touch at all would be ayoga, or deficient association with sense-objects. To see objects very near the eye, at a very great distance, or to see frightful, hideous, unpleasant and disturbing sights, would be examples of the improper use (mithyā-yoga) of the visual sense. To hear grating and unpleasant sounds would be examples of the improper use of the ear; to smell bad and nauseating odours would be examples of mithyā-yoga of the nose; to eat together different kinds of things, which in their combination are so opposed as to be unhealthy, is an example of the improper use of the tongue; to be exposed to sudden heat and cold are examples of the improper use of touch. Similarly, all activities of speech, mind and body, when they are performed to an excessive degree, or not performed at all, or performed in an undesirable or unhealthy manner, are to be considered respectively as examples of atiyoga, ayoga and mithyā-yoga of the effort of speech, mind and body (vān-manah-sarira-pravrtyti). But these are all due to the misuse of intelligence (prajñāparādha). When a particular season manifests its special characteristics of heat, cold or rains to an excessive degree or to a very deficient degree or in a very irregular or unnatural manner, we have what are called atiyoga, ayoga and mithyā-yoga of time (kāla). But the misuse of intelligence, or prajñāparādha, is at the root of all excessive, deficient or wrongful association with sense-objects; for, when proper things are not taken at the proper time or proper things are not done at the proper time, it is all misuse of intelligence and is therefore included under prajñāparādha. When certain sinful deeds are performed by prajñāparādha, and, by the sins (adharma) associated with those deeds, which become efficient only after a certain lapse of time, illness is produced, the real cause of the illness is primarily adharma or its root cause, prajñāparādha; kāla, or time, however, may still be regarded in some sense as the cause through which the adharma is matured and becomes productive.

The principle of growth and decay is involved in the maxim

1 Caraka-samhitā, 1. 11. 37.
2 Ibid. 1. 11. 39. 40. Cakrapāni says that this includes sinful deeds which produce illness and unhappiness, śātra-mānasika-vācakarma-mithyā-yoga-genaiśa-dharma-śaśāntara-vyāpāreṇaśādharma-janyānāṃ tīkāraṇāṃ kriya-mānāvādā.
3 Three seasons only are mentioned, Śūtsrā-varṣa-lakṣaṇāh punar heman- ta-grīśma-varṣāh. Ibid. 1. 11. 42.
4 Thus Cakrapāni, commenting on this, says, “buddhi-aparādhasyaiva indri-yārthāditiyogādi-hetutvād.” Ibid. 1. 1. 53.
that the different constituents of the body grow when articles of food having similar constituents are taken, and that they decay when articles of food having opposite qualities are taken (evam eva sarva-dhātu-guṇānāṃ sāmānya-yogād vṛddhir vipar-yayādd hrāsah)\(^1\). Thus, flesh increases by the intake of flesh, so does blood by taking blood, fat by fat, bones by cartilages, marrow by marrow, semen by semen and a foetus by eggs\(^2\). But the principle applies not only to the same kind of substances as taken in the above example, but also to substances having largely similar qualities, just as the seminal fluid may be increased by taking milk and butter (samāṇa-guna-bhūyisthānām anyaprakrtinām apy-āhāra-vikārānām upayogah)\(^3\). The ordinary conditions of growth always hold good, namely, proper age of growth, nature, proper diet and absence of those circumstances that retard growth. The assimilation of food is effected by heat which digests, air which collects together all things for the action of heat, water which softens, fat which makes the food smooth, and time which helps the process of digestion\(^4\). As any particular food is digested and changed, it becomes assimilated into the body. The hard parts of the food form the hard parts of the body and the liquid parts form the liquid parts such as blood and the like; and unhealthy food, i.e. food which has qualities opposed to the natural qualities of the body, has a disintegrating influence on the body.

As regards the growth of the body through the essence of the food-juice, there are two different views summed up by Cakrapāṇi (1. 28. 3). Some say that the chyle is transformed into blood, and the blood into flesh, and so forth. As regards the method of this transformation, some say that, just as the whole milk is changed into curd, so the whole chyle is transformed into blood, while others say that this transformation is somewhat like the circulation in irrigation (kedari-kulyā-nyāya). The rasa (chyle) produced as a result of the digestive process, coming into association with rasa as the body-constituent (dhātu-rūpa-rasa), increases it to a certain extent; another part of the rasa, having the same colour and smell as blood, goes to blood and increases it, and another part similarly goes to flesh and increases it; and the same process takes place with reference to its increasing fat, etc. Here the whole circula-

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\(^1\) Caraka-samhitā, 1. 1. 43 and 44, also 4. 9 and particularly 4. 6. 10.  
\(^2\) Ibid. 4. 6. 10. Cakrapāṇi explains āma-garbha as anda.  
\(^3\) Ibid. 4. 6. 11.  
\(^4\) Ibid. 4. 6. 14 and 15.
tion begins by the entrance of the entire chyle into the constituent rasa (rasa-dhātu); in passing through some part remains in the rasa and increases it, the unabsorbed part passes into blood, and what is unabsorbed there passes into flesh and so on to the other higher constituents of bones, marrow and semen. But others think that, just as in a farm-house pigeons of different descriptions sit together (khale kapota-nyāya), so not all the digested food-juice passes through the channel of the rasa-dhātu, but different parts of it pass through different channels from the very first stage. That part of it which nourishes rasa enters into the channel of its circulation, that part of it which nourishes the blood goes directly into that, and so on. But there is generally this time limitation, that the part which nourishes the blood enters into it only when the part which nourishes rasa-dhātu has been absorbed in it; so again the part which enters into flesh can only do so when the part which nourishes blood has been absorbed in it. Thus the circulatory system is different from the very beginning; and yet the nourishment of blood takes place later than that of rasa, the nourishment of flesh later than that of blood, and so on (rasād raktam tato māṃsam ityāder ayam arthaḥ yad rasa-puṣṭi-kālād uttara-kālām raktam jāyate, etc.). The upholders of the last view maintain that the other theory cannot properly explain how a nourishing diet (vṛṣya), such as milk, can immediately increase the seminal fluid, and that, if it had to follow the lengthy process of passing through all the circulatory systems, it could not do its part so quickly; but on the second theory, milk through its special quality (prabhāva) can be immediately associated with the seminal fluid and thereby increase it. But Cakrapāṇi remarks that the earlier theory (kedārī-kulyā) is as good as the later one. For on that view also it might be held that by milk its special quality (prabhāva)

1 There are two kinds of rasa, called dhātu-rasa and poṣaka-rasa. See Cakrapāṇi's comment on Caraka-samhitā, vi. 15. 14 and 15.

2 parināma-pakṣe, vṛṣya-prayogasya raktādi-rūpāpati-krameṇāticireṇa sukraṁ bhavatti; kṣetrādayāca sadya eva vṛṣyā dṛṣyante, khale-kapota-pakṣe tu vṛṣyātpanno rasah prabhāvāc chādarām eva sūkraṁ sambaddhāh san tat-puṣṭim karotti yuktam (Cakrapāṇi on Caraka-samhitā, i. 28. 3). Elsewhere (ibid. vi. 15. 32) it is said that those articles of food which stimulate semen (vṛṣya) are, according to some authorities, changed into semen in six days and nights, whereas in the ordinary course, as is said in Sutrāta, it takes a month for the transformation of ordinary articles of food into semen. But Caraka does not favour any time limitation and urges that, just as the movement of a wheel depends upon the energy spent on it, so the time that a particular food takes for getting itself transformed into semen or into any other dhātu depends upon the nature of the food and the powers of digestion.
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passed quickly through the various stages and became associated with the seminal fluid. Nor can it be said that according to the first theory every case of impurity of rasa (rasa-duṣṭi) is also a case of impurity of blood (rakta-duṣṭi), as is argued; for not the whole of rasa is transformed into blood, but only a part of it. So the rasa part may be impure, but still the part that goes to form blood may be pure; thus both theories are equally strong, and nothing can be said in favour of either. In Caraka-samhitā, vi. 15. 14 and 15, it is said that from rasa there is rakta (blood), from rakta flesh, from flesh fat, from fat bones, from bones marrow, from marrow semen. The two theories above referred to deal with the supposed ways in which such transformations occur.

In addition to the seven dhātus, or body-constituents, spoken of above there are ten upa-dhātus, which are counted by Bhoja as ārito, snāyu, ovarial blood and the seven layers of skin1. Caraka says in vi. 15. 15 that from rasa is also produced milk, and from milk ovarial blood; again, the thick tissues or ligaments (kaṇḍa-rā) and ārito are produced from blood, and from flesh are produced fat (vasā) and the six layers of skin, and from fat (medas) are produced the five tissues. The chyle, or rasa, becomes tinged with red by the heat of bile. The blood, again, being worked upon by vāyu and heat, becomes steady and white, and is called fat (medas). The bones are a conglomeration of earth, heat and air and therefore, though produced from flesh and fat, are hard. They are made porous by vāyu running through them, and the pores are filled in by fat, which is called marrow. From the oily parts of marrow, again, semen is produced. Just as water percolates through the pores of a new earthen jug, the semen percolates through the pores of the bones, and there is also a flow of this seminal fluid through the body by way of its own ducts. By the rousing of desires and sex joy and by the heat of the sex act the semen oozes out and collects in the testes, from which it is ultimately liberated through its proper channel2.

1 Cakrapāṇi on Caraka-samhitā, vi. 15. 14 and 15, a quotation from Bhoja. Ojas is counted as an upa-dhātu.

2 Caraka-samhitā, vi. 15. 22–29.
Vāyu, Pitta and Kapha.

The qualities of the body are briefly of two kinds, those which make the system foul, the mala, and those which sustain and purify the body, the prasāda. Thus in the pores of the body are formed many undesirable bodily growths which seek egress; some constituents of the body, such as blood, are often turned into pus; the vāyu (air), pitta (bile) and kapha (phlegm or lymph) may become less or more than their normal measure (prakupita), and there are other entities which, existing in the body, tend to weaken or destroy it; these are all called malas. Others which go towards the sustenance and the growth of the body are called prasāda1.

But vāyu, pitta and kapha are primarily responsible for all kinds of morbidities of the body, and they are therefore called doṣa. It must, however, be noted that the vāyu, pitta and kapha and all other malas, so long as they remain in their proper measure (svamāna), do not pollute or weaken the body or produce diseases. So even malas like vāyu, pitta and kapha, or sweat, urine, etc., are called dhātus, or body-constituents, so long as they do not exceed their proper measure, and thus instead of weakening the body they serve to sustain it. Both the mala-dhātus and the prasāda-dhātus in their proper measure co-operate together in sustaining the body2. When various kinds of healthy food and drink are exposed in the stomach to the internal fire of the digestive organs, they become digested by heat. The essential part of the digested food is the chyle (rasa), and the impurities which are left out and cannot be assimilated into the body as its constituents are called kiṭṭa or mala. From this kiṭṭa are produced sweat, urine, excreta, vāyu, pitta, śleṣman and the dirt of ear, eye, nose, mouth and of the holes of the hairs of the body, the hair, beard, hair of the body, nails, etc.3 The impurity of food is excreta and urine, that of rasa is phlegm (kapha), that of flesh bile (pitta) and that of fat (medas) sweat4. This view of vāyu, pitta and kapha seems to indicate that these are secretions, waste-products (kiṭṭa), like the other waste-products of the body. But the theory of waste-products is that, when they are in their proper measure, they serve to sustain the body and perform important functions, but, when

1 Caraka-saṃhitā, iv. 6. 17.
2 evam rasa-malau svā-pramāṇāvasthitau ādhyātmya sama-dhūtor dhātu-sām-yam anuvartayataḥ (ibid. 1. 28. 3).
3 Ibid. 1. 28. 3.
4 Ibid. vi. 15. 30.
they exceed the proper limit or become less than their proper measure, they pollute the body and may ultimately break it. But of all waste-products vāyu, pitta and kapha are regarded as being fundamentally the most important entities, and they sustain the work of the body by their mutual co-operation in proper measure, and destroy it by the disturbance of balance due to the rise or fall of one, two or all three of them.

As has already been said, the body is composed of certain constituents, such as rasa and rakta. The food and drink which we take go to nourish the different dhātus. Not all the food and drink that we take, however, can be absorbed into the system, and consequently certain waste-products are left. The question arises, what is it that sustains the system or breaks it? It has already been noticed that the due proportion of the dhātus is what constitutes the health of the body. This due proportion, however, must, as is easy to see, depend on the proper absorption of food and drink in such a way that each of the dhātus may have its due share and that only, neither less nor more. It is also necessary that there should be a due functioning of the causes of waste or accretion, working in a manner conducive to the preservation of the proper proportion of the constituents with reference to themselves and the entire system. Deficiency or excess of waste-products is therefore an invariable concomitant of all disturbances of the balance of dhātus, and hence the deficiency or excess of waste-products is regarded as the cause of all dhātu-vaiṣamya. So long as the waste-products are not in deficiency or excess, they are the agents which constitute the main working of the system and may themselves be therefore regarded as dhātus. It is when there is excess or deficiency of one or more of them that they oppose in various ways the general process of that working of the system and are to be regarded as doṣas or polluting agents. There are various waste-products of the body; but of all these vāyu, pitta and kapha are regarded as the three most important, being at the root of all growth and decay of the body, its health and disease. Thus

1 Śāṅgadhara (iv. 5) counts seven visible waste-products which are different from the three malas referred to here as vāyu, pitta and kapha. These are (1) the watery secretions from tongue, eyes and cheeks, (2) the colouring pitta, (3) the dirt of ears, tongue, teeth, armpits and penis, (4) the nails, (5) the dirt of the eyes, (6) the glossy appearance of the face, (7) the eruptions which come out in youth, and beards. Rādhamalla, in commenting on this, refers to Caraka-samhitā, vi. 15. 29–30, in support of the above passage of Śāṅgadhara. Most of the malas are chidra-malas, or impurities of the openings.
Ātreya says in answer to Kāpyavaca’s remarks in the learned discussions of the assembly of the sages, “In one sense you have all spoken correctly; but none of your judgments are absolutely true. Just as it is necessary that religious duties (dharma), wealth (artha) and desires (kāma) should all be equally attended to, or just as the three seasons of winter, summer and rains all go in a definite order, so all the three, vāta, pitta and ślesman or kapha, when they are in their natural state of equilibrium, contribute to the efficiency of all the sense-organs, the strength, colour and health of the body, and endow a man with long life. But, when they are disturbed, they produce opposite results and ultimately break the whole balance of the system and destroy it. There is one important point to which the notice of the reader should particularly be drawn. I have sometimes translated mala as “polluting agents or impurities” and sometimes as “waste-products,” and naturally this may cause confusion. The term mala has reference to the production of diseases. Kiṭṭa means waste-products or secretions, and these may be called mala when they are in such proportions as to cause diseases. When, however, a mala is in such proportions that it does not produce any disease, it is not a mala proper but a mala-dhātu (nirbādha-karān malādin prasāmde saṃcakṣmahe). In another passage of Caraka (1. 28. 3), which has been referred to above, it is said that out of the digested food and drink there are produced rasa and kiṭṭa (secretion) called mala (tatrāhāra-prasādākhyā-rasāḥ kiṭṭaṃ ca malākhyam abhinirvartate), and out of this kiṭṭa is produced sweat, urine, excreta, vāyu, pitta and ślesman. These malas are also dhātus, inasmuch as they sustain the body as much as the other dhātus, rasa or raktu, etc. so long as they are in their proper proportions and balance (te sarva eva dhātavo malākhyāḥ prasādākhyāḥ ca). Vāgbhaṭa, however, takes a different view of this subject. He separates the doṣa, dhātu and mala and speaks of them as being the roots of the body. Thus he says that vāyu sustains the body, contributing energy (utṣāha), exhalation (ucchevāsa), inspiration (niḥsvāsa), mental and bodily movement (ceṣṭā), effective forces (vega-pracartana); pitta helps the body by

1 Caraka-samhitā, 1. 12. 13.
3 Cakrapāṇi on Caraka-samhitā. Compare Śūraṅgadharā, iv. 8: vāyuḥ pittāṃ kapho doṣā dhātavai ca malā matāḥ, i.e. vāyu, pitta and kapha are known as doṣa, dhātu and mala.
4 Also evam rasa-malau sva-pramāna-vasthitav śārayasya sama-dhātor dhātu-sāmyam anuvartayataḥ (Caraka-samhitā, 1. 28. 3).
digestive function, heat, the function of sight, imagination (medhā),
power of understanding (dhi), courage (saurya), softness of the
body; and ślesman, by steadiness, smoothness, by serving to unite
the joints, etc. The functions of the seven dhātus, beginning with
rasa, are said to be the giving of satisfaction through the proper
functioning of the senses (prāṇana or rasa), the contribution of
vitality (jīvana), the production of oiliness (sneha), the supporting
of the burden (dhāraṇa) of the bones (asthi), the filling up of bone
cavities (pūrāṇa or majjā) and productivity (garbhītpāda of śukra);
of males it is said that the excreta has the power of holding the
body, while urine ejects the surplus water and sweat holds it back.
The elder Vāgbhaṭa distinguishes the dhātus from vāyu, pitta and
kapha by calling the latter dosa (polluting agents) and the former
dūṣya (the constituents which are polluted). He further definitely
denies that the malas of dhātus could be the cause of disease. He
thus tries to explain away this view (that of Caraka as referred to
above) as being aupacārika, i.e. a metaphorical statement. The
body, according to him, is a joint product of dosa, dhātu and
mala. Indu, the commentator on the Aṣṭāṅga-samgraha, however,
emphasizes one important characteristic of the dosas when he says
that the dynamic which sets the dhātus in motion (dosebhya eva
dhātunāṃ pravrthiḥ) is derived from the dosas, and the circulation
chemical activities, oiliness, hardness, etc. of the chyle (rasa) are
derived from them. Owing to the predominance of one or other
of the dosas from the earliest period, when the foetus begins to
develop, the child is said to possess the special features of one
or other of the dosas and is accordingly called vāta-prakṛti, pitta-
prakṛti or ślesma-prakṛti. Vāgbhaṭa further says that disease is not
dhātu-vaiśamya, but dosa-vaiśamya, and the equilibrium of dosas or
dosa-sāmya is health. A disease, on this view, is the disturbance of
dosas, and, as dosas are entities independent of the dhātus,
the disturbance of dosas may not necessarily mean the dis-
turbance of dhātus.

1 Aṣṭāṅga-hridaya, 1. 11. 1-5.
2 tajjān ity-āpasāraṇa tān āhur ghṛta-dāharat
rasādīsthēsu dosēsu vyādhyāvas sambhuvanti ye.
Aṣṭāṅga-samgraha, 1. 1.
3 Indu, the commentator on the Aṣṭāṅga-samgraha, puts it as ātrīmaṇ ca dosa-
dhātu-mala-samudāyaḥ (1. 1).
4 tathā ca dhātu-prādyāya rasasya vahana-pāka-sneha-kāśhīnyādi dosa-
prasāda-labhyam eva (sibid.).
5 Āyur-veda is closely associated with the Śāṃkhya and Nyāya-Vaiśeṣika,
which alone deal with some sort of physics in Indian philosophy. It is pointed
that, as the manifold universe is nothing but a modification of the gunas, so all diseases are but modifications of the three dosas, or, as in the ocean waves, billows and foam are seen which are in reality the same as the ocean, so all the different diseases are nothing but the three dosas. The elder Vāgbhaṭa uses also in another place the simile of the three gunas with reference to the three dosas. Thus he says, “As the three gunas co-operate together for the production of the world in all its diversity, in spite of the mutual opposition that exists among themselves, so the three dosas also co-operate together, in spite of natural opposition, for the production of the diverse diseases.” In the treatment of the bone system the present writer agrees with Dr Hoernle that Vāgbhaṭa always attempted to bring about a reconciliation between Caraka and Suśruta by explaining away the unadjustable views of one or the other. Here also the same tendency is seen. Thus, on the one hand, he explained away as being metaphorical (aupacārīki) the expressed views of Caraka that the dhātu-malas are the dosas. On the other hand, he followed the statements of the Uttara-tantra that the three dosas, the dhātu, excreta and urine sustain a man’s body. He further follows the Uttara-tantra in holding that the three dosas are the three gunas (bhinnā dosās trayo guṇāḥ). Dalhana identifies vāyu with rajas, pitta with sattva and kapha with tamas.

In the Sūtra-sthāna Suśruta mentions blood (ṣonita) as having the same status as vāyu, pitta and kapha and holds that the body out by Narasimha Kavirāja (a writer from the south) in his Vivarana-siddhānta-cintāmanī (the only manuscript of which is in possession of the present writer) that according to Śāmkhya it is the doṣa transforming itself from a state of equilibrium to a state of unbalanced preponderance of any of them that is to be called a disease (vaiśamyā-sāmyāvasthā-bhinnāvasthā-viśeṣavat doṣatvam rogatvam). The Naiyāyikas, however, hold that disease is a separate entity or substance, which is produced by doṣa, but which is not itself a doṣa (dravyatvē sati doṣa-bhinnā-doṣa-janyatvem rogatvem). So a disease is different from its symptoms or effects. Narasimha further holds that, since Caraka speaks of diseases as being fiery (āgniya) and aerial (vāyusa), he tacitly accepts the diseases as separate substances. That Caraka sometimes describes a disease as being dhātu-vaiśamyā is to be explained as due to the fact that, since dhātu-vaiśamyas produce diseases, they are themselves also called diseases in a remote sense (yat tu Carakena dhātu-vaiśamyasya rogatvam uktam tat tēṣām tathā-vīdhā-duḥkhā-karṣyatvād aupacārikam. Vivarana-siddhānta-cintāmanī, MS. p. 3).

1 Aṣṭāṅga-saṃgraha, 1. 22.
2 ārāmbhākam virodhe ’pi mitho yad guna-trayam vīvāyasya dṛṣṭam yugapad vṛddher doṣa-trayam tathā (ibid. 1. 21).
3 rojō-bhuyāśto mārutha, rojō hī pravartakam sarva-bhāvānām pitām sattvot-katam laghu-prakāśakatōdi, rojō-yuktaṁ vai ity eke kaphas tamo-bahulah, guru-prā- varanāmakaṁvād ity āḥur bhīṣajaj. Yady evam tat katham kapha-prakṛtiṁ puniṁ sattva-gunopapanntatā paśñhitā, ucyate, guna-devitayam api kaphe jñātavyam sattva-tamo-bahulā āpa (Dalhana on Suśruta, Uttara-tantra, 66. 9).
depends on food and drink as well as on the various combinations of vāyu, pitta, kapha and sōnita in health and disease. Ğalhana, in commenting on this, says that, Suśruta’s work being principally a treatise on surgery, its author holds that blood with all its impurities plays an important part in producing disturbances in all wounds. Suśruta further speaks of vāta, pitta and sīlṣman as the causes of the formation of the body (deha-sambhava-hetavah). The vāta, pitta and kapha, situated in the lower, middle and upper parts of the body, are like three pillars which support the body, and blood also co-operates with them in the same work. Ğalhana remarks that vāta, pitta and kapha are concomitant causes, working in co-operation with semen and blood. Suśruta further derives vāta from the root vā, to move, pitta from tap, to heat, and sīlṣman from śliṣ, to connect together. The Sūtra-sthāna of Suśruta compares kapha, pitta and vāyu with the moon (soma), the sun (sūrya) and air (anila) but not with the three gunas, as is found in the supplementary book, called the Uttarata-tantra. In discussing the nature of pitta, he says that pitta is the fire in the body and there is no other fire but pitta in the body. Pitta has all the qualities of fire, and so, when it diminishes, articles of food with fiery qualities serve to increase it, and, when it increases, articles of food with cooling properties serve to diminish it. Pitta, according to Suśruta, is situated between the stomach (āmāsuya) and the smaller intestines (pavrāśaya), and it cooks all food and drink and separates the chyle on the one hand, and the excreta, urine, etc. on the other. Being situated in the above place, between the stomach and the smaller intestines (tatra-stham eva), by its own power (ātma-sāktā) it works in other pitta centres of the body and by its heating work (agni-karma) sets up the proper activities at those places. In its function of cooking it is called pācaka, in its function in the liver and spleen, as supplying the colouring matter of blood, it is called “colouring” (raṇjakā), in its function in the heart it serves intellectual purposes (sādhaka), in its function in the eyes it is called “perceiving,” or lokaka, in its function of giving a glossy appearance to the skin it is called bhrājaka. It is hot, liquid and blue or yellow, possesses bad smell, and after

1 etad dhi śalya-tantram, śalya-tantri ca vrācon pradhāna-bhūtah vrāne ca dūyeyo madye raktasya prādhānyam 1t tismitopādānam (ibid.). Suśruta also uses the word doja to mean pus (pūya) (1. 5. 12).
2 Suśruta, 1. 21. 3 and 4. Ğalhana, commenting on this, writes: “sukrārtavādi sahaśakāriyā deha-janakā ahśipretāḥ.”
passing through unhealthy digestive actions tastes sour. Coming to ślesman, Suśruta says that the stomach is its natural place; being watery, it flows downwards and neutralizes the bile-heat, which otherwise would have destroyed the whole body by its excessive heat. Being in āmāsaya, it works in the other centres of ślesman, such as the heart, the tongue, the throat, the head and in all the joints of the body. The place of vāyu is the pelvic regions and the rectum (śroni-guda-samīraya); the main place of the blood, which is counted as doṣa by Suśruta, is regarded as being the liver and the spleen. I have noticed above, that in the Atharva-Veda mention is found of three kinds of diseases, the airy (vātaja), the dry (śuṣma) and the wet (abhrajā). In the Caraka-samhitā vāta, pitta and kapha are regarded as being produced from kīṭa, or secretions. They are thus regarded here as being of the nature of internal waste-products of unassimilated food-juice at the different stages of its assimilation, as chyle, flesh, etc., which have important physiological functions to perform for the preservation of the process of the growth of the body, when they are in due proportions, and they break up the body when they are in undue proportions. What exactly kīṭa means is difficult to determine. It may mean merely the part of the food-juice unassimilated as chyle, or the part of it unassimilated as blood, and so forth; or it may mean such unassimilated products, together with the secretions from the respective dhātus, which absorb the substantial part of the food-juice and throw off some of its impurities into the unabsobered material; this at least is what kīṭa ought to mean, if it is interpreted as dhātu-mala, or impurities of dhātus. These secretions and waste-products form the source of most of the constructive and destructive forces of the body. The watery character of kapha and the fiery character of pitta are not ignored; but their essence or substance is considered to be secretive, or of the nature of waste-product. Suśruta, however, does not seem to refer to this secretive aspect, but he seems to have grasped the essential physiological activity of the body as being of the nature of digestive operation and the distribution of the heat and the products of digestion; and the analogy of cooking, as requiring fire, water and air, seems to have been well before his mind. Suśruta also seems to

1 Suśruta-samhitā, 1. 11. 8–16.
2 Ye abhrajā vātajas yai ca śuṣmo (Atharva-veda, 1. 12. 3); again, agner ivāṣya hata eti śuṣmīnah (ibid. vi. 20. 4).
have leant more towards the view of the physiological operations of the body as being due to elemental activities, the food-juice taking the place of earth and the other three principles being fire (piṭṭa), water (īlēśman) and air (vāṭa). The reason why the principles of the body are here regarded as being transformations of fire, water and air is not explained by Suśruta. The supplementary Uttara-tantra, however, thinks that they are the three guṇas. Vāgbhaṭa, always fond of taking a middle course in his endeavour to reconcile the different attempts to grasp the principles under discussion, holds that they are comparable to the three guṇas, because, though opposed to one another, they also co-operate together; and, because diseases are but modifications of the doṣas, he further thinks that doṣas, dhātus and dhātu-mālas are quite different entities; but he is unable to give any definite idea as to what these doṣas are. The person who seems to have had the most definite conception of the doṣas was Caraka. In the Uttara-tantra and by Vāgbhaṭa the Sāṁkhya analogy of the guṇas seems to have had a very distracting influence, and, instead of trying to find out the true physiological position of the doṣas, these writers explain away the difficulty by a vague reference to the Sāṁkhya guṇas.

Let us now return to Caraka. By him vāyu is described as being dry (rukṣa), cold (śīta), light (laghu), subtle (sūkṣma), moving (cala), scattering everything else in different directions (viśada) and rough (kharā)\(^1\). It is neutralized in the body by those things which have opposite qualities. In the healthy constructive process the vāyu is said to perform physiological functions as follows: it sustains the machinery of the body (tandra-yantra-dharaḥ), it manifests itself as prāṇa, udāna, samāna and apāna and is the generator of diverse kinds of efforts; it is the force which controls (niyantā) the mind from all undesirables and directs (praṇetā) it to all that is desirable, is the cause of the employment of the sense-organs, is the carrier of the stimulation of sense-objects, collects together

\(^1\) Caraka-saṃhitā, 1. 1. 58. Cakrāpāni, in commenting on this, says that, though vāyu is described as neither hot nor cold according to the Vaiśeṣika philosophy, yet, since it is found to increase by cold and decrease by heat, it is regarded as cold. Of course, when connected with piṭṭa it is found to be hot, but that is on account of its association with the heat of piṭṭa (yoga-vāhitā). In the Vāta-kalā-kalīya chapter (1. 12. 4), six qualities of vāṭa are mentioned; sūkṣma is not mentioned, however, and, in place of cala, dārūna is mentioned. Cakrāpāni says that dārūna means the same as cala. In the same chapter (1. 12. 7) vāyu is qualified as śuṣṭra-kara, i.e. that which makes holes.
the *dhātus* of the body, harmonizes the functions of the body as one whole, is the mover of speech, is the cause of touch and sounds, as also of the corresponding sense-organs, the root of joy and mental energy, the air for the digestive fire, the healer of morbidities, the ejecter of extraneous dirt, the operating agent for all kinds of circulation, the framer of the shape of the foetus, and is, in short, identical with the continuity of life (*āyuṣo 'nuvṛtti-pratyaya-bhūta*). When it is in undue proportions, it brings about all sorts of troubles, weakens the strength, colour, happiness and life, makes the mind sad, weakens the functions of the sense-organs, causes malformations of the foetus, produces diseases and all emotions of fear, grief, delirium, etc., and arrests the functions of the *prāṇas*.

It is interesting to note how Vāyorvīda describes the cosmic functions of air as the upholding of the earth, causing the burning of fire, the uniform motion of the planets and stars, the production of clouds, the showering of rains, the flow of rivers, the shaping of flowers and fruits, the shooting out of plants, the formation of the seasons, the formation of the strata of minerals, the production of the power of seeds to produce shoots, the growing up of crops, etc.\(^1\) In the same discussion Mārici considers fire to be contained in the *pitta* and productive of all good and bad qualities, digestion and indigestion, vision and blindness, courage and fear, anger, joy, ignorance, etc., according as it is in equilibrium or is disturbed. Kāpya maintains that *soma*, contained in *sīlesman*, produces all good and bad qualities, such as firmness and looseness of the body, fatness, leanness, energy and idleness, virility and impotence, knowledge and ignorance, etc.\(^2\)

These discussions seem to indicate that before Ātreya’s treatise was written attempts were made to explain the physiological functions of the body in health and disease by referring them to the operation of one operative principle. The *Chāndogya Upaniṣad* speaks of earth, water and fire as being world-principles of construction: the different *vāyuṣ* were known as early as the *Athaṃvṛeda*, and *vāyu* is regarded in many of the Upaniṣads as the principle of life. It seems fairly certain that the theory of *vāta*, *pitta* and *kapha* is a later development of the view which regarded air (*pavana*), fire (*dahana*) and water (*toya*) as the fundamental constitutive principles of the body. Thus Suśruta refers to this view

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\(^1\) *Caraka-samhitā*, 1. 12. 8.  
in III. 4. 80: "Some say that the constitution (prakṛti) of the human body is elemental (bhautikā), the three constitutive elements being air, fire and water." The advance of the medical schools of thought over these speculations and over others which consider the body to be a product of one bhūta or of many bhūtas is to be sought in this, that, besides allowing the material causes (upādāna) of the body to be the dhātu, they emphasized the necessity of admitting one or more inherent dynamic principles for the development and decay of the body. This explains how vāta, pitta and kapha are regarded both as dhātu and as doṣa, as prakṛti and as vikṛti. Thus Caraka says, as has already been mentioned, that from the time of the formation of the foetus the vāta, pitta and kapha are working, but in more or less diverse ways and in diverse systems, with equal vāyu, pitta, mala and kapha (sama-pittānila-kapha) or different degrees of predominance of them as vātala, pittala and ślesmala. Men of the ślesmala type are generally healthy, whereas vātala and pittala persons are always of indifferent health. Later on, when there is a disease with the predominance of that doṣa which is predominant in man's constitution from his birth, the newly collected doṣa produces morbidity on the lines on which the predominating doṣa of his constitution is working; but this newly collected doṣa does not augment the corresponding original doṣa. The original doṣa is never increased, and, whatever may be the predominance of a doṣa due to any disease, the constitutional condition of the doṣas remains the same. Thus a vāta-prakṛti person does not become ślesma-prakṛti or pitta-prakṛti, and vice-versa. The doṣas which are constitutional always remain as the

prakṛtim iha nārānām bhautikīm kercid ādūḥ
pavana-dahana-treyaih kirtitās tās tu tsrah.

Sūrūta, III. 4. 80.

Caraka refers to a view that there are none who may be regarded as sama-vāta-pitta-ślesman (or having equal vāta, pitta and ślesman). Since all men take various kinds of diet (vyāmāhārapayogiti), they must be either vāta-prakṛti, pitta-prakṛti, or ślesma-prakṛti. Against this Caraka says that sama-vāta-pitta-ślesman is the same thing as health or freedom from disease (aṅgula). All medicines are applied for attaining this end, and there cannot be any doubt that such a state exists. Again, the terms vāta-prakṛti, pitta-prakṛti and ślesma-prakṛti are incorrect; for prakṛti means health. What they mean by vāta-prakṛti is that vāta is quantitatively predominant (ādbhikya-bhācāt tā doṣa-prakṛti ucyate), and quantitative predominance is the same as vikāra; so the proper terms are vātala, pittala, etc. When a vātala person takes things which increase vāta, his vāta increases at once; but when he takes things which increase pitta or ślesman, these do not increase in him as rapidly as vāta does. So in the case of a pittala person pitta increases rapidly when articles which increase pitta are taken, and so with regard to ślesman (Caraka-samhitā, III. 6. 14–18).
constant part engaged in their physiological operations. The later accretion of the doṣas or their deficiency has a separate course of action in producing diseases, and there is no interchange between these later collections of doṣas or their deficiency and the constitutional constant parts of the doṣas known as prakṛti. The only sense (as Cakrapāṇi says) in which a doṣa is related to a constitutional (prakṛti) doṣa is that a doṣa grows strong in a system in which a corresponding doṣa is constitutionally predominant, and it grows weaker when the opposite is the case. It is not out of place in this connection to say that, though the doṣas are mutually opposed to one another, they do not always neutralize one another, and it is possible for them to grow simultaneously violent in a system. In the six seasons of rains (varṣā), autumn (śarat), late autumn (hemanta), winter (śīta), spring (vasanta) and summer (grīṣma) there is an alternate collection (caya), disturbance (prakopa) and lowering down (praśama) of the three doṣas, pitta, śleṣman and vāyu respectively. Thus, for example, in the rains (varṣā) there is collection of pitta, in the autumn (śarat) there is disturbance of pitta, in the harvesting season (hemanta) there is lowering of pitta and collection of śleṣman, in the summer there is collection of vāta, and so forth. Contrasting the functions of the doṣas in the normal (prakṛti) and abnormal (vikṛti) states, Caraka says that in the normal state the heat of

1 Ibid. 1. 7. 38-41. The passage prakṛti-stham yadā pittam mārutah śleṣmanah kṣaye (1. 17. 45) is often referred to in support of the view that the new accretions of doṣas affect the prakṛti-doṣas. But Cakrapāṇi explains it differently. He says that a disease may be caused by a doṣa which is not in excess of the constant constitutional quantity (prakṛti-māna) by virtue of the fact that it may be carried from one part of the body to another and thereby may produce a local accretion or excess, though the total quantity of doṣa may not be in excess.

2 samāñām hi prakṛtē prāpya doṣah pravṛddha-halo bhavatī, asamāñām tu prāpya tathā balavān na syāt (Cakrapāṇi on Caraka-samhitā, 1. 17. 62).

3 Ibid. 1. 17. 112. See also Cakrapāṇi’s comments on these. Dalhana, in commenting on Suiruta-samhitā, 1. 21. 18, says that saṃcaya of doṣas means aggregation or accumulation in general (dehe ‘tirupāvṛddhih cayah); prakopa of doṣas means that the accumulated doṣas are spread through the system (vīlayana-rūpā vṛddhih prakopaḥ). The external signs of the caya of vātu are fullness of the stomach and want of motions; of pitta yellowish appearance and reduction of heat (mānospatā); of kapha heaviness of the limbs and feeling of laziness. In all cases of caya there is a feeling of aversion to causes which increase the particular doṣa of which there has been caya (caya-kārana-videṣai ca). The stage of caya is the first stage of operation in the growth and prevention of diseases. If the doṣas can be removed or neutralized at this stage, there is no further disease. The usual indication of the disturbance (prakopa) of vāyu is disorders of the stomach; of pitta, acidity, thirst and burning; of kapha, aversion to food, palpitation (hrdayottikla), etc. The prakopa of blood (śīvana) is always due to the prakopa of vāta, pitta or kapha. This is the second stage of the progress of diseases. The
pitta occasions digestion; ślesman is strength and vitality, and vāyu is the source of all activities and the life of all living beings; but in the abnormal state pitta produces many diseases; ślesman is the dirt of the system and the cause of many troubles, and vāta also produces many diseases and ultimately death. The places (sthānāni) at which the affections of vāta, pitta and kapha are mostly found are thus described by Caraka: of vāta the bladder, rectum, waist and the bones of the leg, but the smaller intestine (pakvāsaya) is its particular place of affection; of pitta sweat, blood and the stomach, of which the last is the most important; of ślesman the chest, head, neck, the joints, stomach and fat, of which the chest is the most important. There are eighty affections of vāta, forty of pitta and twenty of ślesman. But in each of these various affections of vāta, pitta and ślesman the special features and characteristics of the corresponding dośas are found. Thus Caraka in i. 20. 12–23 describes certain symptoms as leading to a diagnosis of the disease as being due to the disturbance of vāta, pitta or kapha. But a question may arise as to what may consistently with this view be considered to be the nature of vāyu, pitta and kapha. Are they only hypothetical entities, standing as symbols of a number of symptoms without any real existence? In such an interpretation reality would belong to the symptoms, and the agents of morbidity, or the dośas, would only be convenient symbols for collecting certain groups of these symptoms under one name. Wherever there is one particular set of symptoms, it is to be considered that there is disturbance of vāyu; wherever there is another set of symptoms, there is disturbance of pitta, and so third stage is called prasāra. At this stage there is something like a fermentation of the dośas (paryuṣita-kinvodaka-pitta-samavāyu itva). This is moved about by vāyu, which though inanimate, is the cause of all motor activities. When a large quantity of water accumulates at any place, it breaks the embankment and flows down and joins on its way with other streams and flows on all sides; so the dośas also flow, sometimes alone, sometimes two conjointly, and sometimes all together. In the whole body, in the half of it, or in whatever part the fermented dośas spread, there the symptoms of diseases are showered down, as it were, like water from the clouds (doṣo ekañāma nabhāni meghavat tatra varṣati). When one doṣa, e.g. vāyu, spreads itself in the natural place of another doṣa, e.g. pitta, the remedy of the latter will remove the former (vāyoh pitta-sthāna-gatastyā pittavat prāthikāraḥ). The difference between prakopa and prasāra is thus described by Dalhaṇa: just as when butter is first stirred up, it moves a little; this slight movement is like prakopa; but, when it is continuously and violently stirred to flow out, in froths and foams, it may then be called prasāra (Suśruta-saṁhitā, i. 21. 18–32). The fourth stage is when the pūraṇa-rūpa is seen, and the fifth stage is the stage of rūpa or vyādhi (disease) (ibid. 38, 39).

1 Caraka-saṁhitā, i. 20. 11.
forth. But there are serious objections against such an interpretation. For, as we have shown above, there are many passages where these doṣas are described as secretions and waste-products, which in their normal proportions sustain and build the body and in undue proportions produce diseases and may ultimately break up the system. These passages could not be satisfactorily explained upon the above interpretation. Moreover, there are many passages which describe pitta and kapha as entities having a particular colour and material consistency, and it is also said that there are particular places in the body where they collect, and this would be impossible upon the interpretation that they are not real entities, but hypothetical, having only a methodological value as being no more than convenient symbols for a collective grasp of different symptoms.

The attribution of a certain number of specific qualities to the doṣas is due to a belief that the qualities of effects are due to the qualities of causes. So, from the diverse qualities of our bodies considered as effects, the causes were also considered as having those qualities from which those of the effects were derived. Thus, in connection with the description of the qualities of vāta, Caraka says that on account of the qualities of rauksya the bodies of those having congenital vāta tendency are rough, lean and small, and

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1 The secretory character of these doṣas is amply indicated by such passages as those which regard vāta, pitta and śleṣman as requiring some space in the stomach for digesting the food materials, e.g. ekam punar vāta-pitta-śleṣmanām (ibid. III. 2. 3); śleṣma hi smīḍha-śalaksna-ṁṛdu-madhura-sāra-sāndra-manda-stimita-guru-śītu-vijalācahaḥ (śleṣman is smooth, pleasing, soft, sweet, substantial, compact, inert, benumbed, heavy, cold, moist and transparent—ibid. III. 8. 14. 7. 5); pittam upṇam ślaṃgam dravam visrām amalam kaṭukam ca (pitta is hot, sharp and liquid, and possesses bad odour, and is acid and pungent and bitter—ibid. III. 8. 14. 7. 6); vātas tu rūkṣa-laghu-cala-bahu-sīghra-śīta-paruṣa-viśadah (vāta is rough, light, moving, manifold, quick, cold, coarse and scattering—ibid. III. 8. 14. 7. 7).

It must, however, be noted that the translation I have given of some of these words cannot be regarded as satisfactory; for in the translation I could only give one sense of a word, which in the original Sanskrit has been used in a variety of senses which the word has. Thus, for example, I have translated rūkṣa as "rough." But it also means "slim," "lean," "having insomnia," or (of a voice) "broken," and so forth. There is no English synonym which would have so many senses. Mahāmahopādhyāya Kaviraj Gaṇanātha Sen, of Calcutta, tries to divide the doṣas into two classes, invisible (rūkṣma) and visible (sthāla)—Siddhānta-mdāna, pp. 9–11. But though such a distinction can doubtless be made, it has not been so distinguished in the medical literature, as it is of little value from the medical point of view; it also does not help us to understand the real nature of the doṣas. The nature and the functions of the doṣas do not depend in the least on their visibility or invisibility, nor can the visible doṣa be regarded as always the product of the invisible one.
the voices of such people are rough, weak, grating, slow and broken, and they cannot sleep well (jāgarāka); again, on account of the quality of lightness of vāyu, the movements of a man with congenital vāta tendency would be light and quick, and so would be all his efforts, eating, speech, and so forth. It is easy to see that the resemblance of the qualities of vāyu to the qualities of the body is remote; yet, since the special features and characteristics of one’s body were considered as being due to one or the other of the body-building agents, these characteristics of the body were through remote similarity referred to them.

There is another point to be noted in connection with the enumeration of the qualities of the doṣās. The disturbance of a doṣa does not necessarily mean that all its qualities have been exhibited in full strength; it is possible that one or more of the qualities of a doṣa may run to excess, leaving others intact. Thus vāyu is said to possess the qualities of rūkṣa, laghu, calu, bahu, śīghra, śīta, etc., and it is possible that in any particular case the śīta quality may run to excess, leaving others undisturbed, or so may śīta and rūkṣa, or śīta, rūkṣa and laghu, and so forth. Hence it is the business of the physician not only to discover which doṣa has run to excess, but also to examine which qualities of which doṣa have run to excess. The qualities of doṣas are variable, i.e. it is possible that a doṣa in its state of disturbance will remain a doṣa, and yet have some of its qualities increased and others decreased. The nature of the disturbance of a doṣa is determined by the nature of the disturbance of the qualities involved (aṃśāṃśa-vikalpa)\(^1\). The natural inference from such a theory is that, since the entities having this or that quality are but component parts of a doṣa, a doṣa cannot be regarded as a whole homogeneous in all its parts. On this view a doṣa appears to be a particular kind of secretion which is a mixture of a number of different secretions having different qualities, but which operate together on the same lines. When a particular doṣa is in a healthy order, its component entities are in certain definite proportions both with regard to themselves and to

\(^1\) Caraka-samhitā, I. 1. 10. 4. Cakrapāni, in commenting on this, says: “tatra doṣāṃ aṃśāṃśa-vikalpo yathā—vai prakṛipte ‘pi kādācād vātasya śītāmśa balaśrān bhavati, kādācād laghu-aṃśāh, kādācād rūkṣāmśaḥ kādācād laghu-rūkṣāmśaḥ.” The doṣa or doṣas which become prominently disturbed in a system are called anubandhya, and the doṣa or doṣas which at the time of diseases are not primarily disturbed are called anubandha. When three of the doṣas are jointly disturbed, it is called samipāta, and when two are so disturbed it is called saṃsarga (ibid. III. 6. 11).
the total *doṣa*. But, when it is disturbed, some of the component secretions may increase in undue proportions, while others may remain in the normal state; of course, the quantity of the whole *doṣa* may also increase or decrease. A *doṣa* such as *kapha* or *pitta* should therefore be regarded as a name for a collection of secretions rather than one secretion of a homogeneous character. It will be easily seen that, on taking into consideration the comparative strengths of the different components of a *doṣa* and the relative strengths of the other components of other *doṣas* and the relative strengths and proportions of each of the *doṣas* amongst themselves, the number of combinations is innumerable, and the diseases proceeding from such combinations are also innumerable. The whole system of Caraka’s treatment depends upon the ascertainment of the nature of these affections; the names of diseases are intended to be mere collective appellations of a number of affections of a particular type.¹

One further point which ought to be noted with regard to the constructive and destructive operations of *vāyu, pitta* and *kapha* is that they are independent agents which work in unison with a man’s *karma* and also in unison with a man’s mind. The operations of the mind and the operations of the body, as performed by *vāyu, pitta* and *kapha* on the materials of the *dhātu*, *rasa*, *rakta*, etc., run parallel to each other; for both follow the order of human *karma*, but neither of them is determined by the other, though they correspond to each other closely. This psycho-physical parallelism is suggested throughout Caraka’s system. Caraka, in trying to formulate it, says: “*śārīram api satvam anuvidhiyate satvam ca śārīram*” (the mind corresponds to the body and the body to the mind). It may be remembered in this connection that the ultimate cause of all *dhātu-vaiṣamya* or *abhīghāta* (bodily injuries through accidents, a fall and the like) is foolish action (*prajñā-parādha*). Again *vāta, pitta* and *kapha* are found to perform not only physical operations, but also intellectual operations of various kinds. But all intellectual operations belong properly to mind. What is meant by attributing intellectual functions to *vāyu, pitta* and *kapha* seems to be a sort of psycho-physical parallelism, mind corresponding to body, body corresponding to mind, and both corresponding to *karma*.

¹ *yad vātāraḥbhatavādī-jiñānam eva kāraṇam rogāṇām cikitsāyām upakāri; nāma-jiñānam tu vyayahāra-mātra-prayojanārtham* (Cakrpāṇī on *Carakasaṃhitā*, I. 18. 53).
Head and Heart

The most vital centres of the body are the head, the heart and the pelvis (vasti). The prānas, i.e. the vital currents, and all the senses are said to depend (śritāh) on the head. The difference between head (śirṣa) and brain (maṭiśka) was known as early as the Atharva-Veda. Thus in A.V. x. 2. 6 the word śirṣa is used in the sense of “head,” and in verses 8 and 26 of the same hymn the word maṭiśka is used in the sense of “brain.” Head-disease is also mentioned in the Atharva-Veda, i. 12. 3, as śirṣakti. The brain-matter is called mastuluṅga in Caraka-saṃhitā, viii. 9. 101; the word maṭiśka is used in the same chapter in the sense of brain-matter (viii. 9. 80), as has also been explained by Cakrapāṇi.

The passage from Caraka, viii. 9. 4, quoted above shows that at least Drḍḥabala considered the head to be the centre of the senses and all sense currents and life currents. Cakrapāṇi, in commenting upon this passage, says that, though the currents of sensation and life pass through other parts of the body as well, yet they are particularly connected with the head (śirasi viśeṣaṇa prabaddhāṇi), because, when there is an injury to the head, they are also injured. According to Caraka and Drḍḥabala all the senses are particularly connected with the head, as well as the prānas, but the heart is regarded as the vital centre of the prānas, as well as of the manas, as I shall point out later on. Bhela, who is as old as Caraka, considers the brain to be the centre of the manas, a view which is, so far as I know, almost unique in the field of Sanskrit

1 The different names of the heart in Caraka-saṃhitā are mahaṭ, artha, hṛdaya (i. 30. 3).
2 Cakrapāṇi, however, explains it as śritā iva śritāḥ, i.e. “as if they depended on” (i. 17. 12), because, when the head is hurt, all the senses are hurt. It is said in ibid. vi. 26. 1 that there are one hundred and seven vital centres (marmo), and of these the three most important are the head, the heart and the pelvis. Also in viii. 9. 16, hṛdi mūrdo ca vastau ca nṛnāṃ prānaḥ pratiṣṭhitāḥ. In viii. 9. 4 it is distinctly said that all the senses and the currents of senses and prāṇa are dependent on the head as the rays of the sun are dependent on the sun—śirasi indriyāṇi indriya-prāṇa-vahāṇi ca srotāṁśi sūryam iva gabhastayaḥ saṃśritāni.
3 “Which was that god who (produced) his brain, his forehead, his hindhead (kakātiḥ), who first his skull, who, having gathered a gathering in man’s jaw, ascended to heaven” (A.V. x. 2. 8). “Athaḥavan, having sewed together his head (mūrdhānam) and also his heart, aloft from the brain the purifying one sent (them) forth, out of the head” (ibid. 26). (Whitney’s translation, Harvard oriental series.)
4 Maṭiśkaḥ śīro-majjā. Cakrapāṇi, viii. 9. 80 of Caraka-saṃhitā. The word maṭiśka is sometimes, though rarely, used in the sense of head, as in the passage quoted by Cakrapāṇi in viii. 9. 80—maṭiśke 'ṭāngulam paṭṭam.
literature. He says that *manas*, which is the highest of all senses (*sarvendriya-param*), has its seat between the head and the palate (*śiras-tālu-antara-gatam*). Being situated there, it knows all the sense-objects (*viśayān indriyānām*) and the tastes which come near it (*rasādikān samīpa-sthān*). The original cause of *manas* and the energy of all the senses and the cause of all feelings and judgments (*buddhi*), the *citta*, is situated in the heart. The *citta* is also the cause of all motor functions and activities, such that those who are possessed of good *cittas* follow a good course and those who are possessed of bad *cittas* follow a bad course. The *manas* knows the *citta*, and thence proceeds the choice of action; then comes the understanding, deciding what is worth doing and what is not. *Buddhi*, or understanding, is the understanding of certain actions as good (*subha*) and certain others as bad (*aśubha*). It seems plain that Bhela distinguishes between *manas*, *citta* and *buddhi*. Of these *manas* is entirely different from *citta* and, so far as can be made out from Bhela’s meagre statements, it is regarded as the cause of all cognitions and as having its seat in the brain. The *citta* was regarded as the cause of all activities, feelings and judgments, and the heart was regarded as its seat. *Buddhi* was probably the determinate understanding and judgment which was but a function of the *citta*. Bhela says that the *doṣas* in the brain affect the *manas*, and, as a result of this, the heart is affected, and from the affections of the heart the understanding (*buddhi*) is affected, and this leads to madness.

In another passage, while describing the different functions of *pitta*, Bhela says that there is a special kind of *ālokaka pitta* called the *cakṣur-vaiśeṣika*, which, by bringing about the contact of *manas* with the soul, causes cognition and, transmitting it to the *citta*, produces the discriminative visual knowledge by which different objects are comprehended by the eye.

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2 *ūrdhvam prakupitā doṣāḥ śiras-tālu-antare sthitāḥ, mānasam dūṣayanṭi āśu tataś cittam viṇḍyate citta vyāpadam āpanne buddhir nāśam niyacchati tatas tu buddhi-vyāppattau kāryākāryaṁ na buddhyate evam pravarataṁ vyādhīṁ unmaṇḍo nāma dāruraṁ.*

Ibid. p. 149.
judgmental state, however, is different, and it is produced by a special kind of ālocaha pitta called the buddhi-vaiśeṣika, which is situated at the point between the eyebrows, and, being there, holds together the subtle forms emanating from the self (susūkṣmān arthān āima-ktān), associates the data (dhārayati), integrates them with other similar known facts (pratyūdāharati), remembers the past, and, after producing our knowledge in conceptual and judgmental forms, wills for future realization, generates instructive actions, and is the force which operates in meditation (dhyāna) and restraint of thoughts (dhāranā)¹.

Suśruta does not state anything of importance concerning the brain; but there seems to be little doubt that he knew that particular nerves in the head were connected with particular sense functions. Thus he says in III. 6. 28 that there are two nerves (śirā) lower down the ears on their back, called vidhurā, which, if cut, would produce deafness; on both sides of the nasal aperture inside the nasal organ there are two nerves called phāna, which, if cut, would destroy the sensation of smell; at the back of the eyebrows, below the eyes, there are the nerves called the apānga, which, if cut, would produce blindness. All these cognitive nerves meet in passing at the centre of the eyebrow (śrṅgāṭaka)². He further says that the nerves are attached to the brain inside the skull on the upper part of it (mastakābhyantaropariṣṭhāt śirā-sandhi-sannipāta) and this place, called the romāvarta, is the supreme superintendent (adhipati). Caraka says that the head is the place for the senses. It cannot be decided whether he took this in any deeper sense or whether he means simply that the sense-organs of ear, eyes, nose and taste are situated in the head.

Caraka considers the heart (ḥṛdaya) to be the only seat of consciousness³. The seats of prāna are said to be the head, throat, heart, navel, rectum, bladder, the vital fluid ojas, semen, blood and flesh⁴. In I. 19. 3 Caraka, however, excludes navel and flesh and includes the temples (śaṅkha) in their place. It is difficult to determine what is exactly meant by prāna here. But in all probability the word is used here in a general way to denote the vital parts. In I. 30. 4 and 5 Caraka says that the whole body with

¹ Bhela’s chapter on “Puruṣa-nisçaya,” p. 81.
³ Caraka-saṃhitā, IV. 7. 8, ḫṛdayaṃ cetanādhiśṭhānam ekam.
⁴ Ibid. 9.
the four extremities, the trunk, and the head, collectively called șad-āṅga, knowledge (viśīnā), the senses, the sense-objects, the self, manas and the objects of thought (cintya), are all supported (samśrita) by the heart, just as a house is supported by pillars and rafters. It is plain, as Cakrapāni explains, that the body cannot subsist in the heart. What is meant is that, when all is well with the heart, it is well with all the rest. Caraka holds that the manas and the soul reside in the heart and so also do cognition, pleasure and pain, not, however, in the sense that the heart is the place where these reside, but in the sense that they depend on the heart for their proper functioning; if the heart is wrong, they also go wrong, if the heart is well, they also work well. Just as rafters are supported by pillars, so are they all supported by the heart. But Cakrapāni does not seem to agree with this view of Caraka, and he holds that, since the heart is affected by strong thoughts, pleasure and pain, the mind and the soul actually reside in the heart and so do pleasure and pain. The self, which is the cause of all knowledge of sense-objects and the Upholder (dhārin) of the system, resides in the heart. It is for this reason that, if a man is struck in the heart, he swoons away, and, if the heart bursts, he dies. It is also the place of the supreme vitality (param ojas). The heart is also regarded as the place where all consciousness is concentrated (tatra caitanya-samgrahah). Caraka says that the heart is the centre of the prāṇa currents (prāṇa-vahānām srotāsām hṛdayam mūlam, III. 5. 9) and also of the currents of mental activity (II. 7. 3). In the Apasmāra-nidāna (II. 8. 4) Caraka speaks of the heart as being the supreme place of the inner self (antar-ātmanah sreṣṭhām āyatanam).

It may not be out of place here to point out that the Taittiriya Upaniṣad (I. 6. 1) also speaks of the heart as being the space where

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1 Caraka-samhitā, I. 30. 5.
2 Cakrapāni says that the mention of param ojas here proves that Caraka believed in another, apram ojas. The total quantity of apram ojas in the body is half a handful (ardhāṅjali-parimāṇā), while that of param ojas is only eight drops of a white-red and slightly yellowish liquid in the heart. The dhānams of the heart contain half a handful of apram ojas, and in the disease known as prameha (urinary disease) it is this ojas that is wasted; but even with waste of this ojas a man may live, whereas with the slightest waste of the param ojas a man cannot live. Ojas ought not to be regarded as the eighth dhātu; for it only supports (dhārayati) the body, but does not nourish it. Ojas, however, is sometimes used also in the sense of rasa (Caraka-samhitā I. 30. 6, Cakrapāni’s commentary). See also ibid. I. 17. 74 and 75 and Cakrapāni’s comment on the same. Ojas is, however, regarded in the Atharva-Veda, II. 17, 88 the eighth dhātu.
manomaya puruṣa, i.e. the mind-person, resides. In many other Upaniṣads the heart is the centre of many nādis, or channels. Śaṅkara, in explaining Brh. II. i. 19, says that the nādis or śirās, called hitā, which are developed out of the food-juice and are 272,000 in number, emanate from the heart and spread over the whole body (puritat). The buddhi resides in the heart and from there controls the external senses. Thus, for example, at the time of hearing in the awakened state the buddhi passes through these nādis to the ear and from there expands the auditory organ and superintends it. When the buddhi thus expands, we have the state of awakening, when it contracts, the state of deep sleep (suṣupti).

The Circulatory and the Nervous System.

The names śirā (also hirā) and dhamani, of two different kinds of channels in the body, seem to have been distinguished at a period as early as the Atharva-Veda. The Brhad-āraṇyaka Upaniṣad describes the hitā nādis of the heart as being as fine as a thousandth part of a hair, and they are said to carry white, blue, yellow and green liquids; Śaṅkara, commenting on this, says that these various colours are due to the various combinations of vāta, pitta and ślesman which the nādis carry. He states that the seventeen elements (five bhūtas, ten senses, prāṇa and antaḥkarana) of the subtle body, which is the support of all instinctive desires, abide

1 See Brh. II. i. 19, IV. 2. 2 and 3, IV. 3. 20, IV. 4. 8 and 9; Chând. VIII. 6. 6; Kâtha, vi. 16; Kau. iv. 19; Mund. II. 2. 6; Maitri, Bibliotheca Indica, 1870, VI. 21, VII. 11; Pârśâva, III. 6 and 7.
2 The word puritat means principally the covering of the heart. But Śaṅkara takes it here to mean the whole body.
3 itam hirā sahasram dhamanir uta. Atharva-Veda, vii. 36. 2. Sāyana explains hirā as garbha-dhâranârtham antar-avasthitâh sukma nādyâh and dhamanī as garbhâsraya avastambhikâ sthâlâ nâdyâh. Atharva-Veda, i. 17. 1, 2, also seems to distinguish hirā from dhamanī. In i. 17. 1 the hirās are described as being of red garments (lohitâ-vâsasah), which Sâyana explains as lohitâsya rudhirasya nivâsa-bhūtâ hi (the abode of blood) and paraphrases as rajo-vahana-nâdyâh. It seems, therefore, that the larger ducts were called dhamanis. In i. 17. 3 the Atharva-Veda speaks of hundreds of dhamants and thousands of hirās.
4 Brh. IV. 3. 20, with Śaṅkara’s commentary. Anandagiri, in commenting on the same passage a passage from Suṣruta which is substantially the same as Suîrūta-samhitâ, III. 7. 18, to show that those śirās which carry vâta are rosy (aruna), those which carry pitta are blue, those which carry blood are red, and those which carry ślesman are white:

arunâḥ śirā vâta-vahā mlâh pitta-vahāh śirâh
arg-vahâs tu rohînya gauryâh ślesma-vahâh śirâh.
in these nādis. In Bṛhad-āranyaka, iv. 2. 3 it is said that there is the finest essence of food-juice inside the cavity of the heart; it is this essence which, by penetrating into the finest nādis, serves to support the body. It is surrounded by a network of nādis. From the heart it rushes upwards through the extremely fine hitā nādis, which are rooted in the heart. Chāndogya, viii. 6. 6 speaks of 101 nādis proceeding from the heart, of which one goes towards the head. In Mūnḍ. ii. 2. 6 it is said that, like spokes in a wheel, the nādis are connected with the heart. Praśna, iii. 6 and 7, however, says that in the heart there are one hundred nādis and in each of these are twenty-two hundred branches and the vyāna vāyu moves through these. The Maitrī Upaniṣad mentions the suṣumṇā nāḍi proceeding upwards to the head, through which there is a flow of prāṇa. None of these passages tell us anything definite about the nādis. All that can be understood from these passages is that they are some kind of ducts, through which blood and other secretions flow, and many of these are extremely fine, being about the thousandth part of a hair in breadth. The nāda, or hollow reed, is described in the Rg-Veda (viii. 1. 33) as growing in ponds and in the Atharva-Veda (iv. 19. 1) as being vārsīka, or “produced in the rains.” This word may have some etymological relation with nādi. In another place it is said that women break nāda with stones and make mats out of them. The word nādi is also used in the Atharva-Veda in the sense of “ducts.” In Atharva-Veda, v. 18. 8 the word nādi is used

1 This passage is sometimes referred to in later literature to show that the suṣumṇā nāḍi, which goes towards the head, was known as early as the Chāndogya Upaniṣad. See also Katha, vi. 16.

2 Īrdhva-gā nāḍi suṣumṇākhya prāṇa-samcārīṇī. Maitrī, vi. 21. Sāyaṇa, in his commentary on A.V. i. 17. 3, quotes the following verse:

madhya-sthāyah suṣumṇāyāh parva-pancaka-sambhavāh
sākhopābhāhatam pṛäptāh śrā iha-ruṣṭāv yā paryām
artha-āśām iti prāhuh sātrābha-vicāraāh.

3 Macdonell makes the following remarks in his Vedic Index, vol. i. p. 433: “Nāda is found in several passages of the Rg-Veda (i. 32, 8; 179, 4; ii. 34, 3; viii. 69, 2; x. 11, 2; 105, 4) but its sense is still obscure. It is identified by Pischel (Zeitschrift der Deutschen Morgenländischen Gesellschaft, 35, 717 et seq.; Vedische Studien, i. 183 et seq.) with Nada, being explained by him in one passage (i. 32. 8). Here Caland and Henry, L’Agniṣṭoma, p. 313 would read naḷam. See also Wackernagel, Altindische Grammatik, i. 173, as a reed boat, which is split, and over which the waters go, etc.”

4 yathā naḍam kaśipune striyo bhindanty aśmanā (Atharva-Veda, vi. 138. 5).

5 In the Atharva-Veda, vi. 138. 4, the nādis are described as ducts over the testes, through which the seminal fluid flows: ye te nāḍyau deva-kṛte yayaś tiṣṭhati uṣṭhyam te te bhinaṃdi (I break with a stone upon a stone those two ducts of yours
to denote the speech organ (vāk). The word dhāmanī is used in Rg-Veda, ii. 11. 8 and is paraphrased by Śāyaṇa as sound (śabda) and by Macdonell as "reed" or "pipe." If Śāyaṇa's explanations are to be accepted, then in A.V. ii. 33. 6 the word snava means fine sīrās (sūkṣmāh-strāh) and dhāmanī the larger ducts (dhāmanī-śabdena sthūlāh). In vi. 90. 5 one hundred dhāmanīs are said to surround the body of a person suffering from colic or gout (śūla), and Śāyaṇa paraphrases dhāmanī here as nādi. In Chāndogya, iii. 19. 2, the rivers are said to be dhāmanīs (yā dhāmanayās tā nādyāh), and Śaṅkara paraphrases dhāmanī as sīrā. I have already referred to the use of the word hirā in the Atharva-Veda; the word is also used in the Rg-Veda.

The above references show that nādis, sīrās (or hirās) and dhāmanīs were all ducts in the body, but sometimes the nādis or sīrās had also the special sense of finer channels; whereas the dhāmanīs were the larger ducts. I shall now come to Caraka: it will be found that there was not much advance towards a proper understanding of the significance of their distinction and functions.

Caraka plainly regards dhāmanīs, sīrās and srotas (secretory currents) as ducts and thinks that different names are applied to them on account of their different functions. He says that the roots of the ten dhāmanīs are in the heart. These carry throughout the body the ojas, by which all people live and without which they all die. It is the essence by which the foetus is formed, and which goes to the heart at a later stage, when the heart is formed; when it is lost, life also ceases to exist; it is the essence of the body and the seat of the prānas. These ducts are called dhāmanīs, because they are filled with chyle from outside; they are called srotas, because the chyle, etc. which nourish the body are secreted (sravanāt) out of these; and they are called sīrās, made by God over your two testes, through which your semen flows). In x. 7. 15 and 16, the hollows of the seas are described as nādis (samudro yasya nādyāh), and so also the interspace of the quarters of the sky (yasya catasrah pradīpa nādyāh).

1 "Dhamani, 'reed,' appears to denote 'pipe' in a passage of the Rg-Veda (ii. 11. 8) and in a citation appearing in the Nirukta (vi. 24)." Vedic Index, vol. 1, p. 390. The word sīrā is spelt with a palatal "ś" in Caraka and with a dental in the Vedas, and it has therefore been differently spelt in this chapter in different contexts.

2 tvam uṣṇam āyāyānam sīrāsā maho vajrena sītvapāh. R.V. i. 121. 11. The word dhāmanī is spelt with a long "i" in Caraka and with a short "i" in the Atharva-Veda.
because they go (saranāt sirāh) to the different parts of the body. The ten dhāmanis spread out in manifold branches throughout the body. In the Caraka-samhitā srotas means properly the path through which the successive evolutionary products of the body-constituents (dhātus) or other kinds of secretion run and accumulate together with elements of their own types. Cakrapāṇi explains it thus: The transformation into blood takes place in connection with chyle (rasa). The coming together of rasa with blood at a different part of the body cannot take place without a path of transmission, called srotas. So the transformation of dhātus takes place through the function of this path of transmission. So for each kind of product there is a separate srotas. Vāyu, pitta and kapha may be said to go through all the srotas, though there are, no doubt, special channels for each of the three. Gaṅgādhara, however, takes the srotas as being the apertures through which the dhātus and other waste-products flow. In whatever way it may be looked at, the srotas is, according to Caraka, nothing but the duct of the dhāmanis. Caraka opposes the view of those who think that the body is nothing but a collection of srotas, for the simple reason that the substances which pass through these srotas and the parts of the body where they are attached are certainly different from the srotas themselves. There are separate srotas for the flow of prāṇu, water, food-juice, blood, flesh, fat, bony materials, marrow, semen, urine, excreta and sweat; vāta, pitta and ślesman, however, flow through the body and all the channels (sarva-srotāṃsi ayana-bhūtāni). For the supply of materials for the suprasensual elements of the body, such as manas, etc., the whole of the living body serves as a channel. The heart is the root of all

1 dhmānād dhāmanyaḥ sravaṇāt srotāṃsi saranāt sirāh. Caraka-samhitā, 1. 30. 11.
2 Ibid. III. 5. 3.
3 Doṣānām tu sarva-sārira-caratvena yathā-sthūla-sroto 'bhidhāne 'pi sarva-srotāṃsy eva gamanārtham vaksyante . . . vātādānām api pradhāna bhūtādhamanyah santy eva. Cakrapāṇi’s comment on ibid.
4 ādāra-parināma-rasa hi srotasām chidā-rūpaṃ panthānām vinā gantum na śaknoti, na ca srotāś chidā-pathena gamanāṃ vinā tād-uttarottara-dhātuvanā parinamaṃ, etc. Gaṅgādhara’s Jñalpa-kalpa-taru on ibid.
5 Gaṅgādhara, in commenting on this passage (Caraka-samhitā, III. 5. 7), “tadvad atindriyaṃ punah sattvādānām kevalāṃ cetanāvāc charitrāṃ ayana-bhūtāṃ adhiśṭhāna-bhūtām ca,” says, “mana ātmā śrotra-sparśaṇa-nayana-rasanā-ghrāṇa-buddhya-ahankārādānām kevalāṃ cetanāvāc sajīvaṃ sārira-sroto ’yana-bhūtāṃ adhiśṭhāna-bhūtām ca.” There are several passages in Caraka where we hear of mano-vaha currents (currents carrying manas); if manas, buddhi, ahankāra, etc. can all be carried in currents, they must be considered as having some material spatial existence. These manas, buddhi and ahankāra may be atindriya, but they are not on that account non-physical.
prāṇa channels, i.e. the channels of the prāṇa vāyu; for vāyu in general moves through all parts of the body. When these are affected, there is either too much or too little respiration; the respiration may be very slow or very quick, and it is attended with sound and pain. From these signs therefore one can infer that the prāṇa channels have been affected. The source of water channels is the palate, and the seat of thirst is in the heart (kloma). When these are affected, the tongue, palate, lips, throat and kloma become dried up, and there is great thirst. The stomach is the source of all currents carrying food, and, when these are affected, there is no desire for food, but indigestion, vomiting and the like. The heart is the source, and the ten dhāmanis are the paths, of the chyle (rasa) currents. The liver and spleen are the source of blood currents. The tendons and skin are the sources of flesh currents. The kidneys are the sources of fat channels; fat and pelvis, of bone channels; the bones and joints, of marrow channels; the testes and penis, of semen channels; the bladder, the pubic and the iliac regions, of urine channels; the intestines and the rectum, of the excreta channels, and the fat and pores of hairs, of perspiration channels.

It is curious, however, to note that, in spite of the fact that here the śīrās and dhāmanis are regarded as synonymous, their number is differently counted in IV. 7. 13, where it is said that there are two hundred dhāmanis and seven hundred śīrās, and the finer endings of these are counted as 29,956. It is reasonable to suppose, in accordance with the suggestions found in the Atharva-Veda, that, though the dhāmanis and śīrās were regarded by Caraka as having the same functions, the former were larger than the latter.

Gaṅgādhara, in commenting on this passage, says that śīrās, dhāmanis and srotas are different on account of their being different in number and of their having different functions and different appearances. It is well known that a distinction between śīrās and dhāmanis is drawn by Suśruta, to which I shall presently refer, but Caraka positively denies any such distinction; and this

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1 Caraka-saṁhitā, III. 5. 10. Cakrapāṇi explains it (kloma) as kṛdaya-sthānam, and Gaṅgādhara as the point of conjunction between the throat and the heart (kaṇṭhorasah sandhiḥ).

2 The synonyms for srotas given by Caraka are śīrā, dhāmanī, rasa-vāhini, nāḍī, paṇthā, mārga, śatru-chīdra, saṁvrtāsaṁvṛtāni (open at the root, but closed at the end), sthāna, āśaya and niḳeta.

3 There is one passage of Dr̥ḍhabala (Caraka-saṁhitā, VI. 29. 23) which seems to draw a distinction between śīrās and dhāmanis; for there, as a symptom of a disease, it is said that the śīrās have expanded (āyāma) and the dhāmanis have become contracted (sankoca).
is accepted by his commentator Cakrapāṇi also. Gaṅgādhara is unable to point out any passage in Caraka to prove his opinion or to state more explicitly what is the difference of functions and appearances between the dhāmanis and śīrās. In fact Gaṅgādhara’s remarks are directly borrowed from Suśruta, III. 9. 3, without acknowledgment, and it is very surprising that he should not know the difference of views on this point between Caraka and Suśruta and should try to support Caraka by a quotation from Suśruta on the very point on which they materially differ.

Suśruta refers to Caraka’s view that śīrās, srotas and dhāmanis are the same and opposes it, saying that they are different in appearance, number and functions. Čaḷhaṇa, in explaining this, says that the śīrās carry vāta, pitta, śīlāṃ, blood, etc., and are rosy, blue, white and red, whereas the dhāmanis that carry sense-impressions of sound, etc. have no distinctive colour, and the srotas have the same colour as the dhātus which flow through them. Again, the principal śīrās are forty in number, the principal dhāmanis twenty-four and the principal srotas twenty-two in number. The śīrās permit us to contract or expand our limbs or perform other motor functions, and they allow the mind and senses to operate in their own ways and serve also to fulfil other functions of moving rapidly (prasyandana), etc., when vāyu works in them. When pitta flows through the śīrās, they appear shining, create desire for food, increase digestive fire and health. When śīlāṃ passes through them, they give an oily appearance to the body, firmness of joints and strength. When blood passes through them, they become coloured and filled also with the different dhātus and produce the sense-cognition of touch. Vāyu, pitta, śīlāṃ and blood—any one of these may flow through any and every śīrā.

The dhāmanis are more like sensory nerves, since they carry sensations of sound, colour, taste and smell (śabda-rūpa-rasagandha-vahatvādiikāṃ dhāmaninām). The srotas carry prāṇa, food, water, chyle, blood, flesh and fat. It is on account of their close proximity, similar functions, fineness (saukṣmyaḥ), and also because of the fact that they have been referred to in similar terms by older authorities, that they have sometimes been regarded as performing the same work, though their functions are really different.

1 na ca Carake Suśruta ieva dhāmanit śīrā-srotasāṃ bhedo vivakṣitaḥ. Cakrapāṇi’s commentary on Caraka, III. 5. 3.
2 Suśruta-saṃhitā, III. 7. 8–17.
3 Čaḷhaṇa on ibid. III. 9. 3.
4 Ibid.
Dālhaṇa, in explaining this, says that, as, when a bundle of grass is burning, the burning of each separate blade of grass cannot be perceived on account of their contiguity, so the śīrās, dhamanis and srotas are situated so close to one another that it is very difficult to observe their separate functions and work. Śīrā, srotas, mārga, kha and dhamani are the general names used to denote the canals or ducts of the body. It is on account of the similarity of action of all these ducts that their functions are sometimes confused.

The dhamanis start from the navel; ten proceed to the upper part of the body, ten to the lower part and four crosswise (tīr-ya-gāh). Those ten which go to the upper part of the body, branch out, are divided into three classes, and are thirty in number. Of these there are altogether ten for carrying vāta, pitta, kapha, śoṇita and rasa, two for each; there are eight for carrying śābda, rūpa, rasa and gandha, two for each; there are two for the organ of speech, two for making noise (ghoṣa), as distinguished from speech; two for going to sleep, two for being awake; two for bearing tears, two for carrying milk in women, and it is the same two dhamanis that carry the semen in men. It is by these dhamanis that the body on the upper side of the navel (e.g. sides, back, chest, shoulders, hands, etc.) is held fast to the lower part. The carrying of vāta, etc. is the common quality of all these dhamanis.

Those dhamanis which branch out downwards are thirty in number. They eject vāta, urine, excreta, semen, menstrual blood, etc. downwards. They are connected with the place of pitta (pittāṣaya), draw downwards the materials not fit for being absorbed, and nourish the body with the assimilable products of digestion. The dhamanis connected with the pittāṣaya carry the food-juice throughout the body, as soon as it is digested by the action of heat, by supplying it to the upper circulatory dhamanis and through them to the heart, which is designated as the seat of rasa (rasa-sthāna). Ten dhamanis carry vāta, pitta, śoṇita,

1 Thus Dālhaṇa remarks:

ākāṣṭyāvakāśāṇāṁ dehe nāmāṇi dehināṁ
dīrāḥ srotāṁśi mārgāḥ khaṁ dhamanyāḥ.

2 Suśruta, Sārta, ix. 7 and 8; see also Dālhaṇa’s commentary on it. The apertures of some dhamanis by which the food-juice is circulated through the body are as fine as lotus fibres, and some grosser than them, as the apertures of lotus stalks. Thus some dhamanis have very fine apertures, and others grosser apertures.

yathā svabhāvataḥ khāṁ mṛṇāleśu biseṣu ca
dhamanānāṁ tathā khāṁ rasa yāyair upaśyate.  

Ibid. ix. 10.
kapha and rasa; two, connected with the intestines, carry the food-juice; two carry water; two are connected with the bladder for ejecting urine; two are for the production of semen (śukra-
prādūr-bhāva), two for its ejection, and it is these which regulate the menstrual flow in the case of women; two, connected with the larger intestines, eject the excreta; there are eight others which carry perspiration. It is by these dhamanis that the intestines, waist, urine, excreta, rectum, bladder and penis are held together.

Each of the other four dhamanis, which go crossewise (tiryag-gāḥ), has hundreds and thousands of branches, which, innumerable as they are, are spread all over the body, like so many windows; their mouths are at the holes of the hairs, through which perspiration goes out and which nourish the body with rasa, and through these the effective principles (vīrya) of oil, watery sprinklings, ointments, etc. enter the body after being acted on by bhrājaka (heat of the skin)\(^1\). It is again these which carry the pleasurable and painful sense-impressions of touch\(^2\). The dhamanis direct the five senses to the five sense-objects for their cognition. There is the cognizer (mantr) and the manas organ; the dhamani which is connected with manas on one side and the dhamanis which carry the different sense-impressions on the other make the sense-data cognized by the self\(^3\). The various sensory and motor dhamanis are further named in Suśruta, III. vi. 28. Down below the back of the ear there are two dhamanis, called vidhura, which, when injured, produce deafness; inside the two nostrils there are the two dhamanis called phāṇa which, when hurt, arrest the sensation of smell. Below the eyebrows on the two sides of the eye there are the two dhamanis, called apāṅga, which, when hurt, produce blindness: there are also two other dhamanis, above the eyebrows and below them, called āvarta, which, when hurt, also produce blindness. Suśruta also speaks in this connection of a place inside

\(^1\) Suśruta, Śārtra, ix. 7 and 8; see also Īḍalāṇa’s commentary on it.

\(^2\) Īḍalāṇa, in commenting on this passage of Suśruta, III. ix. 9, says: “tair eva mano-nugataiḥ sukhāsukha-rūpaṃ sparśam karmātmā grhnitte.” (It is through these dhamanis, as connected by manas, that the self, as associated with the subtle body, receives the pleasurable and painful impressions of touch.)

\(^3\) paṇcābhiṣṭas tv atha paṇca-kṛtvāh
paṇcendṛiyam paṇcasu bhāvayanti
paṇcendṛiyam paṇcasu bhāvayitvā
daḥcetram ṣyānti vindāśa-kāle.

Suśruta, III. ix. 11.

Īḍalāṇa, in commenting on the above, says: “māntā hi sārte eka eva, mano ‘py eham eva, tena manasā yaiva dhamani johdādi-vahāsu dhamantiṣo abhiprapannā saiva dhamani eva-dharmaṃ grāhīyatī mantāraṃ nānyeti.”
the skull on the upper part of the brain, where all the śīrās have met together, as the adhipati superintendent.

In describing the śīrās (700 in number) Suśruta says that these are like so many canals by which the body is watered and by the contraction and expansion of which the movements of the body are rendered possible. They start from the navel and branch out like so many fibres of leaves. The principal śīrās are forty in number; of these ten are for the circulation of vāta, ten for pitta, ten for kapha and ten for rakta (blood). The śīrās of vāta circulation again branch out into 175 śīrās, and the same is the case with those which circulate pitta, kapha and rakta. We have thus altogether 700 śīrās. When vāta is properly circulated through the śīrās, it becomes possible for us to move our limbs without obstruction and to exercise our intellectual functions. But it should be noted that, though some śīrās are regarded as mainly circulating vāyu or pitta or kapha, yet they all, at least to some extent, circulate all three.

There are 900 snāyas, and these have also holes within them (suśīrāh), and these, as well as the kandaśas, which are also but special kinds of snāyas, serve to bind the joints of the body, just as the several pieces of planks are held together in a boat. Suśruta also mentions five hundred muscles. The marmas are vital spots in flesh, śīrā, snāyu and bones which are particularly the seats of prāna: when persons are hurt in these places, they may either lose their lives or suffer various kinds of deformity. The srotas are again described by Suśruta as being ducts, other than śīrā and dhamant, which start from the cavity of the heart and spread out through the body. These srotas carry the currents of prāna, food-juice, water, blood, flesh, fat, urine, excreta, semen and menstrual blood.

The Nervous System of the Tantras.

The nerve system of the Tantras, however, is entirely different from that of the medical systems of Caraka and Suśruta. It starts with the conception of the spinal column (meru-danda), which is regarded as one bone from the bottom of the back to the root of

1 na hi vātām śīrāḥ kāścin na pittām kevalam tathā ślesmānām vā vahanty etā ataḥ sarvavahāḥ smṛtāḥ.
Suśruta, III. vii. 16.

2 Suśruta, Sastra, ix. 13:
mulāt khād antaram dehe prasṛtām tu abhihāhi yat srotas tad iti viññeyāṁ śīrā-dhamant-varjitam.
the neck. In the passage inside this spinal column there is a nerve (nāḍī), called susūmnā, which is again in reality made up of three nāḍīs, susūmnā, vajrā and citrini. All nāḍīs start from the root at the end of the vertebral column, called kānda, and they proceed upwards to the highest cerebral nerve-plexus, called sahasrāra, and are seventy-two thousand in number. The place of the root of these nāḍīs (kānda) is an inch above the anus and an inch below the root of the penis. If susūmnā is the central nerve of the spinal cord, then on its extreme right side is the idā, and then parallel to it towards the susūmnā are the gāndhārī, stretching from the corner of the left eye to the left leg, hasti-jihvā, stretching from the left eye to the left foot, saṅkhini, branching on the left, kuhū (the pubic nerve on the left) and also the viśodarā, the lumbar nerves. On the extreme left of it is the pīngalā, and between it and the susūmnā are the pūṣā, stretching from below the corner of the right eye to the abdomen, paśyanti, the auricular branch or the cervical plexus, sarasvati and vāranā (the sacral nerve). The saṅkhini (the auricular branch or the cervical plexus on the left) goes parallel to the susūmnā, but takes a turn in the region of the neck and passes on to the root of the left ear-holes; in another branch it passes through the inner side of the region of the forehead, where it gets joined with the citrini nāḍī and enters into the cerebral region. The susūmnā nāḍī is a sort of duct inside the spine, which encases within it the vajrā nāḍī, and that again encases within it the citrini nāḍī, which has within it a fine aperture running all through it, which is the fine aperture running through the spinal cord.

1 But according to the Tantra-cūḍāmanī, susūmnā is not inside the spinal column but outside it. Thus it says, “tad-bāhye tu tayor madhye susūmnā vāhinī-samyuta.” This, however, is against the view of the Saṭ-cakra-mirūpana, which takes susūmnā to be inside the passage of the spine. According to the Nigama-tattvāsāra-tantra, idā and pīngalā are both inside the spine, but this is entirely against the accepted view. Dr Sir B. N. Seal thinks that susūmnā is the central passage or channel of the spinal cord and not a separate nāḍī (The Positive Sciences of the Ancient Hindus, pp. 219, 226, 227). Mr Relè in his The Mysterious Kundalini (pp. 35, 36) thinks that it is a nāḍī which is situated centrally and passes through the spinal column (meru-danda); but, judging from the fact that it is said to originate in the sarcrum, from which it goes upwards to the base of the skull, where it joins with the plexus of a thousand nerves called brahma-cakra (cerebrum in the vault of the skull) and is divided at the level of the larynx (kaṇṭha) into anterior and posterior parts between the two eyebrows (ājīnā-cakra) and the cavity in the brain (brahma-randhra) respectively, Relè thinks that this susūmnā nāḍī is nothing but the spinal cord.

2 Nāḍīs derived by Pūrṇānanda Yati, in his commentary on the Saṭ-cakra-mirūpana, from the root nāḍa, to go, as a passage or duct (nāḍa gatau iti dhātar nāḍaye gamyate ’nayā padavyā iti nāḍī). Mahāmahopādhyāya Gaṇānātha Sen makes a
within the citrini nādi is also called brahma-nādi; for there is no further duct or nādi within the citrini. The sūsumnā thus in all probability stands for our spinal cord. The sūsumnā, however, is said to take a turn and get connected with the šaṅkhini in the inside region of the forehead, whence it becomes connected with the aperture of the šaṅkhini (šaṅkhini-nālam ālambya) and passes to the cerebral region. All the nādis are connected with the sūsumnā. Kundalini is a name for supreme bodily energy, and, because the channel of the sūsumnā, the brahma-nādi, is the passage through which this energy flows from the lower part of the trunk to the regions of the nerve-plexus of the brain, sūsumnā is sometimes called kundalini; but kundalini itself cannot be called a nerve, and it is distinctly wrong to call it the vagus nerve, as Mr Rele does. The idā nādi on the left side of the sūsumnā outside the spine goes upwards to the nasal region, and pīngalā follows a corresponding course on the right side. Other accounts of these nādis hold that the idā proceeds from the right testicle and the pīngalā from the left testicle and passes on to the left and the right of the sūsumnā in a bent form (dhanur-ākāre). The three, however, meet at the root of the penis, which is thus regarded as the junction of the three rivers, as it were (triveni), viz. of sūsumnā (compared to the river Gaṅgā), idā (compared to Yāmuna) and pīngalā (compared to Sarasvati). The two nādis, idā and pīngalā, are also described as being like the moon and the sun respectively, and sūsumnā as fire. In addition to these nādis the Yogi-yaññavalkya mentions the name of another nādi, called alambuṣā, making the number of the important nādis fourteen, including sūsumnā and counting sūsumnā as one nādi (i.e. including vajrā and citrini), though the total number of nādis is regarded as being seventy-two thousand. Śrikanṭa in his Nādi-vijnāna counts the number of nādis as thirty-five millions. But, while the Tantra school, as represented in the works Šaṭ-cakra-nirūpana, Jñāna-samkalini, Yogi-yaññavalkya, etc., regards the nādis as originating from the nerve-plexus very serious mistake in his Pratyakṣa-śāstra when he thinks that the nādis are to be regarded as being without apertures (mīndhra). They are certainly not so regarded in the Āyur-veda or in the Šaṭ-cakra-nirūpana and its commentaries. In Yoga and Tantra literature the term nādi generally supersedes the term śirā of the medical literature.

1 Šabda-brahma-rūpyāh kundalinyāh paraṇa-siva-samidhi-gamana-patha rūpa-citrini-nādy-antaragata-sānya-bhaga iti. Pūrṇānanda’s commentary on Šaṭ-cakra-nirūpana, St. 2.
2 Sūsumnāyai kundalinyai. Haṭha-yoga-pradīpikā, iv. 64.
3 Šaṭ-cakra-nirūpana, St. 1 and Yogi-yaññavalkya-samhitā, p. 18.
lying between the root of the penis and the anus, and while Caraka regards them as originating from the heart, Śrikanṭāda regards them as originating from the region of the navel (nābhi-kanda) and going upwards, downwards and sideways from there. Śrikanṭāda, however, compromises with the Tantra school by holding that of these thirty-five millions there are seventy-two thousand nāḍis which may be regarded as gross and are also called dhāmanis, and which carry the sense-qualities of colour, taste, odour, touch and sound (paṇcendriya-gūnavahā). There are again seven hundred nāḍis with fine apertures, which carry food-juice by which the body is nourished. Of these again there are twenty-four which are more prominent.

The most important feature of the Tantra school of anatomy is its theory of nerve-plexuses (cakra). Of these the first is the ādhāra-cakra, generally translated as sacro-coccygeal plexus. This plexus is situated between the penis and the anus, and there are eight elevations on it. It is in touch with the mouth of the suṣumnā. In the centre of the plexus there is an elevation called svayambhū-liṅga, like a fine bud with an aperture at its mouth. There is a fine thread-like fibre, spiral in its form, attached to the aperture of the svayambhū-liṅga on one side and the mouth of the suṣumnā on the other. This spiral and coiled fibre is called kula-kundalini; for it is by the potential mother-energy, as manifested in its movement of a downward pressure of the āpāna vāyu and an upward pressure of the prāṇa vāyu, that exhalation and inhalation are made possible and life functions operate. Next comes the svādhiṣṭhāna-cakra, the sacral plexus, near the root of the penis. Next comes the lumbar plexus (maṇi-pura-cakra), in the region of the navel. Next is the cardiac plexus (anāhata-cakra or viśuddha-cakra), in the heart, of twelve branches. Next is the laryngeal and pharyngeal plexus, at the junction of the spinal cord and the medulla oblongata, called the bhārati-sthāna. Next comes the lalanā-cakra, opposite the uvula. Next to this is the ājñā-cakra between the eyebrows, within which is the manaś-cakra, the centre of all sense-knowledge and dream-knowledge, and the seat of manas, the mind-organ. Vijñānabhikṣu says in his Yoga-vārttika that one branch of the suṣumnā goes upwards from here, which is the nāḍī for carrying the functions of manas and is called mano-vahā nāḍī; the Jñāna-samkalinī tantra calls it jñāna-nāḍī. It seems, therefore, that it is through this nāḍī that connection is established
between the soul, residing in the brain, and the manas, residing in the manas-cakra. Śaṅkara Miśra argues in his commentary on the Vaiśeṣika-sūtras, v. 2. 14 and 15, that the nāḍīs are themselves capable of producing tactile impressions; for, had it not been so, then eating and drinking, as associated with their corresponding feelings, would not have been possible, as these are effected by the automatic functions of prāna. Above the ajña-cakra comes the soma-cakra, in the middle of the cerebrum, and finally, in the upper cerebrum, there is the sahasrāra-cakra, the seat of the soul. The process of Yoga consists in rousing the potential energy located in the ādāhāra-cakra, carrying it upwards through the aperture of the citrīṇi or the brahma-nāḍī, and bringing it to the brahma-randhra or the sahasrāra. This Kundalini is described as a fine fibre like a lightning flash (taḍid iva vilasat tantu-rūpa-svarūpa), which raises the question whether this is actually a physical nerve or merely a potential energy that is to be carried upwards to the upper cerebrum in the sahasrāra-cakra; and it cannot, I think, be yet satisfactorily explained. But, judging from a wide comparison of the texts, it seems pretty certain that it is the kundali sakti or the kundali energy which is carried upwards. If the kundali energy is inexhaustible in its nature, the whole discussion as to whether the ādāhāra-cakra is depleted or not or whether the kundalini herself rises or her eject, as raised in Sir John’s Serpent Power, pp. 301–320, loses its point. How far the cakras can themselves be called nerve-plexuses is very doubtful, since the nerve-plexuses are all outside the spinal aperture; but, if the kundalini is to pass through the aperture of the citrīṇi nāḍī and at the same time pass through the cakras, the cakras or the lotuses (padma) must be inside the spinal cord. But, supposing that these nerve-plexuses represent the corresponding places of the cakras inside the spinal cord, and also because it has become customary to refer to the cakras as plexuses, I have ventured to refer to the cakras as such. But it must be borne in mind that, as the kundalini is a mysterious power, so also are the cakras the mysterious centres in the path of the ascent of the kundalini. A nerve-physical interpretation of them as nerve-plexuses would be very unfaithful to the texts. A more detailed discussion on these subjects will be found in the treatment of Tantra philosophy in a later volume of this work. The chief interest of the present section is only to show that the Tantra

1 See Dr Sir B. N. Seal’s Positive Sciences of the Ancient Hindus, pp. 222–225.
The Theory of Rasas and their Chemistry.

The theory of Rasas or tastes plays an important part in Āyur-veda in the selection of medicines and diet and in diagnosing diseases and arranging their cures. In 1. 26 of Caraka we hear of a great meeting of sages in the Caitraratha Forest, attended by Ātreya, Bhdrakāpya, Śākunteya, Pūrṇākṣa Maudgalya, Hiranyākṣa Kauśika, Kumārasīras Bharadvāja, Vāryovida, the Vaideha king Nimi, Bādiśa and Kāṅkāyana, the physician of Balkh, for the purpose of discussing questions of food and tastes.

Bhdrakāpya held that taste, or rasa, was that which could be perceived by the organ of the tongue and it was one, viz. that of water. Śākunteya held that there were two rasas, nutritive (upāśamanīya) and denutritive (chedanīya). Pūrṇākṣa held that there were three rasas, upāśamanīya, chedanīya and neutral (sādhāraṇa). Hiranyākṣa held that there were four rasas, sweet and good, sweet and harmful, distasteful and good, distasteful and harmful. Kumārasīras held that there were five rasas, earthy, watery, fiery, airy and ethereal (āntarikṣa). Vāryovida held that there were six rasas, heavy (guru), light (laghu), cold (śita), hot (uṣṇa), smooth (snigdha) and dry (rākṣa). Nimi held that there were seven rasas, sweet (madhura), sour (amla), salt (lāvana), hot (kaṭu), bitter (tikta), pungent (kaśāya) and alkaline (kṣāra). Bādiśa added one more to these, viz. unmanifested (avyakta), and held that there were eight rasas. Kāṅkāyana held that the rasas were of infinite variety and could not be counted, on account of the diversity of substances in which they are located (āstraya), their specific properties as light or heavy (uṣṇa), their action in developing or reducing the constituents of the body (karma) and their diversity as apparent to the organ of taste. Ātreya Puranvasu held that there are six rasas only,
sweet (madhura), acid (amla), saline (lavana), hot and pungent (kaṭu), bitter (tikta) and astringent (kaśāya). The source (yoni) of all these rasas is water. Its actions are sedative (upasamana) and denutritive (chedana), and a basis of equilibrium (sādhāraṇatva) of the rasas is reached when those having the above opposite actions are mixed together. Pleasantness (svādu) or unpleasantness (asvādu) of taste depends on liking or disliking. The seats of rasas are the essences of the five elements (pañca-mahā-bhūta-vikāraḥ) modified in accordance with five conditions, viz. (1) specific nature of the substance (prakṛti); (2) as acted upon by heat or other agents (vikṛti); (3) association with other things (vicāra); (4) the place in which the substance is grown (deśa); (5) the time at which it is produced (kāla)

1. The gunas of heaviness, lightness, cold, warm, moisture and dryness belong to the things to which the rasas belong. The alkaline (kṣāra) should not be counted as a separate rasa, as it is made up of more than one rasa and affects more than one sense-organ; for it has at least two important rasas (of “hot and pungent” and “saline”) and it affects not only the organ of taste, but also that of touch, and does not naturally belong to any substance, but has to be created by artificial processes. There is no such separate rasa which can be called unmanifested (āvyakta). Water is the origin of all rasas; so all rasas may be considered as existing in an unmanifested state in water, but that is no reason why we should say that water has a separate taste called “unmanifested”; moreover, when a substance has two rasas, one dominant and the other extremely feeble, the feeble rasa may be regarded as unmanifested; or, when in a compound of different rasas, say, of a syrup, a slight hot taste is added, this may be considered as unmanifested; but certainly there is no rasa to which the name “unmanifested” (āvyakta) could be given. The view that there is an infinite number of rasas is untenable; for, though it may be urged that the same rasa may occur differently in different objects, that would only go to show that there are various grades of forms of each particular rasa and not prove that with each variety of a particular rasa the rasa itself is wholly different. Again,

1 Thus mudga (a sort of kidney-bean), which is a bhūta-vikāra, has the rasa of astringent and sweet and is yet light by nature, though one would expect it to be heavy on account of its rasa of astringent and sweet. Vikṛti is best exemplified in the case of fried paddy, which is lighter than rice. It is well known that by composition wholly new properties may be generated in the product. Medicinal herbs vary in their properties in accordance with the time of plucking.
The Theory of Rasas and their Chemistry

if different rasas are mixed together, the mixed rasa itself is not entitled to be counted as a separate rasa; for its qualities are just as the sum total of the qualities of the different rasas which are its constituents, and no independent work can be attributed to this mixed rasa (na sansrṣṭānāṁ rasānāṁ karmopadīsānti Buddhīṃ ānāh), as in the case of a compound of two or more substances, as mentioned above (vicāra).

Though on account of the predominance of one or the other of them they are called earthy (pārthiva), watery (āpya), fiery (āgneya), airy (vāyavya) or ethereal (ākāśātmaka), yet all substances are compounded of the five elements. All substances, whether animate or inanimate, are to be considered as medicines (auṣadha), provided they are applied in the proper way (yukti) and for specific purposes (artha). A substance can be a medicine only when it is applied in the proper way and for specific purposes; nothing can unconditionally be considered a medicine. The medicative influence is exerted both by virtue of the specific agency of a substance (dravya-prabhāva) and by the specific agency of its qualities, as also by their joint influence\(^1\). The action of medicines is called karman, its potency vīrya, the place where they operate adhikarana, the time of operation kāla, the mode of operation upāya, and the result achieved phala.

As regards the origin of rasas, it is suggested that water gets mixed with the five elements in the air and also after its fall on the ground. These rasas nourish the bodies of all plants and animals. All the five elements are present in all rasas; but in some rasas some of the elements predominate, and in accordance with this there are differences among the various rasas. Thus, with the predominance of soma there is a sweet taste, with the predominance of earth and fire an acid taste, with water and fire a saline taste, with air and fire, hot and pungent, with air and ākāśa, bitter, with air and earth, astringent. The different elements

\(^1\) The medicinal effect of substances may be distinguished from the medicinal effect of qualities, as when by certain stones (maṇi) poison may be removed or by the use of certain amulets certain diseases may be cured. Again, there may be cases where simply by the application of heat a certain disease may be cured, irrespective of the substance which possesses heat as its property. It seems that only the sense-properties and mechanical properties are here counted as guṇas; other kinds of properties were considered as being due to the thing (dravya) itself. For, in addition to the sense-properties, the twenty qualities, guru, laṣṭu, śīta, uṣṇa, snigdha, rūkṣa, manda, tikṣṇa, sthira, sāra, mṛdu, kathina, vitada, picchila, śakṣita, khara, sūkṣma, sthūla, sāndra and drava, are counted as guṇas (Caraka-samhitā, 1. 1. 48; 1. 25. 35; 1. 26. 11).
which take part in the formation of rasas are said to be instrumental causes (nimitta-kārana) of the rasas; this explains how, though fire has no rasa, yet it may help the generation of a particular rasa. Destiny or unknown cause (adṛśta) is, however, the general cause of such combinations of elements with water.

In the very first chapter of the Caraka-samhitā, substances (dravya) are counted as being the five elements, viz. ākāśa, air, light, heat, water and earth, together with soul, manas, time and space. Of these those substances which possess sense-organs are called animate and those which do not are called inanimate. The gunas are the sense-properties of hearing, touch, colour, taste and smell, the mechanical and other properties which all elements have in common, such as heaviness, lightness, cold, heat, and moisture, dryness, dullness, sharpness, steadiness, mobility, softness, hardness, motion, slipperiness, smoothness, roughness, grossness, fineness, thickness, liquidity, etc., and desire, hatred, pleasure, pain and effort, intelligence (including memory), consciousness, patience, egoism, etc., distance (para), nearness (apara), combination (yukti), number, contact, disjunction (vibhāga), separateness, measure, inertia (samskāra) and repetition (abhyāsa). The definition of substance (dravya) is, that which possesses quality (guna) and action (karma) in the relation of inherence and is also the inseparable material cause (samavāyi-kārana) of all effects. Gunas are things which are themselves inactive and exist in dravyas in an inseparable relation of inherence. The gunas themselves cannot contain any further gunas.

The above being the theory of dravya and guna, the question arises as to the way in which medicines operate in human bodies. The most general and obvious way in which the different medicines were classified was by their different tastes, which were considered primarily to be six in number, as has already been pointed out. Each of the tastes was considered as being capable of producing certain good or bad physiological effects. Thus the sweet taste is

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2 *Caraka-samhitā, 1. 1. 47.* Even trees were regarded as being possessed of senses and therefore animated or cetana. Cakrapāṇi says that, since the sunflower continues to turn its face towards the sun, it may be regarded as being possessed of the sense of sight; again, since the lavali (*Averrhoa acida*) plant fructifies through hearing the sound of thunder, the plants have auditory organs, etc.

3 *Ibid.: 1. 1. 47, 48 and 50,* with Cakrapāṇi’s commentary.
said to increase blood, flesh, fat, marrow, semen, life, to do good to the six senses, and to produce strength and colour of the body; to do good to the skin and throat, to destroy pitta, poison and mārūta (morbidity of air), and to produce moistening, cold and heaviness, etc. The acid (āmla) is said to rouse digestion, develop the body, and to remove vāta; it is light, warm, moist, etc. The saline taste is digestive; it removes vāta, secretes kapha; and it is moist, warm, etc. And so on with the other tastes. But, of course, all these qualities cannot belong to the tastes; as has already been pointed out, the guṇas cannot possess further guṇas, and the tastes (rasa) are themselves guṇas; so, when certain functions or properties are attributed to the rasas, they must be considered as belonging to the substances which possess those specific rasas (rasā iti rasa-yuktāni dravyāṇi).

From Suśruta’s statements it appears that there was a great difference of opinion regarding the relative prominence of dravya and its properties. There were some who held that dravya was the most important, since dravya remained permanent, whereas rasa, etc. are always changed; so dravya is relatively permanent. Again, dravya is grasped by the five senses, and not its guṇas. The dravya is also the support of the rasas, etc. All operations have to be done with the dravya, and the authoritative texts also speak of operations with the dravyas, and not with the rasas; the rasas depend largely on the nature of the dravyas. Others hold that rasas are the most important, since it is of them that we become directly aware when we take our food, and it is said that they remove the various morbidities of vāta, etc. Others hold that the potency (vīrya) of things is the most important, since it is by their potency that medicines act. This potency is of two kinds, hot (uṣṇa) and cold (śīta); some think that it is of eight kinds, hot (uṣṇa), cold (śīta), moist (snīḍha), dry (rūkṣa), moving (viśada), slippery (pičchila), soft (mṛdu) and sharp (tiṣṇa). Sometimes potency or vīrya overcomes rasa by its power and makes its own tendencies felt; thus, though sugar-cane ought to remove vāta on account of its sweetness, it really increases it on account of its being śīta-vīrya (of cold

1 Caraka-saṃhitā, 1. 26. 39, Cakrapāṇi’s commentary.
2 Suśruta, Suśra-sthāna, 40. 3. Dravya is defined by Suśruta as kriyā-guṇavat samvādyi-kāraṇam.
potency). Others say that the *rasa*, as digested by the stomach (*pāka*), is most important, since things can produce good or bad effects only when they are digested. Some hold that each *rasa* remains unchangeable by digestion, though according to others there are only three kinds of *rasa* resulting from digestion or *pāka*, viz. sweet, acid and hot (*kaṭu*); whereas Suśruta held that there were only two kinds of *rasa* resulting from digestion, viz. sweet and hot; for, in his view, acid was not the result of digestion (*amlo vipāko nāsti*). According to Suśruta it is the *pitta* which is turned into acid. Those objects which have more of earth and water in them are turned into sweet taste, whereas those which have *tejas*, air and *ākāśa* as their ingredients are turned into hot taste (*kaṭu*).

Speaking of the differences of view regarding the relative importance of *dravya, rasa, virya* and *vipāka*, Suśruta says that they are all important, since a medicine produces effects in all those four ways according to its own nature. The view of Suśruta, as explained by Cakrapāṇi in the *Bhānumati*, seems to be that food, drink and medicine are all products of the five *mahā-bhūtas*, and *rasa, virya* and *vipāka* are dependent on the *dravya* and are like its potency (*sakti*), through which it works. Cakrapāṇi, commenting on this in the *Bhānumati*, says that even in those cases where certain *rasas* are said to remove or increase certain morbidities (*doṣa*) it is only because of their importance that they are so described; the real agent in all such cases is the *dravya*, since the *rasa*, etc. are always dependent on the *dravya*. Apart from the *sakti* as manifested in *rasa*, etc., the *dravya* also operates by itself in an unthinkable way (*acintya*), which is also called *prabhāva* and which is comparable with the attractive force exerted by magnets on iron. The *dravya* by itself is thus differentiated from its *sakti*, and it is said to have a peculiar operative mode of its own, as distinguished from that of its *sakti* or potency, as manifested in *rasa, virya* or *vipāka*, and this mode of operation is considered to

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1. *etāni khalu viryāni sva-bala-guṇotkarṣat rasam abhīkhuyātma-karma kurvantī. Suśruta, ibid.* The *virya* is said to remain both in the *dravya* and in the *rasa*. Thus in Suśruta, t. 40. 5–8, it is said that, if in those *rasas* which remove *vāta* there is dryness (*rakṣya*), lightness (*lāghava*) and cold (*laitya*), then they will not remove *vāyu*; so, if in those which remove *pitta* there is sharpness (*taiktāra*), heat (*auryya*) and lightness (*laghuta*), then they will not remove *pitta*, and so on.

2. *caturnām api sāmayam ichchany atra vipācitaḥ. Suśruta, t. 40. 13.*

be quite unthinkable (acintya) as to the way in which it operates. Thus some medicines operate by rasa, some by vipāka, or the rasa resulting from the digestive operation (e.g. śuṇṭhi, which, though hot in taste and hot in virya, is sweet after digestive operation), some by virya (e.g. kulattha, though pungent, yet removes vāyu on account of its hot virya), some by both rasa and vipāka, some by dravya-prabhāva, virya and rasa, some by dravya-prabhāva, virya, rasa and vipāka.

Caraka, however, differs from Suśruta in this view of dravya and rasa, virya and vipāka; for, according to him, rasa, virya and vipāka, themselves being gunas, cannot possess further gunas. He does not admit a sakti as different from the dravya. Thus in the case of prabhāva, while Suśruta holds that it is a specific sakti, or the thing operating in unaccountable ways, Caraka thinks that this sakti is identical with the thing itself. Thus Cakrapāṇī in explaining Caraka-samhitā, 1. 26. 72, says, “saktir hi svarūpam eva bhāvānām, nātiriktam kincid dharmāntaram bhāvānām” (potency is the nature of things and is no separate property distinct from them). Virya in its general sense means “the potency or power of medicines to produce effects,” and as such includes within it both rasa and vipāka; but, since these have special names, the term virya is not applied to them. Apart from this there is special virya in a technical sense (pāribhāṣika). In the view which considers this virya to be of two kinds, snigdha and rūkṣa, these are to be taken as specific characteristics; but in the view which considers the virya to be of eight kinds, these are to be taken as a different set of characteristics of dravya or substance. This virya is believed to be more powerful than rasa, so that, when the virya and rasa of a thing come into conflict, it is the virya which predominates and not the rasa.

Vāgbhaṭa junior makes some remarks in support of the name virya, as given to the characteristics which go by that name. He says that, since the virya characteristics of things remain unchanged even after digestion, and since the things are primarily

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1 dravyam ātmanā śaktā prabhāvākyayā doṣam hanti...atra dravya-sakti-kāryodāharanam yathā karpaka-mānir loha-sālayam ākarsati. Bhānunatt, 1. 40. 13.
2 tasya pākṣaṇa tad-rasasya vipākṣaṇa ca pṛthān-mirdesān na virya-vyavahārāh īdātre...Carake tu sāmānya-virya-sabdāna te 'pi grhītāh. Ibid. 1. 40. 5.
3 yadā devīdharmān viryam tadā snigdha-rūkṣādāṁ...rasādi-dharmata-yaiya hārya-grāhaṇam vakṣyati hi madhuro rasah snigdhā ity ēdi astavidha-virya-pakṣe tu...balavat-kārya-kārtṣṭva-vivakṣayā viryatvam iti sthitā. Ibid. 1. 40. 4.
in use for medical purposes and each of them would include many substances and rasas, this character justly deserves to be called virya, or the potency-in-chief for producing medical effects. He further says that rasa is baffled by vipāka, that rasa and vipāka can baffle virya, if they work in the same direction, and that they may all be baffled by prabhāva. These remarks, however, are true only in those cases where rasa, virya and vipāka exist in the same proportion, and it must be borne in mind that some objects may have rasa of such a predominant type that it may overcome the vipāka or the virya. As regards the relative priority of virya and vipāka, Śivadāsa in commenting on Cakrapāni’s Dravya-gunasamgraha says that virya is prior to vipāka; and this would imply that, as virya can supersede rasa, so vipāka may supersede virya.

If we look back to the earliest history of the development of Indian medical ideas in the Atharva-Veda, we see that there were two important classes of medicines, viz. the amulets, manis and water. Atharva-Veda, 1. 4. 4, 1. 5, 1. 6, 1. 33, VI. 24, VI. 92, etc. are all in praise of water as medicine, and water is regarded there as the source of all rasa or taste. Thus from the earliest times two different kinds of medicines were used. Of these the amulets were more or less of a miraculous effect. It was not possible to judge which kind of amulet or mani would behave in which way; their mode of operation was unthinkable (acintya). It is easy to see that this mode of operation of medicines was what was considered a prabhāva by Caraka and Suśruta. With them prabhāva means the mysterious operation of a medicine acting in an unaccountable way, so that, though two medicines might be exactly similar in rasa, virya and vipāka, they might behave differently with regard to their medicinal effects. Such an effect was thus naturally considered as unthinkable. But the analogy of the old manis was fresh in the minds of these medical thinkers when conceiving this prabhāva, and it was in reality an extension of that idea to other unaccountable effects of medicines. As none of the chemical effects.

1 Asīṣaḥya-hṛdaya, 1. 9. 15.
2 Ibid. 1. 28.
3 rasa-virya-vipākānaṁ sāmānyam yatra lakṣyate viśeṣah karmanām caiva prabhāvas tasya ca smīrtaḥ. Caraka-samhita, 1. 26. 60. Cakrapāni, in commenting on this, says, “rasādi-kāryaṇaṁ yena nāvadhārayitum lakṣyate kāryaṁ tat prabhāva-hṛtāṁ iti sūcyata; ata evoktāṁ ‘prabhāvaḥ capintya ucyate’ rasa-virya-vipākā-tayāciṇtya ity arthāh.”
4 maniṁṇāṁ dhāraṇyāṇāṁ karma yo vividhātmakāṁ, tat-prabhāva-hṛtyaṁ teṣām prabhāvo ‘cintya ucyate. (The various actions of amulets are to be considered as being due to a prabhāva which is unthinkable—ibid. 1. 26. 72.)
The Theory of Rasas and their Chemistry

(in the modern sense) of medicines on human organs were known, the most obvious way in which the medical effects of herbs, roots, etc. could be classified was on the basis of taste, and by Caraka and Suśruta we are told the effects of the different rasas on the different morbidities of the body, vāyu, pitta and kapha. As the main source of all diseases was unequal increase or decrease of vāyu, pitta and kapha, a classification which described the rasas in such a way that one could know which rasa increased or decreased which of the morbidities was particularly useful. But it is obvious that such a classification, though simple, could not be universally true; for, though the taste is some indication of the medicinal property of any substance, it is not an infallible one. But no other mode of classification was known; it was supposed that the taste (rasa) of some substances changed altogether after digestion and that in such cases the taste which changed after digestion (pāka) would be operative. Cakrapāni says that in those cases where the taste on the tongue (rasa) agrees with the taste as produced after the digestive process, the effect in that direction becomes very strong, but in the case where the latter differs from the former the operation of rasa becomes naturally weak, because the force of the taste produced by the final operation of the digestive process is naturally strong\(^1\). Caraka thought that there were only three rasas as the result of digestion, viz. katu, madhura and amla; Suśruta rejected the last, as has already been described. But even this was not sufficient; for there were many other effects of medicine which could not be explained on the above suppositions. In explaining this, the theory of virya was introduced. In addition to taste substances were considered to possess other properties of heat and cold, as judged by inference, tactual properties of slipperiness, movement, moisture and dryness, etc., sharpness, etc. as manifested by odour, and these were supposed to produce effects in supersession of rasa and vipāka. It was only in the cases where no sensible data of any kind could be found to indicate the medical properties of the thing that the idea of prabhāva was introduced. The chapters in Āyur-veda on dravya

\(^1\) Cakrapāni on Caraka, t. 26. 65. Cakrapāni points out that the hot (katu) taste is at first useful in cleaning the phlegm of the throat, but, since it becomes sweet after digestion, it acts as a nutrient (virya). But, except in the case of such local actions, it is difficult to understand why the rasa which was altered by digestion should have any such effect as Cakrapāni suggests (viparyaye tu durbalam iti jñeyam).
and gunā deal with the enumeration of prabhāva and also of rasa, vipāka and vīrya wherever there is a divergence among them, as determined by empirical observation. This is very necessary not only for the selection of medicines and diet in the cure of diseases, but also for prevention of diseases. It is well to remember that many diseases were supposed to arise through eating together things which are opposed to each other in rasa, vipāka or vīrya.

The Psychological Views and other Ontological Categories.

Caraka in the eighth chapter of the Sūtra-sthāna counts the senses as being five in number. Though both the Sāṃkhya and the Vaiśeṣika systems, to which Āyur-veda is largely indebted for its philosophical ideas, admit manas, or mind-organ, as a separate sense (indriya), Āyur-veda here differs from them and, as Cakrapāṇi says, separates manas from the ordinary senses by reason of the fact that it has many functions which are not possessed by any of the other senses (caksur-ādibhyo 'dhika-dharma-yogitayā)¹. Caraka himself, however, in another place speaks incidentally of a sixth sense (śaḍ-indriya) in connection with the description of sweet taste². Manas is, however, here described as transcending the senses (atindriya). Cakrapāṇi, in explaining the atindriya character of manas, says that it is called atindriya because it is not a cause of the knowledge of external objects like the other senses. Manas is, indeed, the direct cause of pleasure and pain, but it is the superintendent of all the senses (adhiṣṭhāyaka). Manas is also called sattva and cetas. The self is, however, the permanent subject of all acts of consciousness (cetanā-pratisandhātā). When the manas comes into contact with its objects, viz. pleasure or pain or the objects of thought, and the self makes an effort at grasping these objects, then there is a movement on the part of manas, by which it feels pleasure or pain, or thinks the objects of thought, or moves the sense-organs. Thus, when the self makes an effort and the objects of pleasure or pain or thought are present, then the manas turns to these as its objects and moves the senses, and the senses, guided by it, grasp their respective objects and produce their knowledge.

¹ Cakrapāṇi’s commentary on Caraka-samhitā, i. 8. 3.
² Caraka-samhitā, i. 26. 41, tatra madhuro rasaḥ...śaḍ indriya-prasādanah.
The one manas appears as diverse on account of the diversity of its objects of thought (e.g. the mind may sometimes take religious thoughts and appear religious and at other times take lustful thoughts and appear lustful), diversity of sense-objects with which it is associated (e.g. the mind may grasp colour, smell or sound, etc.), and diversity of ways of imagination (e.g. "This will do good to me" or "This will do me harm," etc.). In the same man the mind may sometimes appear as angry, ignorant or virtuous. But in reality the manas is one and the same for each person; all these differences do not appear at the same time with the same person, as might have been the case if there were many minds for one and the same person. Moreover, the manas is atomic; for otherwise many different objects or functions could be performed by one and the same manas at the same time.

It may be asked, if one and the same manas can show different kinds of moral propensities, sattva, rajas or tamas, how can any person be characterized as sāttvika, rājasika or tāmasika? The answer is that a man is called sāttvika, rājasika or tāmasika according as predominance of one or other of these guṇas is observed in that man.

Manas is supposed to move the senses, which are constituted of ākāśa, air, light, heat, water and earth; and the seats of the senses are the physical sockets of the eye, the ear, the nostrils, the tongue and the skin. The five sense-cognitions are produced through the contiguity of the senses, the sense-objects, manas and soul. They are short-lived (ksanika), but not exactly momentary, as the Buddhists would like to have them. They also are of determinate nature (niścayātmikāh). As Cakrapāni says, it is quite possible for transitory sense-cognitions to give a determinate report of their objects. Though all the senses are made up of the five elements, yet those senses which contain any element in a preponderating degree were conceived as made up of that element. The sense that has a particular element in a preponderating degree is regarded as having by virtue of that a special capacity for grasping that particular element.

The connection of the body, the senses, the manas and the self

1 Cakrapāni's commentary on Caraka-samhitā, i. 8. 11. Kṣanikā ity āsūtrar-vināśīnyah na tu bauddha-siddhāntavād eka-kṣanōvasthādyānīyah.

2 tatra yad-yad-ātmakam indriyam viśīgat tat-tad-ātmakam evārtam anu-grhṇāti tat-svabhāvād vibhutvāc ca. (Caraka, i. 8. 14.)
Speculations in the Medical Schools

is called life (*jivita*). The self is everywhere regarded as the agent which unites the acts of consciousness (*jñāna-pratisandhātā*). Cakrapāṇi says that, since the body is momentary (*śartraya kṣaṇikatvena*), it may be argued that the union of the self with the body is also momentary. The answer that Cakrapāṇi gives to such an objection is that, though the body is momentary, yet, since the momentary bodies are repeated in a series, the series as a whole may be looked upon as one; and, though the union of the self with each term of the series is momentary, yet, since the series may be looked upon as one, its union with the self may also be regarded as one (*santāna-vyavasthitō 'yam ekatayā ucyate*). In another place Caraka says that the *manas*, the self and the body are connected together like a tripod, on which life rests; if any one of the components is missing, the unity is broken.

It has already been pointed out that, according to Caraka, the self is active and that by its activity the mind moves; and it is by the operation of mind that the senses move. The self is also regarded as being *cetana* (conscious). But this consciousness does not belong to the self in itself, it is attained only by its connection with the senses through *manas*. It is, however, necessary to note that apart from this self there is, according to Caraka, another transcendent self (*parah ātma*), different from the self which participates in the union of the body and the senses (which is also technically called the *samyogi-puruṣa*). The subtler, or transcendent, self is unchangeable (*nir-vikāra*). Knowledge implies a process and a change, and this self manifests consciousness only in those parts where it becomes associated with *manas* and the senses. Thus, though the self is eternal, yet the rise of consciousness in it is occasional. The unchangeableness of the self consists in its being able to unite with itself its past and future states. If the self were not permanent, it could not unite with itself all its past experiences. The sufferings and enjoyment

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1 Caraka, 1. 1. 41. The other synonyms of life are *dhāri*, *nityaga* and *anubandha*.
6 Caraka, 1. 1. 47.
that affect us should not be attributed to the self, but to manas (dṛṣṭamāna-rāgādi-vikāras tu manas).

The special feature of this view of self is that it is permanent and unchangeable; this self seems to hold within it all the individual egos which operate in association with their respective senses, manas and body. It becomes endowed with consciousness only when it is in association with the senses. Pleasure, pain and the movements involved in thought-processes are attributed to manas, though the manas is also considered to derive its activity from the self. The states of consciousness that are produced are all united in the self. The self, thus diverted in its subtler aspect from the senses and manas, is eternal and unchangeable, whereas in its aspect as associated with manas and the senses it is in the sphere of change and consciousness. This view is therefore different from those of the orthodox schools of Indian philosophy.

It is well to note in this connection that the Caraka-samhitā begins with an enumeration of the Vaiśeṣika categories, and, though it often differs from the Vaiśeṣika view, it seems to take its start from the Vaiśeṣika. It enumerates the five elements, manas, time, space and self as substances (dravya); it enumerates the gunas, such as the sensible qualities, the mechanical or physical qualities given in the list beginning with heaviness (gurva ādayah), intelligence (buddhi), and those beginning with remoteness (para) and ending with effort (pratyānta). But what is this gurva ādi list? There is no such list in the Vaiśeṣika-sūtras. Cakrapāni, however, refers to an enumeration given in a later chapter (1. 25. 35) by Caraka, where however these gunas are not enumerated as belonging to all substances, but only to the food and drink that we take1. But the list referred to as parādi (beginning with parādi) prayatnānta (ending in prayatna) is not to be found anywhere in the Caraka-samhitā. This may be a reference to the Vaiśeṣika-sūtra, 1. 1. 62. But, if this is so, it leaves out a number of other gunas enumerated in the Vaiśeṣika-sūtra which were counted there in the parādi list3. Caraka himself gives a list of gunas beginning with para which includes some of those gunas included in the Vaiśeṣika-sūtra already

2 paratvāparatve buddhayāḥ sukha-duḥkhe ichchā-dveṣām prayatnās ca guṇāḥ. Vaiśeṣika-sūtra, 1. 1. 6.
3 rūpa-rasa-gandha-paraḥ śāṃkhyā-paripāmanāḥ prthaktaḥ samyogavibhāgau paratvāparatve. Ibid.
referred to and some more. The *gunas* enumerated are *para*, *apara*,
*yukti*, *samkhya*, *samyoga*, *vibhaga*, *prthaktva*, *parimana*, *samskara*,
and *abhyasa*. *Para* means “superiority” or “importance” (*pradhana*),
*apara* means “inferiority” or “unimportance” (*apradhana*). This importance
or unimportance is with reference to country, time, age, measure, the *rasa*
resulting from digestion (*paka*), potency (*virya*) and taste (*rasa*). Thus, a dry
country is called *para* and a marshy one *apara*; the rains (*visarga*) of early
and late autumn (*sarat* and *hemanta*) are called *para*, whereas the
season of drought (winter, spring and summer) is called *apara*; with
reference to *paka*, *virya* and *rasa*, *para* and *apara* mean
“suitability” and “unsuitability”—that which is suitable to one is
*para* and that which is unsuitable to him is *apara*. *Yukti* means
proper selection of medicines with reference to certain diseases
(*doshdy-apekshayaya bhesajasya samitina-kalpana*); *samkhya* means
“number”; *samyoga*, the mixing up or compounding of two or
more substances; *vibhaga*, separation; *prthaktva*, difference. The
mountains Himalaya and Meru are *prthak*, because they are
situated in different places and cannot unite; again, even though
a pig and a buffalo may meet together, they always remain different
from each other; and again, in the same class, say in a collection
of peas, each pea is different in identity from the other; in the last
case difference in number constitutes a difference in identity; thus,
wherever there is a numerical difference (*anekata*), there is difference
in identity. *Prthaktva* thus stands for three kinds of difference,
spatial difference, difference of characters and difference of identity
due to numerical distinction. *Parimana* means measurement by
weight, *samskara* means the production of new qualities and
*abhyasa* means habit due to constant practice (*satata-kriya*). It
is evident from the above that, though the terms used are the
same as those used by Kañada in the *Vaiseshika-sutra*, yet they are
mostly used in different senses in accordance, probably, with
medical tradition. But this list does not end with *prayatna*; it
seems therefore that *paradi* and *prayatnanta* stand for two dif-
ferent lists and should not be combined together. We have above
the *paradi* list. The *prayatnanta* is a different list of *gunas*. It
includes, as Cakrapani says, *iccha* (desire), *deesa* (hatred), *sukha*

1 *Praparate yukti ca samkhya ca samyoga eva ca, vibhaga ca prthaktvam ca
parimanaam athapi ca, samskarabhyasa ity ete gunah jikrayah paradayah. Caraka-
samhita, 1. 26. 27-29.
(pleasure), duḥkha (pain) and prayatna (effort). Prayatna means that particular quality by the rise of which in the soul the manas is moved to activity.

Karma (movement) is described as prayatnādi-ceṣṭitam, i.e. a movement of the nature of conscious effort; the word ādi in prayatnādi is explained by Cakrapāṇi as meaning "of the nature of."1

Samavāya means the relation of inseparable inherence, as in the case of qualities and substances. Cakrapāṇi, in explaining the nature of samavāya, says that it is eternal, so that, even when in a particular case it may disappear, it continues to exist in other cases. It is never destroyed or created anew, but only its appearance is or is not manifested in particular cases.2 In the case of sāmānya and višeṣa, again, Caraka seems to add a new sense to the words. In the Vaiśeṣika systems the word sāmānya means a class concept; but here it means the concrete things which have similar constituents or characteristics; and višeṣa, which means in Vaiśeṣika ultimate specific properties differentiating one atom from another, means in Caraka concrete things which have dissimilar and opposite constituents or characteristics. Sāmānya and višeṣa thus have a significance quite different from what they have in the Vaiśeṣika-sūtras. The principle of sāmānya and višeṣa is the main support of Āyur-veda; for it is the principle which underlies the application of medicines and the course of diets. Substances having similar constituents or characteristics will increase each other, and those having dissimilar constituents or characteristics will decrease each other. Thus a substance having the characteristics of vāta will increase vāta and decrease ślesmān, which is dissimilar to it, and so on. Sāmānya is thus defined as tulyārthatā, i.e. performing similar purposes. Instead of having only a conceptual value, sāmānya and višeṣa are here seen to discharge a pragmatic work of supreme value for Āyur-veda. As regards the theory of substances (dravya) also, though Caraka borrowed the enumeration of categories, Cakrapāṇi says that the simpler bhūtas formed parts of the complex ones (bhūtāntarānupravaśa), and in support of this idea he quotes a sūtra from the Nyāya-sūtra, which, however, there occurs as an opponent's view, since the theory of bhūtānupravaśa was not believed in by the Nyāya-

1 ādi-labdhāḥ prakāravāc. Cakrapāṇi's commentary on Caraka-samhitā, 1. 1. 48.
2 Ibid. 1. 1. 49.
Vaiśeṣika school; with that school none of the elements entered into any other, and their qualities were fixed in themselves. However, in spite of these modifications, the relation of Nyāya-Vaiśeṣika with Caraka seems to be close. But the detailed description of the school of Sāṃkhya, in iv.1, as has already been mentioned and explained in the first volume of the present work, in the chapter on Sāṃkhya, does not seem to have much bearing on the needs of Āyur-veda; and so the whole chapter does not appear to fit in with the rest of the work, and it is not referred to in other parts of the book. It is not improbable that this chapter was somehow added to the book from some other treatise.

Suśruta does not, like Caraka, enumerate the categories of the Vaiśeṣika, and his account of Sāṃkhya is very faithful to the traditional account given in Iśvarakṛṣṇa’s Kārikā and in the Sāṃkhya-sūtra. Having described the Sāṃkhya theory, Suśruta says that according to medical science the causes of things are sixfold, viz. (1) nature of things (svabhāva), (2) God (Īśvara), (3) time (kāla), (4) accidental happenings (yadrccchā), (5) destiny (niyati) and (6) evolution (parināma). As Ďalhana points out, Suśruta has in several places referred to the operation of all these causes. Thus the formation of the limbs of the body in the foetus-state is said to be due to nature (svabhāva); God as fire is said to operate as the digestive fire in the stomach and to help digestion; time as seasons is said to be the cause of the increase and decrease of doṣas; destiny means virtue and vice, and diseases and recovery from them are sometimes attributed to these. Jejāta, in commenting on Suśruta (as reported by Ďalhana), says that all the above six causes, with the exception of God, are but different names of prakṛti. Gayi, however, thinks that the above six causes represent the instrumental cause, though prakṛti may still be considered as being the material cause (upādāna-kāraṇa).

As Ďalhana and Gayi think, there is no reason to suppose that Suśruta described the Sāṃkhya doctrine; for, immediately after describing the sixfold causes, he speaks of the elements as being constituted of the three guṇas, sattva, rajas and tamas. Even the senses are regarded as being material. Souls are according to Āyur-veda eternal, though they are limited to their bodies and are not all-pervasive. They are manifested when the semen and the blood combine, and it is this bodily self, suffering transmigration owing

1 Suśruta-saṃhitā, iii. 1. 11.
to virtue and vice (called *karma-puruṣa*), with which medical science is concerned. When the self is in association with *manas*, it has the following qualities: pleasure, pain, desire, hatred, effort, *prāna* and *āpāna* (the upward current of breath and the downward force acting in the direction of the rectum), the opening and closing of the eyelids, the action of the intellect as decision or *buddhi* (*nISCaya*), imagination (*saṃkalpa*), thought (*vicāranā*), memory (*smṛti*), scientific knowledge (*viñāna*), energy (*adhyavasāya*) and sense-cognitions (*viṣayopalabdhi*). The qualities of *manas* are divided into three classes, viz. *sāttvika*, *rājas* and *tāmasa*; of these the *sāttvika* ones are kind actions, the desire of enjoying gradually, mercy, truthfulness, virtue, faith, self-knowledge, retentive power (*medhā*), intelligence (*buddhi*), self-control (*dhyti*), and sense of duty for the sake of duty (*anabhiṣaṅga*); the *rājas* qualities are suffering, impatience, pride, untruthfulness, cruelty, boastfulness, conceit (*māna*), joy, passion and anger; the *tāmasa* qualities are dullness, viciousness, want of retentive power, idleness and sleepiness.

Logical Speculations and Terms relating to Academic Dispute.

Things are either existent (*sat*) or non-existent (*asat*), and they can be investigated by the four *pramāṇas*, viz. the testimony of trusty persons (*āptopadesa*), perception (*pratyakṣa*), inference (*anumāna*) and the coming to a conclusion by a series of syllogisms of probability (*yukti*)¹.

Those whose minds are free from the impurities of *rajas* and *tamas* through the force of their ascetic endeavours, who possess unlimited knowledge extending through the past, present and future, are to be considered as trustworthy (*āpta*). Such persons neither have any deficiency of knowledge nor would they willingly say anything untrue. They must be considered as absolutely trusty (*āpta*), and their testimony may be regarded as true².

The valid and certain knowledge that arises as the result of the relation of self, senses, *manas* and sense-objects is called “perception.” This contact of the sense with the object is regarded by Cakrapāṇi as being of five kinds, viz. (1) contact with the *dravya* (substance), called *samyoga*; (2) contact with the *gūṇas*

¹ *Caraka-saṃhitā*, 1. 11. 17. ² *Ibid.* 1. 11. 18, 19.
qualities) through the thing (samyukta-samavāya) in which they inhere by samavāya (inseparable) relation; (3) contact with the guṇas (such as colour, etc.) in the generic character as universals of those qualities, e.g. colouredness (rūpatva), which exist in the guṇas in the samavāya relation; this is called samyukta-samaveta-samavāya since the eye is in contact with the thing and the colour is in the thing by samavāya relation, and in the specific colour there is the universal colour or the generic character of colour by samavāya relation; (4) the contact called samavāya by which sounds are said to be perceived by the ear: the auditory sense is ākāśa, and the sound exists in ākāśa by the samavāya relation, and thus the auditory sense can perceive sound by a peculiar kind of contact called samaveta-samavāya; (5) the generic character of sound as the sound universal (śabdātva) is perceived by the kind of contact known as samaveta-samavāya. It is only immediately resulting (tadātve) cognition of such a contact that is called perception (pratyakṣa); for inference, memory, etc. also may come in as a result of such a cognition at later stages through other successive processes (pūramparya). Cakrapāni further notes that the four kinds of contact spoken of here are the real causes of the phenomenon of perception; in reality, however, "knowledge that results as the effect of sense-contact" would be a sufficient definition of pratyakṣa; so in the perception of pleasure, though none of these contacts are necessary, it is regarded as a valid case of direct perception. Contact with the self is, of course, necessary for all kinds of cognition. It is easy to see that the above theory of perception is of the same type as that found in the Nyāya system. The nir-vikalpa perception is not taken into consideration; for there is nothing corresponding to the term avyapadeśya in the Nyāya-sūtra. Inference must be based on perception, by which the concomitance of the hetu can first be observed. Inference is of three kinds, viz. from kārya (effect) to kārana (cause), as the inference of cohabitation from pregnancy; from cause to effect, as the inference of the future production of

1 Cakrapāni on Caraka-saṃhitā, i. 11. 20.
2 The definition of pratyakṣa given in Caraka-saṃhitā, i. 11. 20, is:
   ātmendriya-manovṛthāṁ samikariḍat pravartate
   vyaktaḥ tadātve yā buddhiḥ pratyaksam sa nirucyate.

The definition of pratyakṣa in the Nyāya-sūtra is as follows:
   indriyārtha-sannikartopamam jīlānam avyapadeśyam
   avyabhicāri vyavasābyātmakam pratyaksam.

For a discussion thereon see vol. i, pp. 333–343.
fruit from a seed with the other attendant causes, sprinkling with water and the like; and inference by associations other than that of cause and effect, as the inference of fire from smoke.\(^1\)

\textit{Yukti} is not counted as a separate pramāṇa by any other system of Indian thought. When our intelligence judges a fact by a complex weighing in mind of a number of reasons, causes or considerations, through which one practically attains all that is desirable in life, as virtue, wealth or fruition of desires, we have what may be called \textit{yukti}.\(^2\) As Cakrapāṇi points out, this is not in reality the nature of a separate pramāṇa; but, since it helps pramāṇas, it is counted as a pramāṇa. As an example of \textit{yukti}, Caraka mentions the forecasting of a good or bad harvest from the condition of the ground, the estimated amount of rains, climatic conditions and the like. Cakrapāṇi rightly says that a case like this, where a conclusion is reached as the combined application of a number of reasonings, is properly called \textit{āha} and is current among the people by this name. It is here counted as a separate pramāṇa. It is in reality an inference of an effect from causes and, as such, cannot be used at the present time, and hence it cannot be called \textit{tri-kāla}, valid in all the three times, past, present and future, as Caraka says.

The Buddhist, writes Śāntarakṣita in discussing Caraka’s doctrine of \textit{yukti} as a separate pramāṇa, holds that \textit{yukti} consists in the observation that, since, when this happens, that happens, and, since, when this does not happen, that does not happen, this is the cause of that. It may be argued that this is not a case of inference, since there is no proposition equivalent to the proposition with a \textit{drṣṭānta}, or example, in Nyāya inference (e.g. whatever is smoky is fiery, as the kitchen). It is held, as Kamalaśīla interprets, that the cause-effect idea is derived from the idea of “this happening, that happens,” and there is no other idea in the notion of causality; if in any case any particular example is given, then another example might be asked for, and after that another, and we should have \textit{regressus}

\begin{verbatim}
pratyakṣa-pūrvaṁ tri-vidham
tri-kālaṁ cānumiyate
vahnir nigūḍho dhūmena
maithunaṁ garbha-darśanāt.
Evaṁ vyavaryanty attāṁ
bijāt phalam anāgatam
drṣṭaṁ bijāt phalam jātām
itaśca sadṛśam buddhāḥ.
\end{verbatim}

\textit{Caraka-samhitā}, 1. 11. 21, 22.

\begin{verbatim}
buddhāḥ paṭyati yā bhāvān bahu-kāroṇa-yogajān
yuktis tri-kālaṁ sā jīreyā tri-vargāḥ sādhyate yayā. \textit{Ibid.} 1. 11. 25.
\end{verbatim}
ad infinitum. These arguments in support of yukti as the concluding of the cause-effect relation from "this happening, that happens" relation are refuted by Śāntarakṣita and Kamalaśila, who point out that there are no separate cognitive processes which link up the relation of "this happening, that happens" with the cause-effect relation, because both these convey the same concept. The cause-effect relation is the same as "this happening, that happens." It may be argued that, whenever anything invariably and unconditionally happens on the happening of any other thing, then the two are considered to be related as cause and effect, just as a jug, etc. are invariably seen to appear after the proper operations of the potter and his wheels. If this is yukti, then it is not a different source of knowledge.

Cakrapāṇi, however, points out that these criticisms are all beside the point, since yukti, according to Caraka, is not kārya-kāraṇatā from tad-bhāva-bhāvītā; it is the arriving at a conclusion as a result of a series of reasonings. But it is important to note that in III. 4. 6 and 7 Caraka speaks of three kinds of pramāṇas, viz. pratyakṣa, anumāṇa and śabda, and describes anumāṇa as being tarka depending on yukti. Tarka is explained by Cakrapāṇi as being the knowledge of things which cannot be perceived (tarko 'pratyakṣa-jñānam), and yukti is here paraphrased by Cakrapāṇi as the relation of a-vinā-bhāva. It is said in this connection that a disease is to be determined by pratyakṣa, the medical texts (āptopadeśa) and inference. But in III. 8. 6. 33 and 34 Caraka counts aitihya as āptopadeśa, though ordinarily aitihya is considered in

1 ārṣṭānte 'py ata eva tad-bhāva-bhāvītvā kāryatā-pratipattih, tatraśi ārṣṭānte 'nyo 'mēṣaṣṭiyah, tatraśi apaṇa ity anavasthā. Kamalaśīla as quoted by Cakrapāṇi on Caraka-samhitā, 1. 11. 25.

Śāntarakṣita misrepresents Caraka’s view of yukti in a very strange manner. He says that, when from the fact that in all cases when A is present B is present and in all cases when A is absent B is also absent one thinks A to be the cause of B, this is regarded by Caraka as the new pramāṇa of yukti. Śāntarakṣita’s exact words are:

\[
\text{asmin sati bhavaty eva na bhavaty asatitī ca
tasmād ato bhavaty eva yuktir esā 'bhidhyate
pramāṇāntaram eveyam ity āha carako munih
nānumāṇam iyaṁ yasmād ārṣṭānte 'tra na labhyate.}
\]

Tattva-samgraha, p. 482.

This, however, is entirely different from what Caraka says, as is pointed out by Cakrapāṇi in his commentary on Caraka-samhitā. Caraka’s idea of yukti is the logic of probability, i.e. when from a number of events, circumstances, or observations one comes to regard a particular judgment as probable, it is called yukti, and, as it is different from inference or any of the other accepted pramāṇas, it is to be counted as a separate pramāṇa. So far as I know, this is the only example of the introduction of the logic of probability in Indian thought.
Indian philosophy as being "tradition" or long-standing popular belief, different from ēptopadesa; upamāna, under the name of aśpamy, is also referred to.

It may not be out of place here to note that the obstacles to perception referred to in the Sāṃkhya-kārikā are all mentioned here. Thus it is said that even those things which have colour (rūpa) cannot be perceived if they are covered by a veil, or if the senses are weak, or if the mind is unsettled, or if they are mixed up in any homogeneous medium indistinguishable from them, or when in the case of smaller lights they are overcome by stronger luminaries, or when they are too fine or too subtle.

Logic was of use with Indian medical men not only in diagnosing a disease, but also in the debates which they had with one another. The rival practitioners often had to show their skill and learning in debates on occasions of the treatment of illness of rich patients. The art of carrying on a dispute successfully was considered an important acquisition among medical practitioners. Thus we have a whole set of technical terms relating to disputes, such as are never found in any other literature, excepting the Nyāya-sūtra. In the Caraka-samhitā almost the whole of the chapter called the "Roga-bhīṣag-jītya-vimāna" (III. 8) is devoted to this purpose. It is well to remember that different kinds of disputes and fallacies are mentioned in the Nyāya-sūtra, and it will be useful to refer to these when dealing with similar topics from either the Caraka-samhitā or the Suśruta-samhitā.

The four terms referred to in connection with disputes in the Nyāya-sūtra are tarka, vāda, jalpa and vitanā. Tarka is said to be the same as uha, and this is explained as a process of reasoning carried on in one's mind before one can come to any right conclusion. It is a name for the subjective weighing of different alternatives on the occasion of a doubt before a conclusive affirmation or denial (nirñaya) is made. Disputes are said to be of three kinds, vāda, jalpa and vitanā. Vāda means a discussion for the ascertainment of truth, jalpa a dispute in which the main object is the overthrow of the opponent rightly or wrongly, and vitanā a dispute in which attempts are made to discover the faults of the opponent's thesis without any attempt to offer any alternative thesis. Vāda is thus essentially different in its purpose from jalpa and vitanā; for vāda is an academical discussion with pupils,

1 Caraka-samhitā, 1. 11. 8.
teachers, fellow-students and persons seeking truth solely for the purpose of arriving at right conclusions, and not for fame or gain. Jalpa, on the other hand, is that dispute which a man carries on while knowing himself to be in the wrong or unable to defend himself properly from his opponents except by trickery and other unfair methods of argument.

Caraka, in III. 8, says that a medical man should hold discussions (sambhāśā) with other medical men. Discussion increases zeal for knowledge (sāmharṣa), clarifies knowledge, increases the power of speech and of achieving fame, removes doubts in the learning acquired before and strengthens convictions. In the course of these discussions many new things may be learnt, and often out of zeal an opponent will disclose the most cherished secret teachings of his teachers. These discussions are of two classes, friendly (sandhāya sambhāṣā) and hostile (vigrhya sambhāṣā). A friendly discussion is held among wise and learned persons who frankly and sincerely discuss questions and give their views without any fear of being defeated or of the fallacies of their arguments being exposed. For in such discussions, even though there may be the fallacies described, no one would try to take advantage of the other, no one is jubilant over the other’s defeat and no attempt is made to misinterpret or misstate the other’s views.

Caraka then proceeds to give instructions as to how one should behave in an assembly where one has to meet with hostile disputes. Before engaging oneself in a hostile discussion with an opponent a man ought carefully to consider whether his opponent is inferior (para) to him and also the nature of the assembly (pariṣat) in which the discussion is undertaken. A pariṣat may be learned (jñānavattī) or ignorant (mūdhā), and these again may be friendly (suḥṛt), neutral (udāsinā), or hostile (pratiniṇiṣṭā). When an opponent is to be judged, he is to be judged from two points of view, intellectual and moral. Thus, on the one hand, it has to be considered whether he is learned and wise, whether he remembers the texts and can reproduce them quickly and has powers of speech, and on the other hand, whether he is of an irritable temperament, or of a fearful nature, etc. A man must carefully consider whether his opponent is superior to him in these qualifications or not.

1 vādaṁ ca nirnaya-phalārthibhir eva śīya-sabrahmacāri-gurubhiḥ saha vītā-

ragaḥ, na khyāti-labha-rabhasa-pravardhamāna-spardhāmubandha-vidhuraśma-

Logical Speculations and Terms

No disputes should be undertaken in a hostile assembly; for even the best arguments might be misinterpreted. In an ignorant, friendly or neutral assembly it is possible to win a debate by proceeding tactfully against an opponent who is looked down upon by famous or otherwise great persons. In beginning conversations with such persons attempts may be made to puzzle them by reciting long sūtras and to demoralize or stun them, as it were, by jokes, banter and gestures and by using satirical language.

When a man has to enter into a dispute with his equal, he should find out the special point in which his opponent is weak and attack him there and should try to corner him in such positions as are generally unacceptable to people in general. Caraka then proceeds to explain a number of technical terms in connection with such disputes. Like the Nyāya, Caraka divides such hostile disputes (vāda) into two classes, jalpa and vitanḍā. Pratijñā is the enunciation of a thesis which is sought to be proved, e.g. “The puruṣa is eternal.” Sthāpanā is the establishing of a thesis by syllogistic reasonings involving propositions with hetu, dṛṣṭānta, upanaya and nigamana. Thus the above thesis (pratijñā), “The puruṣa is eternal,” is to be supported by a reason (hetu), “because it is uncreated”; by an example (dṛṣṭānta), “The sky is uncreated and it is eternal”; by a proposition showing the similarity between the subject of the example and the subject of the thesis (upanaya), viz. “Just as the ākāśa is uncreated, so the puruṣa is also uncreated”; and finally by establishing the thesis (nigamana), “Therefore the puruṣa is eternal.”

Pratiṣṭhāpanā is the attempt to establish a proposition contrary to the proposition or the thesis put forth by the opponent. Thus, when the thesis of the sthāpanā is “Puruṣa is eternal,” the pratī-sthāpanā proposition would be “Puruṣa is non-eternal,” because “it is perceivable by the senses,” and “The jug which is perceptible to the senses is non-eternal,” and “Puruṣa is like the jug,” so “Puruṣa is non-eternal.”

Caraka defines hetu as “the cause of knowledge” (hetur nāma upalabdhi-kāraṇam), and the cause of knowledge is the pramāṇas of pratyakṣa, anumāna, aitihya and aupamya. The definition of hetu in the Nyāya-sūtra refers only to the perceived hetu in the case of inference, through a similarity or dissimilarity to which a

1 It is easy to see that Caraka admitted in a syllogism all the five propositions that are admitted in the Nyāya-sūtra.
relation is established by inference\(^1\). Here Caraka points out that a *hetu* may be either perceived, inferred or found by analogy or from the scriptures, but, in whichever way it may be found, when it leads to knowledge, it is called a *hetu*. Thus, when I say, "The hill is fiery, because it smokes" (*parvato vahminān dhūmavattvāt*), the smoke is the *hetu*, and it is directly perceived by the eye. But when I say, "He is ill, because he is of low digestion," the *hetu* is not directly perceived, but is only inferred; for the fact of one's being in low digestion cannot be directly perceived. Again, when it is said, "*Puruṣa* is eternal, because it is uncreated" (*nityāḥ puruṣah a-kṛtakatvāt*), the uncreatedness (*a-kṛtakatva*) is the *hetu*, but it is neither perceived, nor inferred, but accepted from the testimony of the scriptures. Again, in the proposition, "His face is most beautiful, because it has been compared with the moon" (*asya mukham kāntatamam candropamatevāt*), the fact of being compared with the moon is the *hetu* and it is known by *upamā*\(^2\). Thus Caraka's definition of *hetu* does not really come into conflict with that of Gautama: he only says that a *hetu* may be discovered by any of the *pramāṇas*, and, by whichever *pramāṇa* it may be discovered, it may be called a *hetu*, if it is invariably and unconditionally (*a-vinā-bhāva*) associated with the major term (*sādhya*)\(^3\).

Caraka then proceeds to describe *uttara*, which is in purport the same as the *jāti* of the *Nyāya-sūtras*. When an opponent wants to prove a thesis on the basis of a similarity of the subject of the thesis with the *hetu*, attempts have to be made to upset the thesis by showing its dissimilarity to the *hetu*. Thus one may say that the feeling of cold in a man must be due to his being affected by snow, dews, or chilly air, because effects arise from causes similar to them; in reply it may be said that effects are dissimilar from their causes, since a burning fever may often be an effect of cold\(^4\).

\(^1\) udāharaṇa-sādharmyāt sādhyā-sādhanaṁ hetuḥ tathā vaidharmyāt. *Nyāya-sūtra*, i. 1. 34, 35.

\(^2\) See Gaṅgādhara’s *Jaipa-kalpa-taru*, iii. 8. 122.

\(^3\) *hetuḥ cāvinābhāva-liṅga-vacanam yady api, tathāptha liṅga-pragrāhākāṃ pratyakṣādhi-pramāṇān eva yathokta-hetu-mūlataśvena hetu-labdenāḥ.* Cakrapāni on Caraka, iii. 8. 6. 25.


Sādharmya-vaidharmya-sama is that in which, when an argument is given on
Logical Speculations and Terms

The long list of jātis given in the Nyāya-sūtra and explained in the commentaries and in the Nyāya-maṇḍari is not referred to

the basis of the similarity or dissimilarity to a certain hetu, it is pointed out that the opposite conclusions may be drawn from other points of similarity or dissimilarity with other hetus. Thus, when it is said, “Sabda is non-eternal, because it is produced by an effort, and whatever is produced by an effort is non-eternal, as a jug,” it may be answered, “Sabda is eternal, because it is partless: a partless entity like the ākāśa is found to be eternal; there is no special reason why on account of its similarity to a jug sound should be non-eternal, and not eternal owing to its similarity to ākāśa.” An escape from the dilemma is possible by enquiring as to what may constitute an unconditional and invariant (avyabhicāri) similarity.

Utkarṣṭāpakarya-vārṇyāvārṇya-vikalpa-tādhya-sama is that in which similarity is pressed too far. Thus it is urged that, because sound is non-eternal like a jug, it must also be visible like a jug, and, if it is not so, it cannot be non-eternal like a jug. Moreover, it may be said that the reason why sound is expected to be non-eternal like a jug is that the former is produced by an effort (prayatnāntartyaka). But things which are produced by efforts differ in many of their qualities; thus a cloth is soft, and a jug is hard, though both of them are produced by effort; so it may be argued that, though sabda is as much a product of effort as a jug, it may not agree with the jug in being non-eternal. Moreover, instead of arguing that sound is like a jug, it may as well be argued that a jug is like sound; so that the status of the jug is as uncertain as sound itself (yadi yathā ghaṭas tathā sabdah prayaptam tarhi yathā sabdah tathā ghaṭa iti sabdaś cāmiyatavād tādhya iti ghaṭo 'pi tādhya eva syād anyathā hi na tena tulyo bhavat—Nyāya-maṇḍari, p. 624). In answer to these kinds of fault-finding the proper argument is that no similarity should be extended beyond its limits, and an example (drśṭānta) should not be considered to have the same status as a prabandum (tādhya); for an example is that which already agreed upon among the disputants and the common people (laukika-parīkṣakānāṃ yasminn arte buddhi sāmyam sa drśṭāntah).

Prāpty-aprāptī-sama is that in which it is urged that, if the hetu and the prabandum are together, they cannot be distinguished from each other; if they are separate, hetu cannot lead us to the tādhya. The answer to this is that a hetu can produce an effect either by direct contact (e.g. the rope and the stick in contact with clay produce a jug) or from a distance (e.g. the śyena sacrifice can destroy an enemy from a distance).

Prasāṅga-sama is that in which a reason for the hetu is asked. Thus, if the character of immediately following an effort (prayatnāntartaryakatva) is the cause of non-eternity, what can establish the prayatnāntartyakatva of a jug, etc.? The answer to this is that a reason is necessary only for that which is not directly experienced as being evident in itself. That a jug immediately follows the efforts that produce it is directly experienced and does not require any argument or reason to establish it, as no light is required to see a burning lamp.

Drśṭānta-sama is that in which from the same hetu two different conclusions are seen to result. Thus it may be said that both the jug and ākāśa have the character of immediately following an effort (e.g. as by digging new space is produced in underground wells which before the effort of digging were solid earth without space—kūpa-khanana-prayatnāntartaram tad-upalambhā—and this character is therefore to be regarded as prayatnāntartyaka); yet, as a jug is non-eternal and ākāśa eternal, so sabda, though it immediately follows an effort, is eternal. The answer is that, if such an opposite conclusion is drawn, a separate hetu has to be given, which is not done in the present case.

If sound is non-eternal, it must possess the character of coming into existence immediately after an effort that produces it; but how can it possess that character before being produced or coming into existence? If it cannot at that stage
by Caraka; nor does the technical name of jāti find any place in Caraka's description of it. If these elaborate descriptions of jāti possess that character, it must be eternal, since the cause of its non-eternity is absent. This objection is called anupatti-sama. The reply is that, unless the sound is in existence, its eternality or non-eternity cannot be discussed. If it is non-existent, of what is the eternality to be affirmed by the opponent?

Again, it may be argued that tabda has prayatnāntaryakatva, and therefore it may be expected to be non-eternal; it is perceived by the senses, and therefore it may be expected to be eternal, like so many other sensible objects. This doubt is called samāyana-sama. A doubt remains a doubt only so long as the special features which remove a doubt are not discovered. Though a man may have many qualities in common with a post, the doubt cannot remain when the special features of a man (e.g. his having a head and hands and feet) are known.

Prakarana-sama is that in which an entity is equally related to hetu, so that no one conclusion can properly be drawn. Thus, sound has both prayatnāntaryakatva and nirayavayatva (partlessness). Though, according to the first, it may be said to be non-eternal, according to the second it may be said to be eternal; so it is eternal. The answer is that the second hetu cannot be pressed as leading to a conclusion, because the first also is admitted to exist.

Ahetu-sama is the objection that there can be no argument from a hetu; for, if there is no sādhyya (probandum), what is it that the hetu produces? and again, if there is no hetu before the sādhyya, how can the sādhyya be produced? So, as hetu is only a concomitant of sādhyya, no inference is possible from it. The answer is that it is quite possible that from the previously existing hetu the non-existing sādhyya should be produced. Arthāpatti-sama is where, for example, owing to the fact that sound is partless, it appears to be similar to ṛkṣā and hence by implication to be eternal. This is against the previous thesis that it is non-eternal owing to its being prayatnāntaryaka. Aviśēga-sama is the objection, that if on account of having the same characteristic of prayatnāntaryakatva, tabda and ghaṣa are said to be equally non-eternal, then, owing to all things having the same quality of existence (saṁtā), they are all the same. The answer to this is that equality in one respect does not mean equality in all respects.

Upapatti-sama is where a jug may be expected to be non-eternal owing to its prayatnāntaryakatva and eternal owing to its being partless like ṛkṣā. Upalabdhi-sama is where it is urged that, when by a terrible storm a tree is broken, there is sound which is not the result of any human effort (prayatnāntaryakatva), and yet it is non-eternal; again, lightning is not the result of human effort, still it is non-eternal. The answer is that the concomitance is between prayatnāntaryakatva and non-eternity and not between non-eternity and prayatnāntaryakatva; so that all that is produced by human effort is non-eternal, but not vice-versa. It should also be noted that by prayatnāntaryakatva emphasis is laid on the fact that all things that possess this character are produced. Anitya-sama is an objection where it is urged, for example, that, if on account of the similarity of sound to a jug, the former is non-eternal, then, since in some way or other all things in the world must have some similarity to a jug, all things must be non-eternal. The miṭya-sama objection runs as follows: Is non-eternity in sound non-eternal or eternal? If the latter, then in order that an eternal quality may abide in it, sound itself must be eternal. If the former, then on some occasions at least sound must be eternal.

The kārya-sama objection suggests that prayatnāntaryakatva leads to production in two ways, either by bringing into existence that which was non-existent, or by removing the veil from something which was in a veiled condition; and it remains undecided what sort of prayatnāntaryakatva applies to tabda.

The above interpretations are all based on Jayanta's Nyāya-mahajāt.
were known to Caraka, it is unlikely that he should have passed
them over without referring to them.

An example (drśṭānta) is that on which the common folk and
the learned are of the same opinion, since examples involve facts
which are perceived by all and known to all, e.g. the fire is hot,
water is liquid, the earth is firm. A siddhānta, or conclusion, is
that to which one could arrive after a searching enquiry and
demonstration by proper reasons. This siddhānta is of four kinds,
viz. (1) sarva-tantra-siddhānta, or conclusions accepted by all, e.g.
"There are causes of diseases; there are diseases; curable ones
can be cured"; (2) prati-tantra-siddhānta, or conclusions which are
not accepted by all, but are limited to particular books or persons:
e.g. some say that there are eight rasas, others say that there are
six; some say that there are five senses, others, that there are six;
(3) adhikarana-siddhānta, or conclusions which being accepted
or proved, other conclusions also become proved or accepted:
e.g. if it is proved that emancipated souls do not reap the fruits
of karma, as they are without any desire, then the doctrine of the
suffering of the fruits of karma, emancipation, the existence of
soul and existence after death will have to be considered as refuted;
(4) abhyupagama-siddhānta, or conclusions which are accepted
only for the sake of an argument, and which are neither examined
critically nor considered as proved.

Śabda is a collection of letters which may be of four kinds, viz.
(1) drśṭārtha—of experienced purport (e.g. "The dosas lose their
equilibrium through three causes"); (2) adṛśṭārtha—of unper-
ceivable purport (e.g. "There is after-life; there is emancipation");
(3) satya, or truth, that which tallies with facts (e.g. "There is
Āyur-veda; there are means for curing curable diseases"); (4) anṛta,
the opposite of truth, untruth. Saṁśaya, or doubt, occurs with
reference to things about which no certainty is attained. Thus
those who are unhealthy and inactive die soon, whereas those who
are healthy and active live a long life. So there is a doubt whether
in this world death happens timely or untimely. Prayojana, or the
object of action, is that for which anything is begun. Thus one
may think that, if there is untimely death, I shall form healthy
habits and leave off unhealthy habits, so that untimely death may

1 All these siddhāntas occur under the same names in the Nyāya-sūtra,
1. 1. 28, 29, 30, 31.

2 The first two divisions, drśṭārtha and adṛśṭārtha, occur in the Nyāya-sūtra,
1. 1. 8, sa dvīndho drśṭadṛśṭārthatvāt.
not touch me\(^1\). *Sa-vyabhicāra* means variability, e.g. “This may or may not be a medicine for this disease\(^2\).” *jīnāsā* means experimenting; a medicine is to be advised after proper experiments (*jīnāsā*). *Vyavasāya* means decision (*niścaya*), e.g. “This is a disease due to predominance of *vāyu*; this is the medicine for this disease.” *Artha-prāpti* is the same as the well-known *arthāpatti*, or implication, when on making a statement, some other thing which was not said becomes also stated; it is a case of implication, e.g. the statement, “This disease cannot be cured by allowing the patient to take his normal food and drink,” implies that it can be cured by fasting, or, if it is said, “He should not eat during the day,” this means that “He should eat during the night.” *Sambhava* is the source from which anything springs, e.g. the six *dhātu* may be considered as the *sambhava* of the foetus; wrong diet, of disease; and right course of treatment, of health.

*Anuyojya* means a faulty answer which omits such details as should have been given in the answer, e.g. “This disease can be cured by purificatory action”; such an answer is faulty, as it does not state whether the purification should be made by vomiting or purging. *Ananuyojya* is what is different from *anuyojya*. *Anuyoga* is a question put by a learned man in a discussion as an enquiry about the reason for a thesis put forward by a learned colleague: e.g. a learned man says, “*Puruṣa* is eternal,” and another learned man asks, “What is the reason?” Such a question is called *anuyoga*. A counter-question, such as “What is the reason for your asking such a question?” is called *praty-anuyoga*.

*Vākya-dosā*, or faulty statement, is of five kinds, viz. *nyūna*, *adhika*, *anarthaka*, *apārthaka* and *viruddha*. *Nyūna*, or the fault of omission, is that in which any of the five propositions necessary for a syllogism is omitted. It may also be applied to those cases in which, when a statement has to be supported by a number of

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\(^1\) *Prayojana*, which means pleasure and pain, is referred to in the *Nyāya-sūtra*, i. i. i., though it is nowhere critically examined. It is explained by *Vatsyāyana* as that which goads men to action (*yena prayuktah pravartate*). *Uddvyotakara* explains it as the realization of pleasure and the fear of pain (*sukha-prāpti-dukkha-hānti*).

\(^2\) *anātikāntikah sa-vyabhicārah*. *Nyāya-sūtra*, i. 2. 5. E.g. “sound is eternal” because it is untouchable; but untouchability does not lead to eternality, since the touchable atoms are eternal, whereas untouchable thoughts are short-lived.

\(^3\) *Cakrapāṇi* says that *Caraka* does not think that *artha-prāpti* is a separate *pramāṇa*; according to him it is a case of inference, and hence is not included in the list of *pramāṇas*. 
reasons, only one is offered and others are omitted, materially affecting the strength of the support of the original statement. Thus several reasons are given in support of the eternality of puruṣa, viz. beginninglessness, not being the product of any effort, unchangeableness, etc. Proposing to give all these reasons, and giving only one, is an instance of nyūna. Adhika is where, when Ṛgveda is being discussed, the opponent makes irrelevant references to learned works on politics or the art of government. It may also mean cases where words or statements are needlessly repeated. Such a repetition is of two kinds, verbal repetition and sense repetition. Verbal repetition is the repetition of the same word, while the other is the repetition of the sense only, though different words may be used. Anarthaka and apārhaka mean the use of meaningless and unconnected words or expressions. Viruddha, or contrary statement, means the making of a statement contrary to the example (dṛṣṭānta-viruddha) or the accepted conclusion (siddhānta), e.g. cold water is hot, for so is fever; or when a medical man (vaidya) says that medicine does not cure diseases.

Samaya-viruddha is the making of any statement against the accepted conclusions of any particular śāstra. Thus, for example, if a Mīmāṃsaka says that animals should not be sacrificed, it will be against his accepted doctrine that animals should be sacrificed. Or, if in any system of philosophy treating of emancipation (mokṣa-śāstra) it be said that injury to living beings is good, then this is against the accepted tenet of that śāstra. Vākya-praśamsā is that kind of statement in which the faults mentioned above in vākya-doṣa do not occur.

Chala means a rejoinder in which the statement of the opponent is wilfully misinterpreted. It is of two kinds, vāk-chala and sāmānya-chala. The word nava means "nine" as well as "new," and if, when one says about one’s opponent, "This physician is nava-tantra" (has newly learnt his texts), and the opponent replies, "I have not nine text-books, I have one text," the other person objects, "I do not say you have nine texts, I say that you are navābhyaṣṭa-tantra" (have newly learnt the texts), navābhyaṣṭa-tantra might also mean "read nine times"; and then the opponent might well say, "I have several times read the texts, and not nine times, as you say." This is an example of vāk-chala.

Again, when a physician says "Medicine cures diseases," the opponent may take the most general characteristics of the terms
and say that the above statement comes to this, that an existent entity cures another existent entity; and, if this is so, then, since bronchitis exists (san kāsah) and consumption exists (san kṣayah), bronchitis, being an existent entity, must cure another existent entity, consumption. This is called sāmān ya-chala.

Fallacies (a-hetu) are of three kinds, prakarana-sama, samśaya-sama and varṇya-sama. Prakarana-sama is where that which

1 Chala is treated in the Nyāya-sūtra exactly on the same lines as here. Thus the definition of chala there (Nyāya-sūtra, 1. 2. 10) is vacana-vighāto 'ṛtha-vikalpopapattā chalam (to attack one’s speech by a wilful misinterpretation of it is chala). This is divided into three classes, vāk-chala, sāmān ya-chala and upacāra-chala; of these vāk-chala is exactly the same as in Caraka-samhitā, and so also the sāmān ya-chala (because a Brahman is well-read in scriptures, a vrātya (outcast Brahman) is also well-read, because he also is a Brahman in some sense). Upacāra-chala, which, however, resembles vāk-chala, is not mentioned in the Caraka-samhitā. Its definition in the Nyāya-sūtra, 1. 2. 14, is dharmasthālapa-nirdēśe 'ṛtha-sad-bhāva-praṭīṣedha upacāra-chalam (to make one’s statement impossible by taking it in one sense, say the primary, when the secondary one was intended). Thus, if it is said, “This porter is an ass,” it may be objected that the porter, being a man, cannot at the same time be an ass. Gautama, however, tentatively raises the objection that chalas should be regarded as three in number and not two, taking upacāra-chala within sāmān ya-chala. This means a criticism in view of Caraka’s division of chala into two classes. For Gautama argues that, if on account of some similarity upacāra-chala should be included within sāmān ya-chala, and chalas should be counted as being of two kinds instead of three, then for the very same reason of similarity chalas may as well be regarded as being of one kind instead of two. So, in view of the specific differences that exist between the chalas, they should be regarded as being of three kinds.

2 Nyāya-sūtra, 1. 2. 4, describes the fallacies (hetu-ābhāsa) as of five kinds, sa-vyabhicāra, viruddha, prakarana-sama, sādhyā-sama and kālātta.

Sa-vyabhicāra hetu is that which has no invariable concomitance with the probandum, e.g. sound is eternal because it is untouchable, and that which is touchable is non-eternal, like a jug. But untouchability has no invariable concomitance with eternity; for an atom is touchable and at the same time eternal, and thoughts (buddhi) are untouchable and at the same time non-eternal.

Viruddha hetu is where the reason (hetu) demolishes the very theory on which its security depends, e.g. this changeable world (vikāro) disappears (vyakter apaiti), because it is non-eternal (nityatva-praṇītah); but, though it disappears (apeto 'pi), yet it exists (asti), because it is not destructible (vināśa-praṇītah). Now a thing which is non-eternal cannot but be destructible. Destructibility and eternity cannot abide together.

Prakarana-sama is where two opposite hetus exist in a thing, so that nothing can be affirmed by either of them. Thus it may be argued with as much force that “sound is eternal, because it has in it the qualities of eternal things,” as that “sound is non-eternal, because it has in it the qualities of non-eternal things”; so no conclusion can be drawn from either of these hetus.

Sādhyā-sama is where the hetu itself remains to be proved. Thus in the argument, “shadow is a substance because it moves,” the movability of shadows is a doubtful point and is itself in need of proof. Does a shadow move like a man, or is it that because the covering entity moves that at different places the light is veiled and this gives rise to the formation of shadows at different places?

Kālātta is where the hetus in the case of the accepted example and the case to be proved vary, because in the latter case the hetu is not properly a
is given as the *hetu* remains to be proved. Thus, when it is said that, since the self is different from the body, it is eternal, and because the body is unconscious it is non-eternal, it may be urged (as by the Čārvāka school of philosophers) that both the points, viz. that the self is different from the body and that the body is not endowed with consciousness, which are offered as the *hetu*, are themselves to be proved; for according to the Čārvākas the body is endowed with consciousness and is non-eternal. A reference to the footnote below shows that this *prakaraṇa-sāma* is different from the *prakaraṇa-sāma* of the Nyāya-sūtra. *Śamśaya-sāma* is that in which that which is the cause of doubt is offered as the *hetu* for a particular conclusion, e.g. This person quotes a passage from Āyur-veda—is he or is he not a physician? Even a man who is not a physician might have heard a passage somewhere and quoted it. Now, therefore, quoting a passage from Āyur-veda leaves us in doubt as to the man’s being a physician or not. If this itself is offered as the *hetu* for a particular conclusion and if it is said, “He is a physician because he has quoted a passage from Āyur-veda,” it becomes a case of *samśaya-sāma*. Gautama speaks of *samśaya-sāma* as an instance of *jāti*; but the former is a case where a doubt is not removed because of the fact that the thing about which anything is affirmed possesses two opposite qualities, so that no affirmation can be made on the strength of any of these characteristics. Here, however, *samśaya-sāma* is used in the sense that what is itself doubtful is adduced as the reason for a particular conclusion.

*Varnya-sāma* is where an affirmation is made about a thing on the strength of another affirmation which itself remains to be proved and is hence in the same condition as the previous affirmation, e.g. “Buddhi is non-eternal, like sound, as it is un-touchable, like the latter.” But the non-eternity of sound stands as much in need of proof as that of *buddhi*, and the former affirmation cannot be made on the basis of the latter. This fallacy is

*hetu*; for the *hetu* and *sādhyā* exist in two successive moments and are therefore not concomitant; but in the former case they are concomitant and simultaneous, e.g. sound is eternal, because it is manifested, like colour, owing to a particular contact, like light, being manifested by the contact of a stick and a drum, just as colour is manifested by the contact of light with a thing. But the similarity fails; for, while colour is manifested simultaneously with the contact of light and the things, sound is heard at a moment different from that at which actual contact of the stick and the drum takes place.
similar to the jāti called sādhyā-sama and the fallacy sādhyā-sama of Gautama already described in the footnotes to page 386.

Atita-kāla is that in which that which should be said first is said later, e.g. the thesis, or pratijñā, should be stated first and the conclusion, or nigamana, last; if instead the nigamana is stated first and the pratijñā after, then we have the fault of kālātita.

Upālambha (criticism) is the finding fault with the hetus, also called a-hetu, as described above, or hetu-ābhāsas. Parihāra (reply) means the reply given to the objections pointed out by an opponent; e.g. the self is eternal, since so long as it remains in the body it shows signs of life, and, when it is away, though the body still remains the same, yet there is no sign of life; therefore the self is different from the body and is eternal. Pratijñā-hāni (to give up one’s thesis) is where, being cornered by the opponent, one is forced to give up one’s original thesis. Thus one may start with the thesis that puruṣa is eternal, but, being cornered, one may give it up and say that puruṣa is not eternal. Abhyanujñā (to bring a counter-charge) is that in which a disputant, instead of refuting the charge brought against him by his opponent, charges his opponent with the same defects. Heto-antara (dodging with a wrong reason) is where, when the cause of some root fact (prakṛti) is asked, the reply refers to the cause of the modifications or manifestations (vikṛti) of that root fact. Arthāntara (wrong answer) is where, when the definition of one thing (e.g. fever) is asked, a definition of another thing (e.g. diabetes) is given. Nigraha-sthāna is where, in a learned assembly, a statement, though thrice repeated, is not understood by the opponent. Caraka counts among the nigraha-sthānas many of the cases which have already been enumerated and described. Thus he counts pratijñā-hāni, abhyanujñā, kālātita, a-hetu, nyūna, atirikta, vyarthā, apārthaka, punar-ukta, viruddha, hetu-antara, arthāntara.

1 This corresponds to matānujñā of the Nyāya-sūtra, v. 1. 42.
2 In Nyāya-sūtra, v. 2. 6, we hear of a hetu-antara, but that seems to be different from this. The significance of hetu-antara, as it stands there, may be illustrated as follows. An adherent of Sāmkhya says that all this world of things is derived from one root cause, because all these are limited and whatever is limited is derived from one root cause. This may be refuted by pointing out that there are many limited things which are derived from more than one root cause. To this the Sāmkhya adherent replies that only those which are associated with pleasure and pain and ignorance are to be regarded as proceeding from one root cause; but this is an addition which was not contained in the original thesis.
3 This is also mentioned in the Nyāya-sūtra, v. 2. 7.
4 The nigraha-sthānas mentioned in the Nyāya-sūtra, v. 2. 1, are the following: pratijñā-hāni, pratijñāntara, pratijñā-virodha, pratijñā-sannyāsa, hetu-antara.
Logical Speculations and Terms

After this Caraka further describes the ten categories, a knowledge of which he thinks is very necessary for a mastery of the subject-matter of Ayur-veda. These are kāraṇa (the agent or the mover), karaṇa (the instrument necessary for an agent to bring about an effort), kārya-yoni (the material cause by the modification of which effects are produced), kārya (that for the production of which the mover makes his effort), kārya-phala (that for which a particular effect is intended by the agent), anubandha (the good or bad result which attaches itself to the doer after the production of the effect), deśa (place), kāla (the seasons, days, etc.), pravritti (the effort and the action needed for the production of the effect) and upāya (the passivity and special aptitude of the agent, the instrument and the material cause which can make the effect possible). The physician is the cause (kāraṇa), the medicines the instruments (karaṇa); the want of equilibrium of the dhātus the kārya-yoni; the restoration of the equilibrium of the dhātus the kārya; the happy state of body and mind the kārya-phala; length of life, anubandha; the place and the diseased person, deśa; the year and the condition of the diseased person, kāla; the efforts of the physician, pravritti; the qualifications of the physician, the qualities of the medicine, etc., upāya.

It may be pointed out in this connection that the Uttara-tantra of Suśruta also mentions thirty-two technical terms helpful to physicians in refuting the statements of hostile critics and in establishing their own points, which are called tantra-yukti. These are said to be adhikarana, yoga, padārtha, hetu-artha, uddeśa, nirdeśa, upadeśa, apadeśa, pradeśa, atideśa, apavarga, vākya-śeṣa, arthāpatti, viparyaya, prasaṅga, ekānta, anekānta, pūrva-pakṣa, nirṇaya, anumata, vidhāna, anāgatāvekṣana, atikrāntāvekṣana, saṃśaya, vyākhya, sva-saṃjñā, nirvacana, nidarsana, niyoga, samuccaya, vikalpa and añhya. But these technical terms are maxims for the interpretation of textual topics, like the maxims of Mīmāṃśā, and are not points of dispute or logical categories. It is said that these maxims are like the sun to a group of lotuses, or like a lamp to a house.

1 asad-vādi-pravaktānām vākyānām pratisedhānām sva-vākyā-siddhir api ca kriyate tantra-yuktaḥ. Suśruta-saṃhitā, Uttara-tantra, 65. 5.
for the illumination or the expression of the subject of discourse\(^1\). This remark very much resembles the remark of Vātsyāyana that ānvīksiki (logic) is like a light to all sciences (pradīpaḥ sarva-vi-
dyānāṃ). But the difference between tantra-yukti and ānvīksiki is this, that, while the former refers to the laws of thought, the latter refers to technical modes of expression in medical science in general and in the Suśruta-samhitā in particular. They therefore refer to the ways of deducing the inner meaning or intention of the medical texts from their abbreviated forms of expression. Thus, when one reads in the text, "about rasa or doṣa," and nothing else is said, one understands that this style of expression signifies that it is an adhikarana (topic of discourse) and that something is going to be related about rasa or doṣa, though it is not explicitly so stated. Now the maxim (tantra-yukti) of yoga means that the verb at a distant part of the sentence may be joined with its relevant case in another part of the sentence\(^2\). The maxim of padārtha means that, when a word having two or more senses is used, then that meaning alone has to be accepted which suits the previous and the later contexts. Thus, when it is said in a medical text that we shall now describe the origin of the Veda, then only Ayur-veda is to be meant and not Rg, Yajus or Atharva. The maxim of hetu-artha illustrates the condition of invisible things by visible and known examples. Thus it is said that, just as a muddy ball becomes dissolved and sticky through water, so do milk and other drugs dissolve a boil by their application. The maxim of uddeśa is the method of briefly touching a subject without going into details. Thus, when one says "disease" (śalya), it means both internal and external diseases without any kind of specification. The maxim of nirdeśa is the method of describing a thing in detail. The maxim of upadeśa is the method of giving a general instruction. Thus it is said that one should not sit up at night nor sleep during the day. This is, however, only a general instruction which has its exceptions.

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1. yathāmbuṭa-vanasyārkah pradīpaḥ veśmāno yathā prabodhyasya prakāśarthaḥ tathā tantrasya yuktyāḥ.
   
   Suśruta-samhitā, Uttara-tantra, 65. 7.

   
   Ibid. 9. 10.

In the above verse it is enjoined that a particular medical decoction is to be made with a number of drugs which are to be boiled (siddham), and this boiled decoction has to be drunk (pivec). But the word pivec is in the first line and the word siddham is in the third line, and it is allowed that these two distant words may be combined (yoga).
maxim of *apadeśa* is the method of showing the reasons of things. Thus it is said that phlegm (*ślesma*) increases through the taking of sweet things (*madhureṇa ślesmā 'bhivardhate*). The maxim of *pradeśa* is the analogy by which a present difficulty is solved in the way in which a past difficulty was solved (*prakṛtasya atikrāntena sādhanam pradeśah*). Thus it may be said that, since this has cured Devadatta in this way in the past, it would also cure Yajñadatta in a similar way now. The maxim of *atideśa* is that of anticipating a future event from a present indication or prognosis. Thus from the fact of the increase of uprising wind in a man's system it may be predicted that he will have a specific bowel-disease (*udāvarta*). The maxim of *apavargha* consists in allowing exceptions to general directions (e.g. cases of poisoning should not be fomented, except in the case of poisoning through the bites of insects). The maxim of *vākya-śesā* consists in supplying an idea suggested by the context, but not expressly mentioned. Thus when it is said "of the head, hands, feet, sides, back, belly, heart," it is the whole man that is to be understood though it is not expressly stated in the context. That which is understood, by implication, though not directly mentioned, is called the maxim of *arthāpatti*. Thus, when a man says "I shall eat rice," it is understood that he is not thirsty, but hungry. The maxim of *viparyaya* is that by virtue of which from a positive or a negative assertion its contrary is asserted also, e.g. when it is said that those who are lean, weak and of fearful temperament are difficult to be cured. The maxim of *prasaṅga* is that by virtue of which allusion is made to things repeatedly described in another chapter. The maxim of *ekānta* allows of affirming a specific action of things unexceptionably (e.g. *madana* fruit induces vomiting, i.e. under all circumstances). The maxim of *anekānta* is that by virtue of which one understands that different opinions prevail on a particular subject. Thus some teachers think that substances are the most important, while others think that *rasa* is so; others, again, think that the inner essence (*vīrya*) is the most important, while still others think that chemical action through digestion (*vipāka*) is so. The maxims of *pūrva-pakṣa* and *uttara-pakṣa* allow of discussing a matter in the form of question and answer. The maxim of *anumata* is that by virtue of which it is to be understood that, when the opinion of other authorities is referred to and not contradicted, it is signified that it is approved. The maxim of *vidhāna* is that by virtue of
which one understands that, when certain descriptions follow certain enumerations, the former are to be taken in the order in which the latter are related. The maxim of anāgatāvekṣaṇa allows of leaving certain things for future description and elaboration, and atikrāntāvekṣaṇa permits alluding to things described before (e.g. it is said in the Śloka-sthāna that this matter will be described in the Cikitsā chapter, and about another matter it may be said in the Cikitsā chapter that it has been described in the Śloka-sthāna). The maxim of samśaya allows a way of statement which may create doubt and confusion in the mind of the reader. The method of elaborate description is called vyākhyāna. The method of using words in a sense different from what they have in other literatures is called swa-samjñā, i.e. technical use (e.g. mithuna in Āyur-veda means honey and clarified butter). A definition is called nirvacana. The maxim of nidarsana allows of describing anything after the analogy of other things. Thus it may be said that, just as fire in a room grows bigger and bigger with wind, so does a boil grow with vāta, pitta and kapha. Niyoga means a direction (e.g. “only what is good to the system is to be taken”). Samuccaya means the taking of two or more things together as having equal value. Vikalpa is the method of giving alternative or optional directions. Īhaya is the maxim by which things which are apparent from the context can be understood.

It is easy to see that of these thirty-two maxims some are ways of interpreting ideas, others are ways of interpreting the arrangement and manner of textual words and their connections, while there are others which are but descriptions of specific peculiarities of style. The redactor (Nāgārjuna) says that he has collected all these maxims as general principles of textual understanding, and he calls them sabda-nyāyārtha, i.e. the meaning of the maxims of verbal interpretation.

Did Logic Originate in the Discussions of Āyur-veda Physicians?

Dr Mahāmahopādhyāya Satish Chandra Vidyabhusan in his History of Indian Logic supposes without adducing any reason that the Caraka-samhitā gives a summary of the principal doctrines of Ānvikṣiki, possibly as propounded by Medhātithi Gautama. He further says that the doctrines of Ānvikṣiki evidently did not con-
stitute a part of the original Āyur-veda of Punarvasu Ātreya, and that these doctrines seem to have been incorporated into the Caraka-samhitā by the redactor Caraka, in whose time they were widely known and studied. Dr Vidyabhusan’s theory is that both Caraka and Aksapāda borrowed the Nyāya doctrines from Medhātithi Gautama, but, while Caraka accepted them in their crude forms, Aksapāda pruned them thoroughly before they were assimilated in the Nyāya-sūtra.

But Dr Vidyabhusan’s Medhātithi Gautama is more or less a mythical person, and there is no proof that he ever wrote anything, or that Caraka borrowed anything from a Medhātithi Gautama, or that the Nyāya doctrines found in the Caraka-samhitā were not contained in the original treatise of Agnivesa, now lost. Dr Vidyabhusan refers to the evidence of a number of works, such as the Kusumāṇjali, Naśadha-carita and Nyāya-sūtra-vṛtti, which refer to Gautama as being the founder of Ānvikṣikī. But none of these authorities are earlier than the tenth century. He refers also to the authority of the Padma-purāṇa, Skanda-purāṇa and Gandharvatāntra, none of which can be regarded as a work of any considerable antiquity. Vātsyāyana himself refers to Aksapāda as the person to whom Nyāya (the science of Logic) revealed itself. Uddyoṭakara also refers to Aksapāda as the utterer of the Nyāya-sāstra, and so also does Vācaspati. There is therefore absolutely no reason why the original authorship of Nyāya should be attributed to a Gautama, as against Aksapāda, on evidence which cannot be traced to any period earlier than the tenth century and which is collected from Purāṇa sources directly contradicted by the earliest Nyāya authorities. The Nyāya-sāstra, therefore, cannot be traced on the evidence of the earliest Nyāya authorities to any earlier Gautama; for, had this been so, it would certainly have been mentioned.

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1 History of Indian Logic, pp. 25 and 26, by Mahāmāhopādhyāya Satish Chandra Vidyabhusan. Calcutta University, 1921.

2 Yo kṣapaḍam pṛth nyāyah pratyaśabhād vadatām varam taryā Vātsyāyanā idam bhāya-jātām avariṣṭayat.
Vātsyāyana-bhāya, 2. 24, A.D. 400.

Dr Vidyabhusan’s translation of it as “The Nyāya philosophy manifested itself (in a regular form) before Aksapāda” is inexact.

3 yad Aksapādaḥ pravaro munānām samāya śāstraṁ jagato jagāda.
Nyāya-vārttikā of Uddyoṭakara (A.D. 600). Opening lines.
atha bhagavatā Aksapādāṃ nihāreṣyā-hetau śāstre pranīte. Nyāya-vārttikā-tāt-
paryya-gātā of Vācaspati. Dr Vidyabhusan’s translation of the Nyāya-vārttikā word śāstra as “Nyāyasāstra in a systematic way” is again inexact.
by either Vātsyāyana, Uddyotakara or Vācaspati. Jayanta also attributes the elaborate Nyāya work to Aksapāda and does not seem to know that this elaborate treatise, the *Nyāya-sūtra*, was based on the teachings of an earlier authority\(^1\). If any such authorities were known, they would certainly have been mentioned for the dignity and the prestige of the Śāstra. Gautama is an old name, and we find it attached to one of the Rṣis of the *Rg-veda* (1. 62. 78. 85; iv. 4); he is mentioned in the *Satapatha-brāhmaṇa* (1. 4. 1. 10; III. 3. 4. 19, etc.); in the *Taittiriya-prātiṣākhya* (1. 5), in the *Āśvalāyana-srauta-sūtra* (1. 3; 11. 6, etc.) and in other similar older works; but nowhere is he spoken of as being the author of the *Nyāya-sāstra*. Gautama is also mentioned in the *Mahā-bhārata* several times, but nowhere is he referred to as the author of the *Nyāya-sāstra*. The passage of the *Mahā-bhārata* on which Dr Vidyabhusan bases his theory of a Medhātithi Gautama does not say that Medhātithi was the author of Ānvikṣikī or Nyāya, nor does it say that Medhātithi and Gautama were identical persons\(^2\). The name Gautama is a patronymic, and the passage of the *Mahā-bhārata* referred to by Dr Vidyabhusan clearly means that the highly wise Medhātithi of the Gautama race was engaged in asceticism. This is corroborated by the fact that the passage of Bhāsa referred to by Dr Vidyabhusan mentions Medhātithi as a teacher of *Nyāya-sāstra* and does not call him Gautama, nor does it say that Medhātithi was the originator of Nyāya\(^3\). Dr Vidyabhusan's theory, therefore, of Medhātithi Gautama being the originator of the *Nyāya-sāstra* falls down like a house of cards. His identification of Medhātithi Gautama's birthplace as Mithilā, his ascertainment of his date, his identification of Persian references to Medhātithi Gautama and his so-styled references to Medhātithi Gautama in the *Aṅguttara-nikāya* and the *Brahma-jāla-sutta* are no less fictitious\(^4\). The Gautama tradition of Nyāya need not be followed; but it may incidentally be mentioned that an Ātreyā Gautama, who is described as being Sāṃkhya (probably in the sense of wise, philosopher, or learned), is counted in the list of the

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1. *Aksapāda-pranito hi vātato Nyāya-pādapaḥ.*

Opening lines of the *Nyāya-maṇḍapa* of Jayantabhaṭṭa (A.D. 880).


_Mahā-bhārata, Sānti-parva, 265. 45, Vangavasī edition._


sages who assembled together to discover the causes and remedies of diseases; side by side with this Ātreya, another Ātreya is also mentioned as bhikṣu Ātreya\(^1\). A number of sages are mentioned in the Caraka-samhitā as persons who discussed the problem of the rise of diseases and how they could be removed. Among these Bharadvāja volunteered to proceed to Indra to learn from him the science of healing. Indra instructed him in the subject, being learned in the three subjects of the (hetu) causes (of diseases), knowledge of the (liṅga) signs (of diseases) and the knowledge of medicines. Bharadvāja, having learnt this elaborate science in three divisions, repeated it to the sages in exactly the same manner in which he learnt it. After this it is said that Punarvasu taught Āyur-veda to his six disciples, Agnivesa, Bhela and others. Cakrapāṇi, the commentator, says that Punarvasu was the disciple of Bharadvāja, and quotes as his authority a statement of Hārīta. But on this point Caraka himself is silent.

But one thing emerges from this half-mythical account of the origin of Āyur-veda, viz. that the Āyur-veda was occupied from the beginning with the investigation of the nature of causes (hetu) and reasons (liṅga) for legitimate inferences in connection with the enquiry into the causes of diseases and the apprehension of signs or indications of the same. In the Nidāna-sthāna of Caraka eight synonyms for reason (hetu) are given, viz. hetu, nimitta, āyatana, kartr, kārana, pratyaya, samutthāna and nidāna. It is curious enough that the words pratyaya and āyatana are used, which are presumably Buddhistic. The word pratyaya, in the sense of cause, is hardly found in Indian philosophy, except in Buddhism. The use of so many terms to denote cause evidently suggests that before Caraka’s reедакtion there must have been an extensive literature which had used these words to denote cause. As a matter of fact, the word pratyaya is hardly ever used in the Caraka-samhitā to signify cause, though it is counted here as one of the synonyms of hetu, or cause. The natural implication of this is that the word pratyaya was used for hetu in some earlier literature, from which Caraka collected it; so with other words, such as samutthāna, āyatana, which are counted in the list as synonyms for hetu, but are not actually used in the body of the text. This may lead us to think that the discussion of hetu under

\(^1\) Ātreya Gautamaḥ śāmkhyah. In this passage Ātreya may, however, be taken as a man separate from the wise Gautama.
Speculations in the Medical Schools

various names is an old subject in Āyur-veda literature existing before Caraka, from which Caraka collected them.

We know that Āyur-veda was primarily concerned with three questions, viz. how diseases originated, how they were known, and what were their cures. It was in this connection that the principle of causality was first from a practical necessity applied in Āyur-veda. Thus, if it is known that a person has been exposed to sudden cold or has enjoyed a heavy feast, then, since it is known that cold leads to fever and over-feeding to indigestion, with the very first symptoms of uneasiness one may at once infer that the patient is likely to get fever or to have diarrhoea or acute indigestion. Or, if it is known that the patient has a strong diarrhoea, then it can similarly be inferred that he has eaten indigestible articles. Thus the two principal kinds of inference which were of practical use to the Āyur-veda physicians were inference of the occurrence of a disease from a knowledge of the presence of the causes of that disease, i.e. from cause to effect, and inference of the specific kinds of unhygienic irregularity from the specific kind of disease of the patient, i.e. from the effect to the cause. The other and third kind of inference is that of inference of disease from its early prognostications (pūrva-rūpa). Cakrapāni, in commenting on the possibility of inference of specific diseases from their early specific prognostications, compares it with inference of rain from an assemblage of dark clouds or of the future rise of the Kṛttika constellation from the rise of the constellation Rohinī, which immediately precedes it. Both these are cases of inference of future occurrences of causation or coexistence. The prognostication may, however, be of the nature of an immediately and invariably associated antecedent which may drop altogether when the disease shows itself. Thus before a high fever the hair of the patient may stand erect; this standing erect of the hair in a specific manner is neither the cause nor is it coexistent with fever, since it may vanish when the fever has actually come. It is, however, so invariably associated with a specific kind of fever that the fever can be inferred from it. Again, when there is any doubt among a number of causes as to which may be the real cause of the disease, the physician has to employ the method of difference or

1 These two kinds of pūrva-rūpa are thus described by Cakrapāni in his commentary on Caraka-samhitā, 11. 1. 7: tāc ca pūrva-rūpaṁ dvi-vidhām ekam bhaṇi-avyādyā vyaktā-liṅgam...dvityayām tu doṣa-dūṣya-sammūrchanā-janyam avyaktā-liṅgād anyad eva yathā jvāre bāla-pradāsa-roma-harmādi.
the method of concomitant variation for its proper ascertainment. That similar things produce the same kind of effects and opposite things produce opposite results are two of the accepted postulates of the law of sāmānya and viśeṣa in the Caraka-saṁhitā. Now, applying these two principles, it is held that in a case of doubt as to any kind of irregularity being the cause of any particular disease it has to be found out by experiment whether the application of the suspected cause (e.g. cold) increases the disease (e.g. fever); if it does, and if the application of its opposite (e.g. heat) decreases the disease, then cold is to be regarded as the cause of the disease. If the application of any particular kind of element increases an effect (a particular kind of disease) and the application of its opposite decreases it, then that particular element may be regarded as the cause of that effect. Caraka holds that the three methods, viz. the cause and effect relation (niḍāna), the method of invariable prognostication (pūrva-rūpa) and the method of concomitant variation (upāśaya, which includes anupāśaya also) are to be employed either jointly or separately for the ascertainment of the nature of diseases which have already occurred or which are going to happen in the near future. Caraka thus urges that the physician should examine carefully the causes of diseases by the application of all these methods, so that they may be ascertained from their visible effects. Caraka then goes on to give examples of a number of diseases and the causes or prognostications by which their nature can be ascertained. He then says that a disease which is at first only an effect of some other causes may act as a cause of other diseases and may thus be regarded both as an effect and as a cause. There is therefore no absolute difference between a cause and an effect, and that which is a cause may be an effect and that which is an effect may also in its turn be a cause. Sometimes a disease may behave as cause of another disease and then cease to exist itself, whereas again, one disease may exist side by side with another disease which it has produced and aggravate its effects. Then, again, a disease (cause) may produce a disease (effect), and that effect another effect. Thus one cause may produce one effect as well as many effects, and one effect may be due to one or to many causes, and

1 Caraka-saṁhitā, i. 1. 44.
2 The other two methods of samprāpti and rūpa need not be discussed in this connection.
again many causes may jointly produce many effects. Thus, though fever, delirium, etc. may all be produced by dryness (rūkṣa), yet under certain circumstances fever alone may be produced by it. Again, fever may also be produced by the combination of a number of causes which under other circumstances may produce jointly a number of diseases. So one entity may be an invariable concomitant (linga) of one event or of many events, and there may also be a number of invariable concomitants of one event. Thus fever is the invariable concomitant of hygienic irregularities in general, and all fevers have heat as their invariable concomitant. From certain kinds of hygienic irregularities fever can be inferred; but these can also be associated with a number of other diseases.¹

Hence it is evident that the determination of the nature of causes and effects and the inference of facts or events of invariable concomitance were an indispensable necessity for the Āyur-veda physicians in connection with the diagnosis of diseases and the ascertainment of their causes and cures. It was for this reason that Caraka divided inference into three classes, from causes to effects, from effects to causes and from the association of other kinds of invariable concomitants. The Nyāya-sūtra of Aksapāda contains expressions which seem to have been borrowed from Nāgārjuna’s Madhyamika-kārikā and from the Lankāvatāra-sūtra and the regulations of Buddhistic idealism, and hence it is generally believed to have been composed in the second or the third century A.D.² In this fundamental and earliest work of Nyāya philosophy inference (anumāna) is described as being of three kinds, viz. from cause to effect (pūrvavat), from effect to cause (śeṣavat), and inference from similarities (sāmānyato-drṣṭa) not comprehended under the cause-effect relation. Now it is exactly these three forms of inference that are described in the Caraka-samhitā, and, so far as is known to the present writer, this is the earliest work which describes inference in such a systematic manner, and so it

¹ See Caraka-samhitā, 11. 8. 22–27.

A commentary on Nāgārjuna’s Pramāṇa-vidhvaṃsana called Pramāṇa-vidhvaṃsana-sambhāṣṭa-vṛtti reproduces Nāgārjuna’s definition of the categories, which are the same as the categories enumerated in the first sūtra of Aksapāda’s Nyāya-sūtra. But, as Walleser points out in his Life of Nāgārjuna from Tibetan and Chinese Sources, it is impossible to fix Nāgārjuna’s date exactly. He may have lived at any time between the second and the fourth centuries A.D. So no fruitful result can be attained by considerations of this kind.
may naturally be regarded as the source from which Akṣapāda drew his ideas. Now Caraka’s work may be regarded as a revision of Agnivesa’s work, based on Atri’s teachings, based on Bharadvāja’s instructions. Agnivesa’s work is now lost, and it is not known what exactly were the contributions of Caraka in his revision of Agnivesa’s work; but, since we find no work of an earlier date, Hindu, Buddhist or Jaina, which treats of the logical subjects found in the Caraka-saṁhitā, and since these logical discussions seem to be inextricably connected with medical discussions of diagnosis of diseases and the ascertainment of their causes, it seems very natural to suppose that Caraka got his materials from Agnivesa, who probably got them from still earlier sources. Incidentally it may be mentioned that Jayanta, in his Nyāya-mañjarī, discussing the question of the probable sources from which Akṣapāda drew his materials, suggests that he probably elaborated his work from what he may have gathered from some other science (śāstrāntarābhyāsāt); but it is difficult to say whether by śāstrāntara Jayanta meant Ayur-veda. The Nyāya-sūtra, however, expressly justifies the validity of the Vedas on the analogy of the validity of Ayur-veda, which is a part of the Vedas.

The similarity of the Nyāya-sūtra definition of inference to Caraka’s definition is also very evident; for while the former begins tat-pūrvakāṁ tri-vidham (where tat-pūrvakāṁ means pratyakṣa-pūrvakāṁ), the latter begins pratyakṣa-pūrvakāṁ tri-vidham tri-kālam. But, while Caraka knows only the three forms of inference, he has no names for these three types such as are supplied by Akṣapāda, viz. pūrvavat (related to pūrva, the prior, or the cause), śeṣavat (related to śeṣa, the later, or the effect) and sāmānyato-dṛṣṭa (from observed similarity in the past, present and future, which is also emphasized by Caraka in the same manner). From the con-

1 Mantrāyurveda-prāmānyavac ca tat-prāmānyam āpta-prāmānyāt.

Nyāya-sūtra, 11. 1. 68.

Jayanta enters into a long discussion in his Nyāya-mañjarī, trying to prove that it was through his omniscience that Caraka could write his work and that he neither discovered the science by inductive methods nor derived it from previous traditional sources.

2 Evaṁ vyavasyanty attam bijāt phalam anūgatam
dṛṣṭā bijāt phalam jātam śaiva sadāsām buddhāḥ.

Caraka-saṁhitā, 1. 11. 22.

Vātsyāyana, in his commentary on the Nyāya-sūtra, illustrates pūrvavat (from cause to effect) as the inference of rain from the rise of clouds, śeṣavat (from effect to cause) as the inference of rain in the uplands from the flooding of the river in the lower regions and sāmānyato-dṛṣṭa (from similar behaviour) as the inference of the motion of heavenly bodies from their changes of position in the sky at
considerations detailed in the preceding footnote it may well be assumed that Akṣapāda's contribution to the definition of inference consists in his giving names to the types of floating inference described in Caraka-saṃhitā. It is not improbable that the Nyāya-sūtra derived its theory of five propositions, and in fact most of the other logical doctrines, from Caraka, as there are no earlier works to which these can be traced\(^1\). Caraka's definition of perception as the knowledge
different times. But he also gives another meaning of these three terms pūrvavat, šesavat and sāmānyato-drṣṭa. He interprets pūrvavat here as the inference of fire from smoke "on the analogy of past behaviour of co-presence," šesavat as the inference of the fact that sound is quality because it is neither substance nor action, by the method of residues (iṣṭa), and sāmānyato-drṣṭa as the inference of the existence of soul from the existence of desire, which is a quality and as such requires a substance in which it would inhere. This is not an inference from similarity of behaviour, but from the similarity of one thing to another (e.g. that of desire to other qualities), to extend the associations of the latter (inherence in a substance) to the former (desire), i.e. the inference that desire must also inhere in a substance.

In the case of the terms pūrvavat and šesavat, as these two terms could be grammatically interpreted in two different ways (with matup suffix in the sense of possession and vati suffix in the sense of similarity of behaviour), and as the words pūrva and iṣṭa may also be used in two different ways, Vātsyāyana interprets them in two different ways and tries to show that in both these senses they can be justified as modes of inference. It seems obvious that the names pūrvavat, šesavat and sāmānyato-drṣṭa were given for the first time to the threefold inference described by Caraka, as this explains the difficulty felt by Vātsyāyana in giving a definite meaning to these terms, as they had no currency either in traditional or in the contemporaneous literature of Vātsyāyana. Uddiyotakara, in his commentary on Vātsyāyana, contributes entirely original views on the subject. He takes Akṣapāda's sūtra, atha tat-pūrvakam tri-vidham anumānam pūrvavac cheṣavat sāmānyato-drṣṭam ca, and splits it up into atha tat-pūrvakam tri-vidham anumānam and pūrvavac cheṣavat sāmānyato-drṣṭam ca; by the first tri-vidham he means inference from positive instances (anvayi), from negative instances (vyatirekhi) and from both together (anvayya-vyatireki). He gives two possible interpretations of the terms pūrvavat, šesavat and sāmānyato-drṣṭa, one of which is that pūrvavat means argument from cause to effect, šesavat that from effect to cause and sāmānyato-drṣṭa is the inference on the basis of relations other than causal. The Sāmkhya-kārikā also mentions these kinds of inference. The Māthara-vṛtti again interprets the threefold character of inferences (tri-vidham anumāna) in two ways; it says, firstly, that tri-vadha means that an inference has three propositions, and, secondly, that it is of three kinds, viz. pūrvavat (from the effect, e.g. flooding of the river, to the inference of the cause, e.g. showers in the upper region), šesavat (from part to whole, e.g. tasting a drop of sea-water to be saline, one infers that the whole sea is saline), and sāmānyato-drṣṭa (inference from general association, e.g. by seeing flowering mangoes in one place one infers that mangoes may have flourished in other places as well). Curiously enough, the Māthara-vṛtti gives another example of sāmānyato-drṣṭa which is very different from the examples of sāmānyato-drṣṭa hitherto considered. Thus it says that, when one says, "It is illuminated outside," another replies, "The moon must have risen."

\(^1\) For more or less fanciful reasons Mr Dhruva suggests that the terms pūrvavat and šesavat were borrowed in the Nyāya-sūtra from the Mātanga-sūtra and that this sūtra must therefore be very old (Proceedings and Transactions of the First Oriental Conference, Poona, 1922). This argument is invalid for more