CHAPTER XIII.

Now we shall discuss the Chapter which treats of leeches and of how and which to use (Jalauka-vacharaniyamadhyayam).

Leeches should be applied where the patient would be found to be old or imbecile, or a woman, or an infant, or a person of an extremely timid disposition, or a person of a delicate constitution, and as such is not fit to be surgically operated upon, since this mode of bleeding is the gentlest that can be possibly devised. The blood vitiated by the deranged wind (Vāyu), bile (Pittam), and phlegm (Kapham) should be respectively sucked through a horn, by leeches and a gourd appliance (Alāvu-Yantra) or with whichever of them is available at the time, irrespective of the cause of such vitiation, whenever such bleeding or sucking would be found to be imperatively necessary.

Authoritative verses on the subject:—A cowhorn is described in the Shastras as of a hot or heat making potency, and as possessed of a slightly cooling (Snigdha) or soothing (Madhura) property. Accordingly it should be used in sucking the blood vitiated through the action of the deranged bodily wind. Leeches, which are born in water, are possessed of Madhura (sweet or soothing) properties, and hence they
should be used in sucking the blood vitiated through a deranged condition of the bile (Pittam). The gourd (Alāvu) is pungent, parching and irritating in its potency and should be therefore used in sucking the blood vitiated through the action of the deranged phlegm (Kapham).

Mode of application:—The part from which the blood is to be sucked should be first scarified or slightly cut in two or three places, and then the mouth or the open end, of the horn, covered with a thin piece of muslin tied round its edges should be placed over it and sucked with the mouth through the aperture at its tip or top-end, or with a gourd appliance equipped with a lighted lamp placed in its inside.

The term Jalaukā (leeches) may be etymologically interpreted to mean creatures whose life (Āyu) or whose longevity is in, or depends upon, water, whereas the derivative meaning of the term Jalauka (leeches) is based upon the fact of their dwelling ("Oka"—dwelling place) in water (Jalam). Leeches may be divided into twelve distinct species of which six are venomous, and six non-venomous. The six venomous species are named Krishnā, Karvurā, Alagardā, Indrāyudhā, Sāmudrikā and Gochandanā. The leeches of the first-named species (Krishnā) are marked by thick heads, and of a colour resembling powdered lampblack. The leeches of the Karvurā type have extended or
elongated bodies like the Varmi fishes, and are indented and thick at the waist. The Alagardá leeches are hairy, thick and round at the sides, and black at the mouth. The leeches of the Indráyudha species are marked on the surface with up-pointed rainbow coloured lines. The skins of the Sámudrikás are blackish yellow, dotted over with white spots of a variety of shapes. Leeches which are provided with narrow mouths and are marked by bifurcating line at the bottom like the scrotal sac of a bull are called Gochandanás.

A person bitten by any of the above-said venomous leeches has an irresistible inclination to scratch the seat of the bite which is marked by a considerable swelling. Fever, with burning, retching, drowsiness and delirium supervenes and ultimately the patient loses all consciousness. The remedy consists in the administration of an anti-toxic medicine known as Mahágada, as snuffs, potions and unguents, etc. A bite by an Indráyudha usually proves fatal. Venomous leeches, as well as cures for their bites, have thus been described.

The non-venomous species include Kapilás, Pingalás, Shankhamukhis, Musikás, Pundarimukhis and Sarávikás. The Kapilás are coloured like Manah-Shila (realgar) at the sides, and their backs are tinged with a glossy hue like that of a Mudga pulse. The Pingalás have a reddish colour, are round in shape and
capable of speedy locomotion. The Shankhamukhis are marked by a blackish red hue like that of the liver, are provided with sharp elongated mouths, and are capable of sucking blood with the greatest swiftness. The Musikâs are coloured like the common blind moles, and emit a fetid smell from their bodies. The Pundarimukhâs are coloured like the Mudga pulse and are so called from the fact of the resemblance of their mouths to the full-blown lotus lilies (Pundarikas). The Sarâvikâs have cold bodies marked with impressions like lotus leaves and measure eighteen fingers' width in length, and they should be employed in sucking blood from the affected parts of lower animals. This exhausts the list of non-venomous leeches.

The countries, such as Turkestan (Yavana), the Deccan (Pandya), the tract of land traversed by the Ghaut mountains (Sahya), and Pautana (modern Mathura), are the natural habitats of these leeches. The leeches, found in the aforesaid countries, are specifically non-venomous, strong, large-bodied, greedy and ready suckers.

The venomous leeches have their origin in the decomposed urine and fecal matter of toads and venomous fishes in pools of stagnant and turbid water. The origin of the non-venomous species is ascribed to such decomposed vegetable matter, as the petrified stems of the several aquatic plants known as Padma, Utpalam,
Nalina, Kumuda, Pundarika, and the common zoophytes which live in clear waters.

**Authoritative verse on the subject.**—The non-venomous leeches swim about in sweet scented waters, live on non-poisonous weeds, lie on the leaves of flowering water plants instead of on the dank and oozy beds of pools, and suck blood from the affected part of a human organism without causing any discomfort.

Leeches should be caught hold of with a piece of wet leather, or by some similar article, and then put in to a large-sized new pitcher filled with the water and ooze or slime of a pool. Pulverised zoophytes and powder of dried meat and aquatic bulbs should be thrown into the pitcher for their food, and blades of grass and leaves of water-plants should be put into it for them to lie upon. The water and the edibles should be changed every second or third day, and the pitchers should be changed each week, (the leeches should be transferred to a new pitcher at the end of every consecutive seven days).

**The authoritative verse on the subject:**—Leeches that are venomous, thick about the middle, elongated, of slow locomotion, look fatigued, do not readily take to the part they are applied to, and capable of sucking only a small quantity of blood, should be looked upon as not belonging to the proper or the commendable type.
Then having seated or laid down the patient suffering from a disease which requires the application of leeches, the seat of bleeding, if not previously ulcerated, should be roughened by dusting it over with a composition of loose earth and pulverised cowdung. Then the leeches should be taken out of their receptacles and sprinkled over with water saturated with mustard seed and pasted turmeric. Then for a moment they should be kept in a basin full of water, and after they have regained their natural vivacity and freshness, they should be applied to the affected part. Their bodies should be covered with a piece of thin and wet linen, or with a piece of white cotton. The affected part should be sprinkled over with drops of milk or blood, or slight incisions should be made into it in the event of their refusing to stick to the desired spot. Other fresh leeches should be applied even when the preceding measures should prove ineffectual. That the leeches have taken to the affected part may be inferred from the mouths of the leeches assuming the shape of a horse-shoe, and the raised and arched position of their necks after they had become attached to the seat of the disease. While sucking, the leeches should be covered with a piece of wet linen and should be constantly sprinkled over with cold water.

A sensation of itching and of a drawing pain at the seat of the application would give rise to the pre-
suction that fresh blood was being sucked, and the leeches should be forthwith removed.

Leeches refusing to fall off even after the production of the desired effect, or sticking to the affected part out of their fondness for the smell of blood, should be sprinkled with the dust of powdered Saindhava (rock salt.)

After falling off, the leeches should be dusted over with rice powder and their mouths should be lubricated with a composition of oil and common salt. Then they should be caught by the tail-end with the thumb and the forefinger of the left hand and their backs should be gently rubbed with the same fingers of the right hand from tail upward to the mouth with a view to make them vomit or eject the full quantity of blood they had sucked from the seat of the disease. The process should be continued until they manifest the fullest symptoms of disgorging. Leeches that, had vomited the entire quantity of blood sucked as above, would briskly move about in quest of food if placed in water, while the contrary should be inferred from their lying dull and inert. These should be made to disgorge again. Leeches not made to emit the entire quantity of the sucked

* The leeches, though a blissful dispensation of Nature in themselves, instinctively draw off the vitiated blood from a diseased part, attacking the healthy vital fluid (red blood) when the former has been completely tapped or sucked.
blood stand in danger of being attacked with an incurable disease peculiar to their genus, and which is known as Indramada. The leeches should then be put into a new pitcher, and treated as before laid down, after they had fully emitted the sucked blood.

An ulcer incidental to an application of leeches should be rubbed with honey or washed with sprays of cold water, or bound up with an astringent (kashāya) sweet and cooling plaster, according to the quantity of blood removed from the part. *

**Authoritative verse on the subject:**—The physician who is fully conversant with the habitat, mode of catching, preservation and application of leeches, can well aspire to cure the diseases which yield to them or in which their use is indicated.

* In case of full and proper bleeding (Yoga) the ulcer should be rubbed with clarified butter technically known as the Shatarbhatam (lit: hundred times washed) Ghritam (clarified butter), or a piece of cotton, soaked in the same substance, applied as a compress over the part. The ulcer should be rubbed with honey in case of insufficient bleeding, while it should be washed with a copious quantity of cold water if excessive bleeding (Atri-Yoga) should set in. Similarly in a case marked by the absence of any bleeding at all (Mithyā-Yoga) a sour, sweet and cooling plaster should be applied over the ulcer.

Thus ends the thirteenth Chapter of the Sutrasthānam in the Sushruta Samhita which treats of Leeches and of how and which to use.
CHAPTER XIV.

Now we shall discuss the Chapter which treats of blood (Shonita-Varnaniya-madhya-

The food of a human being, which is usually composed of the five fundamental material principles, admits of being classified under four different heads [as, drinks and edibles, etc.]. It has six different tastes or is of two [cooling or heat-making] potencies, or consists of eightfold properties, [viz. hot, cool, dry, expansive, slimy, mild, sharp, etc.] and of a variety of other active or efficacious virtues. The food is fully digested with the help of the internal heat and ultimately assimilated in the system, giving rise to lymph chyle (Rasa) which is extremely thin or attenuated in its consistency and which forms the essence of the assimilated food.

The lymph chyle (Rasa), though running through the whole organism, has its primary seat in the heart, whence it flows through the twenty-four vessels which branch off from the latter (heart) to the remotest parts and extremities of the body. Of the aforesaid twenty-four vessels, ten are up-coursing, ten are down-coursing, and four have a lateral direction. The Rasa or the

* It is free from all sorts of impurities such as food matter, etc., and permeates the minutest vessels and capillaries.
lymph chyle, thus flowing out of the heart, constantly soothes, maintains, and irrigates by transudation the body, and further contributes to its growth, and supports life owing to the dynamical effects of causes which lie beyond the ken of human understanding. The nature and course of this lymph chyle, which runs through the whole system, can be inferred from the growth, attenuation, or other modified conditions of the body.

Now it may be asked, whether the Rasa, which permeates the entire body and limbs; and which by flowing through different chambers (viscera) of the body is thus in constant contact with the excreta and other morbid humours, is of a cooling (Saumya) or heat-making (Āgneya) potency?

The question may be answered by stating that, since the Rasa or lymph chyle is a fluid, and possessed of lubricating, vitalising, moistening, and nutritive lit:—supporting, properties, it must be included within the class of Saumya (cooling) substances. The Rasa, though a Saumya fluid, obtains its characteristic pigment (Rāgam) in its passage through the spleen and liver.

Authoritative verses on the subject:—The Rasa or the lymph chyle, coloured through the effect of the healthy normal dyeing heat of the body, obtains the name of blood. The Rasa is transformed into the catamenial flow in women which commences at the age of twelve and ceases at fifty.
Catamenial blood, though originating from Rasa which is of a cooling potency, is fiery or heat-making (Ágneya) in its character; and the fecundated or impregnated ovum (Garbha) is both cooling and heat-making in its properties on account of its partaking of the nature of both the menstrual blood (ovum) and semen which are respectively possessed of the two preceding virtues. Hence several authorities hold the blood to be identical with the life blood or with the vital principle of a living organism, and being such, to be the product of the five fundamental material principles (Páñchabhautikam).

**Metrical texts**—In blood the properties such as, a raw or fleshy smell, fluidity, redness, lightness and mobility, which respectively characterise the fundamental principles (of earth, water, fire, air, and sky) are to be found thus representing those specific elements in its composition.

The chyle produces blood. From blood is formed flesh. From flesh originates fat which gives rise to bones. From bones originate marrow, which, in its turn, germinates semen.

The Rasa which is originated from the digested or assimilated food and drink pre-eminently strengthens all the fundamental principles of the body.

The Purusha or self-conscious personality is Chyle-
born in its origin, and hence an intelligent person should carefully preserve his bodily Rasa (lymph chyle) by adopting a proper regimen of diet and conduct.

The term Rasa is derived from the root "Ras", to go, and the substance is so called from the fact of its continually flowing through and permeating every vital principle of an animated organism.

The Rasa is successively transformed into each of the six remaining fundamental principles of the body, and continues in the shape of each for the period of three thousand and fifteen kalás five days according to our modern computation. Thus the Rasa is converted into semen, or into the menstrual blood ovum) in women, in the course of a month.

1 The successive development of the fundamental or root principles of the body follows a distinct order. The essence of the assimilated food matter under the heat of digestion goes towards the formation of chyle, and is ultimately transformed into it, its excreted and effete residue being passed out of the organism in the shape of stool, etc. The chyle thus produced is called the immature Rasa, or the Rasa in its nascent stage. Subsequently it enters into the bodily principle of Rasa, becomes matured by the native heat of the latter, and is resolved into three factors, or in other words, its excreted matter is transformed into phlegm, its thick or condensed portion is transformed into and assimilated in the matured Rasa of the body, whereas its subtle essence is metamorphosed into blood. The blood, thus newly generated, is merged into the fundamental organic principle of blood; and there by the heat of the latter it is again resolved into three factors, viz., its excreted portion is transformed into bile, its thick or condensed portion is transformed or assimilated into the fundamental organic principle of blood, and its subtle essence is metamorphosed into flesh. The flesh, thus newly formed, is merged into the fundamental organic principle of flesh, and there, by the native heat of the latter, it is resolved into three
Authoritative verse on its computation:—In the present work, as well as in other works of recognised authority, a month is calculated to consist of eighteen thousand and ninety Kalas.

The said Rasa courses through the whole body in invisible currents of zigzag shape, like the waves of sound, or in an upward direction like flames of fire, or in a downward direction like rivulets of water.
Chap. XIV.] SUTRASTHANAM. 111

Now it may be asked, since the Rasa is naturally transformed into semen in the course of a month, what is the use of administering medicine which has a stimulating effect upon the organs of generation (Vājikarana.) The answer is, that such medicines out of their own specific potencies and virtue help the speedy conversion of Rasa into semen and its profuse emission [on the desired occasion] like purgatives aiding the drastic evacuation of the bowels.

Again it may be asked, how is it, that semen is not found in an infant? Since perfume in a flower-bud is imperceptible to the organ of smell you may as well ask whether there is any perfume in it or not. But what does not exist in a thing can not be evoked in the subsequent course of its development. As the perfume in a flower-bud lies latent in its early stage of growth but becomes patent only with the growth of its seed organs, so semen or catamenial blood lies in a potential state in a male or a female child, and appears with the growth of beards and mustaches, or with the enlargement of the breasts, uterus and vaginal canal and the appearance of pubic hair.

The same Rasa, originated from the assimilated food, serves only to maintain the vitality in the old and spontaneously decayed subjects owing to an exhausted state of the inner vitalising principle, natural to old age.
The abovesaid principles (of Rasa, blood etc.) are called the root principles (Dhātus), inasmuch as they maintain the integrity of the human organism and guard against its speedy dissolution. And since the strength or weakness of the abovesaid bodily principles absolutely depends upon the richness or poverty of blood, we shall discourse on the latter condition of the blood.

The blood, vitiated by the deranged bodily wind Vāyu, becomes thin, frothy, transparent, quick-coursong, and expansive, assumes a vermillion or black hue, and is divested of its slimy character; whereas vitiated through a deranged condition of the bile (Pitam), it assumes a blue, yellow, green, or brown colour, emits a fishy smell, becomes thin in its consistency and is shun by flies and ants. Similarly, blood, vitiated by the deranged phlegm (Kapham), becomes cold, glossy and thick, assumes a colour like that of the washings of Gairika or that of a flesh tendon, takes time in secreting or in running down, and is marked by an increase of its slimy character. The blood, vitiated through a concerted derangement of the three bodily humours, is marked by features peculiar to each of them, and assumes a colour like that of Kānjika (sour gruel), and emits a fetid smell. Similarly, the blood, vitiated through the joint action of any two of the (beforesaid) bodily humours, is characterised by features peculiar to each of them.
The blood in its healthy and natural state is possessed of a vivid red colour like that of an Indragopa (Cochineal) insect, and is neither too thin nor too transparent. 

**Cases where blood-letting is prohibited:**—A person afflicted with an oedematous swelling extending all over the body should be deemed unfit for bleeding. An intumescence occurring in a weak and enfeebled patient owing to an excessive use of acid food or in a person suffering from jaundice or laid up with haemorrhoids or abdominal dropsy, as well as in an enceinte, or in a person suffering from Pulmonary consumption (Shosha), should not be bled.

Blood-letting, with the help of a surgical instrument, may be grouped under two distinct heads, according as scarification (Prachehhānam) or venesection (Sirā-Vyadhanam) is resorted to for the purpose. In such a case the knife or the instrument (Shastram) should be driven straight and speedily so as to make the incision straight, narrow, unextended, and of equal and slight depth throughout, so as to reach only the surface layer of the flesh and blood, and not to injure in any way the local veins, nerves, joints, and other vital parts.

Bleeding performed on a cloudy day or done with a

*Additional texts:* Later on we shall have occasion to speak of the principles known as the life-blood (essential conditions of vitality - Shā, Jiva-Shonita) and of the process of blood-letting.
wrong incision, or with full exposure to cold and wind, or performed on a patient not previously diaphorised, or on a patient with an empty stomach, is attended with little or no outflow of blood owing to the thickened condition of the blood.

**Authoritative verse on the subject:**—Blood-letting surgically performed on a fatigued or exhausted subject, or on a person in a swoon, or anyway poisoned or intoxicated, or on a person suffering from extreme constipation of the bowels accompanied by suppression of the flatus: Vāyu and urine, or on a person of timid disposition, or on one overcome with sleep, is marked by the absence of any outflow of blood.

The vitiated blood, failing to find out an outlet, gives rise to itching, swelling, redness, burning, suppuration and pain in the part (to which it is confined). On the contrary, blood-letting performed on the body of a person excessively diaphorised or heated, or by an ignorant or inexperienced surgeon, or with an injudiciously deep incision, is attended with haemorrhage, which may be followed by such dreadful results as Shirobhita or violent headache, blindness or loss of sight (Timria, Adhimantham (ophthalmia), loss of vital principles of the body (Dhatu-Kshaya), convulsions, paralysis (Ekāṅga Vikāra), Hemiplégia (Pakshágháta), thirst, a burning sensation, hic-cough, cough, asthma, jaundice and even death.
Authoritative verses on the subject:—Therefore blood-letting should be performed on a patient not in an extremely hot or cold season, neither on one who is too much heated or improperly diaphorised (before the act). The patient should be given gruel 'Yavágu) before the operation. A spontaneous cessation of red flow would indicate that there has been a free discharge of blood.

An act of complete and successful blood-letting is followed by a feeling of lightness and alleviation of pain in the affected part, by an abatement of the disease, and a general sense of cheerfulness.

A person, accustomed to blood letting, enjoys a kind of immunity from all types of skin diseases, sarcomata, aneurism, oedema, and diseases brought about by a vitiated condition of the blood such as, Ovarian tumour, Carbuncle, Erysipelas, etc.

A plaster composed of Elá, Shitashiva, Kustha, Tagara, Páthá, Agáradhuma, Bhadradáru, Vidanga, Chitraka, Trikatus, Ankura, Haridrá, Arka, and Nakta-mála, or three, or four, or as many of them as are available, pasted together and soaked in mustard oil saturated with common salt, should be rubbed over the mouth of the incision. By this means the blood will fully come out. In a case of excessive flow or haemorrhage, the mouth of the incision should be gently rubbed with a composition consisting of the powders of Lodhra,
Priyangu, Madhuka, Pattanga, Gairika, Sarjarasa, Rasānjana, Shālmali flowers, Shankha, Shukti, Másha, Yava and Godhuma, and firmly pressed with the tips of the fingers. As an alternative, the mouth of the incision should be gently rubbed with the powdered barks of Sāla, Sarja, Arjuna, Arimeda, Mesha-shringi, and Dhanvana, or the edges of the wound should be lightly dusted with the burnt ashes of a silk cord (a piece of silk rolled up in the form of a cord), and firmly pressed with the tips of the fingers; or the mouth of the wound should be lightly touched with the powders of Lākshā and Samudra-phena, and its edges should be similarly pressed together as above. Then the wound should be firmly tied up (with a piece of silk or linen; plastered over with a paste of the substances mentioned in connection with the bandaging of ulcers (Vrana). The patient should be kept in a cool room, covered over with a wet sheet and constantly soothed with sprays of cold water. A medicinal plaster of a cooling virtue and a course of cooling diet should be prescribed for him. The wound should be cauterised with fire or an alkali, or the vein should be again opened at a point a little below the seat of the first incision in case where the abovesaid measures should have failed to check the flow of blood. The patient should be made to drink a decoction compound of drugs of the Kākolyādi group, sweetened with sugar or honey; and his ordinary drink should consist of the
blood of the Eno of common deer, or of a sheep, hare, or buffalo. A diet composed of boiled rice, soaked in or saturated with clarified butter, should be prescribed, and the complications should be subdued according to the nature of the deranged bodily humours respectively involved therein.

Authoritative verses on the subject:—Excessive blood-letting is followed by impaired appetite and an agitated condition of the vital Vāyu owing to the loss of the fundamental principles of the body, and, accordingly, to recoup the health of the patient a course of diet should be prescribed which is light and not excessively heat-making, and which contains a fair amount of emollient and blood-making matter, and is marked by little or no acid taste.

The four measures indicated for the stoppage of bleeding are known; as the Sandhānam (process by contracting the affected part), the Skandanam (thickening or congealing the local blood), the Pāchanam (process of setting up suppuration in the wound) and the Dahanam (process of cauterisation).

Drugs of astringent tastes are possessed of the property of bringing about an adhesion (contraction) of the wound. Cooling measures such as, applications of ice etc, tend to thicken the local blood; alkalis and alkaline preparations produce suppuration in such a
wound or ulcer, whereas cauterisation has the property of contracting a vein.

Remedies and appliances possessed of the virtue of bringing about an adhesion of such a wound should be used where applications for thickening or congealing the local blood would fail; whereas the suppurating measures should be adopted in the event of the former (Sandhánam) proving ineffectual. With any of the three of these preceding measures a physician should try to check the outflow of blood incidental to an operation of bleeding, and lastly the process of cauterisation should be resorted to in the event of the preceding ones having proved unavailing, as it is pre-eminently the best means of checking the bleeding.

The least residue of the vitiated blood continuing in the affected part may not aggravate the disease but prevent its perfect healing. In such a case bleeding should not be again resorted to, but the deranged residue should be subdued by means of pacifying or absorbing remedies.

Blood is the origin of the body. It is blood that maintains vitality. Blood is life. Hence it should be preserved with the greatest care.

The Vāyu of a person who has been bled, and which has been aggravated by constant cold applications
may give rise to a swelling of the incised part characterised by a piercing pain, which should be treated with an ointment of tepid clarified butter.

Thus ends the fourteenth Chapter of the Sutrasthanam in the Sushruta Samhita which treats of Blood.
CHAPTER XV.

Now we shall describe the Chapter which treats of development and non-development of the humoral constituents of the body and excrements (Dosha-Dhatu-Mala-Kshaya-Vṛiddhi-Vijnaniya-madhyaṣyam).

Since the human body is constituted of humours, (Doshas), excretions (Mala), and the fundamental principles (Dhatus) of blood, marrow, etc., hear me discourse on the features which are peculiar to each of them.

The Vāyu.—The imparting of motion to the body (Praspadanam), the carrying of the sensations of the respective sense organs (Udvahanam), the passing down of food to its proper receptacles (Puranam), the separation of excretions from the assimilated food matter (Viveka), and the retention and evacuation of urine and semen, etc. (Dharanam) should be ascribed to the functions of the five kinds* of Vāyu (nerve force) which support the body.

The Pittam.—Pigmentations or colouring (Bāgakrit), the digestion of food and metabolism of tissues (Paktikrit), the vitalisation and nutrition of the protaplasmic cells (Ojakrit), the origination and preser-

* They are called Prāna, Udāna, Samāna, Vyāna and Apāna.
vation of eye-sight (Teja-Krit), the germination of heat and maintenance of the temperature of the body (Ushma-Krit), and the origination of the faculty of intellection (Medha-Krit) should be regarded as the functions of the five kinds* of Pittam, which contribute to the preservation of the body through its thermogenetic potency †(Agni-Karma).

The Shleshma.—The function of the five kinds† of Shleshma is to lubricate the interior of the joints (Sandhi-Samsleshahanam), to contribute to the gloss of the body (Snehanam), to aid in the formation of healthy granules in sores (Ropanam), to add to the size of the body (Puranam), to build fresh tissues (Vrimhanam), to impart a pleasant or soothing sensation to the body (Tarpanam), to increase its strength (Valakrit), and to give firmness to the limbs (Sthairyakrit), thereby contributing to the welfare of the body by supplying it with its watery element.

The Rasa or the lymph chyle exercises a soothing effect upon the entire organism and tends

* They are named as Ranjaka, Pacha, Sadhaka (Medha-Krit and Ojakrit), Alochaka and Bhrajaka.
† They are known as Shleshmaka, Kledaka, Vodhaka, Tarpaka, Avalamvaka.

N. B.—The Vayu, Pittam, and Shleshma, (Kaphham), though ordinarily translated as wind, bile and phlegm, differ in their meaning from their usual English synonyms. We reserve the treatment of these subjects for a separate place in another part of the book when we shall have occasion to deal with the essentials of Ayurvedic Physiology—Tr.
to contribute to the increased formation of blood. The blood, in its turn, increases the healthful glow of the complexion, leads to the increased formation of flesh and muscles and maintains vitality in the organism. The flesh contributes towards the stoutness or rotundity of the limbs and occasions the formation of fatty matter in the system. The fat gives rise to the glossiness (formation of oily or albuminous matter) of the body and primarily contributes towards the firmness and growth of the bones. The bones, in their turn, support the body, and contribute to the formation of marrow. The marrow contributes towards the formation and increase of semen, and fills in the internal cavities of the bones, and forms the chief source of strength, amorous feelings and hilarity. The semen gives rise to valour and courageousness, makes a man amorous disposition towards the female sex, increases his strength and amativeness, is the sole impregnating principle in the male organism, and is possessed of the virtue of being quickly emitted.

The excreta or the fecal matters of a man are indispensably necessary for the preservation of the body. They contain the wind and digestion (being primarily connected with the movements of the bodily Vāyu and the feeling of hunger). The urine fills the receptacle of the bladder, and is possessed of the property of washing or draining off the waste or refuse matter of the organism; whereas perspiration tends to moisten the skin.
The Ártavam (menstrual blood) is endued with the same properties as its arterial namesake, and is one of the essential factors in a woman which makes impregnation possible. The fætus or impregnated matter (Garbha) serves to make patent the features characteristic of pregnancy. The breast-milk in its turn tends to bring about an expansion of the mammæ (of a woman), and maintains the life of her child (by supplying it with the necessary and nutritive element of food). These Váyu, etc. should* be duly preserved in their normal condition.

Now we shall describe the symptoms which attend the loss or waste of any of the foregoing principles of the body.*

The loss of the bodily Váyu (nerve-force) is followed by a state of languor, shortness of speech, uneasiness or absence of hilarity, and loss of consciousness. The loss of (Pittam) is marked by a dulness of complexion, diminution of the bodily heat and an impaired state of internal fire (digestive heat). The loss of phlegm (Kapham) is marked by dryness, a sensation of internal burning, a feeling of emptiness in the stomach and other

* Such a loss or perceptible deterioration of any of them should be ascribed to the use of excessive cleansing or cathartic (Samshodhanam) and pacifying (Samahamanam) measures, or to a repression of the natural urgings of the body, or to a course of violent or overfatiguing physical exercise, or to amorous excesses, or to the use of unwholesome and unsuitable food, or to grief, etc.
THE SUSHRUTA SAMHITA. [ Chap. XV.

cavities or chambers of the body, looseness of the joints (a feeling as if the joints were all broken), thirst, weakness, and insomnia. In such cases the medical treatment should consist of remedial agents which are capable of directly contributing to the growth or formation of the humour so lost or deteriorated.

Similarly the loss of lymph chyle is marked by pain about the region of the heart, Angina Pectoris, with palpitation of the heart, a sensation of emptiness or gone-feeling in the viscus, and thirst. The loss of blood is attended with such symptoms as roughness of the skin, and a craving for acid food or drink. The patient longs to be in a cool place and asks for cool things, and the veins become loose and flabby. The loss of flesh is marked by emaciation of the buttocks, cheeks, lips, thighs, breasts, armpits, neck, and the calves of the legs. The arteries seem loose and flabby, and the body seems to be dry and inert, accompanied by an aching or gnawing pain in its members. The loss of fat is followed by such symptoms as the enlargement of the spleen, a sense of emptiness in the joints, and a peculiar dryness of the skin and a craving for cold and emollient meat. The degeneration of the bones is marked by an aching pain in the bones and bone-joints, a wasting of teeth and gums, and a general dryness of the body. Similarly,

* The armpits look thin, narrow and contracted.
the loss or waste of marrow is characterised by the formation of a lesser quantity of semen, aching pain in the bones and breaking pain in the bone-joints which have become marrowless. The loss or waste of semen is marked by pain in the penis and the testes, and by incapacity for sexual intercourse. In such cases the emission of semen but rarely happens, and is then perceptibly deficient in its quantity, the emitted matter consisting of a small quantity of semen marked with shreds of blood. The medical treatment under the preceding circumstances should consist of remedies of such medicinal virtues as are found to directly and immediately contribute to the formation of the bodily principle (thus wasted or lost).

The loss absence, suppression or scanty formation of fecal matter is attended with a sensation of pain at the sides and the region of the heart, and the upward coursing of (the incarcerated) wind or flatus, accompanied with a rumbling sound about the region of the liver and the intestines. Similarly, the loss, absence or scanty formation of urine is marked by an aching pain in the bladder, causing it dribble or to come out in thin and scanty jets. Here, as in the foregoing instances, the remedial agents should consist of drugs which directly contribute to the formation of urine. Similarly the waste, absence or scanty formation of perspiration is followed by such symptoms as numbness about the pores of the hair, and
dryness of the epidermis (skin). The sense of touch is perceptibly affected, and perspiration is entirely stopped. The medical treatment in such a case consists in the application of medicated unguents, lubrications, diaphoretics, and adoption of measures (that tend to produce a copious perspiration).

In the case of loss or waste of the catamenial flow, the menses do not appear at the appointed time or are scanty. The vagina seems stuffed and painful. The medical treatment in such cases consists in the adoption of alterative or cleansing measures, and in the administration of drugs of a heat-making (Āgneya) potency or virtue.

The loss or waste of breast-milk is characterised by a shrunken condition of the mammae, and suppression or scanty secretion of the fluid. The medical treatment in such cases lies in the administration of drugs which generate Kapham.

The atrophy or wasting of the foetus in the womb (during the period of gestation) is marked by the absence of any movement in the uterus and the non-distended condition of the sides or walls of the abdomen. The treatment consists in the application of Kshira Vastis (enemas of medicated milk into the region of the uterus) in the eighth month of gestation, and prescribing courses of emollient fare for the patient (mother)*

* Several editions read invigorating diets, egg, etc.
Chap. XV. ] SUTRASTHANAM. 127

Now we shall describe the symptoms which mark the excess (excessive accumulation in the body) of any of the fundamental humours, principles and excrements of the body.

The quantities of these humours, principles and secretion, are abnormally increased through the use of substances that primarily contribute to their formation in the organism.*

An excess of Vāyu in the body is marked by such symptoms as roughness of the skin, † emaciation of the body, darkness of complexion (lit.: blackness of hue), a little tremor or trembling of the limbs, longing for heat, or for hot things, insomnia, thickness or increased consistency of the fecal matter and decrease of bodily strength. (Similarly, an abnormal) increase of Pittam is characterised by a sallow complexion or a yellowish colour of the skin, a general burning sensation in the body as well as insomnia, a craving for cold contacts and cooling things, diminution of strength, weakness of the sense organs, fits of fainting and yellowness of the conjunctivae, stool and urine.

An excess of Kapham in the body is marked by such symptoms, as the whiteness, coldness and numbness of the body, heaviness of the limbs, a

* Several Editions read it as an additional text.
† Several Editions read roughness of speech.
sense of drowsiness and languor, somnolence, and a feeling of looseness of the bone-joints.

Similarly, an increased germination of lymph chyle (Rasa) in the body is manifest by such characteristics as, nausea, water-brash, and an increased flow of salivary secretion. A plethora of blood in the system gives a reddish glow to the complexion and the white of the eyes, and imparts fullness to the veins. An increase of flesh is marked by the rotundity and fullness of the buttocks and the lips, as well as of the penis, arms, and the thighs, and an increased heaviness of the whole body. An excess of fat in the body imparts an oily gloss to the skin. The sides of the abdomen are increased in bulk, and the body emits a fetid smell, and the person is assailed with cough and dyspnoea. An excessive formation of bone (abnormal ossification) is attended with such symptoms as the cutting of additional teeth and the abnormal development of any of the bone-structures. An excessive formation of marrow gives rise to a heaviness of the eyes and to the members of the body.

An excess of semen in the body is marked by an excessive flow of that fluid and gives rise to the formation of gravels (concretions) in the bladder which are known as Shukrashmari. An abnormal increase in the formation of fecal matter is attended with distension of the abdomen and colic pains in the loins and the intestines. An excessive formation of urine is manifest by constant
urging for micturition and distension of the bladder, attended by a kind of gnawing or aching pain.

Similarly, an increased secretion of perspiration is attended with an itching of the skin which emits a bad odour. An *excess in the quantity of* catamenial blood* gives rise to an aching of the limbs and an excessive flow. So also an *excess in the quantity of the breast-milk* is attended with frequent secretions of that fluid, and with inflammation and pain in the mammae. An *excessive growth of the fetus* in the uterus tends to abnormally swell the region of the abdomen, and is accompanied by anasarca, or dropsy, of the lower extremities (phlegmasia dolens).

These abnormal excesses of the aforesaid humours and principles, etc. of the body should be checked or remedied with corrective (cleansing) or pacifying measures as would be indicated by their respective natures, so as not to reduce them to a smaller quantity than that in which they are found in the normal and healthy state of a body.

**Metrical text:**—An increased quantity of a bodily principle gives rise to a similar increase in the quantity of one immediately succeeding it in the order of enumeration as stated above; and hence an

* An abnormal flow tends to stimulate the voluptuous sensation of a woman to a considerable extent, and is followed by a sense of reactionary weakness. It emits a fetid smell and originates ovarian tumours.
increase in any of the fundamental principles of the body should be checked and reduced to its normal quantity.

Now we shall describe the characteristic features of the strength-giving principles of the body, as well as the symptoms that mark their loss or waste. The quintessence of all the fundamental principles of the body, starting with lymph chyle and ending with semen, is called the Ojas, which is identical with what is termed "vital power." This view of oneness of vitality with protoplasmic albumen has been adopted in the present work.*

This Ojas (albumen) or strength-giving principle serves to impart a firm integrity to the flesh (and the muscles), exercises unbounded control over all acts of vitality, improves the voice and complexion, and helps both the external (operative) and the internal (intellectual) sense organs, in duly performing their natural functions.

Authoritative verses on the subject:—Ojas (albumen) being of a white colour belongs to the class of Somatmakam (cooling) substances.

* The Sanskrit term "Ojas" has a variety of meanings. Primarily it means protoplasmic matter as found in cells (Vindus). Secondly it means albumen as we shall describe later on in the chapters on etiology and therapeutics of Prameha. Several authorities hold a contrary view stating that Ojas (albumen) forms only one of the essentials of vitality and that the two are by no means identical.
It is cooling, oleaginous, and firm (Sthira), contributes to the formation and growth of flesh, maintains its integrity or holds it firm, and is mobile or capable of moving about from one place to another within the organism. It is further soft and shiny, and is possessed of the most efficacious virtue and should be regarded as the most important element (seat) of vitality. The whole body with its limbs and members is permeated with Ojas, and a loss or diminution in its natural quantity leads to the gradual emaciation (and ultimate dissolution) of organism.

A blow, a persistent wasting disease, anger, grief, cares and anxieties, fatigue and hunger, are the causes to which should be ascribed the wasting or disappearance of this strength-giving principle (albumen) of the body. The bodily albumen, through the agency of the above-said causes, is wasted through the channels carrying the different fundamental principles of the body. Albumen is transformed into strength which radiates from the heart.

A deranged or vitiated albumen (Ojas) is characterised firstly by its dislodgment from its proper seat or locality (Visransha), secondly, by a change or modification of its native virtues in contact with the deranged humours or disordered organs (Vyāpad) and thirdly, by wasting away (Kshaya).

* Several editions read Rasam, meaning it to be possessed of a sweet taste.
The first of the preceding properties (dislodgment) gives rise to such symptoms as looseness of the bone-joints, numbness of the limbs, dislodgment of the deranged humours from their respective receptacles and suppression of the (bodily and intellectual) functions. To the second of the foregoing properties, (change or modification of its natural virtue through contact with the deranged bodily humours etc.) should be ascribed such symptoms, as numbness and heaviness of the limbs, dropsy due to the action of the deranged bodily Vāyu, discoloured or changed complexion, feeling of malaise, drowsiness and somnolence. The third property of the deranged albumen, loss or wasting, brings on fits of fainting, loss of flesh, stupor, delirium and ultimately death.

Authoritative verses on the subject:—A deranged state of albumen is marked by the three abovesaid properties of dislodgment from its proper seat (Visransha); by a change of its natural virtues through contamination (Vyāpād) and by wasting (Kshaya). The first of these properties (Visransha) is characterised by looseness of the joints, by an inert state of the body, by a sense of fatigue, by a dislodgment of the deranged humours from their natural seats, and by a suppression of the bodily and intellectual functions. Numbness and heaviness of the limbs, malaise, a discoloured complexion, drowsiness,
somnolence and dropsical swelling brought about by a deranged state of the bodily Vāyu, should be considered as natural consequences of the Vyāpad (change of the natural virtues of albumen through contamination). The loss or waste of Ojah (albumen) is marked by such symptoms as fits of fainting, emaciation of the body, bewilderment and distraction of the mind, delirium and loss of consciousness and ultimately death.

The medical treatment in cases of dislodgment or flowing out external secretion of albumen from its natural seat (Visransha), as well as in the event of it becoming contaminated by the vitiated principles of the body, should consist in improving its quantity by elixirs and remedies possessed of rejuvenating properties, tending to increase the quantity of such fluid (albumen) in the body. A patient who has lost all consciousness (owing to an excessive loss or waste of albumen) should be given up by a physician (as incurable).

The oily or albuminous matter found within the components of the other fundamental principles (Dhátu) of the body (as metabolised by the internal heat and regularly metamorphosed into the succeeding ones) should be grouped under the head of fiery or thermogenetic (Ágneya) substances. This fatty matter (Vasā) predominates in the female organism and produces its peculiar softness,
beauty and pleasing shape, causes the growth of scanty but soft hair on its surface. It strengthens the eyesight and increases the energy of the body, improves its power of digestion and heightens its glow and complexion. Fat is deranged by such acts as, an abuse of astringent, bitter, cold, parchifying or Vjstambhi (indigestible food which remains stuffed in the stomach) substances, a voluntary repression of the natural urging for evacuations of the body, by excessive sexual indulgence, and fatiguing physical exercise, or by the draining action of any particular disease.

An instance of dislodgment of fat from its proper seat or locality is attended by such symptoms as roughness of the skin, loss of the natural healthful glow of the body and a breaking or an aching pain in the limbs. Anæmia or a gradual emaciation of the body, impaired digestive function and a slanting or downward course of the deranged humours, mark the case where the bodily fat has undergone a change in its natural properties through any foul contamination. A case of loss or waste of the bodily fat is marked by such symptoms as, impaired digestive function, dulness of sight, decay of strength and aggravation of the bodily Vâyu, and always ends in death.

The medical treatment in the latter case (loss of fat) should consist in the administration of oily or emollient drinks, use of medicated unguents or lubrications, Pradeha (plasters of oleaginous substances) and
Parisheka (washes) and a diet comprising light, cooling and well-cooked articles of food.

**Metrical texts:**—A person suffering from a wasting of any of the constituent humours or fundamental principles or excrements of the body, as well as one suffering from loss of *Ojāh* (albumen) naturally craves for drink and food that tend to contribute directly to the formation of the matter (or bodily principle) so lost or wasted. Conversely, the particular food or drink longed for by a person suffering from a loss or waste of any of the abovesaid fluids or principles, should be looked upon as possessed of a curative virtue in that particular case. Such a person devoid of consciousness and divested of his bodily and intellectual functions through a deranged state of the bodily Vāyu (nerve-force) and extremely weak and enfeebled owing to the loss of the vital fluid should be regarded as past all cure.

**Etiology of Obesity:**—Obesity or loss of flesh (Kārsha) should be ascribed to changes in the condition of the lymph chyle. The lymph chyle derived from the assimilated food of a person, who is habituated to a course of diet which tends to promote the quantity of the bodily Kapham or is in the habit of pampering his belly even when a previous meal has not been thoroughly digested, or who is addicted to a habit of sleeping in the day, or leading a sedentary life, or is averse to taking
any sort of physical exercise, continues in an immature state and is transformed into a serum of sweet taste which moves about within the body, engendering the formation of fat which produces excessive stoutness. A person afflicted with obesity develops such symptoms as shortness of breath, thirst, ravenous appetite, excessive sleepiness, perspiration, fetid odours in the body, wheezing sound in the throat during sleep or sudden suspension of breath, inert feeling in the limbs, dulness or heaviness of the body, and indistinctness of speech. Owing to the softness of fat, a fatty person is unfit for every kind of work. Capacity for sexual intercourse is diminished (in such a one), owing to the obstruction of the passage of semen by phlegm and fatty deposits; and the growth of the rest of the root-principles of the body such as, lymph chyle, albumen, semen, etc., is considerably arrested owing to the deposit of fatty matter within the channels of the internal passages of the body, thus seriously affecting his bodily strength. An obese or excessively corpulent person is likely to be afflicted with any of the following diseases such as, urethral discharges, eruptions, boils, carbuncles, fever, fistula in ano, or with any of the diseases which are caused by a deranged state of the bodily Vāyu; and such attacks are invariably found to terminate in death. Any disease in such a person is apt to develop into one of a violent and dangerous type owing to the obstruction of the internal channels with deposits of fat.
Hence all things or conditions which foster the growth of abnormal fat should be carefully avoided.

Accordingly medicated compositions, consisting of such drugs and substances as Shilájatu, Guggulu, Go-Mutram, Triphalá, Loharaja, Rasánjanam, Madhu, Yava, Mudga, Koradusha, Shyámaka and Uddálaka which are anti-fat in their properties, or of remedial agents possessing the efficacy of cleansing the internal channels, as well as enematas of liquefacient solutions technically known as Lekhana Vastis and physical exercise should be prescribed.

**Etiology of Karshyam:**—Loss of flesh or a gradual emaciation of the body should be ascribed to the partaking of food in the composition of which, matter which aggravates the bodily Váyu largely or excessively enters, to over-fatiguing physical exercise, sexual excesses, over study, fright, grief or anxiety, to the keeping up of late hours, to unsatisfied hunger, insufficient food, and to astringent food which tends to dry up the lymph chyle. The chyle, thus parched up, moves about in the organism, but fails to impart to it the necessary nutritive element owing to its being insufficiently charged with it, thus causing the body to grow extremely emaciated.

A patient suffering from extreme emaciation of the body fails to bear the inclemencies of weather and the variations of terrestrial heat, and becomes apathetic to all movements and does but imperfectly perform the
functions of vitality, and is also incapable of enduring thirst or hunger. The bodily strength suffers a gradual diminution, and diseases, incidental to a deranged state of the bodily Vāyu, make their appearance, and the patient has to meet his doom from any of the following diseases as asthma, cough, Shosha (phthisis), enlarged spleen or liver, abdominal dropsy, dyspepsia, abdominal glands and hæmoptysis. Any disease appearing in such a patient develops into one of a violent type owing to the loss or diminished condition of the bodily strength or protoplasm (Prána).

Contrarily, conditions or factors which produce obesity should be avoided. A case of patent obesity should be checked with a medicated compound, consisting of such drugs as, Payasyá, Ashvagandhá, Vidári, Vidárigandhá, Shatávari, Valá, Ativalá, Nágavalá and such other drugs of sweet taste. Diets consisting of thickened milk, clarified butter, curd, meat, boiled Shali rice, Yasthika, wheat, barley, etc., should be prescribed in the case; and sleep in the day, sexual indulgence, physical exercise, etc., should be prohibited. Enematas of nutritive substances can be likewise given with advantage.

On the other hand, the lymph chyle of a man, who partakes of food belonging to both the abovesaid classes, courses through his organism and strengthens the root-principles of his body, thus giving a middling or healthful rotundity to his limbs owing to its properties being
equipoised. A man possessed of such a body is capable of all kinds of work and movement. He can fairly stand the inclemencies of weather and the keenness of hunger and thirst, and will gain in strength and energy. Care should be always taken to have such a well equipped body of moderate size.

Authoritative verses on the subject:—Excessively corpulent and excessively lean persons are alike condemnable. A body which is neither too stout nor too lean, but strikes the mean as regards plumpness, is the best. A lean frame should have the preference to a stout one. The enraged or aggravated bodily humours dry up the fundamental principles of the body, such as the lymph chyle etc., just in the same way as a well-kindled fire will evaporate the water contained in a basin placed over it. Since (the temperament, constitution, size and the fundamental principles of) the body vary in different individuals; (and since the body, in its turn, undergoes such gradual transformations as infancy, youth and old age), and changes its state each moment, it is absolutely impossible to lay down the exact quantity of the deranged humours, excrements and fundamental principles (of lymph chyle, blood, semen, albumen, etc.) that may be found in the human organism. Hence it is necessary for a physician to ascertain their state of equilibrium (their continuance in normal state and
should be lubricated or rubbed with any unboiled oil. A copious bleeding attended with pain would indicate that the needle has passed through a place other than the natural (and closed up) fissure described above; whereas the absence of any serious after-effect would give rise to the presumption that the piercing has been done through the right spot. Any of the local veins incidentally injured by an ignorant, bungling surgeon, may be attended with symptoms which will be described under the heads of Kālikā, Marmarikā, and Lohitikā.

Kālikā is marked by fever and a burning pain in the affected part and swelling. Marmarikā gives rise to pain and knotty (nodular) formations about the affected region, accompanied by (the characteristic inflammatory) fever; while in the last named type (Lohitikā) symptoms such as, Manyā-Stambha (numbness of the tendons forming the nape of the neck), Apatānak (a type of tetanus), Shirograха (headache) and Karna-shula (ear-ache) exhibit themselves, and they should be duly treated with medicinal remedies laid down under their respective heads. The lint should be speedily taken out from a pierced hole which is marked by extreme pain and swelling, etc., on account of its being made with a blunt, crooked or stunted needle, or owing to its being plugged with a deep and inordinately large lint, or to its being disturbed by the aggravated bodily humours (Doshas), or to its being made
at a wrong place. An unguent composed of Madhuka, Eranda roots, Manjisthá, Yava, Tila, honey and clarified butter pasted together, should be thickly plastered over the affected part until the ulcers are perfectly healed; after which the lobules of the ears should be again pierced through according to the directions laid down before.

The lint should be removed, each third day, and a thicker one should be inserted in its stead on each successive occasion, and the part should be rubbed with (unboiled oil) as before. For the expansion of the fissures, sticks of Nimba or Apamárga, or rods of lead should be inserted into them after the subsidence of the accompanying symptoms and deranged bodily humours (in the locality).

**Metrical Text:**—The fissures thus expanded may ultimately bifurcate the lobules of the ears owing to the effects of the deranged bodily humours (Dosha), or of a blow. Now hear me discourse on the mode of adhesioning them (with suitable bandages).

These unions or adhesions admit of being briefly divided into fifteen different kinds, viz., the Nemi-sandhánaka, the Utpala-Bhedýaka the Valluraka, the Ásangima, the Ganda-karna, the Áháryaya, the Nirvedhima, the Vyáyojima, the Kapáta-sandhika, the Ardha-kapáta-sandhika, the Samkshipta, the Hina-karna, the Vallikarna, the Yasthi-karna, and the Kákaushthaka.
Out of these, the process, known as the Nemi-sandhánaka, should be used in cases where each of the bifurcated lobes of the ears would be found to be thick, extended, and equal in size. The process, known as the Útpala-Bheyaka, should be used in cases where the severed lobes of the ears would be found to be round, extended, and equal in dimensions. The process, Valluraka should be resorted to in cases where the severed lobes of the ears would be found to be short, circular and equal in size. The process, known as the Ásangima, should be adopted in cases where the anterior surface of one of these severed appendages would have a more elongated shape than the other. The process, known as the Ganda-Karna, consists in slicing off a patch of healthy flesh from one of the regions of the cheeks and in adhering it to one of the severed lobes of the ears which is more elongated on its anterior side than the other (Plastic-operations). In the case of extremely short lobes, the flesh should be cut off from both the cheeks and adhered to them, the process being known as the Áháryaya. The lobes of the ears which have been completely severed from their roots are called Pithopamas. The process known as the Nirvedhima should be resorted to in such cases by piercing the two Putrikás (Tragus and Anti-tragus) of the ears.

The process known as the Vyáyojima should be made use of in cases where one of the bifurcated
lobes of the ear should be found to be dissimilar to the other as regards its thickness or thinness. The process known as Kapáta-Sandhika consists in bringing about an adhesion, on the posterior side, between one of the bifurcated lobes and another, which is elongated on the anterior side of the ear. The adhesion is so called from the fact of its resembling the closing of the two leaves of a door (Kapátam). The process known as the Ardha-Kapáta-Sandhika consists in bringing about an adhesion on the anterior side between the shorter one of the two parts of a bifurcated ear-lobe with the part, elongated on the posterior side, like a half-closed door.

The ten aforesaid processes of adhesion may be successfully brought about and their shapes can be easily pictured from the meanings of their respective names.

The remaining five sorts such as the Samkhiptam etc., are seldom attended with success and hence are called impracticable (Asádhayas). The process Samkhiptam has its scope in the case where the auricle (Shashkuli) has been withered up and one of the bifurcated lobes is raised, the other being reduced and shortened. The process of Hina-karna should be adopted in cases where the supporting rim of the lobe (pinna) has been entirely swept away and its exterior sides and the cheeks are sunk and devoid of flesh. Similarly the adhesive
process known as the Vallikarna is indicated in cases where the lobes are short, thin and unequal. The adhesion known as the Yasthi Karna is indicated in cases where the thin and severed ear-lobes are run across with veins and made of knotty or nodular flesh. The case in which the ear-lobe, being permeated with a little quantity of blood, is fleshless and ends in a narrow tip or end, furnishes the occasion for Kākusthakapāli.

The five above-said adhesions, if followed by swelling, inflammation, suppuration and redness of the affected part and found to be secreting a sort of slimy pus or studded over with pustular eruptions, may be apprehended as not to be attended with success.

**Authoritative verses on the subject:**—The exact middle point of the external ear should be pierced (with a knife) and the severed parts should be pulled down and elongated in the case where both the parts of a bifurcated ear-lobe would be found to have been entirely lost or eaten away. In the case where the posterior one of the two bifurcated parts would be found to be longer or more elongated, the adhesion should be effected on the anterior side; whereas the contrary should be the case where the anterior one would appear to be more elongated. Only the remaining one of the two bifurcated parts of an ear-lobe would be pierced, cut in two and adhesioned on the top,
in the case where the other part would be found to be gone. A surgeon well-versed in the knowledge of surgery (Śhástras) should slice off a patch of living flesh from the cheek of a person devoid of ear-lobes in a manner so as to have one of its ends attached to its former seat (cheek). Then the part, where the artificial ear-lobe is to be made, should be slightly scarified (with a knife), and the living flesh, full of blood and sliced off as previously directed, should be adhesioned to it (so as to resemble a natural ear-lobe in shape).

A surgeon, wishing to effect any sort of adhesion other than those described before, should first collect the articles enumerated in the chapter on Preliminary Measures to Surgical Operations, together with milk, water, Dhánýámla (fermented rice boilings), Surámanda (transparent surface-part of wine) and powders of earthen vessel. Then the hair of the patient, whether male or female, should be gathered and tied up in a knot, and the patient should be given a light food (so as to keep up his strength without hampering his digestion); after which his friends and relations should be asked to hold him firm. Then having ascertained the particular nature of adhesion to be effected in the case, the surgeon should examine the local blood by incising, excising, scarifying or puncturing the affected lobes as found necessary, and determine whether the same is pure or vitiated. Then having
washed the blood with Dhānyāmla and tepid water, if found vitiated through the action of the deranged (Vāyu), or with milk and cold water in the event of the same being contaminated by the deranged Pittam, or with Surāmaṇḍa and warm water in the case of its being vitiated by the action of the disordered Kapham, the surgeon shall bring about the adhesion by again scarifying the affected parts of the ear, so as not to leave the adhesiioned parts elevated (raised), unequal and short. Of course the adhesion should be effected with the blood being still left in the parts that had been scraped. Then having anointed them with honey and clarified butter, they should be covered with cotton and linen, and tied with strings of thread, neither too loose nor too tight, and dusted over with powders of baked clay. Then directions should be given as regards the diet and nursing of the patient, who may be as well treated with the regimen laid down in the chapter on Dvi-vranīyam.

Authoritative verses on the subject:—The patient should be careful not to disturb the bandage and avoid physical exercise, over-eating, sexual intercourse, exposure to, or basking in, the glare of fire, fatiguing talk, and sleep by day. For three consecutive days the ulcer should be anointed with unboiled oil; and cotton soaked in the same substance should be placed over it, which is to be altered, each third day, till healing.
The incidental ulcer should not be tried to be healed up as long as the local blood (blood in the ulcer) is not fully purified; or so long as there is haemorrhage from the seat of the affection or the local blood continues feeble. An ulcer, adhesioned with the least of the Vayu-vitiated blood continuing in its inside, will spontaneously burst or break open afresh. It will be again attended with pain, burning, redness and suppuration in the event of its being closed with a little quantity of Pitta-deranged blood incarcerated in its inside. Adhesioned even with a little quantity of Kapha fouled blood in its cavity an ulcer is marked by itching and numbness. An ulcer adhesioned with the continuance of an active haemorrhage from its inside is marked by a brown or blackish yellow swelling. An ulcer, adhesioned at a time when the local blood, though otherwise good or pure, has been thinned or weakened through excessive bleeding, is followed by a corresponding emaciation (thinness) of the adhesioned part. The lobule of the ear thus adhesioned should be gradually pulled down and elongated after the complete healing of the local ulcer and the subsidence of its concomitant symptoms, and after the cicatrix has assumed the colour of the skin of the surrounding part. Otherwise the adhesioned part may be characterised by pain, swelling, inflammation, burning and suppuration, or the adhesion may again fall off. An adhesioned ear-lobe, un-
accompanied by any of the distressing or unfavourable symptoms, should be gradually elongated by rubbing it with an unguent composed of the milk, fat, and marrow of any such animals and birds as the Godhá, the Pratudas, the Vishkiras, the Ánupas, or the Audakas as would be available, and clarified butter and the oil expressed out of the seeds of white mustard, boiled with the decoction or Kvátha of Arka, Alarka, Valá, Ativalá, Anántá, Apamárga, Ashvagandhá, Vidarrigandhá, Kshira-Shukla, Jalashuka and the drugs forming the group known as the Madhura, which should be previously prepared and carefully stowed in a covered receptacle.

**Metrical texts:**—Then the above medicinal unguent should be applied or rubbed over the lobe of the affected ear, whereby all the disturbing or unfavourable symptoms would be subsided, thus favouring its firm and steady growth. Similarly a plaster composed of Yava, Ashvagandhá, Yashtyáhva, and Tila, pasted together might be rubbed over the affected ear-lobe with advantage. Oil prepared and boiled with the essence of Shatávari, and Ashvagandhá, or Payasyá, Eranda, Jivana and milk increases the growth of an ear-lobe. The lobe of an ear, which refuses to grow in size in spite of being fomented and lubricated as above indicated, should be scarified with slight longitudinal incisions on its anterior side (that is on the side nearest to the cheeks)
and not on the posterior one, as such a procedure might be attended with dreadful results.

An ear-lobe should not be tried to be elongated just after the adhesion of its two severed parts, inasmuch as the centre of the adhesion, still being raw, might cause them to fall off again. Thus an ear-lobe under the circumstance should be gradually elongated, only when it would be found to be marked by the growth of hair on its surface, and the hole or the perforation has assumed a circular look, and the adhesion has become firmly effected, well-dried, painless, even and level in its entire length.

The modes of bringing about an adhesion of the two severed parts of an ear-lobe are innumerable; and a skilled and experienced surgeon should determine the shape and nature of each according to the exigencies of a particular case. *

* **Additional Text:**—O Sushruta, again I shall deal with diseases which affect the lobule of an ear under the circumstance described above. The deranged bodily Vāyu, Pittam and Kapham, either jointly or severally, give rise to several types of diseases which affect the lobule of an ear. The deranged Vāyu produces numbness and an erysipelasant swelling and ulcer about the affected ear-lobe, while an erysipelasant ulcer in the locality accompanied by swelling, burning, suppuration, etc., should be ascribed to the action of the deranged Pittam. Heaviness, numbness and swelling of the ear-lobe accompanied by constant itching in the affected locality mark the action of the deranged Kapham. The medical treatment in these cases consists in effecting a subsidence of the particular deranged humour by means of diaphoresis, lubrication, Paríshekás (medicated plasters) or blood-letting as the case may be. These measures should be moderately applied and a nutritive and invigorating food should be pres-
Rhinoplastic operations:—Now I shall deal with the process of affixing an artificial nose.

cribed for the patient. The physician who is well familiar with the actions of the deranged bodily humours as described above, should be looked upon as alone entitled to take in hand a case, which falls under the head of one of the preceding types.

Now I shall enumerate the names of the several diseases which affect a severed lobe of the ear and describe the symptoms which each of them develops in succession. They are known as Upatuka, Upatuka, Shyāva, Bhrism-kandujāta, Avamantha, Sakanduka, Akundaka, Granthika, Jāmvatya, Sravī and Dāhavāna. Now hear me discourse on the nature of medicinal treatment to be adopted in each of them.

Remedies:—A plaster composed of the drugs known as Ápāmārga, Sarjarasa, Patala bark and Lākuchi bark pasted together, or a medicated oil prepared and boiled with the preceding substances should be applied in a case of the Upatuka type, whereas a case of the Upatuka type would prove amenable to a medicinal plaster consisting of Shampāka, Shigru, Patika, the fat and marrow of a Godhā, and the milk and bile of a she-deer, she-buffalo or sow, pasted together; or to a medicated unguent composed of the abovesaid substances duly boiled with oil. Similarly, a medicinal plaster composed of the drugs known as Gauri, Sugandhā, Shyāma, Anantā, Tanduliyakam, or an oil prepared and boiled with the extract of the preceding drugs, would prove beneficial in a case of the Shyāva type of the disease. In a case of the Vrisham-Sakundakam type, the affected part should be rubbed or lubricated with an unguent or medicated oil prepared with the boiled extract of Pāthā, Rśanjananam, Kshoudram, and warm Kanjikām, or a plaster composed of the same drugs and substances should be applied over the diseased locality.

In a case of ulceration, the ulcerated ear-lobe should be rubbed with the oil prepared and boiled with the drugs known as Madhukam and Kshira-kākoli, or with those which form the group known as the Jivakādi-Varga; while in a case where Vringhanam measures are to be adopted, lard prepared from the fat of a Godhā, boar, or snake might be used with advantage. In the Avamanthaka type the diseased ear-lobe should be washed and covered with a plaster composed of the drugs known as Prapundarikam, Madhukam, Samandī and Dhavam, or rubbed with oil prepared and boiled with the same drugs. Similarly, a case of Kanda-juta (accompanied with itching) would yield to a plaster composed of the drugs known as Sahadeva, Vishvadeva, and Saindhava salt pasted with goat's milk, or to the medicated oil boiled and prepared with the same drugs and substances.
First the leaf of a creeper, long and broad enough to fully cover the whole of the severed or clipped off part, should be gathered; and a patch of living flesh, equal in dimension to the preceding leaf, should be sliced off (from down upward) from the region of the cheek and, after scarifying it with a knife, swiftly adhered to the severed nose. Then the cool-headed physician should steadily tie it up with a bandage decent to look at and perfectly suited to the end for which it has been employed (Sādhu Vandha). The physician should make sure that the adhesion of the severed parts has been fully effected and then insert two small pipes into the nostrils to facilitate respiration, and to prevent the adhesioned flesh from hanging down. After that, the adhesioned part should be dusted with the powders of Pattanga, Yashtimadhu and Rasānjana pulverised together; and

In a case of the Granthika type (accompanied by the formation of knotty growths in its inside) the knotty growths or glandular formations should be first removed, and the affected locality should be bled with a surgical instrument and dusted with powdered Saindhava salt. Likewise, in a case of Jāmvala type, blood-letting should be resorted to by scarifying the seat of the disease, which should be then washed with a spray of milk. The ulcer should be healed after the perfect purification of its internal morbid contents. A case of the Srāvi (secreteting) type would readily yield to a medicinal plaster composed of the drugs known as Madhuparni, and Madhukar, or of Madhukam pasted with honey, or to the medicinal oil prepared and boiled with the same drugs and substances. A case of the Dahyamāna (burning) type should be treated with a plaster composed of the drugs known as the five Kalkas and Madhukam pasted together and mixed with clarified butter, or with a pasted compound of the drugs which form the group of the Jivakadi Varga with a quantity of clarified butter added to it.
the nose should be enveloped in Kārpāsa cotton a several times sprinkled over with the refined oil of p sesamum. Clarified butter should be given to the patient for drink, and he should be anointed with oil a treated with purgatives after the complete digesti of the meals he has taken, as advised (in the books medicine). Adhesion should be deemed complete at the incidental ulcer had been perfectly healed up, wh the nose should be again scarified and bandaged in t case of a semi or partial adhesion. The adhesion nose should be tried to be elongated where it wo fall short of its natural and previous length, or it sho be surgically restored to its natural size in the case the abnormal growth of its newly formed flesh. T mode of bringing about the adhesion of severed lips identical with what has been described in connecti with a severed nose with the exception of the inserti of pipes. The physician, who is well conversa with these matters, can be alone entrusted with t medical treatment of a King.

Thus ends the sixteenth chapter of the Sutra-Sthānam in the Sush Samhitā which treats of the Piercing and Bandaging of ear-lobes.
CHAPTER XVIII.

Now we shall discuss the Chapter which deals with the mode of distinguishing between suppurating and non-suppurating swellings. Ama-pakkaishaniyamadhyayam.

Diseases such as, Granthi (Aneurism), Vidradhi, (abscess) and Alaji (inflammation of the edge of the cornea) etc. are ushered in by a preliminary swelling which subsequently develops symptoms peculiar to each of them. These diseases differ in their symptoms and outward shape. A swelling which may appear at any part of the body, and is round, elevated, even, or uneven in its (surface) is called a Shotha (swelling). It restricts itself to the skin and flesh of its locality and is characterised by the several or concerted action of the deranged bodily humours. The Shothas (swelling) admit of being divided into six different types according as they are caused by the action of the deranged Váyu, Pittam, Kapham or blood, or are due to the concerted action of the three fundamental humours of the body, or are of traumatic origin.

Now we shall describe the symptoms which mark the respective actions of the humours in a swelling. A swelling due to the action of the deranged Váyu assumes a reddish or blackish hue and is shifting in its character. It feels rough and soft to the touch,
and is marked by a sort of aching pain (peculiar to the deranged Vāyu) which vanishes at intervals.

A swelling, due to the action of the deranged Pittam, assumes a yellowish hue. It is soft and fluctuates under pressure, and is marked by an accumulation of blood in its body. It swiftly shifts from one part of the body to another, accompanied by a burning, sucking pain. A swelling, brought about through the deranged condition of the Kapham, assumes a grey or whitish colour. The skin becomes glossy and cold, and the swelling very slowly changes its original site, if it shifts at all, accompanied by pain and itching. A swelling engendered through the concerted action of the three bodily humours successively manifests the symptoms and assumes the colours respectively peculiar to each of them. The symptoms which mark a swelling due to the action of the vitiated blood are identical with those which are exhibited in a swelling of the Pittaja type with the exception of the blackness of the part (and an increase of heat). A swelling due to an external blow (traumatic) manifests symptoms peculiar to the Pittaja and blood-origined types.

A swelling, which does not yield to internal and external remedies on account of an excessive accumulation of the deranged local humours, or through the insufficient or contrary effects of the remedial agents, shows sign of suppuration.
Now hear me describe the symptoms, which respectively mark an unspurred, suppurating or suppurated swelling. The unspurred or immature stage continues as long as the skin of the swelling retains its natural hue, marked by a little pain and heat in its inside, and coldness, hardness and a slight elevation of its surface.

The suppurating stage gives rise to a sensation of pricking pain in the affected locality. The swelling seems as if it is being pricked with needles, or bitten or wandered over by a host of ants, or cut with a knife, or pierced with a spear, or thrashed with a club, or pressed with the hand, or scraped round with fingers, or burnt with a fire or an alkali. The patient complains of a sort of sucking, burning pain in the swelling of a fixed or shifting character. The patient, as if stung by a scorpion, does not find comfort in any place or position. The hue of the local skin is changed and the swelling goes on increasing like an inflated leather bag; and fever, thirst, a burning sensation and aversion to food etc. gradually supervene.

The suppurated stage is marked by an amelioration of the local pain and a yellowishness of the skin over the swelling, which cracks and seems too big, thus giving rise to folds in the integument. The swelling exhibits fluctuation under pressure and shows perceptible signs of diminution. Moreover, it yields to pressure and
reaches its former height when the pressure is removed. The pus or the suppurated matter changes its place, or shifts from one part of the swelling to another under pressure like water in a bloated leather bag. The distressing symptoms gradually subside; the patient again evinces a desire for food, and feels a constant inclination for scratching the affected part which is characterised by a sort of aching pain. Sometimes, as in cases of traumatic swelling or in those brought about by a deranged condition of the Kapham, the suppurating process is restricted to the deeper tissues of the affected part and hence fail to exhibit its characteristic symptoms—a fact which often misleads a physician (surgeon) as regards the true state (lit.—whether suppurated or not) of the accompanying swelling. But the knowledge that a process of suppuration, occurring in the deeper tissues of an affected part, is accompanied by alleviation of the pain and swelling which becomes as compact as a stone and cold to the touch, and the local skin resuming its natural colour, would unquestionably ward off all apprehensions for error of judgment.

Authoritative verses on the subject:—A physician (surgeon) who is fully conversant with the symptoms which are respectively exhibited by (an inflammatory) swelling in its unsuppurated, suppurating and suppurated stages, is alone worthy of the epithet; the rest are but impostors. Since there can
be no pain without the intervention of the deranged Vāyu; and no suppuration can set in without the action of the deranged Pittam; nor pus, without the action of the deranged Kapham; it is evident that a suppurated swelling is marked by the combined and simultaneous action of the three deranged humours of the body.

According to certain authorities, the deranged Pittam gets the preponderance over the local Vāyu and Kapham, and transforms the blood into pus out of its own preponderant energy.

The incision or opening of a swelling in its inflammatory or un supp urated (lit. immature, unripe) stage is attended with the destruction of the local flesh, ligament, bone, vein, or joint, and is usually followed by excessive hæmorrhage. The incidental wound becomes extremely painful. Many distressing symptoms begin to manifest themselves in succession and cavities are formed inside the wound which may lapse into a case of Kshata-Vidradhi (a type of ulcerated abscess).

On the other hand, a fully suppurated swelling, left unopened for a long time out of fear or ignorance by the attending physician, is attended with symptoms which are fraught with dreadful consequences. The accumulated pus, unable to find an outlet, is infiltrated and attacks the deeper tissues of the affected part, and forms large cavities or sinuses in their inside, thus converting
the disease into one of a difficult or incurable type.

**Authoritative verses on the subject:**—The physician (surgeon) who opens an unsuppurated or unripe swelling out of ignorance, as well as the man who neglects a fully suppurated one, should be looked upon as the vilest Chandála for his wrong or incorrect diagnosis. The patient should be provided with a meal before the surgical operation, or strong wine should be given him, if he is found to be addicted to the habit of taking any. The effect of a good meal under the circumstance will be to keep up the strength of the patient and to guard against his swooning during the operation, while the effect of wine will be to make him unconscious of the pain. The rule as regards the feeding and anaesthetising (wine giving) of the patient should be strictly adhered to, since the internal vital principle of a man is invigorated by the strength of his body which is the product of lymph-chyle, the essence of food, and the quintessence of the five material principles. A swelling, no matter whether limited or extensive, spontaneously runs on to suppuration, if not medicinally treated, or left to nature. The base of such a swelling goes on extending. It becomes unequally suppurated and reaches an unequal elevation, thus affecting the deeper tissues of the part and swiftly running into one of an incurable type. A swelling, which does not yield to the application of medicated plasters
or to corrective or blood-letting measures, speedily and uniformly suppurates, and is marked by a small and restricted base and a circular or conical elevation. As a blazing fire fed by gusts of favourable wind soon consumes a withered forest, so the incarcerated pus, in the absence of any outlet, attacks and eats away the healthy flesh, veins and nerves of an organism.

Surgical acts in connection with an abscess (Shotha) may be divided into seven kinds such as 1. mutilation (Vimlápanam) of the swelling by massage, 2. Avashechanam (bleeding or application of leeches) 3. Upanáham (poulticing) 4. Pátanam (opening or incision) 5. Shodhanam (purification of the internal morbid matter of an incised boil with corrective medicines) 6. Ropanam (healing) and 7. Vaikritápa-ham (restoring of the natural colour of the skin to the cicatrix).

Thus ends the seventeenth Chapter of the Sutrastham in the Sushruta Samhita, which treats of how to distinguish between suppurating and non-suppurating swellings.
CHAPTER XVIII.

Now we shall discourse on the Chapter which treats of dressings and bandages of ulcers (Vranlepana-Vandha-Vidhi-madhyayam).

A medicinal plaster should be regarded as the general and most important remedy in all cases of (inflammatory) swelling. We shall presently discuss the nature of plasters to be used in each specific form of disease. A bandage plays a more important part (than a medicinal plaster), as regards its healing and curative efficacy, inasmuch as it materially contributes to the purification and healing of an ulcer and keeps the joints steady. A medicinal plaster should be applied from down upward or in a direction contrary to that of the local hair (Pratiloma). It should never be applied (so as to run down with the local hair), since a plaster, applied as directed above, would firmly stick to the surface of the affected part, and naturally percolate through the follicles of the hair and the external orifices of the vehicles of perspiration (Sudoriferous ducts), thus permeating the organism with its own native potency and virtue.

A medicinal plaster should be removed or replaced by a fresh one as soon as it has become dry, except in cases where the purpose of its application
would be found to be the drawing of pus to a definite head (Pidayitavya Vrana).

A dried medicinal plaster will prove useless or abortive, and may act as a caustic or corrosive agent. A medicinal plaster admits of being grouped under any of the three subheads of Pralepa, Pradeha and Álepana (according to its thickness or consistency) etc.

**Medicinal plasters:**—A medicinal plaster of the Pralepa class is applied thin and cold, and is made to be endured with an absorbing (Vishoshi) or non-absorbing (Avishoshi*) property according to the nature of the effect desired.

On the other hand, a medicinal plaster of the Pradeha class is applied either thick or thin, warm or cold, and acts as a non-absorbent.

A medicinal plaster of the Álepana class stands midway between a Pralepa and a Pradeha.

Of these, a plaster of the Pralepana class is possessed of the efficacy of pacifying or restoring the deranged blood and Pittam to their normal condition. A plaster of the Pradeha class pacifies the deranged Váyu and Kapham and tends to bring about the union, purification, and healing (of an ulcer), causing the

* As in the case of a Pidayitavya ulcer, described before, where the withdrawing or gathering of pus to a definite head is desired.
subsidence of pain and swelling. Hence it should be used in all types of swelling whether ulcerated or otherwise.

A medicinal plaster (Álepanam) applied over an ulcer is called by the changed epithet of Kalka or Niruddha-Álepanam (arrestive or astringent plaster). The function of such an Álepanam consists in arresting a local hemorrhage, in softening the ulcer, in withdrawing sloughing or putrifying flesh from its cavity, in checking the formation of pus in its inside, and in correcting the morbid matter or deranged humours (that retard its union and healing).

Metrical Texts:—A medicinal plaster of the Álepanam class would prove beneficial in a swelling marked by the absence of suppuration, inasmuch as it subdues the characteristic symptoms of each of the deranged bodily humours viz, the burning sensation (peculiar to the deranged Pittam), itching (incidental to the deranged state of Kapham) and the aching pain (which marks the disorder of the bodily Váyu). Its action lies principally in cleansing the skin, the flesh and the blood of all morbiferous diatheses, in removing the burning sensation, and in alleviating the piercing pain and itching.

A physician (surgeon) should use an Álepana in ulcerous diseases appearing about the anus, or about any other vital part (Marmas) of the body, with a view
to bring about the purification of the (local deranged humours). In diseases caused by a deranged condition of the Vāyu, Pittam or Kapham, medicinal plasters should be respectively mixed with a quantity of clarified butter, measuring a sixth, quarter, and an eighth part of their respective quantities.

It has been said that the thickness of an Ālepanam should not be made to exceed that of the newly-flayed skin of a buffalo. Under no condition, should a medicinal plaster be applied at night, inasmuch as such a measure would arrest the escape or radiation of heat from the swelling in virtue of its own inherent humidity, and thus bring on an aggravation.

**Metrical Texts:**—In diseases, which are amenable to the application of medicinal plasters of the Pradeha type, as well as in swellings resulting from the vitiated condition of blood and the Pittam, or in those which are of extrinsic origin, or are due to the effect of a poison or blow, the plaster should be applied cold, by day. A plaster should not be applied without removing the previous one, nor over the one applied on the day before, as this would increase the local heat and aggravate the pain and the burning sensation on account of its greater or increased thickness. A medicinal plaster, previously used, should not be moistened and applied again; it should be held
as absolutely ineffective owing to its virtue having been previously used or soaked in.*

**Articles of bandaging:**—Now we shall enumerate the names of articles which are required in bandaging ulcers. They are as follows:—

Kshauma (cloth woven with the fibres of Atasi plant), Ávika (blankets made of sheeps’ wool), Dukulum (loom-silk), Kausheya (silk), the Patrona (a kind of cloth made of the fibres of Nága trees, which grow in the provinces of Paundra and Magadha), the Chinapatta (Chinese cloth), Antarvalkala (the inner bark or fibres of a tree), Charma (skin), the Alávu Shakala (the skin of a gourd), the Latá-Vidala (half thrashed Shyámá creepers), string or cord, the cream of milk, Tula-phalam (cotton seeds) and iron. These accessories should be used in consideration of the exigencies of each case and the time or the season of the year in which it occurs.†

* This portion of the text has been omitted by Chakrapani in his commentary entitled the *Rhammati*.

† In a swelling or ulcer caused by the deranged Váyu and Kapha, the bandage should consist of a piece of thick cloth; whereas in summer it should consist of thin linen. Similarly, a bandage, tied round any deep or hollow part of the body, should consist of a piece of thick cloth. The contrary rule should be observed, when the seat of the bandage would be at any flexible part of the body.

Similarly, in the case of a snake-bite, a ligature should be firmly tied above the punctured wound with a string or twisted cord of cotton, while a fractured bone should be set right by twisting bunches of half-thrashed shyámá creeper (Latávidala) round the seat of fracture. A local hemorrhage
**Bandages:** The fourteen different forms of bandage are named as the Kosha (a sheath or scabbard), the Dáma (a cord or chaplet), the Svastika (cross), the Anuvellita (a twist), the Pratoli (a winding street or road), the Mandala (ring), the Sthagiká (a betel-box), the Yamaka (double or twin), the Khattá (a bedstead), the China (a streamer), the Vivandha (noose), the Vitána (canopy) the Gophaná (cow-horn), the Panchángi (five limbed). Their shapes can be easily inferred from the meanings of their names.

**Applications:**—Out of these, the Kosha or the sheath-shaped bandage should be tied round the thumb and the phalanges of the fingers; the Dáma or chaplet-shaped bandage, round the narrow or unbent parts of the body; the Svastiká or cross shaped, round the joints, round the articulations or the Marmas known as the Kurchakás (Navicular ligaments) round the eye-brows, round the ears and round the region of the breast. Similarly, the bandage, known as the Anuvellita, should be used when the seat of the affection would be found to be situated at the extremities (hands and legs). A bandage of the Protoli class should be tied round the neck or the penis; the Mandalam ring-

should be arrested by binding the part with milk-cream, while the affected part in a case of Ardóta (facial paralysis) as well as a broken tooth should be bound with strings of iron, gold or silver. Watts, etc., should be bandaged with Eka (correspondent skins), while dried gum-skins should be used in bandaging ulcers on the head (scalp).
shaped), round the circular parts of the body; the Sthagliká (betel-box), round the glans-penis and the tips of the fingers; the Yamakam, round the confluent or contiguous ulcers; the Khattá (bedstead-shaped), over and around the cheeks, cheek-bones, and the parts between the ears and the eye-brows; the Vitánam over the skull, the Gophaná (horn-shaped), round the region of the chin; and the Panchángi, round the part lying above the clavicles.

In short, a bandage of any particular shape should be tied round the part of the body to which it would be found to be most suited. Now we shall deal with the Yantranás (fastenings of bandages) which admit of being divided into three different classes according as they are fastened above, below, or obliquely round an ulcer.

**Kavaliká (Tow):**—Any soft stuffing or tow (such as the leaves or the bark of trees of medicinal virtues) between the medicine applied over an ulcer and the bandaging linen is called the Kavaliká (medicated tow). The tow or the Kavaliká should be placed thickly (on the seat of affection); and then the physician (surgeon) having pressed it with his left hand should* place a piece of straight, soft, untwisted,

* Carefully examining whether the applied remedy had been uniformly distributed over the diseased surface and whether the contemplated pattern of bandage would be actually suited to the case.
and unfolded or unshrivelled linen over it, and then firmly tie up the bandage in a manner so as not to leave any knot over the seat of the ulcer, or to cause any discomfort to the patient.

**Introduction of lint:** A Visheshiká (lint) saturated with honey, clarified butter, and a medicinal paste should be inserted into the ulcer. Care should be taken not to introduce the lint extremely dry, or oily (oversoaked in a lubricating or oily medicinal preparation), inasmuch as an over-lubricated lint would give rise to an excessive formation of slimy mucus in the ulcer, whereas, its parched substitute would bring about the friction and the consequent breaking of the edges of the ulcer, like one misplaced or wrongly inserted.

A bandage should be tied in any of the three ways of Gádha, Sama and Shithila fastenings according to the shape and seat of the ulcer.* A tight bandage (Gádha-Vandha) should be tied round the buttocks, round the sides, round the arm-pits, round the inguinal regions, round the breast or round the head. A bandage of the Sama pattern should be fastened round the ears, round the extremities (hands

* **Additional text:**—A bandage, tightly tied round an ulcerated or affected part of the body without causing any pain or discomfort to the patient, is called a Gádha-Vandha, while the one which is loosely bound is called Shithila, the one neither too tight nor too loose being called a Sama-Vandha.
and legs), round the face, round the throat, round the lips, round the penis, round the scrotum, round the back, round the belly and the chest. A loose bandaging (Shithila-Vandha) should be the rule in the region of the eyes and locations of important joints or unions.

An ulcer, brought about or characterised by the symptoms of the deranged Pittam and occurring at a place where a tight bandaging is indicated, should be fastened with one of the Sama-Vandha class, and with a Shithila bandage where one of the Sama type would be indicated; whereas it should not be bandaged at all in the event of a loose bandage (Shithila-Vandha) being indicated. The same rule should be observed in the case of an ulcer caused through a diseased or contaminated state of the blood. Similarly, in the case of an ulcer produced through a deranged condition of the Kapham, a loose bandaging, otherwise enjoined to be adopted, should be substituted for one of the same pattern. A tight bandage should give place to a lighter one under the same circumstances, and such a procedure should be deemed as holding good even in the case of an ulcer caused by the action of the deranged Vāyu.

In summer and autumn, the bandage of an ulcer, due to the vitiated blood or Pittam, should be changed twice a day; while the one tied round an ulcer of the deranged Vāyu or Kapham, should be changed on each
third day in spring and Hemanta. Similarly, an ulcer, marked by the action of the deranged Váyu, should be bandaged twice a day. "Thou shalt exercise thy own discretion, and vary or adopt the preceding rules of bandaging according to the exigencies of each case."

A medicated lint fails to have any efficacy but rather tends to augment the local pain and swelling where a bandage, enjoined to be loosely bound, or bound up with moderate and uniform steadiness (Sama-Vandha), is replaced by a tight or deep fastened one (Gádha-Vandha). A loose bandage, injudiciously used in a case where a tight or a moderately firm bandage should have been used, would cause the medicine to fall off from the lint and give rise to the consequent friction and laceration of the edges of the ulcer. Similarly, a moderately firm and steady bandage (Sama-Vandha) fastened in a case where a light or loose bandage should have been used, would fail to produce any effect. A proper bandage would lead to the subsidence of pain, and the softening of the edges of the ulcer, thus bringing about a purification of the local blood.

**Evils of non-bandaging:**—An ulcer, left uncovered and untied with a suitable bandage, is soon assailed by gnats and flies. It is moistened by sweat and cold wind, etc. and stands in danger of being irritated by deposits of many foreign matters
such as, the particles of bone, dust, weeds, etc. Moreover, a constant exposure to heat or cold brings on varied pains, the ulcer develops into one of a malignant type, and the applied medicinal plasters are dried, encrusted and speedily fall off.

**Metrical Texts**:—A smashed, lacerated, fractured, dislocated, displaced bone, or a vein or a ligament similarly jeopardised, may be soon healed or set right with the help of a surgical bandage. The patient is enabled by such a means to lie down, or stand up or move about with ease. And an increased facility of rest or movement leads to speedy healing.

**Cases where bandaging is prohibited** :—Ulcers should not be bandaged at all that are due to the deranged condition of blood or Pittam, or to the effects of a blow or of any imbibed poison, and characterised by a sucking, burning pain, redness, or suppuration, as well as those which are incidental to burns, or to the applications of actual or potential cauteries marked by a sloughing or phagedenic character.

**Metrical Texts** :—An ulcer due to a scald in a leper or a carbuncle in a diabetic patient (Pidaká) as well as a fleshy condylomata due to a bite from a venomous rat, or any other poisonous ulcer should not be bandaged at all. The same rule should be observed.

* Different reading :—Pricking, burning pain.
in the case of a dreadful suppuration about the anus, or in that of a sloughing ulcer. An intelligent physician, familiar with the specific features of ulcers, should observe the shape of the one under treatment, and prognosticate the result from its seat or locality and the nature of the deranged bodily humours involved in the case. The season of the year in which an ulcer is first seen to appear also determines the nature of the prognosis.

Bandages may be tied up either from above, below, or from the sides of a diseased locality. Now I shall fully describe the process of bandaging an ulcer.* First the Kavalikā or tow should be thickly laid over the seat of the ulcer and after that a piece of soft and unshrivelled linen should be placed upon it, and the bandage should be loosely or tightly tied up according to the directions laid down before.*

The lint and the (inserted) medicine should not be over-lubricated and must not be inordinately oily in as-much as such a lint or medicine would give rise to the formation of excessive and abnormal slimy mucous in the ulcer. On the other hand, an extremely dry lint would set up friction and laceration of the edges of the ulcer, like the one wrongly or improperly inserted

* Several authorities such as Gayadāsa, Brahmadeva, etc. hold this portion of the text to be an interpolation. Both Dadhana and Chakrapāni have included it within their commentaries with nearly the same remark.
into its cavity, causing numbness, excessive exudation and unevenness of its surface. A lint, properly saturated with a medicinal plaster and rightly inserted into the cavity of an ulcer, leads to its speedy healing. All secreting measures in connection with an ulcer should be continued or stopped according to its condition, whereby the nature and shape of the bandage should be determined as well. An ulcer, due either to the deranged condition of blood or the Pittam, should be dressed and bandaged once a day which may be extended to a number of times in the case of an ulcer brought about by the deranged Kapham and Váyu. The pus or the local morbid matter should be secreted by pressing the base or the bottom of an ulcer and by gently moving the hand along it in a contrary direction (down, upward); and all bandages (around joints and Gudasandhis) should be duly tied up.

The rules laid down under the head of adhesioning the parts of a bifurcated ear-lobe would hold good in a case of severed lips as well. The measures amply discussed in the present Chapter should be extended by means of inference, analogy and judgment to apply mutatis mutandis to the bandaging of a fractured or dislocated bone.

An ulcer, properly bandaged, has a greater chance of not being affected by lying down, sitting up, or any other movement of the patient, nor by the joltings
of a conveyance he may ride or be carried in. An ulcer affecting a vein or a ligament or the skin (superficial) or the flesh or the bones cannot be healed without bandaging it. An ulcer situated in any of the internal chambers (cavities) of the body, or occurring at any junction of the limbs or organs, etc. or having its seat in a bone and whether of a deep, superficial, malignant, or corrosive character, cannot be brought to a successful termination without the help of a bandage.

Thus ends the eighteenth Chapter of the Sutrasāñānam in the Sushruta Samhitā which treats of the dressing and bandaging of ulcers.
CHAPTER XIX.

Now we shall discuss the Chapter which treats of the management or nursing of a patient with an ulcer etc. (Vranito-pasaniya-madhyayam).

First of all a suitable chamber should be sought and selected for a patient, suffering from an ulcer. It should be roomy and spacious and situated in a commendable site.

Metrical Text:—Diseases, which are physical, mental or traumatic in their origin, can never attack a person who dwells in a clean and spacious chamber, protected from excessive heat, and strong gusts of wind.

The bed should be spread clean, ample and comfortable, with the head of the headstead turned towards the east, and provided with some kind of a weapon.

Metrical Texts:—In a spacious and well-spread bed, an ulcer-patient can toss about and move his limbs with the greatest comfort. The reason for the head being turned towards the east is that the patient may easily make obeisance to the (demons and) celestial spirits, who inhabit that quarter of the sky. Thus the patient shall lie in comfortable posture, attended upon by his sweet-talking friends and relations.
Metrical Text:—The friends and relations of a patient shall alleviate the pain of his ulcer with pleasant and interesting topics, and by solacing him with the prospect of a speedy recovery. An ulcer-patient should not sleep in the day time, as it tends to aggravate the pain, swelling and redness of the ulcer, increases its exudations, and gives rise to itching and heaviness of the limbs.

The patient must carefully protect the ulcer when moving any of his limbs, such as standing up, or sitting down, or turning on his sides, or while moving about, or speaking in a loud voice.

Metrical Text:—An ulcer-patient, even if he feels himself strong and capable, should avoid a standing or sitting posture, as well as locomotion, and day-sleep. These acts done to excess, or a long confinement to bed would aggravate the bodily Vayu, thus causing pain in the ulcer.

He should studiously avoid the company and touch of, and even conversation with, women with whom he can legitimately have intercourse.

Metrical Text:—The sight of a woman etc might lead to the secretion and emission of semen and

* Different reading:—Riding in a carriage or on horseback, and garrulousness.
give rise to all the distressing symptoms, which are consequent upon an act of actual coitus under the circumstance.

Prohibited diet:—A diet consisting of newly harvested Dhányam, Másha pulse, Sesamum, Kaláya, Kulattha, and Nishpába should be avoided by an ulcer-patient. The pot-herbs known as Haritaka-sháka, acid, saline or pungent substances, treacle and its modifications, cakes, dried meat, dried pot-herbs, goat’s flesh, mutton, meat of animals which are amphibious in their habits or which live close to water, lard, cold water, Krishará a composition prepared with sesamum, Másha pulse and rice), Páyasa (a sweetened preparation of rice, milk and sugar boiled together), curd, milk and whey should be regarded as unwholesome.

Metrical Texts:—Vegetables and articles which belong to the groups commencing from the one technically known as the Nava-Dhánya-Varga, and ending with the one known as the Takra-Varga, should be understood as possessed of the property of increasing the pus in an ulcer and of aggravating the deranged bodily humours. If in the habit of taking wine, an ulcer-patient will do well to avoid the use of spirituous liquors, such as Mairaya, Arishta, Ásava, Sidhu, Surá and its varieties.* An ulcer may develop

* The species of wine which are made of the expressed juice of grapes and are antacids in their virtues, as well as those mentioned under the head of Hæmoptysis, may be given to an ulcer-patient.
into one of a malignant type through the use of a wine which is acid in its taste, or is sharp, dry and heat-making in its potency, or is followed by almost instantaneous intoxication.

An ulcer-patient should avoid all things that retard the progress of a rapid cure, such as wind, dust, smoke, exposure to heat and cold, over-eating, unpleasant sounds and sights, envy, humiliation, fear, anger, grief, scheming, keeping of late hours, sitting or lying in an uneven posture, fasting, garrulousness, physical exercise, leaping or a standing posture, locomotion, exposure to cold winds, ingestion of unwholesome, incompatible or indigestible substances, and flea-bites on the affected locality.

**Metrical Texts:**—The food, partaken of by a weakened and emaciated ulcer-patient, is not fully digested owing to the above mentioned, and other multifarious causes. The undigested food violently disturbs and aggravates the bodily humours, which move about in the body and give rise to swelling, secretion, burning pain and suppuration in the ulcer.

An ulcer-patient should always be clad in clean and white garments, have his hair and nails closely clipped and pared off, and live in humble devotion to the Brāhmans, to the gods and the preceptors. The rites of benediction and divine peace should be done unto him. Wherefore? Because the monsters and
demons of mighty prowess, who are the attendants of the gods Pashupati, Kuvera and Kumāra, roam about in quest of prey, and visit the bedside of an ulcer-patient out of their fondness for flesh and blood, being attracted thereto by the smell of the secreted and morbid matter in the ulcer. These evil spirits come to take away the life of a patient in a case which is doomed to terminate fatally, while in a successful case their advent is due to the desire of extorting sacrificial oblations from him.

**Authoritative verse on the subject:**—These honour-seeking evil spirits should be worshipped and propitiated with the whole heart; and offerings of burning incense sticks, edibles and sacrifices, etc. should be made to them with the greatest humility.

The evil spirits, worshipped and propitiated as above, spare the life of a self-controlled patient 'out of compassion'. Hence he shall be kept in a chamber furnished with flowers, garlands, weapons, fried paddy, and lamps kept continuously burning. His friends and relations should regale him with fond and loving topics to drive away the feeling of sleepiness with the prospect of a speedy cure.

**Metrical Texts:**—A patient, constantly cheered with the suggested prospects of a speedy
recovery, and beguiled with pleasant and congenial discourses, soon gets rid of his complaint.

Morning and evening, the physicians and the Bráhmans should perform the rites of benediction, over him, as laid down in the Rik, Yajuh, Sáman and the Atharva Vedas.*

**Metrical Texts:**—For ten consecutive days, the room of the patient should be diligently fumigated, morning and evening, with the fumes of mustard, Arishta-leaves, clarified-butter and salt made into a kind of incense stick.

Drugs such as Chhatrá, Atichhatrá, Lánguli, Jatilá, Bramhacháríni, Lakshmi, Guhá, Atiguhá, Shata-viryayá, Sahasra-viryayá and white mustard seeds should be placed on the head of the patient.

**Metrical Texts:**—The patient should be fanned with blowing chowries so that the ulcer may not be in any way thrashed or lacerated during the fanning. The ulcer should not be scratched or pressed. The patient should be carefully watched, while asleep. Demons, that get abroad in the night, fly from the presence of an ulcer-patient protected as above, as herds of deer fly from the forest where lions are found.

**Regimen of diet and conduct:**—An ulcer-patient living on a diet consisting of old and
boiled Sháli rice, not extremely liquefied, and treated with clarified-butter, and taken with the cooked meat of animals of the Jángala species, soon gets rid of his disease. A diet consisting of boiled rice, the pot-herbs known as the Tanduliyakam, Jivanti, Sunishannaka, Vástuka, immature Mulaka, Vártáku, Patola and Kárvella, fried with Saindhava (rock-salt) and clarified-butter, and seasoned with the expressed Juice of Dhádina and Ámalakam, or of Mudga soup treated as above, should be prescribed for the patient. Barley powder, Vilepi, Kulmásha and boiled water, should be likewise given to the patient for food and drink. Fatigue or physical exercise causes the ulcer to swell, while the keeping of late hours increases the local redness. A sleep during the day under the circumstance would give rise to pain in the affected part, while a coitus may bring on the death of the patient.

An ulcer-patient, not given to sleep in the day, and living in a room protected from gusts of wind, and strictly following the instructions of his physician, (surgeon) is healed in the course of a very short time and will enjoy a long life through the observance of the above-said regimen of diet and conduct. This is the dictum of Dhanvantari.

Thus ends the nineteenth Chapter of the Sutrasáhanam in the Sushruta Samhitá which treats of the nursing or management of an ulcer-patient.
CHAPTER XX.

Now we shall discuss the Chapter which treats of the salutary and non-salutary effects of regimen, etc. (HitÔhitiya-madhyayam).

According to certain eminent medical authorities, an article or a substance which is beneficial in derangements of the bodily Vāyu may prove positively injurious in a Pittaja affection; hence it is impossible to name an article or substance which is absolutely or universally wholesome irrespective of the nature and type of a disease, and of the deranged bodily humours involved therein.

But we cannot subscribe to the foregoing hypothesis, since by nature or combination, things (substances) are, or become endued with properties, which prove absolutely beneficial or unconditionally harmful or exert a mixed virtue (both beneficial and injurious) according to the difference in the nature and type of the disease in which they are employed. Things or articles such as, clarified-butter, water, milk and boiled-rice, etc. may be denominated as absolutely beneficial owing to their congeniality to, or natural suitableness to the human organism.

Similarly, substances such as fire, alkali and poison, may be designated as unconditionally harmful in virtue
of their burning, suppurating (lit: boiling) and fatal effect upon the organic bodies in general. A substance, which is innocuous by nature, may prove equally injury as any active poison through an injudicious or incompatible combination; whereas a substance or an article, which proves beneficial in a derangement of the Vāyu, may prove otherwise in a disorder of the Pittam.

Articles or substances which may be safely included within the food stuffs of all human beings are the members of the group (Varga) known as the red Shāli, the Shastika, the Kānguka, the Mukundaka, the Pānduka, the Pitaka, the Pramodaka, the Kālaka, the Ashanaka, the Pushpaka, the Karuddamaka, the Shakunāhrita, the Sugandhaka, the Kalama, the Nivāra, the Kodrava the Uddālaka, the Shyāmāka, the Godhumā and the Venu, etc., as well as the flesh of the Ena, the Harina (copper coloured deer), the Kuranga, the Mriga, the Mriga-mātrikā, the Shvadanstrā, the Karāla, the Krakara, the Kapota (pigeon), the Lāva, the Tittiri, the Kapinjala, the Varttira, and the Varttika, and such like beasts and birds. The varieties of pulse which form the articles of human food are known as the Mudga, the Vana-Mudga, the Makushtha, the Kalāya, the Masura, the Mangalya, the Chanaka, the Harenu, the the Ádhaki and the Satina. Similarly, the different species of pot-herbs, which may be safely used by a man to give a greater relish to his food, are named as the
Chilli, the Vástuka, the Sunishannaka the Jivánti, the Tanduliyaka, and the Mandukaparni, etc. Clarified-butter, the saňt known as the Saindhava, and the luscious juice of the pomegranate and the Ámalakam, should be generally deemed the most wholesome articles of food.

Similarly, the practise of self-control, residence in a room protected from the strong gusts of wind, sleeping only at night, tepid water, and moderate physical exercise should be regarded as absolutely conducive to a better preservation of health.

We have already enumerated the names of substances which are absolutely beneficial or unconditionally injurious to human health. Things which are both wholesome and injurious are those, which, for example, may prove beneficial in a distemper of the bodily Váyu though otherwise in a Pittaja affection. The Valli fruit, the Karaka, the Karira, the Amla-phala, the salt, the Kulattha, the Pinyāka, curd, oil, Virohi, cakes, the dried pot-herbs, goat’s flesh, mutton, wine, the Jamboline fruit, the Chilichima fish, the flesh of the Godhá, and the Varáha (wild boar) being eaten simultaneously with milk, furnish an example of articles which may act as deadly poisons through incompatible combinations.

**Metrical Texts**—An intelligent physician, considering the nature of the disease, the strength and
temperament of the patient, and the state of his digestion as well as the seat of the affection, the physical features of the country and the then prevailing season of the year, should prescribe a diet which he thinks the most proper and suitable to the requirements of the case. Since the conditions infinitely vary in the different types of diseases and even the same conditions do not obtain in one and the same type,* physicians generally prescribe a diet of their own selection, one determined with regard to its general effect on health, in preference to one that has been laid down in books of medicine.

If asked to prescribe either milk or poison to a healthy person, a physician would naturally prescribe the former, and thereby, prove the absolute wholesomeness of milk and unconditional harmfulness of poison. Thus is verified, Sushruta, the correctness of the dictum, that things such as water, etc., are absolutely and unconditionally wholesome or otherwise, by virtue of their respective natural properties.

**Things which are unwholesome through combination:**—Now I shall enumerate the names of substances which become positively unwholesome through incompatible combinations. The

* The propriety and impropriety of a particular diet should be determined with a full regard to the antecedent and attending circumstances of a particular malady.
flesh of any domestic (Grámya) or aquatic (Ánupa) beast or bird, as well as the flesh of those which live in marshy ground (Audaka), should not be eaten with boiled rice prepared from paddy which has commenced sprouting, or with lard, honey, milk, treacle or Māsha-pulse. The pot-herbs, known as the Rohini and the Játu-sháka, should not be partaken of in combination with milk and honey; nor the flesh of a heron, eaten simultaneously with Kulmásha and the spirituous liquor known as Váruni. Maricha (black pepper) and Pippalis should not be eaten in combination with the pot-herbs known as the Kákamáchi. The pot-herbs known as the Nadima and Siddhi should not be simultaneously eaten with curd, and the flesh of a cock. Honey should not be taken immediately after drinking warm water, nor meat and bile should be simultaneously eaten. Surá (wine), Krishará and Páyasa should not be taken in combination. Similarly, Souviraka and sesamum paste, fish and modifications of sugarcane juice, treacle and Kákamáchi, honey and Mulakam, treacle and the flesh of a wild boar, or honey and boar's flesh should not be taken in combination.

Similarly, milk and Mulakam, mango fruit and Jamboline fruit and the flesh of Godhá, Porcupine and hog should not be eaten together. All fish, specially those of the Chilichimi species, should not be taken with
milk, nor the fruit of a plantain tree should be simultaneously eaten with Tāla fruit, milk or whey. The fruit known as Lakucha should not be taken with milk, curd or meat soup, nor with honey and clarified-butter, nor immediately before or after the drinking of milk.

**Incompatible preparations of food:**

Now we shall enumerate the names of substances, which become unwholesome through incompatible preparations. Flesh of pigeon fried with mustard oil should not be eaten. The flesh of a Kapinjala, Myura (peacock), Lāva, Tittira, and Godha, boiled with castor oil and on a fire of the twigs of castor plants, should not be eaten. Clarified-butter, kept in a vessel of Indian bell metal for ten consecutive days, should be rejected as unwholesome. Honey should not be used in combination with an article or substance heated by fire, nor in the seasons of spring and autumn. The pot-herbs known as the Kākamáchi, boiled in a bowl in which fish or ginger had been previously boiled or prepared, should be rejected as positively injurious.

Similarly, the pot-herbs known as the Upodikā should not be eaten by boiling them with the levigated paste of sesamum. The flesh of a heron prepared with hog’s lard should not be taken with the pulp of the cocoanut fruit. The flesh of a Bhāsa bird, roasted on a spit over a charcoal fire, should not be eaten.
Objectionable proportions:—Now we shall enumerate the names of substances which become unwholesome by being mixed in objectionable proportions. Two oily substances (such as oil and clarified-butter) or honey and any of the oily substances, mixed in equal proportions, should not be taken; nor should rain water be drunk immediately after having taken honey and clarified-butter.

Incompatible tastes, potencies and chemical actions:—Now we shall describe the substances enumerated in couples, and possessed of different tastes, which prove incompatible to each other through their respective tastes, potencies and chemical actions (Vipāka). Sweet and acid tastes, or sweet and saline tastes should be deemed incompatible to each other in respect of their potencies and inherent properties. Sweet and astringent tastes are incompatible to each other in all the above three respects.

Similarly, sweet and bitter, or sweet and astringent things should be deemed incompatible to each other in respect of their tastes, and chemical action. Acid and saline things are incompatible to each other as regards their flavours. Acid and acrid things are incompatible as regards flavour and chemical action. Acid and bitter, or acid and astringent things, are incompatible to each other, both as regards their respective flavours, potencies, and digestive or chemical transformations.
Saline and pungent things are incompatible to each other as regards their respective flavour (Rasa) and digestive (chemical) transformation.

Similarly, saline and bitter things or saline and astringent things are incompatible to each other in respect of all the three abovesaid relations and categories. Pungent and bitter tastes are incompatible to each other in respect of flavour and digestive transformation, whereas substances of pungent and astringent or bitter and astringent tastes are incompatible to one another as regards their respective potencies, flavours and digestive (chemical) action or transformation.

**Degrees of incompatibility:**—Substances that are incompatible with, or antagonistic to, the system through a difference of degree or intensity, as well as things which bring about an extreme dryness of the organism, or those which are extremely oily in their composition or are characterised by extreme cold or warmth, should be categorically rejected.

**Authoritative verses on the subject:** —Things or substances which are incompatible to one another in their respective tastes, potencies and reactionary transformation should be denied as absolutely unwholesome, while the rest should be considered as possessed of mixed virtues (wholesome or
injurious under certain circumstances) as described before.

By taking substances which are incompatible to one another as regards their tastes, potencies and digestive transformation, a greedy and intemperate person becomes afflicted with disease and weakness of the sense-organs, and ultimately meets with his doom.

Anything, which being taken enrages or agitates the bodily humours without causing the assimilated food (effete matter) to be evacuated out of the bowels, or is possessed of a taste contrary to, or other than what is necessary for the purposes of vitalization, should be looked upon as the primary source of all bodily distempers.

Diseases brought about by a food or drink composed of incompatible substances, are amenable to the use of purgatives, emetics, or pacifying (corrective of the deranged humours) medicines; and such a diet, even when found unavoidable, should be preceded by the use of drugs or substances potent enough to neutralise its baneful effect.※

A meat, in the composition of which substances of incompatible virtues and potencies largely enter, fails to develop any distressing or harmful symptoms in subjects who are habitually addicted to it, or who takes it in

This couplet occurs also in the Charaka Samhitā.
small quantities, as well as in persons of youthful vigor and strong appetite, or in those who have become invigorated by the use of oily and albuminous food and healthful physical exercise.*

**The effects of the winds:**—Now we shall describe the effects of the winds on the body, as they blow from the different quarters of the heaven.

**The East wind:**—The East wind, which is cool and sweet in its potency, is heavy and charged with salt; it aggravates blood and Pittam and gives rise to an acid digestive reaction. It specially aggravates the disease in a patient suffering from a wound or an ulcer, or from the effect of any poison, and affects persons of Shleshmāla temperament. It is highly efficacious to fatigued persons, as well as to those of a Vātalā (nervous) temperament, or who are afflicted with any sort of Kaphaja disease; though it increases the slimy secretion in their ulcers if there be any.

**The South wind:**—The South wind is light, sweet (produces the same soothing effect on the organism like a thing of sweet taste) and is followed by an astringent after-taste (Anurasā) being antacid in its reaction. It is the best of winds, gives vigour to the eyes, increases the strength, and soothes the blood and the Pittam without aggravating the bodily Vāyu.

* Different Reading—In a child or in a man of voracious appetite.
The West wind:—The West wind is pure, non-slimy, dry, rough to the perception, and keen. It absorbs the albumen or oily principle of the body. It absorbs or dries up fat and Kapham, produces a parched condition in the body when exposed to it, and speedily diminishes the strength of a person.

The North wind:—The North wind is cold, crisp, mild, of a sweet taste terminating in an astringent one. It does not in any way enrage or agitate the deranged bodily humours. In healthy subjects it increases the strength and the running secretions from the different orifices of the body (such as the nostrils etc.). It proves extremely salutary to patients suffering from consumption, cachexia and the effects of poison.

Thus ends the twentieth Chapter of the Sutrasthānam in the Sushruta samhitā which treats of salutary and nonsalutary effects of the regimen.
CHAPTER XXI.

Now we shall discuss the Chapter which investigates the nature of bodily humours, as exciting causes of ulcers (Vrana-prashna-madhyayam).

The Vāyu, Pittam and Shleshmā should be considered as the primary and the most essential factors in the constitution of human organism. These fundamental and vital humours, occupying respectively the lower, middle, and upper parts of the body, maintain its integrity. The human body is supported by the three fundamental humours in the same way as a dwelling house is propped up by three supporting poles or stays; from which fact, the body is called the three-supported one (Tristhunam) by certain authorities. A deranged condition of these three fundamental humours may bring about its dissolution or death, while on their continuance in a normal state depends the vitality of the organism. These three humours, in combination with a fourth, the principle of blood, determine the origin, preservation, and dissolution of animated organism and permeate it with their respective properties till the moment of death.

Authoritative verse on the subject:—There can be no organism without Vāyu, Pittam, Kapham and blood, which are necessary to
constantly maintain its integrity. The terms Vāta (Vāyu), Pittam and Shleshmā (Kapham) are respectively derived from the roots 'Vá', to move or smell, 'Tapa,' to burn or to heat, and "Shlisha," to embrace, with the suffix 'Ta' thereto added."

**Seats of the bodily humours**—Now we shall describe the locations of the foregoing vital humours. The Vāyu may be briefly described as located in the regions of the pelvis (Shroni), and the rectum (Guda). The Pittam has its seat in the region between the stomach (Āmāshaya) and the intestines (Pakvāshaya) which is above the pelvis and the rectum and below the umbilicus, while the Kapham is ensconced within the cavity of the stomach (Āmāshaya).

Now we shall divide the locations of each of the vital humours into five parts: - The five localities of the Vāyu will be described under the head of Vata-Vyādhis (nervous diseases), while those of Pittam are the liver and the spleen, the heart, the pupils of the eyes, the skin and the intestines (Pakvāshaya). The Kapham is located in the region of the breast, the throat, the head, the joints and the stomach (Āmāshaya). The foregoing regions are the seats of the vital humours in their normal state.

"From this should be inferred that motion and smell are the natural attributes of the vital Vāyu, heat and burning are those of Pittam, and union and integration are those of Kapham."
**Metrical Texts**:—The vital humours (Vāyu, Pittam and Kapham) maintain the integrity of the animated organism by creating, assimilating and diffusing strength in the same way as the moon, the sun, and the winds maintain the integrity of the terrestrial globe.*

**The Pittam** :—Now it may be asked whether the Pittam is identical with the elemental fire, or is it something other than that? The question may be answered by stating that the Pittam is the same as fire. Since such symptoms, as a burning sensation, digestion (boiling), and all other characteristics of fire can never exhibit themselves in the human body without the intervention of Pittam. Pittam therefore is called **internal fire.†**

Consequently, an enfeebled action of Pittam is remedied by the administration of drugs and substances which are akin to the elemental fire in their attributes, while an abnormal or excessive action (secretion) of Pittam is subdued by cooling measures as an over-kindled fire is subdued by moisture. There is no other fire (heat making factor) in the organism than Pittam.

---

* The moon laves the earth and imparts to it the vitalising principle with her own ambrosial light. The sun draws off the moisture in virtue of his own attractive force, and the Vāyu distributes the heat and moisture over its surface.

† The analogy is based on the heating (and metabolic) actions of Pittam, and does not extend to its liquid secretion Śāle). But since the former attributes permeate in its entirety, it is designated the **internal fire.**
The Pachakāgni:—By the ordination of fate or necessity (unfathomable natural cause), the Pittam, located in the region between the stomach (Āmāshaya) and the intestines (Pakvāshaya), helps the digestion of the four kinds of food (such as drink and edibles etc.) partaken of by a living subject, and purges off the residue or impure morbiferous matter in the shape of urine and excreta after the completion of the process. Even thus located, it keeps up the temperature in its other distant locations (skin, etc.) in virtue of its native heat-giving attribute. Hence this Pittam is called the Páchakāgni (digestive fire or heat) in an animated organism.

The Ranjakāgni:—The function of the Pittam, which has its seats in the liver and the spleen, consists in imparting its characteristic pigment (Rāgakrit) to the lymph-chyle and is hence known as Ranjakāgni (lit:—dyeing fire or pigment bile.)

The Sādhakāgni:—The Pittam seated in the heart is denominated as the Sādhakāgni (performing or operating heat or fire) inasmuch as its action is to bring about the fruition or realisation of one's desires.

The Álochakāgni:—The Pittam, which is located in the pupils of the eyes, is called the Álochakāgni (the Pittam or fire of sight) as its office is to
catch the image of any external object presented to
the eyes.

**The Bhrajakagni** :—The Pittam, which has
its seat in the skin, is called the **Bhrajakagni** (illuminat-
ing or irradiating heat) inasmuch as it absorbs the
substances used in the shape of ungueents, lubrications,
etc. and irradiates the glow of one's natural complexion.

**Metrical texts** :—The Pittam is a keen, sharp
and warm liquid, of a blue colour (in its normal state),
or yellowish (in its deranged condition). It emits a
kind of fleshy smell and is possessed of a pungent taste
which is transformed into an acid one when deranged or
vitiated.

**Seats of Shleshma** : Kapham : Now we
shall describe the locations of Kapham. The stomach
(Ámáshaya), which is the seat of Kapham, occupies the
same position as regards its location to that of Pittam
as the sun holds in relation to that of the moon. And
since the stomach Ámáshaya, is situated above the
pancreas (Pittáshaya, and is endowed with a property
(cooling; contrary to the primary virtue (heating) of Pit-
tam, and, since the heat emitted by the receptacle of Pit-
tam is naturally radiated in an upward direction, the four
kinds of food, brought in to the stomach (Ámáshaya), are
boiled and transformed into a soft placid mass ('chyme,)
like rice boiled in a bowl full of water placed over a
burning oven. The food, thus brought down into the stomach, is easily moistened, disintegrated and digested by coming into contact with the oily secretions of the stomach (Ámáshaya).

**Metrical Texts:**—The Kapham is originated through the sweet, slimy, watery, exuding character of the food brought into the stomach (Ámáshaya); and hence the Kapham becomes endowed with similar attributes.

**The Kledakam:**—The Kapham, even though principally located in the stomach, permeates its four other distant localities with its peculiar watery or humid essence in virtue of its inherent attributes.

**The Avalamvaka:**—The Kapham, located in the region of the chest, protects the joints of the arms, the neck and the sternum, and enables the heart to perform its natural functions with the help of the lymph-chyle derived from the assimilated food and its own intrinsic potency.

**The Vodhakam:**—The Kapham, situated in the throat and at the root of the palate, lends its aid to the perception of tastes by maintaining the moist or humid character of the tongue.

**The Tarpakam:**—The Kapham, situated in the head, cools and bathes the different sense organs
with its own humid essence, in virtue of its natural humid attributes.

**The Shimeshakam**:—The Kapham, situated in the joints, keeps them firmly united, protects their articulation and opposes their separation and disunion.

**Metrical Texts**:—The Kapham is white, heavy, oily, slimy and cool. In its normal state, it is possessed of a sweet taste, which is followed by a saline one in its reactionary transformation (chemical reaction) when deranged or vitiated.

**Seats of blood**:—The seats of blood are in the liver and the spleen, as stated before, whence it helps its other receptacles to serve their proper functions.

**Metrical Texts**:—The blood is red, oily or glossy, a little warm, and is possessed of an attribute similar to something of a sweet taste. It is heavy, and it emits a fleshy smell and resembles the Pittam in its reactionary process, or in other words, those factors, which derange the Pittam, vitiate the blood as well.

These are the locations of the deranged humours, which are respectively accumulated in them on account of the aforesaid causes. The deranged humours exhibit such symptoms as, fullness and stuffedness of the abdomen, or of any of the viscera (due to the action of the
deranged Vāyu; yellowness of the affected part (due to the action of the deranged Pittam, and diminution of the bodily heat, heaviness of the limbs, and a sense of languor (due to the action of the diseased Kapham), and a natural repugnance for causes (factors) which lead to their respective aggravations or accumulations. The medical treatment should be commenced as soon as the symptoms, peculiar to their accumulation, would become manifest.

**Humours and their aggravations:**

Now we shall enumerate the causes which agitate and (aggravate) the deranged humours. The bodily Vāyu is aggravated by such factors (conduct, practices and diet, etc.) as, wrestling with a wrestler of superior strength, violent gymnastic exercises, sexual excesses, excessive study, a headlong plunge into water or a leap from an inordinate height, running, a violent pressing blow, leaping over a ditch, a bounding gait, swimming, keeping of late hours, carrying of heavy loads, excessive riding, walking a long distance and the partaking of a food into the composition of which pungent, astringent, bitter, light or parchifying articles, or substances of cool potency, largely enter. Diets consisting of dried pot-herbs, Vallura, Varaka, Uddälaka, Karadusha, Shyamáka, Nivára, Mudga, Masura, Ádháki, Harenu, Kaláya, and Nishpáva tend to aggravate the bodily Vāyu.
Fasting, unequal or irregular meals, over-eating, voluntary suppression of urine, semen, and tears, or of the mucous secretions from the nose as in a fluent coryza, a forced stoppage of defecation, eructation or sneezing are the factors, which may be set down as the aggravating causes of the bodily Vāyu.

Metrical Text:—The bodily Vāyu is naturally aggravated in a cold, cloudy or windy day, in winter, during the rains, in the morning and evening and especially at the close of digestion.

Symptoms of aggravated Pittam:—
The Pittam is aggravated by anger, grief, fear, fatigue, fasting, acid transformation (reaction) of the assimilated food, or deficient gastric digestion, unnatural sexual indulgence, partaking of a food consisting of pungent, acid or saline, keen, heat making or light substances, as well as of those whose digestion is followed by a reactionary acidity. It is aggravated by the use of sesame oil, or of sesame paste. Kulattha, Sarshapa, Ātashi, the pot-herbs known as Haritaka, fish, the flesh of a Godhā or a goat or mutton may lead to its aggravation, if taken injudiciously.

Similarly, the use of curd, whey, Kurchikā, (inspissated milk), Sauviraka, different kinds of wine, Amla-phala (sour fruits), or Katvāra (curd mixed with oil) and excessive exposure to the sun, may be followed by the same consequences.
Metrical Texts:—In addition to all these, the Pittam is spontaneously and abnormally aggravated in summer, in autumn, at noon, at mid-night and during the process of digestion, as well as by the partaking of hot or warm substances.

Symptoms of the deranged Kapham:—The deranged Kapham is aggravated by sleep in the day time, or by the following of lazy or sedentary habits. The partaking of food, composed of substances which are heavy, slimy, sweet, acid or saline in their taste, or of one consisting of substances which increase the mucous secretions from the fissures of the body, may be likewise set down as aggravating factors. The use of food grains, which are called the Háyanaka, the Yavaka, the Naishadha, the Itcata, the Másha, the Mahámásha, the Godhuma, the Tilam, or of rice cakes may lead to its aggravation. Curd, milk, the Krishará, the Páyasha (sweetened rice porridge), the various preparations of cane-sugar are things which produce the same result. The flesh of beasts and birds that are aquatic in their habits or live in swampy lands, as well as lard, have the same effect, if used as food. The use of bulbs and lotus stems or of Kasheruka, Shringátaka, Madhura-phala, Valliphala as well as eating before digestion or the partaking of food consisting of both wholesome and un-wholesome substances may aggravate this bodily humour,
Metrical Texts:—The Kapham is naturally and spontaneously aggravated in the morning and evening, in Hemanta, and specially in Spring, and just after a meal. Likewise, it is aggravated by the use of cold food or drink, etc.

Symptoms of the aggravated blood:—[Owing to a natural similarity between blood and the Pittam, and through a natural affinity between their attributes], causes, which tend to aggravate the deranged Pittam, tend to aggravate or agitate the blood as well. Moreover, frequent meals or repeated use of food, into the composition of which cool, liquid and heavy substances largely enter, are followed by a disturbed or aggravated condition of the blood. Sleep in the day time, anger, exposure to the glare of the sun or fire, over-fatiguing labour, an external blow, ingestion of indigestible or incompatible substances, and eating before the full digestion of a previous meal, may as well be set down as causes which tend to aggravate blood.

Metrical Texts:—As the bodily humours are never aggravated independently of the blood, their aggravation goes together with a disturbed or agitated condition of the blood. The aggravated condition of the humours gives rise to pain and moves the wind (Vāyu) in the bowels; it further occasions acid eructations, thirst, burning sensations, aversion to food, vomiting
and nausea. Any of these symptoms should be regarded as the second occasion which calls for medical aid.

**Expansion of the deranged humours**: Now we shall describe the expansion (Prasaram) of the deranged humours. The deranged humours, aggravated by the above mentioned causes, expand and overflow the limits of their respective localities in the same manner as, cakes, soaked in any ferment or enzyme and kept standing over night, ferment and rise through the acquisition of new and unseen attributes. The Vāyu, which is possessed of locomotion or extreme mobility, should be looked upon as the cause of their expansion or over-flowing. The Vāyu, though an inanimate thing, in reality is possessed of the quality of “Rajas” (creative or cohesive energy), and the quality of the Rajas is the only essential or motive principle in the universe.

As a vast and mighty expanse of water, which has been divided into two expanses by a dam or barrier, will sweep away the latter and unite again to form one sheet of water; so the deranged humours, sometimes singly, sometimes in combination with two or all of their species, or in unison with blood, expand and over-run the organism in all directions. As for example, the Vāyu, the Pittam, the Kapham and the blood are singly expanded, whereas the bi-hu-
mournal expansions involve the simultaneous overflow of the two deranged humours, or of any deranged humour and blood, as the Váyu and Pittam, Váyu and Kapham, Váyu and blood, Pittam and blood, and Kapham and blood. The tri-humoural expansions, which involve the blood and any two of the deranged and enraged humours, may be classified as the expansion, of (1) the Váyu, Pittam and blood, (2) the expansion of the Váyu, Kapham and blood, (3) the expansion of Pittam, Kapham and blood, (4) the expansion of Váyu, Pittam and Kapham, (5) the expansion of Pittam, Kapham and blood, the different types of expansion numbering fifteen in all.

**Metrical Texts:**—The aggravated, or the abnormally irritated deranged humours, whether permeating the whole or half of the system or restricted to any particular part or member of the body, give rise to disease in the place of their incarceration, like rain clouds pouring down in the quarter of the sky where they are formed. The deranged humours, not excessively (slightly) aggravated, lie inoperative coating the internal passages (Márgas) of the body and thus bring about a fresh disease, if subsequently agitated by any disturbing causes.

The deranged and aggravated Váyu, having moved into any specific seat of Pittam, should be medicinally treated as a case of Pittaja aggravation. Similarly, the
deranged and aggravated Pittam, or Kapham, changing
their respective places with each other, should be medi-
cinally treated as the humour in whose location it is
found. The Vāyu, thus aggravated and expanded, tends
to deviate from its right passage and gives rise to a
swelling or distention of the abdomen, accompanied by
a rumbling sound in the intestines. The Pittam, under
the similar condition, gives rise to heat, and a sort of
sucking, burning pain in the affected part, together with
a sensation of radiation or evaporation of heat from its
surface. The Kapham, under the circumstance, would
usher in a complete aversion to food, inertness of the
limbs, vomiting and impaired digestion. The preceding
symptoms, caused by the aggravation and expansion
of the bodily humours, should be the third occasion
for medical treatment.

Sthāna-Samshrayam:—Now we shall
enumerate the names of the peculiar diseases, which are
originated by the deranged and expanded humours,
incarcerated in the different parts of the body.
These humours, confined in the abdomen, give rise to
Gulma (abdominal glands) tumours, internal abscesses
(Vīradhī), abdominal dropsy, impaired digestion
in the bowels, constipation (Ānāha), cholera (Visu-
chika) and dysentery.

Lodged in the bladder, these humours usher in
Prāmeha (morbid urethral discharges), Ashmari (stone in
the bladder), Mutrakrichchhra (stricture of the urethra) and Mutrāghāta (retention of urine), and diseases affecting the renal secretion, etc. Restricted to the penis they tend to bring in syphilis, Niśudha-prakāsha (phymosis) and the local inflammatory diseases known as the Shuka-dosha, etc.

Similarly, lodged in the region of the anus, these deranged and expanded humours beget fistula in ano, haemorrhoids and polypus growths about that locality. Confined in the region of the scrotum, they give rise to hydrocele and other types of scrotal tumours, etc. Restricted to the region above the clavicles, these humours originate diseases peculiar to that locality, while erysipelas, cutaneous affections (Kushtha) and other minor diseases supervene, when they restrict themselves to the flesh and the skin (lymph-chyle) and blood. Affecting only the fat, these humours tend to originate Granthi (Aneurism), Apachi (scrofula), Arvuda (tumour), Galaganda (goitre) and Alaji (inflammation of the eye at the edge of the cornea).

Lodged in the lower extremities, they bring on elephantisis, Vāta-Rakta (a kind of leprosy), Vāta-Kantaka, etc. Permeating the whole organism, they give rise to such diseases as fever, Sarvāṅgaroga, etc. which invade the entire system.

* Additional text:—Reaching down and confined in the bone-systems of the body, they produce Vīدركhi (abscesses), Anushayi, etc.
The aggravated and expanded humours, thus firmly ensconced in the different parts of the body, exhibit the premonitory symptoms of diseases which will be fully dealt with under their respective heads. The manifestation of these premonitory symptoms should be considered as the fourth occasion for medical treatment.

**Disease-Its Development:** Now we shall deal with the full development or manifestation of a disease. The full manifestation of a disease, such as a swelling, tumour, aneurism (Granthi), Vidradhi (abscess) and erysipelas (Visarpa) etc., fever or dysentery, signifies the complete development of the characteristic symptoms, which should be regarded as the fifth occasion for medical treatment.

The sixth occasion for the calling in of medical aid should be considered to have arisen when a swelling (abscess, tumour, etc.) would burst and exhibit the characteristic symptoms of an open ulcer. A persistent lingering or continuance of a fever or dysentery, etc., should be considered as marking, or forming one of its particular stages, and which may run into one of an incurable type, if neglected or not sufficiently cared for at the outset.

**Authoritative verse on the subject:**—
The physician, who fully knows about the accumula-
tion (Sanchaya), disturbance or aggravation (Prakopā), expansion (Prasaram), and differentiating traits of the deranged humours (Bhedā), and is well conversant with the specific localities in which they are respectively confined in the course of their expansion (Sthānasamśrayam), and with the symptoms which they respectively exhibit in connection with the incidental disease (Vyakti), is alone worthy of that epithet.

The deranged humours, checked or subdued in their accumulating stage, fail to exhibit any further or subsequent development, but, if left unremedied, they gain in strength and intensity in the course of their further development. The humours, deranged either singly, or in couples, or in a triple combination as regards one or two of their virtues, push on, follow and blend with humours similarly deranged as regards their qualities and combinative numbers.

The medical treatment in a case, where two or all (three) of the deranged humours are involved, consists in conquering the strongest one in the combination, but so as not to enrage or aggravate the minor or the weaker humours in the group and specially so in a case of Sannipatā.*

* The combination of any two of the bodily humours with the vitiated blood may likewise be interpreted to signify a Sannipatika (trihumoural) combination.
A concourse of deranged humours, affecting and appearing in a particular part of the body, is called a boil or an ulcer (ßrana) which “is derived from the root “Vri” to cover and is so called from the fact of its covering a particular part of the body or from its leaving a cicatrix which remains the whole life-time of the patient.

Thus ends the twenty-first chapter of the Sutrasthānam in the Sushruta Samhitā which treats of investigation into the nature of the humours giving rise to an ulcer.