were singled out to denote a time-unit or Mātrā:-

- (i) The Twinkling of an Eye.
- (ii) Time taken to pronounce a short vowel.
- (iii) Time necessary for touching one's knee thrice followed by a clap.
- (iv) Time occupied by one normal respiration.
- (V) Time taken up in pronouncing the sacred syllable 35 etc. etc.

Our readers will immediately see that this sort of calculation is very vague. Nor do the units agree mutually. Not that the ancient

seers were unmindful of this fact. The very attempt to introduce different standards for determining the time-unit, shows that none of them was found to be quite satisfactory. But it has to be remembered that the practice of Pranayama was taught by the master to his pupil in person. So whatever the length of the timeunit accepted by a particular school of Yogins, the student could learn to note it accurately from his master. Moreover at the time of practising Prāṇāyāma, one has after all to judge the Mātrā, that is, had to determine it by a mental process. So there was no difficulty in teaching accurately the length of time that constituted a Mātrā; of course in each case as much accuracy would be ensured as was available by judging the time. Today a practical student of Yoga need not worry himself over the diversity of these timeunits. He should cultivate the habit of counting one, two, three.... at the interval of a second. A few minutes' practice in consultation with his watch, will make him perfect. Those that so wish it, should prefix 3\% to each number. 3\% one, 3\% two, 3\% three and so on.

Next we come to space-unit. This was necessary for measuring the force with which he inhalations and exhalations were practised. In a forced exhalation the current of the expired air can be felt upto a particular distance from the end of the nose. The more forcible the exhalation, the greater will be the space across which the flow can be detected. Very light organic fibres were suggested to be used for detecting this current. The affected space was measured in fingers, etc. So the length of the air current determined the degree of pressure with which one was exhaling in Recaka.

The way of determining the strength of Pūraka as described by the commentators of the original Sūtras, is somewhat difficult to understand. The measure of the strength of Pūraka must naturally lie along the inward flow of the inspired air. In our humble opinion the sensations which have been described as making the space-unit to Pūraka are extremely vague and may not give even a tolerably accurate idea even to an advanced student of Yoga. So we do not attempt any description of this space-unit here.

For all practical purposes, spiritual as well as physical, the following hints will suffice: -

- (i) The length of time to be given to P\u00fcraka should be half of what is being given to Recaka.¹²
- (ii) Throughout Pūraka, the inhalation should be uniform. ¹³ That is the strength of the flow should be of the same degree throughout. The act should neither be slowed down or hurried up.
- (iii) Every Pūraka must end quietly. Many people are in the habit of contracting most violently muscles of the whole body at this stage. It is to be noted that no amount of violence done to muscles other than respiratory, will enable a person to draw in even one additional ml. of air.

The time-unit is applicable even to Kumbhaka. The practical method of measuring the length of time occupied by Pūraka, and Recaka that we have described above, should also be used for Kumbhaka.

^{12.} We shall state later on what time should be given to Recaka.

^{13.} Either in the case of Pūraka or in the case of Recaka if the timeunit is taken care of, and a uniform flow of breath is secured, the space unit takes care of itself.

Having studied the Mātrā by which we can measure Pūraka, Kumbhaka and Recaka independent of one another, we now proceed to see what relation these three component parts of Prāṇāyāma should bear among themselves so far as their duration is concerned. In this connection the most favoured view is to have the durations of Pūraka, Kumbhaka and Recaka in the proportion of 1:4:2. According to another tradition, this proportion should be 1:2:2. Thus if Pūraka consists of sixteen Mātrās, Kumbhaka should be of sixty-four and recaka of thirty-two Mātrās, according to the first proportion. And according to the second proportion for sixteen Mātrās of Pūraka, both Kumbhaka and Recaka should have thirty-two each. There is a third tradition which lays down the same measure for all the three parts of Prāṇāyāma.

This is all right so far as the relative durations of Puraka, Kumbhaka and Recaka are concerned. But what should be the absolute duration of Püraka or Kumbhaka or Recaka, one of which being fixed, would fix up the other two. Here the safest course would be first to settle the Mātrās of Kumbhaka and then to follow any of the proportions stated in the foregoing paragraph. Individually we are in favour of the second proportion for a beginner, although an advanced student can follow the first proportion without any danger to himself. Again in fixing up the Mātrās of Kumbhaka, a beginner should see that he can hold his breath very comfortably during the whole duration. Not only this but he should also see that he is able to perform Recaka in due proportion with an equal degree of comfort. The whole practice of Prāṇāyāma should be gone through with utmost ease and comfort. No jerks, no violence, no undue sense of suffocation should be there at any stage of Pranayama.

We very strongly advise the beginners to start only with Pūraka and Recaka, the respective durations being in the proportion of 1:2. The physical culturist can get all the advantages he wants to derive from Prāṇāyāma, by the practice of Pūraka and Recaka only. Even a spiritual culturist can make a good deal of progress, without the practice of Kumbhaka. So there should be absolutely no hurry about taking to Kumbhaka. So also when Kumbhaka is started, it should be very slowly and cautiously developed. Kumbhaka is the one thing in Prāṇāyāma which demands the utmost attention on the part of a student of Yoga. If, however, it is developed with due caution and care, there is nothing dangerous about it or about Prāṇāyāma as a whole.

The duration in Prāṇāyāma should be judged mentally. Both the physical culturists and the spiritual culturists should practice Prāṇāyāma with utmost concentration. The mind should very closely follow the movement of breath. In numbering the Mātrās the concentration of the breath is disturbed. Again the spirit culturist, as he advances, is required to concentrate on different points either inside the body or outside it. In this work the numbering of the Matras causes a little distraction. Those that can manage the numbering business without allowing their concentration being affected, may take it if they so choose.

In a discussion of Prāṇāyāma a reference to Nāḍis is absolutely necessary. Hence we proceed to a consideration of these.

The Nādīs

In later Yogic literature the Nādīs play a very important part. But either in Bhagavān Patanjali or in the oldest commentary on There again the reference is to a Nāḍ̄is occurs only once. ¹⁴ There again the reference is to a Nāḍ̄is that is comparatively of small importance. The total number of Nāḍ̄is present in the human body has been variously estimated. According to one author it is 72,000, where as according to another it is as huge as 350,000. Nāḍ̄is are, however, distinguished as those of comparatively small importance, those of some importance and those of great importance. One is singled out as the most important of the whole lot. The number of Nāḍ̄is of some importance is stated to be either ten or fourteen. There is however, perfect agreement among the authors of Yogic literature in mentioning the number of the more important Nāḍ̄is as three ¹⁵ and that of the most important as one. ¹⁶

Can we identify these Nāḍis with any of the anatomical structures known to modern science? Upto now various attempts¹⁷

^{14.} It is in the Sūtra कूर्मनाड्यां स्थैर्यम् P.Y.S.III 31.

^{15.} इडा, पिड्गला and सुषुम्ना.

^{16.} सुषुम्ना.

^{17.} By far boldest attempt in this direction has been made by Dr. V.G. Rele of Bombay in his book. The Mysterious Kunḍalinī. The books is certainly thought-provoking and Dr. Rele has worked hard at his thesis. He has taken full advantage of his knowledge of modern anatomy and physiology, and some of his guess-work has every chance of standing the laboratory tests. He has explored a very large field of Yogic physiology and anatomy, and every student of Yoga will ever feel indebted to him for his labour of love. We heartily recommend the book to our readers' attention. But after all his conclusions are based upon mere speculation. Dr. Rele has not tried a single experiment in the laboratory, nor has he taken much care to consult the practical experience of the