THE PHYSICAL BASIS OF PERSONALITY
IN
INDIAN PSYCHOLOGY:

( SĀMKHYA - YOGA )
CHAPTER II.

THE PHYSICAL BASIS OF PERSONALITY: In Indian Psychology.

(Samkhya-Yoga.)

"Parameshtyemidam gātram panchabhutabinirmitam.
Brahmāndasajnakanām duhkhasukhbhbhogāyā kalpitam." (1)

'This body, the abode of Brahma, and composed of five elements (bhutas) and known as Brahmanda (the egg of Brahma i.e. microcosm) has been made for the enjoyment of pleasure or suffering of pain'. Thus it was believed that life and personality are the joint products of "dust and deity and God and brute crossed", and the body is hallowed with a tinge of divinity, being the abode of eternal spirit and is pregnant with inherent teleology, according to the Hindu thinkers. Some, however, allege that the ancient Hindus were ascetic in their outlook and apathetic towards the progress and civilisation of humanity. But it may be pointed out in reply that those Hindus no less than the old Greeks have shared in the works of constructing scientific concepts and methods in the investigation of physical phenomena, as well as building up a body of positive knowledge, which has been applied to industrial technique; and Hindu scientific ideas and methodology have deeply influenced the course of natural philosophy in Asia in the east as well as in the west - in China and Japan as well as in the Saracen Empire. Hindu philosophy on its empirical side was dominated by concepts derived

(1) Siva Samhita —— S.C. Basu.
from physiology and philology, just as Greek philosophy
was similarly dominated by geometrical concepts and
methods. (1). Thus Hindu speculative thought had its
superstructure raised upon definite empirical and
scientific basis.

In trying to give an exposition of the knowledge
of physiology and anatomy of the ancient Hindu psychologists
we shall try to discuss the physical bearings on personality
and their contributions to the study of physiology and
anatomy as are understood to-day by these terms. Some forms
of yoga like the Hatha are physical processes carried to a
higher plane. These yoga practices claim to have been based
on the physiological or anatomical laws, although some
Sceptics and disbelievers find them revolting and impossible,
because their only method of verification is theoretical
logic devoid of practical experiences. The Tantras, according
to some writers, contain and reveal the treasures of anatomical
and physiological knowledge of the ancient Hindus. Queerly
enough, the Trāntrik works contain more elaborate and expert
knowledge of human anatomy than in the medical works of the
ancient Hindus.

It is rather difficult to give a clear and systematic
account of anatomy and physiology of the ancient Hindu
thinkers. This was due to the fact that those thinkers
devoted themselves to a particular line of Sadhana or pursuit
after truth, and engaged themselves in specific types of

(1) The Positive Sciences of the Ancient Hindus—Dr. R. N. Seal.
practices. So, they did not possibly think it worth the while to write in full a systematic account of physiology and anatomy as would be subservient to their cherished goal. Secondly, the terminology applied in the study of those sciences as current centuries back is so different from the modern terminology that the specific connotations of the terms lose their richness and significance, when translated to suit our purpose. Most of the terms and ideas when transferred from their original contexts with a view to use them in modern writings on the subject, the task becomes equivalent to an attempt to drive a square peg into a round hole, and in most cases we are apt to miss their original significance.

The term Brahmanda as applied to human body seems to be very significant, and was attempted to be justified by certain texts. Though described in an allegorical and figurative language in Siva-Samhita, for instance, there are verses describing the nature and contents of the human body.


'In this body, the mount Meru (i.e. the vertebral column) is surrounded by seven islands; there are rivers, seas, mountains,

(1) Siva Samhita, by S.C. Basu.
fields and the lords of the fields too. There are in it the seers and sages; all the stars and planets as well. There are sacred pilgrimages, shrines and the presiding deities of the shrines. The Sun and the Moon, the agents of creation and destruction also move in it. Ether, air, fire, water and earth are also there.'

The description as given in the text quoted above, if literally interpreted, appear something fanciful, figurative and allegorical, although it might contain certain elements of truth. We may well refer to the description given in the Gita also in 'Viswarupa Darsana Yoga', where Lord Krishna was said to have exposed to Arjuna his universal or cosmic form by opening his mouth. Thus for interpretation of spiritual phenomena and sometimes for giving physiological and physical back-ground of practices towards self-knowledge and attainment of liberation (mukti), the thinkers and seers of the past brought in by fits and starts physiological discussions. We shall try to collect such skeleton knowledge of the subject in order to build up the requisite structure so far as it is relevant to a study of human personality.

Personality is very much dependent upon the physical constitution, which is variously described as healthy or sickly, thin or bulky, handsome or ugly, tall or short, particularly in respect of the genes. But health and development of the physique are also subject to environmental conditions, such as food, disease and other climatic predicaments. The nature and constituents of food available, the amount of
heat and humidity etc. in the particular climatic region on the surface of the globe not only offer an indelible stamp on the physical structure of its residents, but they also conspire, to a large extent, in determining the mode of life and general outlook and temperaments of its dwellers. Absence of mineral substances in food, for instance, and deficiency in calcium may generate weak legs and rickets. Absence of iodine in food products may cause deterioration in the thyroid glands leading to enlargement of the neck with goitre. But those bodily structures, which are hereditary and congenital are capable of standing the influences of nature or environmental conditions. In the physiological structure of the human body, the nervous system, the organs and the glands of internal secretion are the most powerful and vital mechanisms endowed congenitally and are less modifiable through the influences of physical or natural factors. (1).

The nervous system is the most important physiological mechanism, which is responsible for general upkeep of the physique and carrying on outward bodily behaviour through specific stimulus-response patterns. This system performs the functions of the telephone wires through the process of excitation and transmission of energy with the help of secretions from the endocrine glands (hormones) supplied into the blood-streams. These glandular secretions (hormones) are, to a great extent, responsible for general physiological conditions, appearances and mental outlook and dispositions.

This essential element in the nervous system, according to the modern writers, is the nerve-cell or the neurones. The neurone is made up of the dendrite, the cell-body and the axon. The point of contact of a nerve is a synapse, which is key to inhibition or facilitation of nerve-currents. The whole body is thus subject to the direction and control of the nervous system. (1).

According to the Hindu thinkers, particularly the Yoga psychologists, the nervous system is the most important physiological mechanism in the human body, and therefore, they made it a point to lay greater stress on the knowledge of the nervous system. The basis of all yogic practices lies on the proper direction and control of the nervous system. They directed their attention to know the structural and functional basis of human behaviours and different mental processes. In the Yoga philosophy in its section on Śiva Samhitā, we find some accounts of the nervous system, nerve-centres and the specific functions allotted to them. As we have noted already the accounts given in the text are neither complete nor systematic, and the terms used are so foreign to the modern physiological and anatomical terminology that their clear appreciation is a matter of deeper comprehension. The term used to signify the nerves is sometimes Nādi (river), somewhere Nādi (Nāri-nerve) etc., and is a term used in its widest extension. The figure of speech and the simile used in those writings all the more multiply the difficulties and intricacies in the way of its correct comprehension. This

(1) Loc. cit. - Shanker, U.
was possibly intentionally done in those sanskrit texts, due to the fact that those teachers and seers wanted to give a spiritual touch to the physiological accounts and possibly because their main intention was to teach practical application of psychology rather than theoretical study of physiology and anatomy.

"Abhyāsadādibarnāni yathā sastrāni bodhayet.

Tatha yogam samāsādyā tatvajñānam ca labhyate."(1).

'As by learning the alphabets, one can through practice master all the sciences, so by thoroughly practising first the (physical) training, one acquires the knowledge of the True.'

In the yoga sāstra of Pātanjali, there is no explicit account of physiology proper, and the author simply confined himself to the detailed accounts of the yogic principles and practices. So, we are constrained to ransack other minor but ancillary works coming under the field of yoga sāstra for relevant materials pertaining to the physiology and anatomy of the human system. In Siva Samhitā, for instance, a chapter has been devoted to the human physiology, which was attributed to Lord Siva, who was said to have told all these to his consort Goddess Parvatee. Taking the terms 'nerve' and 'the nervous system' in their widest denotation, the Siva Samhitā gives as many as 3,50,000 nerves in the human body. It has particularly given a fuller account of the two regions - the pelvic region and the abdominal region, possibly because the chief yogic practices are directly connected with their direction, upkeep,

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(1) Gheranda Samhitā, S.C. Basu, Chap. I.
and proper regulation. Of the nervous system, the account lays greater stress on the constitution and function of three principal nerves (Nadi)- Susumna, Ida and Pingala. It will be worthwhile to quote the original verses in the text in their proper style and originality.

"Sārdhalaksatrayam nādyah santi dehantare nṛṇēṃ.  
Pradhanabhutā nādyaster tāsu mukhyasatudrīśah.  
Susumneḍā pingalā ca gāndhāri hastijihvīka.  
Kuhuh sarasvatī pusā sāmkhīni ca payaswini.  
Varunayālambusā caiva biswodari yasaswini.  
Etāsu tīro mukhyāh syuh pingaledā susumnikā.  
Tīreswēka susumnaibā mukhyā ca yogīvallabhā.  
Anyastadāsrayam krtā nādyah santi hi dehinām.  
Nādyaster tā adhobaktrāh padmatamunibhāh sthitāb.  
Prstabamsam samāsṛtya somasuryaṅgirupinoe.  
Tāsam madhya gata nadi chitra ca mama vallabhā.  
Brahmarandhresā tatraiva suksaṁsukṣamaṁ tam subham.  
Pancabāmollala shuddhā susumnā makhyacārīne.  
Divyāmārgamidam proktamamrtanandakārakam.  
Dhyānamātren yogindro duritaugham bināshayet. (1).  

"In the human body there are 3,50,000 nadis(nerves); of them the principal are fourteen.  
Sushumna, Ida, Pingala, Gandhāri, Fastijihvīka, Kuhu,  
Saravati, Pusa, Samkhini, Payaswini, Varuni, Umbusā,  
Viswodari, and Yasaswini. Among these Ida, Pingala and  
Susumna are the chief.  

Among these three, sushumna alone is the highest and beloved of the yogis. Other vessels are subordinate to  

(dependent on) it in the embodied beings.

All the principal ādīs (vessels or nerves) have their
mouths downwards, and are like think threads of lotus. They
are all supported by the vertebral columns, and represent the
sun, moon and fire. The innermost of these three is Chitārā;
it is my beloved! In that there is the subtlest of all
passages (hollows) called the Brahmārādhre.

Shining with five colours, pure, moving in the middle
of Sūshumnā, this Chitārā is the vital part of the body and
the centre of Sūshumna.

This has been called in the Sāstras (scriptures) the
Heavenly way; this is the giver of the joy of immortality;
by contemplating it, the Yogi removes all sins."

From the above description, sketchy as it appears to
be, it becomes clear that sufficient stress has been laid on
the structure and function of the sympathetic or cerebro-spinal
system. Three of the nerves Sūshumnā, Idā and Pingalā are
fine and subtle nerves, but they are important in so far as
their control and regulation were held to be the key to
organisation and control of the brain-functions, and the entire
psycho-somatic movements. They are held to be so fine as not
to be visible even by a microscopic observation. That is
possibly the reason that modern physiology hardly enables us
to identify them properly, or apply to them suitable modern
terms. It seems from the terms applied for their designation
that these vital nerves were held in high esteem, because the
Chitta-functions and other psycho-somatic functions involved
in higher plane of thought and yogic practices are supposed
to be practically at their mercy. Some modern writers have attempted with some amount of success to identify some of the nerves and nerve-centres as given in modern anatomy. It will be pertinent to quote an extract from an authoritative writer on the subject.

In a paper on the Anatomy of the Tantras published in the "Theosophist", 1888, Major B.D. Basu, I.M.S. tried to unravel the mysteries of the Yogis and Tantrists in regard to the nerve systems and identify the нādis, chakras and padmas described in the original Sanskrit texts on yoga and tantras.

"The language of the Tantras being too allegorical and too mystical to be understood by the uninitiated, it is very difficult to identify the нādis, the Chakras, and the Padmas described in them. However, some of the spots are easily identifiable from their simple and lucid description. Thus, it is apparent that the 'nectar-rayed' moon (sudhā rasmīḥ) is the underpart of the brain with eight phases; that 'sushumna' is the spinal cord; Iḍā and Pingalā are the left and right sympathetic cords respectively.

'Chitra' (from the description of this нādi in the Tantras)(1) may be identified with the grey matter of the spinal cord. For, 'in it is the subtlest of all hollows called 'Brahmarandhra', which is nothing else save the central canal of the spinal cord - a structure, whose functions remain as yet to be discovered by the modern physiologists. The Tantrists appear to have traced its connection with the lateral ventricles of the brain. It has been considered by them to be

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(1) Siva Samhitā, Chap. II, verse 18-19.
the seat of the human soul. Even in these days, when it is no exaggeration to say that the Hindus have quite forgotten the scientific truths discovered by their ancestors, they point to the hollow space in the crown of the head (known as the anterior frontanelle) of the new-born child as the Brahmarandhra.

Every tyro in anatomy knows that this space contains the lateral ventricles of the brain."

The mystical writings of those thinkers, the figurative language in the verses and an apparent intention to couch the real ideas in halo of serenity have rendered these writings all the more difficult to comprehend. As we have already remarked that not only terms like 'nādi' has been applied to designate specific nerves or nerve-systems, but sometimes terms denoting confluence of rivers or sacred pilgrimages and shrines were applied to denote the nervous-systems. For example, the brain has been called the "Meru" or the mount Kailāshā the abode of Lord Siva. The juncture of the nerves Sushumnā, Iḍā and Pingalā has been described as the confluence of the three sacred rivers, the Ganges, the Jamuna and the Saraswati.

"The Sacred Triveni"(1) is the spot in the medulla oblongata, where the sympathetic cords join together or whence they take their origin. The mystic Mount Kailāshā(3) is certainly the brain. Mount Kailāshā, which is said to be the sacred abode of Lord Siva, the giver of eternal bliss.

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(1) Siva Samhitā, Chap. V, p.52.
(2) Vide Ashby's notes on physiology, Article on Medulla Oblongata, and Patanjala Yoga-Darshana, H. Aranya, p.489.
has become the object of comparison. The brain is compared to the kailāśa, the fountainhead of joy, bliss and immortality. Modern anatomy also has established the fact that of the human organism, the brain and its functions are very vital in acquisition of knowledge and other elixir of life.

There is an account also in the Siva Samhitā regarding the shape, structure and location of plexuses and ganglia, called the Padmas and Chakras, which were so dear to the Indian Yogis and thinkers. Some account is there also regarding the specific functions of the nervous system pertaining to the pelvic region. Those nerve-centres and also functional centres resemble different letters of the Sanskrit alphabet, lotuses and circles. Accordingly, significant names were given to each to indicate their peculiar shapes, positions and functions. It will not be out of place to allude to the nerves as given in the original text. The Padmas, as it were, are the directing and generating mechanism of energies. The constituent parts of the spinal sympathetic cord were said to be five in number, which are called by the modern anatomists - Cervical, Dorsal, Lumber, Sacral, and Occygeal.

Gudyāturīyagulādurdhāmethatturyagulādadhah.
Caturangagulavistaramādāhāram vartate samam. 21.
Tasminādārpadme ca karnikāyāṃ sushobhānā. 22.
Trikona vartate yonih sarvatantresu gopita.
Tatttra vidvallātakāra kundali paradevātā.
Sārdhalaksatrayam jastam yathābhāgāṃ vyavasthitām. 23.

.:.:  :.:.  :.:.
Etabhya eva nādibhyah sakhopashēkhātāh kramāt.
Sardhalaksatrayam jastam yathābhāgām vyavasthitam. 30.
Eta bhogabahā nadyo vāyusancharadaksakah.
Otaprotah susamvyāpya tisthantyasminkalevare. 31.

"Two digits above the rectum and two digits below the organ is the Ādhāra Lotus, having a dimension of four digits. In the pericarp of the Ādhāra Lotus, there is the triangular, beautiful yoni, hidden and kept secret in all the Tantras. In it is the supreme Goddess Kundalini of the form of electricity in a coil. It has three coils and a half (like a serpent) and is in the mouth of Susumna." (1)

"It represents the creative force of the world, and is always engaged in creation. It is the goddess of speech, whom speech cannot manifest, and who is praised by all Gods.

The nādi called Ida is on the left side coiling round the Sushumna, it goes to the right nostril.

The nādi called Pingalā is on the right side; coiling round the central vessel, it enters the left nostril.

The nādi which is between Ida and Pingalā is certainly Sushumna. It has six stages, six forces, six lotuses, known to the yogis.

The first five stages of Sushumna are known under various names, being necessary, they have been made known in this book.

The other nādis, rising from Mulādhāra (sacral plexus) go to the various parts of the body, e.g. the tongue, organ, eyes, feet, toes, ears, the abdomen, the armpit, fingers of

(1) Samkhya Karika, - S.N.Sastri, p. 48.
the hands, the scrotum and the anus. Having risen from their proper place, they stop at their respective destination, as above described.

From all these (fourteen) nādis, there arise gradually other branches and sub-branches, so that at last they become three hundred thousand and a half in number, and supply their respective places.

These nādis are spread through the body cross-wise and length-wise, they are vehicles of sensation, and keep watch over the movements of the bodily energy (the nerve energies), they regulate the motor functions also." (1).

From the above verses in the original texts, the Muladhāra Chakra may be almost identified with the sacral plexus and it was considered to be the centre, directing and regulating the bodily movements in general contrary to cerebral-localisation theory of the present day. We shall touch upon these points later on. Let us consider certain points regarding the attempt made by a competent writer on the subject for their proper identification and for knowledge of their respective functions.

As to the Padmas and Chakras (the plexuses and ganglia), there may be rational doubts with regard to their structure, functions, existence and location. In attempting to answer to such enquiries, it may be stated that possibly the writers of the Tantras were adepts in the subject and acquired their knowledge both by yogic practices and actual dissection of the human physique. No specific terms were used, as we observed before, to designate the specific Padmas (nerve-plexuses) and

(1) Siva Sam. - p. 42 f.
Chakras (ganglionic centres). But our attempts at identifying the Padmas and Chakras may be supported by certain rational grounds.

Firstly, many of the Padmas and Chakras correspond to modern anatomists' plexuses and ganglia regarding their location in the nervous system. Secondly, the symbolic letters and petals of particular flowers referred to in the verses specifically indicate the nature of integration or distribution of a system of nerves in a definite share. Thirdly, these are considered also to be the centres of forces and energies, which have been proved by the modern physiologists to be 'separate and independent nerve-centres', called by them ganglion and plexus.

Susumna (the spine) has six plexuses, which are evidently six plexuses in the spinal cord. The thousand-petalled lotus, as described in the Siva Samhita, is the Medulla Oblongata with its specific form.

The six Chakras or plexuses were attempted to be identified as noted below. The identification may not satisfy readers of modern books on anatomy, but nevertheless, it is based upon very cogent arguments.(1).

(i) Muladhara chakra is the Sacral plexus or Sacrococcygeal plexus.

(ii) Svadhishthana Chakra - there can be hardly two opinions as to its being the Prostratic plexus of the modern anatomists.

(iii) Manipura Chakra appears to be the Epigastric plexus.

(iv) Anahata Chakra is the Cardiac plexus.

(v) Visuddha Chakra is either the laryngeal or pharyngeal plexus.

(vi) Ajna Chakra is the Cavernous plexus.

Sir B.N.Seal.
We have very briefly hastened over the six Tantric Chakras. We see that these Chakras are the vital and important sympathetic plexuses, and preside over all the functions of the organic life. There can be little doubt that by contemplation on these chakras, one obtains psychic powers.

Contemplation leads to the control over the functions of these chakras or plexuses. The intimate connection between the sympathetic nerves and the great viscera renders it highly probable that the sympathetic system has mainly to do with the organic functions. The Sympathetic is the system of organic life." (1).

The Ayurvedas (medical sciences) and the Gandharvavedas (the sciences of music) furnish greater details of the plexuses and the ganglionic centres (padmas and chakras). They generally mention as many as nine main chakras or ganglia as given below:

(1) The Ādharā Chakra, the Sacro-occipital plexus, having four lobes is below the solar plexus (Brahmagranthi) and the source of vague organic sensation of pleasure and repose. Slightly below it lies a minor centre called the Agni Chikā (Jet of flame). (2) Śvādhīsthāna Chakra or the Sacral Plexus with six lobes or leaves is the root of sexual excitation with the accompanying feeling of stupor, lassitude, cruelty, contempt etc.

(3) The Nāvikānda (corresponding to the Solar plexus, Ravi mandalam) is the junction of the right and left sympathetic systems with cerebro-spinal axis through Idā and Pingalā. It is connected with the Manipura Chakra of the lumbar-plexus, which conjoined with a group of sympathetic.

nerves is responsible for producing organic sensations of
sleep and thirst, and expressions of passions like jealousy,
shame, fear and stupefaction. (4) Anahata Chakra, the Cardiac
plexus of the sympathetic chain with its twelve branches
connects the heart and is regarded as the seat of egoistic
sentiment (Asmita) and the feelings of hope, despair,
anxiety, remorse, conceit etc.
(5) The Vayatisthana comprising the laryngeal and pharyngeal
plexuses is the junction of the spinal cord and the medulla
oblongata. Its chief function is to control by means of
connecting nerves the larynx and other organs of articulation.
(6) The Lalana Chakra with twelve lobes lying opposite to
the uvula was supposed to be the centre connected with ego-
altruistic sentiments and feelings of self-regard, pride,
affection, grief, respect, contentment, reverence etc.
(7) (a) The Ajna Chakra, the centre of command, having two
petals or lobes, and (b) the Manas Chakra with six
lobes are
the two centres regulating the organs of sense and those of
movements. The auditory, tactile, olfactory, optic, gustatory
etc., nerves (ajnavaha nādis) radiate respectively to relevant
organs of sense and control movements. The sixth lobe of the
manas chakra was supposed to be related with centrally
initiated sensations as in dreams and hallucinations through
the medium of 'monovaha nādi' or nerves.
(8) The Soma Chakra is a sixteen-lobed ganglion lying in the
middle of the cerebrum above the Ajna Chakra. It was regarded
to be the centre connected with higher thought-processes and
mentoemotional processes, e.g. compassion, patience, renuncia-
tion, determination, magnanimity etc.
The Sahasrāra Chakra (thousand-lobed ganglion) is the upper cerebrum with many lobes and convolutions was thought to be the highest seat of consciousness, the soul or ātma. The yogis used to attempt to raise the seat of consciousness to this centre by dint of sustained effort and meditation. (1)

Beginning from the lower state of life to that of Samādhi or highest intellectual or contemplative stage, this nervous system together with the plexuses and the ganglia, which are so closely connected with the viscera lie at the full control of the person, and a person can not only regulate and control outward bodily movements and behaviours, but even the visceral organs, so that the yogi claims to have full control and mastery over life and all its psycho-somatic processes.

Some critics allege that yoga lays undue stress on the spiritual growth at the sheer neglect of the body. This criticism is far from truth. The Hindu Psychologists as well as the Yogis seem to give equal stress, if not more, on the importance of the physique. The body is the abode of the spirit, and its proper upkeep and development are necessary, without which control and development of the mind and personality for spiritual attainment and liberation are absolutely impossible. "Shariramādyam khalu dharma sadhanam" was their motto. The training and regulation of the body in its healthy state is essential for the training and discipline of the mind. That healthy mind lives in a healthy body was also fully realised by the Yogis and psychologists of old, and they, therefore, laid great stress on formulating laws of health, purification

of the body, and observance of definite practices to keep the body in perfect health and to remove all causes of disease and decay. The Hatha Yoga, which consists in training in hardihood and physical discipline was regarded as a preliminary stage and the fundamental step towards Rāja Yoga or mental grace and discipline. The growth and development of personality, in its highest form, according to the Hindu psychologists, can be possible only with proper knowledge of anatomy in order to bring the entire physical processes under direct control and rational co-ordination of the person. "Jñānti yah sarvavidam sa yogi nātra samshayah". (1). - He is without doubt the real yogi, who knows all these.

The Hindu psychologists laid great emphasis particularly on the nervous system, using, as we have seen before, the term nerve (nādi) in its widest sense. Of the nervous system also, they emphasised the importance of the cerebro-spinal system including different nerve-plexus or chakras described by them in their own way. It is hardly possible to give an exhaustive account of the entire nervous system of the human body, but they gave brief account of the chief among the nerves, their structure and functions.

"Brahmāndasadajnake dehe sthānāni syurbahuni ca.
Mayoktāni pradhānāni jñātavyāniha sāstrake." (2).

There are in this body called Brahmānda(egg of Brahma). Three are many localities too, and the chief among them mentioned by me in this small scripture are worth knowing.

Special importance was given by the Hindu psychologists to the spinal-sympathetic system, which in their opinion

(2) Siva Samhitā, Chap. sl.35.
contains the afferent and efferent centres and those of
outward and internal activities as well as of important
thought-processes. According to the modern psychologists,
the brain is the seat of all mind-functions. Their
experiments start with the brain-centres and end in the
brain-centres. But contrary to such findings of modern
psychology, the yogis and the Hindu psychologists of old
thought that the seat of mind-stuff (chitta) is the Muladhār
chakra or the anus centre. In the sacral plexus (Muladhāra
chakra), where all the efferent and afferent nerves join
together, there lies the central bodily power-house. The
primal power residing in that centre was called the Kūndalinī
sakti, prakritī sakti, sabda Brahman, the primal power etc.
All force or energy in body or mind is received from this
power-house. This sakti works in the life of man in two
forms — vikshepa (projecting) and Āvarana (absorbing). This
Sakti is the storehouse also of all past knowledge and
experience. None can understand the varied types of mind-
functions without knowing the secrets of this force. No
yoga or conscious development of personality is possible
without harnessing this force in the life of man. "Without
knowing this central bodily power, its action and hold over
the mind and thought-functions, psychology will be too shallow
and it will be only dealing with mind leaving the sap. That
psychology which does not know and recognise this power
cannot be called by the name psychology at all. Medical
science knows the working of the nerve-currents in the body,
but it has not detected the dynamo, the centre from where the
nerve-currents start. And this dynamo of the nerve-currents
is the Kundalini sakti working at the Muladhara chakra (sacral plexus). Many people out of sheer ignorance get frightened by the very name of this sakti and treat this subject as metaphysical and thereby they miss the facts and create confusion."(1). With the knowledge of this sakti a force can be acquired, according to the®, with the help of the mind which is pure, subtle and one-pointed.

"Muladhāra ātmasaktih kundali paradevātā.  
Shāyitā bhujagakārā sārdhatrivalayanvītā.  
Yāvat sā nidrātā dehe tāvajjibāh pasuryathā. 
Jñānam na jāyate tāvat koti yogam samabhyaḥset."(2).

The great Goddess Kundalini, the energy of the self, ātmasakti (spiritual force), sleeps in the Muladhāra (rectum); she has the form of a serpent having three coils and a half.

So long as she is asleep in the body, the jiva is mere animal, and true knowledge does not arise, though he may practise ten millions of yoga.

The mind acts differently in different persons and in different stages and circumstances. The Hindu psychologists gave different names to the mind working at different planes, not of course viewing them as distinct faculties, but the forms of the same mind working under varying circumstances.

In Yayur-veda, for instance, there is distinct reference to the different states of mind, e.g. Daiva manas (divine mind), Yakṣa- manas (active mind), Prajñān- manas (intellectual mind), having its three different forms - Pratyagvāna-manas, Visvabhā-manas and Vashikaran manas. Each form of the mind

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(1) The Mysteries of Man, Mind and Mind-Functions -Swami Narayanananda.
as enumerated above, can be regulated and controlled by specific bodily processes and practices enjoined by the adepts. The Āsanas (posture), Mudrās (specific organic control), Dhautis (purifications) etc. were prescribed to bring the various mental processes under proper control and regulation. (1).

The life-force may remain enveloped in five different stages or sheathes (Koshas), subject to the influence of Avidya or false identification and the three Gunas or their intermixture, resulting in life's joy or sorrow. In the Annamaya sheath or in the animal stage, life exists on and for food, subject to the preponderant influences of Tamas or lethargy. In the Prānāmaya kosha, the being is wholly active under the influence of Rajas (principle of activity) and is guided by the life-forces and senses both subtle and gross. In the Monomaya kosha, life is subject to the influence of mind with five subtle senses (jñānendriyas) under the sway of three gunas, sattva being preponderant. While when in the Vijnānāmaya kosha, a being is equally subject to the influences of the three gunas, but in this state the intellect (buddhi) with five subtle senses mainly guide the vital activities. But in the last kosha, the life of a being is completely under the hold of the Sattva Guna, and life becomes completely merged in joy and perpetual bliss. Herein the life of a being is completely immersed in a state of unmixed joy and endless bliss. To get out of the lower koshas, specific physical practices and mental discipline as prescribed by the adepts are needed to elevate the plane of life.

(1) Monovijnān Tatha Śiva Samkalpa—Swami Atmanandaji Saraswati.
Modern psychologists are convinced of the development of personality by a process of maturation. The process of maturation of both physical and mental factors may be both natural as well as voluntary. So far as the factors of development are directly under the influence of nature, they lie beyond the control of the person concerned. There is a great controversy among modern psychologists in regard to the influence of heredity and environment in the process of maturation. Leaving aside the issue for the present, let us confine, for the time being, our attention to the consideration of the view of the Hindu psychologists particularly Śāmkhya-Yoga school regarding personal or voluntary contributions towards the constitution and development of personality. It is evident from the writings of different writers of old that physical processes are as significant and important for the mental, as the latter are for the former. And accordingly, they emphasised the specific physical practices and mental control for the development and formation of specific types of personality. Thus the Hindu thinkers of old were possibly in the right in viewing the whole mind-body problem in consideration of their inherent organic unity, from which none can be separated from the other as opposed to Interactionism or Parallelism. "The mind and body have a unique unity; a whole which is sui generis. We can never hope to get light on the mind-body problem by considering in isolation facts derived from either source. It is in fact, impossible to get an answer to the question- what is the relation of the mind to the body? For this formulates the question in such a way as to make any answer ab initio erroneous. Both the
historical answers, e.g. psycho-physical parallelism and interactionism, presuppose that a separation between mind and body exists in a living organism. But a body animated is not a corpse animated by a ghost. When the mind leaves the body there has not been anything which can be described as an act of subtraction, but a totally new phenomenon appears ..... The attempt to use physiological or physical ideas in explaining human or mental activity has everywhere broken down. (1). Yoga and other systems of Hindu psychology did not appear to err on this particular point, rather they seemed to hold that the entire functional aspect of the human personality is an integrated whole of mind-body complex, and that an entire psycho-physical training and discipline was needed for the growth and development of human personality. The physical movements and mental activities all owe their vital force and energy from a common fund, called by them Prakriti sakti, Kundalini sakti or primal power in man. Through such explanations, the Hindu psychologists possibly tried to find answers to many problems of modern psychology.

Hindu psychology including Sāmkhya-Yoga was fully cognizant of the fact that although the important mechanisms of the human body like the nervous and glandular systems are largely inherited, nevertheless, the hypo-activities, general dispositions and temperament of a person are largely dependant upon the nature and constituents of food one is used to take. All types of food are neither liked by nor conducive to all persons. As climate and other environmental factors determine

(1) The Mind And Its Body - Charles Fox.
the nature and constituents of food available in a particular region or locality, so food we take also in return determine in general the physical and mental make-up of a person to a great extent. That is why the Hindu psychologists made very specific references to the nature and types of food to be taken by persons devoted to the various missions of life.

आयुसत्ववालोग्यासुखप्रितिविवर्धनाः।
रसयाः सिंधाः ठिराः ह्रद्याः अहाः सत्त्विकप्रियाः,
कात्वामला लवणात्युस्त तिक्ना-रुक्ष्या-विदाहिनाः।
यत्यामाम गतारसाम पुतिपर्युस्तान्ता यत,
उसिष्टामपि चामेद्याम भोजनम् तामसप्रियाम्। (1).

"That which gives longevity, purity, strength, health, joy and relish, and which is (at the same time) juicy, pure, conducive to the body and delicious is liked by the सत्त्विकas.

The राजसिकas are fond of food that is very bitter, sour, salty, acute, burning, stimulating and pungent and also causes sorrow, grief and disease. Whatever food is cold, dry, unwholesome, stale or inedible, is relished by the तामसास।"

Our general temperament and inward nature at the same time give us the relish and liking for the particular type of food. Hence food is, to a fair extent, considered to be the index of a person's inward mental make-up.

The physiological interpretation of साम्क्यa, sketchy as it might be, was the foundation of all yogic exercises directed towards regulation of the bodily movements for the control of the mental processes and for the attainment of self-knowledge and final deliverance. It will be, therefore,

(1) Gitā - Saradha-traya Viśhāga Yoga.
pertinent to discuss the statements made by Śāṅkhya in respect to the physiological and anatomical observations relating to the gross body (sthula sharira). In the Karikā, the commentators give detailed accounts of the growth and development of the foetus till the birth.\(^1\)

According to Śāṅkhya, there are three sources of physical defects (desah), e.g. rheumatism (vāta), bile (pitta), and phlegm (kapha). There are nine hundred nerves (snāyavah) wrapping the body, two hundred ten joints (sandhayah) and three hundred bones. There are one hundred and more than seven central parts (marma). Seven hundred arteries are there in the body (shirāh) and sixteen hundred tendons (kandarāh). Muscles are about five hundred in number (māngsapeshi), but in the female body, there are twenty more. The arteries carrying the bodily juice (rasavāhinyah dhāmanyah) are twenty four in number. There are altogether ten cavities in different parts of the human body, but in case of females, there are three more.\(^2\)

The Karikā also furnishes further details of location and enumeration of the various parts of the human body. The seat of intelligence (buddhiḥ) resembling the lotus (pankajatulyam) is the heart (hrdayam). Below the heart to the left lies the spleen (pleehā), which is the origin of the arteries carrying the red blood (lohitavāhīn'). Below the spleen lies the organ creating blood-foams called the lung (fushfusha). To the right below the heart lies the liver (yakrt), and it is the repository of the colouring

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(1) Śāṅkhya Kārikā .. p. 40ff.
(2) Loc. cit. .. p. 42.
biles (ranjakapitta). Belov the liver lies the source of the channels carrying water (jalavāhinam sirānām) called the kloma tila. Nourishing the intestinal 'tila' the fat or narrow (medas) producing pair of 'vrkka' or the kidneys (vrkkam) lie connected there. In the naval, there is the zone of the rising moon. In the midst of the lunar zone lies a fiery zone of the Sun, the source of bodily heat (ravinda'lam). In that solar region lies the fire which digests all food, and in a bulky body that is equal to the size of a barley-seed (yavatulyah), but in a small body it is of the size of sesame (tila). In the body of the males, there are three and a half Antras or intestines (āntānā) but they are only three in those of females. It is said that hairs over the human body are three and a half crores. The face is of the size of four fingers and the forehead measures about eight fingers. The liver is of the size of about thirteen fingers, the heart five fingers, tila is about four fingers and the lung is about seven fingers in size. (1).

Sāmkhya differs from Siva Samhitā in regard to the number of the nerves. According to Sāmkhya, there are seven thousand and two hundred nerves in the human body. As already stated we should, however, note that the term nerve (nādi) was used rather in a comprehensive and peculiar sense. Of these ten energy-carrying (vāyuvāha-force or energy directing) nerves or channels were the chief. Of those ten, three are the most prominent. Among the ten energy-carrying nerves, Idā and Pingalā lie respectively to the left and right of the nose. From the middle of the nose originates the nerve Susumāṇa by name. Gāndhāri and Hastijihvā are the two other chief nerves

running respectively from the left and the right eyes.
Similarly from the two ears, start the nerves (nādi) Pushā
and Yashaswini lying respectively to the right and left.
The nerve connecting the mouth is Alambusā, the nerve Kuhu
lies in the genital organ, and from the kidney runs the
nerve Sāmkhini. Idā, Pingala and Susumna are called the
most prominent nerves, because they contain the life-force
and the vital energy (Prāṇa vāyuh).

It appears that the term vāyu was used in the sense of
life-forces or energies capable of rendering specific life
functions. They were the special bodily constituents having
specific functions. There are ten kinds of main vāyus or
vital forces - Prāṇa, Apana, Samāna, Udāna, Vyāna, Nāga,
Kurma, Krkara, Devadatta and Dhananjaya. Prāṇa helps the
process of digestion and assimilation of food and drink.
Apana gets into the Mulādhāra plexus and clears the bowels
and kidneys. Samāna runs all over the 7,200 nādis distributing
proportionately the necessary extracts from the food and drink.
Udāna helps in the upward movement of food and drink. Vyāna
remains all over the body enabling different organs to contract
and expand (movements). Nāga vāyu comes out in udgāra, and
Kurma in opening (an organ). Krkara sharpens appetite, whereas
Devadatta helps vijrambhana (yawning). Dhananjaya stays all
over the body not leaving it even after death.(1).

Through the practice of Prānāyama, the ten kinds of
vāyus may be controlled and rendered instrumental for getting

(1) Karika - p. 44.
any desire fulfilled.

"Prānāyāmabhāsyena basyāh nikhilabhāstapradāh bhavanti." (1). Through the practice of Prānāyāma the controlled vāyus become givers of all desired ends.

In yogic practices and contemplation, the yogis bring these vāyus under their own control through the control and regulation of breath (prānāyāma), which consists in exhaling (recaka), inhaling (puraka) and then holding up the breath in due regularity and interval. Meditation is connected with the concentration of attention on the naval region, the seat of Brahman, the heart, the seat of Vishnu and the forehead, the seat of Shiva respectively. The continued practice of prānāyāma is said to enable the yogi to control and regulate inflow, outflow and retention of air. This practice, it is said, enables a person to bring the mind under complete sway, and also to keep the body free from diseases and physical wants. Such a practice of course requires systematic attempts and proper guidance, or else the results may sometimes prove injurious or fatal.

"Yatha simho gajovyāghro bhabedvasyāh shenaih shanath, Tathaiva sevito vāyuranyathā hanti sādhakam."(2).

As a lion, or an elephant or a tiger is brought under control gradually, so is to be served the vāyu, or else it will kill the devotee.

It is evident from the above, that prānāyāma (control of breath) has three-fold functions to fulfil, e.g. (1) to keep the body fit and healthy, (ii) to modify and regulate

(1) Loc. cit.
(2) Loc. cit. p. 47.
the physical bases of mental life, and (iii) to keep organic and mento-emotional activities in proper order.

Charaka and Susruta also in their medical works (samhitās), dealt with physiology and anatomy in greater details following respectively Atreya and Dhvanvantari faithfully. But in the Sāmkhya-Yoga literatures the accounts given are rather sketchy and limited, and they attempted only to give a picture of the cerebro-sympathetic system together with the ganglionic centres (chakras) and padmas (plexuses), possibly because it was believed that organic activities, e.g. reflexes, automatic actions, thought-processes, and mento-emotional processes, were under the direct sway of the cerebro-spinal system, or, it might be that there were literatures other than those that are still extant to supply the relevant informations regarding anatomy and physiology.

Charaka and Susruta considered, like Aristotle and others, the heart as the seat of the soul (consciousness), whereas the Tantras and the Sāmkhya-Yoga were of opinion like Galen that the brain together with the cerebro-spinal system is the centre of consciousness, and that soul as the seat of consciousness can move up and down along the Brahmadanda (spine) along with Susumna (the central spinal passage). Connecting the central store-house of power, Susumna, the Brahma Nādi and the Monovahā Nādi associated with the Padmas (plexuses) and Chakras (ganglionic centres) carry in and out the afferent and efferent energies from and to the brain, trunk and all over the body. (1). It was, therefore,

believed that change, stages and development in personality have their roots in the control, regulation and proper upkeep of the cerebro-spinal system including the central passage and nerves, the chakras and padmas (ganglia and plexuses). The three sympathetic nerves of the cerebro-spinal system, e.g. Susumnā, Idā and Pingalā are considered in the Samkhya and Yoga literatures as the foremost of the kind, because it is they through which move the vital currents.

"Idadisvadyasya tisrsu nādisu prāna vāyuh sancaratī Idā, Pingalā, Susumnā, iti tisro nādyotishresthāh."(1). Through the three nerves Idā etc. the vital force circulates, and so the three nerves are placed in three directions. The physiology of the Hindus in general including that of Samkhya-Yoga is peculiar in its conception of the three fundamental vital physical elements, Vāyu (vital force or life-energy), pitta (metabolic fluid) and kapha (lymph), which have special connections through subtle currents (srotas) with the entire physique with their respective repositories (āsayas). No pathological disorder can be explained without referring to disorders in either of these fundamental sustainers of life. These have been clearly explained in the Ayurvedas (medical sciences) of both Charaka and Susruta --

"Vāyuh pittam kaphascoktah sharīre dosa-samprakah,
Manasah punaruddistoh rajasca tama eva ca." (2)

The physical diseases are due to the defects in vāyu, pitta, and kapha, whereas mental disorders are due to rajas and tamas.

(1) Sam. Kār. - p.44
(2) Sutrasthanam-Charaka Sam. p.6.
The vāyus and their nature and functions have been differently interpreted by different writers. In medieval physiology, there was mention of as many as 49 kinds of vāyus. But in Śāṃkhyā and so also the Charaka and Susruta samhitās, there is mention of only five chief vāyus - 'Pancha vāyavah'.

According to Charaka, these vāyus are responsible for keeping the body at work, and impel and regulate the movements of the organs including the mind. They also help the organic and structural developments of the body, beginning from the foetal stage. Susrutra in his work writes that the chief vāyus are mainly concerned with the upkeep of the animal life. The distribution and circulation of the vital elements, the organic reflexes and automatic actions, the anabolic, the metabolic and katabolic actions within the body are the important functions of the different types of vāyus.

The medieval experts, Charaka and Susruta, agree in holding that irregularities and excitation of the vāyus leading inevitably to disorders and diseases both physical and mental. The whole body may be regarded as the assemblage of molecular thrills subject to the influences of five vital forces.

The sciences of dancing and music (Gandharvaveda and Nātya śāstra), such as, 'Sangīta Ratnakara', accept the physiological theories of the Śāṃkhyā-Yoga although with slight modification. It takes note of ten vāyus and gives interpretation of the cerebro-spinal-sympathetic system.

(1) Śāṃkhyā Samgraha - Śāṃkhyā tattva vivecanam & Charak's Sutra Sthanam, chap. XII, p. 68ff.
(2) Śāṃkhyā Prakaraṇamala - H.Aranya.
almost in line with that of Sāmkhya-Yoga. Even the modern interpretation of Sangita Ratnākara explain these vāyus to mean subtle elements of Prakṛti in the process of evolution. They are elements of energy in action functioning in the organism assuming different designations, such as, Prāna, Āpana etc. It is these elements that bear these designations as vāyus. (1). The Udana vāyu is more significant for the singers, as it is directly connected with the voice and the organs of articulation. As to the functions of vāyus, the commentary is almost at one with Sāmkhya-Yoga view.

The yogāngas are in general ancillary to regulation and control of the vāyus and other vital and bio-motor activities of the body as well as the mind. Physical exercise (vṛṣama), prānāyāma (breathing exercises), postures (āsanas), mudrās etc. all conduce to the betterment and regulation of the mind-body. Through constant practice (abhyāsa), and breathing exercises, if the vāyus are brought under control, they behave, as it were, like the wish-yielding trees. “Tā eva prāṇādyāh dashvāyāvah prāṇāyamābhyaṣena vasyah santo nikhilāvistapradā bhavanti.”(2). Indeed these ten vāyus as the basis of life, when brought under control by means of Prānāyāma and practice, become the agents of fulfilment of all wishes.

It may be noted that Sāmkhya-Yoga psychology besides accepting intimate connection between the body and mind as

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(1) Samgitaratnakara, by Dr.C.K.Raju, Chap.I, p. 24.
(2) Sāmkhya Kārika - p. 44.
the effects of the same cause - Prakrti or Avyakta as psycho-physical elements, also gives priority to the structure, upkeep and control of the physical basis particularly the nervous system in personality. These psychologists stressed upon the importance of the physique and its vital constituents in maintenance, development and integration of personality. Mento-emotional balance and higher intellectual and spiritual pursuits are not practicable without physical well-being and proper regulation and control. The physical postures, breath-control and regulation, and prescribed dietary are all significant for the importance of the physical basis of personality. Sāmkhya-Yoga metaphysics and psychology stressed upon the importance of physical basis of personality. But yoga also believed in a super-normal power of the self by dint of which, through proper training and constant practice, the mind is capable of functioning without or at least with lesser dependence on the physique. This was possible by means of what was called 'Samyama'.

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