

JAIKRISHNADAS AYURVEDA SERIES

NO. 5

INTRODUCTION
TO
DRAVYAGUNA
(INDIAN PHARMACOLOGY)

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PREFACE

The story of drugs goes back to the Prehistoric days. The Indian sages invented drugs and their therapeutic uses long ago. This was based partly on observation of the effect of drugs on various animals and partly on human trial and error. Ṛgveda, the oldest document of Indian wisdom, contains material which shows the rational attitude towards plant kingdom and its exploitation for the benefit of the humanity. The Atharvaveda has got more advanced picture and a larger number of drugs used in a similar number of diseases. On this long tradition and accumulated wisdom the ancient sages, Atreya and his disciples, after a deep and concentrated effort were able to make some generalisations for rational explanation of drug action which formed the basic concepts of dravyaguṇa. Evidently this study was going on in different circles of scholars and as such different schools of thought arose. The school of Suśruta has some differences with Atreya's teachings which was followed by Nāgārjuna.

The theory of Pañca Mahābhūta is the ultimate basis on which the fundamentals of Dravyaguṇa stand. This is again based on the law of Uniformity in constitution of material bodies including human body on one side and drugs on the other. How to know the Pancabhautic compositions of a drug particularly in its pharmacodynamic aspect? This was attempted in two ways:— one by linking the Rasa as indicator of the Bhautic composition and secondly by observing the sum total effect on the body. Rasas were perceived directly and their effects on the Doṣas were also stand-

ardised. Then by law of similarity and dissimilarity their relation with Bhūtas were known by Inference. Thus Rasas are not direct indicators of drug composition but indirect ones through the channel of Doṣas. For instance, Madhura Rasa increases Kapha which is Pārthivāpya in nature, therefore by law of similarity (If there is increase, there is similarity) Madhura Rasa is taken as Pārthivāpya and the drug is also taken as Pārthivāpya. This is again confirmed by law of dissimilarity as it decreases Pitta and Vāta which are dissimilar to Ap and Pṛthvī respectively.

The drugs can't have effect until they are assimilated and metabolised. It was also observed that there was distinct change in ingested material during digestion which further effected the metabolic process. This led to formulation of the theory of Vipāka. In some cases the effect could not be explained rationally on the basis of Rasa. For instance, pippalī (piper longum) is Kaṭu Rasa which should have katabolic effect on the body whereas reverse effect is seen. This led to infer the transformation of Kaṭu Rasa into Madhura Vipāka.

Drug action was the most important problem to be tackled. This led to the evolution of the concept of vīrya which was responsible for drug action. There was, however, difference of opinion among scholars regarding the nature of Vīrya. One group was of conservatives who held potent guṇas (eight or two) as vīryas but Atreya was liberal enough to accept any principle potent enough to produce action as vīrya. On account of vīrya, the pharmacodynamics of drugs was brought to rational level and different actions were explained on its basis. But there were some specific actions which could not be resolved by this. It was

observed that two drugs which are similar in Rasa, Vīrya and Vipāka differ in action. This difference in action led to formulation of the theory of Prabhāva. Prabhāva is actually the specific composition of the drug which produces a particular type of action. This is said by Caraka as 'Dravya-Prabhāva' (effect of drug-composition) in contrast to 'Guṇa-Prabhāva' which embodies the action on account of Vīrya. Vīrya and Prabhāva are also called as 'Cintya Śakti' (Rational potency) and 'Acintya Śakti' (empirical potency). But it never means that Prabhāva can't be explained. Constant efforts were made to rationalise this aspect which is evident from the fact that many actions which were taken as due to Prabhāva at the time of Caraka were brought within the purview of vīrya by Suśruta and Nāgārjuna. In fact, Prabhāva is dynamic concept having everchanging areas. Empirical action is governed by Prabhāva but as soon as it is rationalised it comes within the area of Vīrya. Thus the word 'Acintya' (unthinkable) is misnomer and may be substituted properly by the word 'Acintita' (unthought) which would make the path of rational thinking always open inviting the dedicated scientists.

While assessing the achievements and contributions made by the Indian authors one must keep in mind their limitations in terms of modern sophisticated instruments and laboratories. This intensifies doubly the value of their scientific observations and conclusions, which proved successful in solving the riddles of Pharmacodynamics. It is not humanely possible to try so many drugs and define their precise actions and uses which are scientifically true in majority of cases even to-day. The study was done by teams of experts for hundreds of years at hundreds of places which

was recorded and documented at certain periods. This was facilitated by the tradition of symposia and seminars organised in different parts of the country for different topics a glimpse of which is seen in the Caraka Samhitā. It is also certain that for various tests, physiological as well as pathological, there were good laboratories although the test was limited to physical and crude chemical examinations. In a section of the laboratory some animals were also kept for experimentation. There were also good hospitals all over the country of the type mentioned by Caraka and Suśruta a chain of which was revived at the time of emperor Aśoka. So the methodology of study and Research was at the high level.

The dynamism and liberalism are two main qualities which distinguish the Indian scholars particularly in the field of Medicine. There was always exchange of views between Indian and foreign doctors which is evident from the contribution of many new drugs to Pharmacopoea of other countries as well as addition of several unknown drugs to their own Pharmacopoea. Jaṭāmānsī (*Nardostachys Jatāmānsī*) and Sarpagandhā (*Ranwolfia serpentina*) come in the former group while opium and Ephedra are in the latter group.

My book on Dravyaguṇa was published in Hindi two decades ago (in 1955) keeping in view the acute necessity of a text book on the subject for the Āyurvedic Colleges. But due to limitation of language it could not serve the purpose fully in non-Hindi speaking areas of the country and of the inquisitive scholars working in other parts of the world. Recently interest on Āyurveda has increased to a considerable extent and several scholars come every to this

country particularly in our institution to learn Āyurveda. Keeping this in view, a certificate course of nine months' duration has been started in our institute from this year for medical graduates of the country and abroad. As there is practically no text book on Dravyagūṇa in English, it posed a very difficult problem for these scholars as well. This book is intended for such readers and my effort would be deemed as fruitful if this object is achieved.

I am thankful to all my friends and colleagues who have helped me in planning and preparation of the subject matter. Shri Maharaj Narayan Singh also deserves thanks who has been helpful in preparation of the Press copy. I express sincere thanks to the publishers who have come forward to publish this work with zeal and enthusiasm.

Banaras Hindu University,
January 26, 1976.

P. V. Sharma

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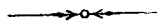
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INTRODUCTION
TO
DRAVYAGUṆA
(INDIAN PHARMACOLOGY)

SECTION I
BASIC CONCEPTS

CHAPTER I

DEFINITION, SCOPE AND BACKGROUND

Definition :

Dravyaguna is the science of drugs (Dravya), their properties and actions (Guṇa).

Scope :

It deals with various aspects of the knowledge about drugs such as identification, properties, actions and uses. It also includes dosage, compatibility and processing of drugs. Accordingly it is divided into the following branches :—

1. *Pharmacognosy* (Nāma-rūpa-vijñāna) :

It deals with various names and synonyms (Nāma) of drugs and also their morphological characters (Rūpa). Most of this information is gained by the help of synonyms.

2. *Pharmacology* (Guṇa-karmavijñāna) :

It discusses the properties (Guṇas) and actions (Karma) of drugs. The action of drugs is interpreted on the basis their properties.

3. *Therapeutics* (Prayoga-vijñāna) :

On the basis of properties and actions, it describes the uses of drugs in various ailments, the dosage and vehicles (Anupāna). The diet prescribed or restricted for the patient (Pathya-Apathya) also comes under this because diet plays important role in Āyurvedic therapy.

4. *Pharmacy* (Bheṣaja-kalpanā) :

Storage and collection of drugs, various processings by which the drug becomes fit for use of the patient are discussed under this branch.

Background :

The edifice of the drug-science of Ayurveda stands on the foundation of the basic fundamentals of Pañcamahābhūta & Tridoṣa. The five Mahābhūtas (Pṛthvī, Ap. Tejas, Vāyu and Ākāśa) constitute the animal body as well as the vegetable and mineral kingdoms. This similarity in constitution of body tissues and drugs is the basis of drug action which is either stimulating (Bṛmhāṇa) or depressing (Lañghana). Drugs having constitution similar to tissues stimulates them while dissimilar causes depression.

While the Mahābhūtas are physical basis of the body, the three doṣas (Vāta, Pitta and Kapha) are their biological representatives responsible for physiological functions in the state of homeostasis, and for pathological disorders in the state of imbalance. The composition of drugs and their properties is described on the basis of Mahābhūtas while their action is described in applied manner on the basis of Tridoṣa.

As the theory of Pañca Mahābhūta plays important role in composition of Dravya and its properties it would be worthwhile to consider it before we proceed further.

Theory of Pañca Mahābhūta and its implications :

Pañca Mahābhūtas are the material basis of the universe so are for the living body. The gross body of a living being consists of Pañca Mahābhūtas and life processes which are due to consciousness. Five Mahābhūtas along with consciousness are called six Dhātus (components) and the living Person is said as composed of these Dhātus (Ṣaḍdhā-twātmaka). On combination with consciousness, Pañcamahābhūtas, out of their some portions, constitute three Doṣas in

order to perform and regulate the physiological processes. Tridoṣas are found only in living body while Pañca mahābhūtas are everywhere, animate or inanimate.

There are three evolutionary states of Mahābhūtas :—
 1. Bhūta 2. Mahābhūta and 3. Dṛśya bhūta. Bhūta is the atomic state which is eternal in view of the Vaiśeṣika Philosophy. When two atoms combine it is called Dwyāṇuka (Di-atomic) and when three dwyāṇukas combine it becomes Trasareṇu (tri-atomic). It is at this state that grossness appears and as such it begins to be known as Mahā (gross) bhūta. Trasareṇu of Ākāśa combines with that of Vāyu bhūta and gives rise to Vāyu Mahābhūta. Similarly, Ākāśa, Vāyu and Agni are in the Ap Mahābhūta and Pṛthvī Mahābhūta contains all the four Mahābhūtas. This process of regressive intrusion is called Anupraveśa. After anupraveśa all the Mahābhūtas attain their normal position but for creating material objects they all combine together again in varying proportions and thus Dṛśya (material) Bhūtas are formed. In each case, there is predominance of one or the other Mahābhūta on which basis the character of the object is defined as Pārthiva, Āpya etc. For instance, when an object is called as Pārthiva it does not mean that it is composed of Pṛthvī alone but it means that it is composed of all the five Mahābhūtas wherein the Pṛthvī Mahābhūta is predominant. Generally, the predominant Mahābhūta is 50% and in the residue portion all the remaining four take their equal share. The Pañca tanmātrā state of sāṅkhya philosophy is the Bhūta or Paramāṇu (Atom) state of Vaiśeṣika Philosophy. Actually, Pañca mahābhūta is the point in Ayurveda where philosophy and science meet together. In regressive manner it goes to the domain of philosophy while in progressive manner it enters into the arena of science.

Table I
Characters and Properties of Mahābhūtas

<i>Mahābhūtas</i>	<i>Property</i>	<i>Physical Character</i>	<i>Sense Organ</i>	<i>Functions</i>	<i>Psychological Property</i>
1. Ākāśa	Śabda	Absence of resistance (apratighāta)	Śrotra	Porousness, Distinction	Sattwa
2. Vāyu	Sparsā	Cala (Movement)	Twak	Sparseness, Lightness, Activity	Rajas
3. Tejas	Rūpa	Uṣṇatwa (Heat)	Cakṣu	Colour, Digestion, Intolerance, sharpness, Braveness, Brightness	Sattwa
4. Ap	Rasa	Dravatwa (Liquidity)	Rasanā	Heaviness, Coldness, Oleation, semen.	Tamas
5. Pṛthvi	Gandha	Kharatwa (Roughness)	Ghrāṇa	Solidity, Heaviness	Tamas

The constitution of modern atom, consisting of protons, electrons and neutrons, is Pāñcabhautika according to

RELATION OF DRAVYAGUNA WITH OTHER BRANCHES OF ĀYURVEDA

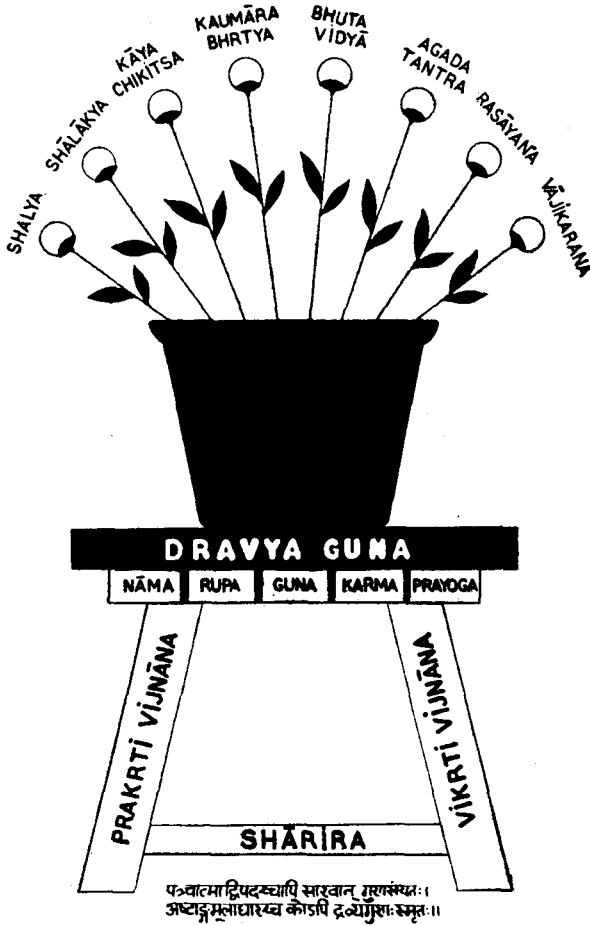


Fig. 1

ancient Indian concept. Weight, cohesion, electricity, movement and spatial relation represent respectively the elements of Pṛthvi, Ap, Tejas, Vāyu and Ākāśa within the atom.

Pañca Mahābhūtas are the basic foundation on which the anatomy, Physio-Pathology and Pharmacology of Ayurveda stands, that is why Suśruta has said to the extent that there is no need of any other subject of consideration in medicine than Pañca Mahābhūtas. Particularly, in Pharmacology, as we shall see, Pañca Mahābhūtas are intimately related with the soil, seasons, Dravya, guṇa, Vīrya, Rasa and Vipāka and as such no study can be complete without them.

Relation of Dravyaguna with other branches of Āyurveda :

Dravyaguna, the Science of drugs, stands at the apex of Triangle formed by Śārira (Anatomy), Prākṛti-Vijñāna (Physiology) and Vikṛti-Vijñāna (Pathology) and itself supports the eight aṅgas of Āyurveda (Fig. 1)

CHAPTER II

DRAVYA AND ITS CLASSIFICATION

Definition of Dravya :

Dravya is the substratum of Guṇa (properties) and Karma (Action). Guṇa and Karma can't be taken in abstract form isolated from Dravya. Similarly, though Dravya stays for a moment in pure form, it cannot be thought of as devoid of Guṇa and Karma. Hence, Guṇa and Karma are said to be inherently related to Dravya.

Importance of Dravya :

Among the six Padārthas, Dravya is the most important one which all other Padārthas are centred around. As said above, Dravya is the substratum of Guṇa and Karma which are related to Dravya with inherence (Samavāya). Again, Dravyas are applied by the rule of Sāmānya (Similarity) and Viśeṣa (dissimilarity). Thus all the six Padārthas (Dravya, Guṇa, Karma, Sāmānya, Viśeṣa and Samavāya) get practical application in Dravyaguṇa, whereas they are purely speculative and conceptual in Philosophy. This is an instance to show how the philosophical concepts have got practical utility in Āyurveda.

Bhautikatvā and Auśadhatva of Dravyas :

All Dravyas are Pañcabhautika in this context. The living animals and plants are used in dead form and as such, devoid of Ātma (consciousness), they remain only as Pāñcabhautika.

All Dravyas can be used as drug. Any dravya can be termed as drug only on the condition that it is used for a definite purpose (Artha) and with rationale (Yukti). Hence purposiveness and rationality are two essential conditions for any Dravya to be used as drug.

Classification of Dravyas :

Dravyas have been classified in various ways. Some of the important classifications are as below :

A. *According to source :*

Dravyas are of three types according to source :

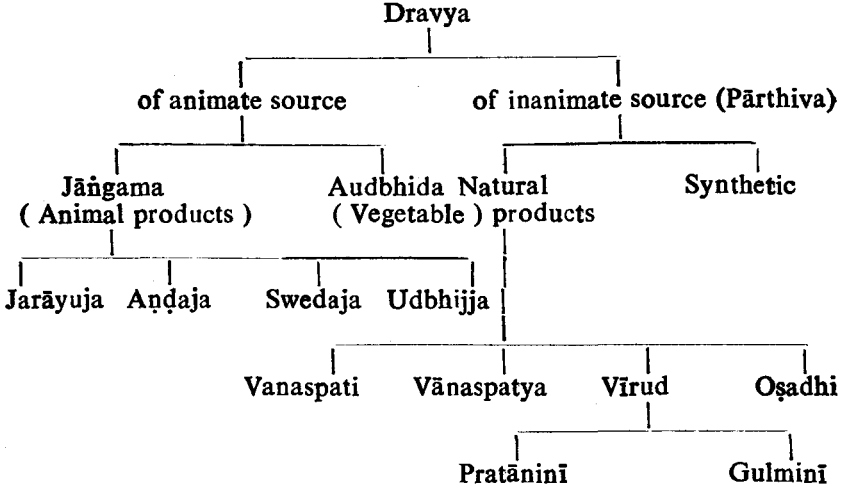
1. Audbhida (Plant products) — Arjuna, Aśoka etc.
2. Jāngama (animal product) — Musk, Civet etc.
3. Pārthiva (Minerals) — Mercury, Iron etc.

Audbhida Dravyas are again subdivided into four groups as their source plants are of four types according to their botanical characters :

1. Vanaspati (Big trees and those having fruits but no apparant flowers) — Coniferous plants, Banyan tree etc.
2. Vānaspatya or Vṛkṣa (Medium-sized trees having both flowers and fruits) — Mango, Haritaki etc.
3. Virud (Shrubs and weak plants) — Sārivā, Śara etc.
4. Oṣadhi — Balā, Citraka etc.

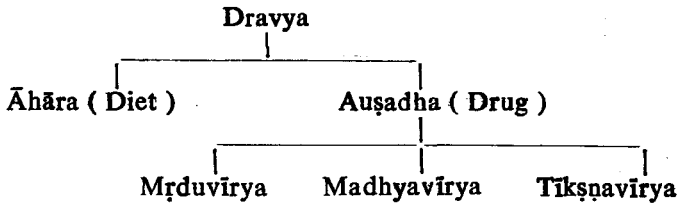
Similarly, the animals, source of Jāngama Dravyas, are of four types :

1. Jarāyuja — Mammalians
2. Anḍaja — Birds, Fishes
3. Swedaja — Insects.
4. Udbhijja — Frog, earworm etc.

Table II*Classification of Dravya according to source :***B. According to use :**

Dravyas are used as either diet (Āhāra) or drug (Auṣadha). Auṣadha Dravya is again of three types according to Vīrya :

1. Mr̥duvīrya
2. Madhyavīrya
3. Tikṣnavīrya.

Table III*Classification of Dravya according to use :***C. According to effect on Doṣas :**

According to effect on Doṣas and Dhātus, Dravyas have been grouped as :

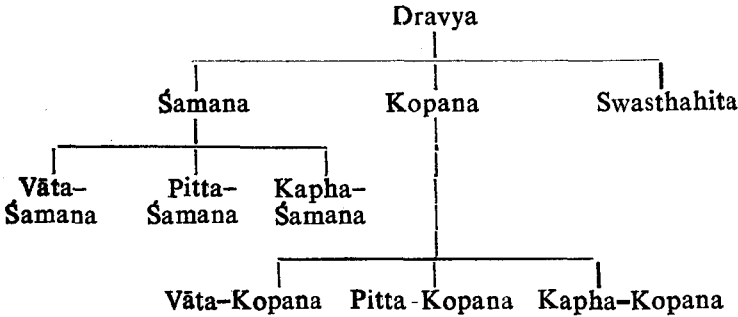
1. Doṣa-Praśamana (Pacifier)
2. Dhātu-Pradūṣaṇa (Vitiator)
3. Swastha-Hita (Maintainer)

The drugs of the first group are used as therapeutic agents in treatment of diseases while those of the second group cause disorders and are important as etiological factors responsible for production of diseases. Drugs of the third group are neither of the two but help in maintaining equilibrium of the body and are thus important from the point of view of prevention.

The first two groups are again sub-divided each in three groups according to three doṣas.

Table IV

Classification of Dravya according to effect on Doṣas :

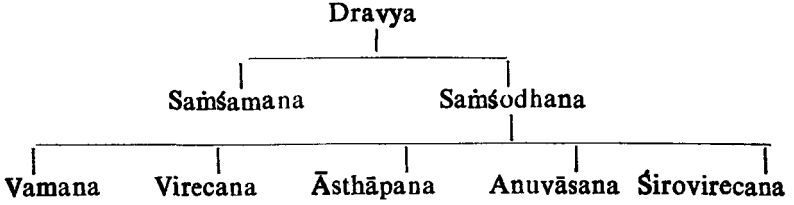


D. According to therapeutic application :

Drugs may be used in therapy for either Pacifying or expelling out doṣas which are called as saṁśamana and saṁśodhana respectively. Saṁśodhana is again of five types known as Pañcakarma (Five purificatory measures).

Table V

Classification of Dravya according to therapeutic application :



E. According to Pharmacological action :

Caraka (Su. Ch. 4) defined fifty groups of drugs according to action; each group containing ten drugs is called Mahākaṣāyā. But by method of induction taking common characteristics into account other similar drugs may be incorporated into them. These groups are as follows :—

1. Jīvaniya (Vitaliser)
2. Bṛmhaṇīya (Bulk-promoting)
3. Lekhaṇīya (emaciating)
4. Bhedaṇīya (Scabula-breaking)
5. Sandhāṇīya (Healing)
6. Dīpaṇīya (Appetiser)
7. Balya (Tonic)
8. Varṇya (Complexion-Promoting)
9. Kanṭhya (Beneficial for throat)
10. Hṛdya (Cordial)
11. Tṛptighna (Anti-Saturative)
12. Arśoghna (Anti-haemorrhoidal)
13. Kuṣṭhaghna (Anti-dermatosis, Antileprotic)
14. Kaṇḍūghna (Anti-pruritic)
15. Kṛmighna (Anthelmintic)
16. Viśaghna (Anti-poison)
17. Stanyajanana (Galactogogue)
18. Stanyaśodhana (Galactodepurant)

19. Śukrajanana (Semen-promoting)
20. Śukraśodhana (Semen-depurent)
21. Snehopaga (Sub-oleative)
22. Swedopaga (Sub-diaphoretic)
23. Vamanopaga (Sub-emetic)
24. Virecanopaga (Sub-purgative)
25. Āsthāpanopaga (Sub-Corrective enemata)
26. Anuvāsanopaga (Sub-unctuous enemata)
27. Śirovirecanopaga (Sub-errhines)
28. Chardinigrahaṇa (Anti-emetic)
29. Tṛṣṇānigrahaṇa (Anti-dyspic)
30. Hikkānigrahaṇa (Anti-hiccough)
31. Purīśasaṅgrahaṇīya (Intestinal-Astringents)
32. Purīśavirajānīya (faecal depigmenter)
33. Mūtrasaṅgrahaṇīya (Anti-Diuretic)
34. Mūtravirajānīya (Urinary depigmenter)
35. Mūtravirecanīya (Diuretic)
36. Kāśahara (Anti-Cough, Anti-Tussive)
37. Śwāsahara (Antidyspneic)
38. Śwāyathuhara (Antiphlogistic)
39. Jwarahara (Antipyretic)
40. Śramahara (Energy-compensater, Acopic)
41. Dāhapraśamana (Refrigerant)
42. Śītapraśamana (Calefacient)
43. Udardapraśamana (Anti-allergic)
44. Aṅgamarda praśamana (Anti-bodyache)
45. Śūlapraśamana (Intestinal antispasmodic)
46. Śoṇitasthāpana (Haemostatic)
47. Vedanāsthāpana (Analgesic)
48. Saṁjñasthāpana (Resuscitative)
49. Prajāsthāpana (Anti-aborttifacient)
50. Vayaḥsthāpana¹ (Gerontologic)

It is to be noted that this grouping starts with Jīvaniya and ends with Vayaḥsthāpana which indicates author's objective as well as the objective of Ayurveda e.g. promoting health (Swāsthya) and longevity (Dīrgha Āyu).

F. According to action and therapeutic use :

Suśruta has arranged drugs in thirty seven groups each group having indication in particular diseases. Caraka has named the groups on the basis of action while suśruta has done it on the typical drug in the group. For instance, Jīvaniya group of Caraka is Kākolyādi of Suśruta, kakoli being the typical representative drug of that group.

The groups defined by Suśruta with indications are as follows :

1. Vidārigandhādi — Pitta-Vāta, Gaseous tumour, emaciation, Lassitude, Dyspnoea, Cough.
2. Āragvadhādi — Kapha, poison, Diabetes, Skin diseases, fever, vomiting, ulcers.
3. Varuṇādi—Kapha, Meda, headache, gaseous tumour, Internal abscess.
4. Viratarvādi — Vāta, Calculi, Dysuria.
5. Sālasārādi²—Kapha, Meda, Skin diseases, Diabetes, Anaemia.
6. Rodhrādi—Kapha, Meda, Uterine disorders, Astringent, Anti-poison, Promotive for Complexion.
7. Arkādi—Kapha, Meda, Worms, Skin diseases, ulcers.

¹ For detailed list of drugs see Appendix I.

² Dallāṇa, the Commentator on Susruta Samhita is wrong in explaining 'Śālasāra' as Heartwood (sāra) of the tree Śāla. Actually the word 'Śālasāra' is a synonym of Śāla meaning the cream (sāra) of trees (sāla). Perhaps due to this confusion, Vāgbhaṭa has changed this gaṇa as Asanādi. Ravigupta in his Siddhasāra-nighantu has rightly named it as 'Śālādi'.

8. Surasādi — Kapha, Worms, Respiratory diseases, Anorexia, ulcers.
9. Muṣkakādi — Meda, Śukradoṣa, Diabetes, Piles, Anaemia, Calculi.
10. Pippalyādi — Kapha, Vāta, Respiratory disorders, Anorexia, appetiser, digestive, Gaseous, tumour, Colics.
11. Elādi — Vāta, Kapha, poison, urticaria, itching, improves complexion.
12. Vacādi. }
13. Haridrādi } Purify breastmilk, indigestion, diarrhoea,
Digestive.
14. Śyāmādi — Purgative, Carminative, Anti-poison.
15. Bṛhatyādi — Tridoṣa, Digestive, Diuretic.
16. Paṭolādi — Kapha, Pitta, Antipyretic, gastritis, skin-disorders.
17. Kākolyādi—Vāta, Pitta, Rakta, Jivaniya, Bṛnhāṇa, Vṛṣya, Stanyajanana.
18. Ūṣakādi — Kapha, Meda, urinary Calculi, Gaseous tumours.
19. Sārivādi — Rakta, Pitta, Thirst, burning sensation, Pittajwara.
20. Añjanādi — Rakta, Pitta, Anti-poison, burning sensation.
21. Parūṣakādi — Vāta, Anorexia, Thirst, Dysuria.
22. Priyaṅgwādi }
23. Ambaṣṭhādi } —Pitta, Astringent. Healing, Wounds.
24. Nyagrodhādi — Rakta, Pitta, Meda, burning sensation, Uterine disorders, astringent, healing of wounds and fractures.

25. Guḍūcyādi — Appetiser, Antipyretic, Anti-emetic, Thirst, Burning sensation.
 26. Utpalādi — Pitta, Rakta, Burning sensation, Thirst, Poison, Vomiting, Palpitation, Loss of Consciousness.
 27. Mustādi — Kapha, Uterine disorders, Digestive, Purifies breast Milk.
 28. Triphalā — Kapha, Pitta, Digestive, Beneficial for eye, Diabetes, Skin diseases, intermittent fevers.
 29. Trikaṭu — Kapha, Meda, Skin diseases, Diabetes, Loss of appetite, Gaseous tumour, Nasal Catarrh.
 30. Āmalakyādi — Kapha, Appetiser, Anti-pyretic, Beneficial for eye and semen, Pyrexia.
 31. Trapwādi — Poison, Worms, Diabetes, Anemia, Heart disease.
 32. Lākṣādi — Kapha, Pitta, Skin diseases, Worms, Chronic ulcers.
 33. Laghu Pañcamūla — Vāta, Pitta, Growth-promoting, Tonic.
 34. Bṛhat Pañcamūla — Kapha, Vāta, Appetiser.
 35. Daśamūla — Tridoṣa, digestive, Anti-pyretic.
 36. Valli Pañcamūla
 37. Kaṇṭhaka Pañcamūla
- } Blood disorders, Kapha,
} Swelling, Diabetes, Semen disorders.
38. Tṛṇa Pañcamūla¹ — Rakta, Pitta, Diuretic.

A comparative study with regard to similarity in the Gaṇas of Caraka and Suśruta may be interesting (Table VI).

¹ For detailed list of drugs see Appendix II.

Vāgbhaṭa, in his Aṣṭāṅga Saṁgraha, added two more Pañcamūlas (Jīvanīya and Madhyama) and a new group, Vatsakādi, useful in gastrointestinal disorders. He has also changed nomenclature of certain Gaṇas such as Padmakādi for Kākolyādi and Asanādi for Sālasārādi. Out of the fifty Gaṇas of Caraka he has left five Gaṇas relating to Pañcakarma. In the chapter relating to Saṁśodhana and Saṁśamana, the groups of drugs used in smoking have been added.

Thus it is evident that the ancients have classified drugs with a view to their morphological characters as well as pharmacological activity. In the first group comes the classification on the basis of root¹ (Daśamula etc.), stem (Valli pañcamūla), thorns (Kaṇṭaka pañcamūla), Bark (Pañca valkala), latex (kṣīri vṛkṣa), leaves (Pañca pallava), Flower (Ādyāpuṣpa), Fruits (Triphalā), Seeds (Caturbija). These parts are to be used in Medicine. On the other hand, the Caraka's classification of Mahākaṣāyas is typical which is based on the main action of the drug.

Table VI

*Comparative statement of The groups of Drugs described
by Caraka and Suśruta*

<i>Caraka</i>	<i>Suśruta</i>
1. Jīvanīya	Kākolyādi
2. Bṛhṇhaṇīya	Vidārigandhādi
3. Lekhaniya	Mustādi
4. Bhedaniya	Śyāmādi
5. Sandhāniya	Ambaṣṭhādi, Priyangwādi
6. Dīpanīya	Pippalyādi

¹ Caraka has also described 'MŪLINĪ' and 'PHALINĪ' groups of drugs.

<i>Caraka</i>	<i>Suśruta</i>
7. Balya	Laghu Pañcamūla
8. Varṇya	Elādi
9. Kaṇṭhya	
10. Hṛdya	Parūṣakādi
11. Tṛptighna	Paṭolādi
12. Arṣoghna	Muṣkakādi
13. Kuṣṭhaghna	Āragvadhādi, Sālasārādi
	Arkādi, Lākṣādi
14. Kaṇḍūghna	Elādi, Āragvadhādi
15. Kṛmighna	Surasādi, Lākṣādi
16. Viṣaghna	Rodhrādi, Āragvadhādi,
	Arkādi, Añjanādi
17. Stānyajanana	Kākolyādi
18. Stānyaśodhana	Mustādi, Vacādi,
	Haridrādi
19. Śukrajanana	Kākolyādi
20. Śukraśodhana	Valli Pañcamūla,
	Kaṇṭāka Pañcamūla
21. Snehopaga	
22. Swedopaga	
23. Vamanopaga	
24. Virecanopaga	Parūṣakādi
25. Āsthāpanopaga	
26. Anuvāsanopaga	
27. Śirovirecanopaga	
28. Chardinigrahaṇa	Nyogrodhādi
29. Tṛṣṇānigrahaṇa	Guḍucyādi, Utpalādi,
	Sārivādi, Parūṣakādi
30. Hikkānigrahaṇa	Bṛhatyādi,
	Vidārigandhādi

<i>Caraka</i>	<i>Suśruta</i>
31. Purīṣa-saṅgrahaṇīya	Rodhrādi, Priyaṅgwādi, Ambaṣṭhadi
32. Purīṣa-virajāniya	Nyagrodhādi
33. Mūtra-saṅgrahaṇīya	Nyagrodhādi, Sālasārādi
34. Mūtra-virecanīya	Tṛṇa Pañcamūla, Viratarwādi
35. Mūtra-virajāniya	Utpalādi
36. Kāsahara	Vidārigandhādi
37. Śwāsahara	Pippalyādi
38. Śothahara	Daśamūla
39. Jwarahara	Sārivādi, Paṭolādi, Āmalakyādi
40. Śramahara	Parūṣakādi
41. Dāha-Praśamana	Sārivādi, Utpaladi, Añjanādi
42. Śīta-praśamana	Pippalyādi, Surasādi
43. Udarda-praśamana	Sālasārādi
44. Aṅgamarda-praśmana	Vidārigandhādi
45. Śūla-praśamana	Pippalyādi
46. Śoṇitasthāpana	Priyaṅgwādi, Añjanādi
47. Vedanāsthāpana	Rodhrādi
48. Saṁjñāsthāpana	Priyaṅgwādi
49. Prajāsthāpana	Vidārigandhādi, Kākolyādi
50. Vayaṣṭhāpana	Kākolyādi, Vidārigandhādi
51. Vamana	Ūrdhwabhāgahara
52. Virecana	Adhobhāgahara
53. Śodhana	Ubhayatobhāgahara

A classification based on physical qualities is also seen such as Madhura Varga, Pañcakola, Pañcatikta, Pañcalavaṇa, Amlavarga, Trijātaka, Sarvauṣadhi etc. Details of some of the common groups are given in Table VII.

Table VII

Some Common Groups of Drugs

<i>Groups</i>	<i>Constituents</i>
1. Triphalā	Haritakī, Bibhītaka, Āmalakī.
2. Trikaṭu	Śuṅṭhī, Pippalī, Marica.
3. Trijāta	Twak, Elā, Patra.
4. Caturjāta	Trijāta & Nāgakesara.
5. Trimada	Viḍanga, Musta, Citraka.
6. Caturbhīja	Methikā, Candrasūra, Kālājājī, Yavānī.
7. Pañcakola	Pippalī, Pippalīmūla, Cavya, Citraka, Śuṅṭhī.
8. Pañcavālkala	Bark of Nyagodha, Udumbara, Aśwattha, Plakṣa, Pārīṣa ¹ .
9. Pañcapallava	Āmra, Jambū, Kapittha, Bijapūra, Bilwa ² .
10. Trīṇapañcamūla	Kuśa, Kāśa, Nala, Darbha, Ikṣu.
11. Pañcatikta	Vāsā, guḍūci, Nimba, Kaṅṭhakārī, Paṭola.
12. Bṛhat Pañcamūla	Bilwa, Pāṭalā, Agnimantha, Śyonāka, gambhārī.
13. Laghu Pañcamūla ³	Śālaparṇī, Prśniparṇī, Kaṅṭhakārī, gokṣura, Bṛhatī.

¹ These plants are called as 'Kṣīrī vṛkṣa' (Trees with latex).

² The latter three plants belong to Rutaceae (citrus) family.

³ Suśruta has described five Pañcamūlas—Bṛhat, Laghu, Kaṅṭaka, Vallī and Trīṇa. Vāgbhaṭa in Aṣṭāṅgasāṅgraha has added two more Jivana and Madhyama.

⁴ This group has been termed as 'Śothahara' in Maḥākaśāya groups by Caraka (Sū. 4).

- | | |
|---------------------------|--|
| 14. Daṣamūla ⁴ | Bṛhat Pañcamūla & Laghu Pañcamūla. |
| 15. Aṣṭa Varga | Jivaka, Rṣabhaka, Medā, Mahāmedā, Kākoli, Kṣīrakākoli, Rddhi, Vṛddhi. ¹ |

But the foremost is the classification according to Bhautika composition on which the application of drugs depends.

G. According to Bhautika composition :

On the basis of predominance of a certain Mahābhūta, drugs are grouped as Pārthiva, Āpya, Tajjasa, Vāyavya and Ākāśīya with their group characters (Table VIII).

From this it is evident that to promote growth and weight we have to apply the Pārthiva drugs. When there is dehydration in the body, the Āpya dravyas are administered. To stimulate Agni as in cases of dyspepsia the Tajjasa drugs are used. Almost all the digestive preparations contain such drugs. For counteracting weight and bulkiness as in obesity, the Vāyavya dravyas are useful. Ākāśa is related with śrotas (various channels) and as such in cases of śrotorodha particularly by Āmadoṣa, the Ākāśīya dravyas are applied. Rasas are the best indicators of the bhautika composition of drugs.

From applied point of view, Guru, Snigdha, Tikṣṇa, Rūkṣa and Laghu have been fixed as specific properties of Pṛthvī, Ap, Tejas, Vāyu and Ākāśa respectively.

¹ Bhāvamiśra has recommended four substitutes for these rare drugs as Śatāvarī, Vidāri, Aśwagandhā, and Vārāhī respectively for a pair.

Table VIII
Characters of Pāñcabhautika Dravyas.

Group	Specific Sense Object	Rasa	Properties	Actions
1. Pāthīva	Smell	Madhura, Kaṣāya (Slightly)	Guru, Khāra, Kathina, Manda, Sthira, Viśada, Sāndra, Sthūla.	Promotive for growth, Weight, Compactness, Stability, Strength, moving downwards (Purgation).
2. Āpya	Taste	Madhura, Slightly Kaṣāya, Amla, Lavaṇa	Śīta, Snigdha, Manda, Guru, Saṛa, Drava, Mṛdu, Picchila.	Moistening, oleation, binding, solution, Pleasing.
3. Tajāsa	Vision	Katu, Slightly Amla, Lavaṇa	Uṣṇa, Tikṣṇa, Sūkṣma, Rūkṣa, Khara, Laghu, viśada.	Burning, Digestion, Lustre, Complexion, illumination, Tearing, heating, Moving upwards (Emesis).
4. Vāyavya	Touch	Kaṣāya, Slightly Tikta	Sūkṣma, Khara, Śīta, Laghu, Viśada.	Non-Sliminess, Lightness, Lassitude, Roughening, Movements.
5. Ākāśīya	Sound	Unmanifest	Ślakṣṇa, Sūkṣma, Mṛdu, Vyāvāyi, Viśada discriminate.	Softening, Porousness, Lightness ¹ .

CHAPTER III

RASA

Definition :

Rasa is the object of the gustatory sense-organ which is located in the tongue. But it is not only perception of taste but is an indicator of the composition, properties and probable action of the drug.

Apart from the above, in Ayurveda, the word 'Rasa' denotes Pārada (Mercury), expressed juice of a plant and the first of the Dhātus (Rasa) in the body.

Number of Rasas :

There are six Rasas each composed of two Mahābhūtas such as :

1. Madhura	Ṙṥthvī + Jala	(P + J)
2. Amla	Ṙṥthvī + Tejas	(P + T)
3. Lavaṇa	Jala + Tejas	(J + T)
4. Kaṭu	Vāyu + Tejas	(V + T)
5. Tikta	Vāyu + Ākāśa	(V + A)
6. Kaṣāya	Vāyu + Ṙṥthvī	(V + P)

Regarding composition of Amla and Lavaṇa Rasas there is difference of opinion between Caraka and Suśruta. The composition given above is as proposed by Caraka while according to Suśruta Amla is composed of Jala + Tejas and Lavaṇa of Ṙṥthvī + Tejas. Relatively Guru Guṇa is predominant in Ṙṥthvī while in Jala there is predominance Snigdha Guṇa. Although both of them have the same

apparent effect on Doṣas (as vitating Kapha-Pitta and Pacifying Vāta), the difference of opinion is mainly on the nature of their action. Amla is more Snigdha while Lavaṇa is more Guru. But as Pṛthvī and Jala often go together it is very difficult to differentiate their composition and action. For instance, Amla Rasa helps in digestion and thereby helping in assimilation may cause increase in Guru Guna while Lavaṇa Rasa absorbs and retains water. In this way Amla and Lavaṇa should have preponderance of Pṛthvī and Jala respectively. But as Amla increases salivation it may be supposed to contain more Jala Mahābhūta while Lavaṇa due to its property of water retention and thereby increasing heaviness in tissues may be said as containing more Pṛthvī Mahābhūta. Thus it is only a difference in outlook, it does not have any appreciable importance in practical field.

How the composition of a Rasa is known ?

The composition of Rasas has been defined by inference on the basis of their effect on the body. For instance, Madhura Rasa increases Guru and Snigdha Guṇas and thereby increases kapha doṣa and decreases Vāta and Pitta doṣas. Kapha is composed of Pṛthvī and Jala; Madhura which increases it, must be similar in composition. Similarly, Kaṭu Rasa increases Vāta and Pitta and pacifies Kapha. Hence it must be composed of Vāyu and Tejas which are similar to Vāta and Pitta and dissimilar to Kapha. Tikta Rasa pacifies Pitta and as such has no Tejas. Further it increases Vāta and decreases Kapha which indicates predominance of Vāyu in its composition. Tikta Rasa produces lightness and has particular effect of relieving avarodha in Srotas (obstruction in channels) which contain Ākāśa. This indicates existence of Ākāśa Mahābhūta in it in addition to

Vāyu. There are two non-Tejas and Vāta-increasing Rasas-Tikta and Kaṣāya. Out of them, the former, due to lightness, is concerned with Ākāśa while the latter on account of its heaviness indicates Pṛthvī in addition to Vāyu. Kaṣāya has got action on channels opposite to that of Tikta.

Rasa and Anu-Rasa :

It is practically impossible to find a dravya having only one Rasa because dravya is Pāñcabhautika and it is quite natural that by different permutations and combinations of Mahābhūtas, different Rasas are produced and contained in it. The only difference is in the preponderance of a certain Rasa. When a dravya is called Madhura it does not exclude other Rasas but it only means that Madhura Rasa is predominant in the same while other Rasas are subservient, latent or unmanifest. The latter ones are termed as Anu-Rasas. Rasa is manifest, stable, till dry state and is perceived at first while Anu-Rasa is unmanifest, unstable (found only in fresh state) and is perceived in the end. For instance, Haritakī has got five Rasas out of which Kaṣāya is (Predominant) Rasa while other four are Anu-Rasas. Likewise, Rasona (Garlic) has also five Rasas but here Kaṭu is predominant and others are subservient ones.

Keeping in view the multi-Rasa nature of dravyas, sixty therepossible combinations have been proposed in consonance with the identical number of combination of Doṣas. The idea is that a particular combination of Rasa is to be applied in case of the identical combination of Doṣas.

Genesis and variation of Rasas :

Water (Jala) has no manifested Rasa but when it comes down from the sky (Ākāśa) with rains it reaches the

soil (Pṛthvi) where it also gets contact with air (Vāyu) and Heat (Agni). By these combined forces the plant grows and develops in which Jala plays important role because it carries nutrition while circulating in all the tissues. Thus it is also responsible for constitution of various chemical fractions which further act as base of the Rasas. Hence, Jala is the material cause of Rasa. Pṛthvī comes next to it. The other three Mahābhūtas are mainly concerned with variation of Rasas such as Kaṭu, Tikta etc. There may be some variation in proportion due to seasonal variations. In visarga kāla (Varṣā, Śarad and Hemanta) there is predominance of Pṛthvī and Jala while in Ādāna Kāla (Śiśira, Vasanta and Grīṣma) Vāyu is predominant. Grīṣma, Varṣā, and Śarad are the seasons having Agni as preominant. However, the question remains unsolved on the analogy of the causal relation between seed and fruit.

One Rasa may be transformed in to another due to various factors such as time, container, combination, heat, place contamination etc.

Classification of Rasas :

A. The Vedic concept of Agni-Ṣomiya has great impact on formulation of the concepts of Indian Medicine. The genesis of embryo by the combination of Śukra (Soma) and Ārtava (Agni); consumption of food (Soma) by Digestive juices and enzymes (Agni); Division of seasonal cycle into visarga (Soma) and Ādāna (Agni) are some of the instances. In the concept of Tridoṣa, Pitta represents Agni and Soma is represented by Kapha. Vāta stands in between as catalytic (Yogavāha) . Which acquires the properties of either when comes into contact. In the field of Dravyaguṇa too, this concept plays a vital role. The division of Vīrya into two-

Śīta and Uṣṇa is based on this concept. Likewise, six Rasas have been grouped into two Saumya and Āgneya. The Rasas which contain Agni are Āgneya while those which do not contain Agni are Saumya. Kaṭu, Amla and Lavaṇa are Āgneya Rasas while Madhura, Tikta and Kaṣāya are Saumya Rasas.

Āgneya (Igneous) Rasas :

- | | | |
|---------|---------|-----------|
| 1. Kaṭu | 2. Amla | 3. Lavaṇa |
|---------|---------|-----------|

Saumya (Non-Igneous) :

- | | | |
|------------|----------|-----------|
| 1. Madhura | 2. Tikta | 3. Kaṣāya |
|------------|----------|-----------|

Āgneya Rasas increase Pitta while Saumya Rasas decrease it. If we have to increase Agni as in case of dyspepsia dravyas having Āgneya Rasas will have to be applied. On the contrary, when there is excess of Pitta as in Jaundice and internal Haemorrhages, drugs having Saumya Rasas would be of choice.

Likewise, the Rasas may as well be classified according to Vāyu. Such as Kaṭu, Tikta and Kaṣāya are Vāyavya Rasas while the remaining three are non-Vāyavya.

B. According to liking and effect Rasas have been divided into four groups as :

1. Swādu Hita — (Tasteful and wholesome)
2. Swādu-Ahita — (Tasteful and unwholesome)
3. Aswādu-Hita — (Distasteful and wholesome)
4. Aswādu-Ahita — (Distasteful and unwholesome)

C. According to action Rasas have been grouped as :

1. Chedaniya (Langhana) — Bulk-reducing
2. Upaśamaniya (Bṛmhaṇa) — Bulk-promoting
3. Sādhāraṇa (Medium)

Characters of Rasas :

1. Madhura Rasa—Is pleasant, softening, annointing (in mouth) and attracts ants and bees.
2. Amla Rasa—Causes salivation, Sweating, mouth-cleaning, burning sensation in mouth and throat and is appetiser.
3. Lavaṇa Rasa—Easily soluble, water-retaining, softening, appetiser; produces burning sensation in mouth and throat.
4. Kaṭu Rasa—Causes salivation, Lachrymation, Tingling, sensation in Tongue and Headache.
5. Tikta Rasa—Overshadows all other tastes, is appetiser, mouth-cleaning and produces dryness in mouth.
6. Kaṣāya Rasa—produces clarity, stiffness and traction in tongue and throat, dryness in mouth, pain in cardiac region and heaviness.

Taking salivation as an objective indicator six Rasas may be divided into three groups as :

A. Sialogogues (increasing salivary secretion) :

1. Amla
2. Kaṭu

B. Anti-sialogogues (decreasing salivary secretion) :

1. Tikta
2. Kaṣāya

C. Altering consistency of saliva :

1. Madhura
2. Lavaṇa

Properties of Rasas :

Properties are actually located in dravya but are projected to Rasas because of their concomitance, these properties actually relate to Mahābhūtās which the Rasas are composed of. Each Rasa contains three guṇas such as :

1. Madhura	-	S	Ś	G
2. Amla	-	S	U	L
3. Lavaṇa	-	S	U	G
4. Kaṭu	-	R	U	L
5. Tikta	-	R	Ś	L
6. Kaṣāya	-	R	Ś	G ¹

If we consider according to guṇas, there may be six groups each containing three Rasas in order of predominance as :

		I	II	III
1.	R	Ks	Kt	T
2.	S	M	A	L
3.	U	L	A	Kt
4.	Ś	Ks	M	T
5.	G	M	Ks	L
6.	L	T	Kt	A ²

Vagbhata, in the Ś group, places M and Ks in I and II positions respectively.

There are some exception to the above generalisation such as :

-
- ¹ S = Snigdha
 Ś = Śīta
 G = Guru
 U = Uṣṇa
 L = Laghu
 R = Rūkṣa

- ² 1. Kṣ = Kaṣāya
 2. Kt = Kaṭu
 3. T = Tikta
 4. M = Madhura
 5. A = Amla
 6. L = Lavaṇa

1. Meat is Uṣṇa although it is Madhura.
2. Āmalaki is Śīta although it is Amla.
3. Saindhava is not Uṣṇa although it is Lavaṇa.
4. Pippalī is snigdha and Guru although it is Kaṭu.
5. Guḍūcī is Uṣṇa although it is Tikta.
6. Harītakī is Uṣṇa although it is Kāṣāya.

Consideration of six Guṇas in relation to six Rasas is very important from applied point of view because these are the Guṇas which attain the state of Vīrya. In other words, they are active properties which are applicable in the respective six therapeutic measures (Śatkarmas) described by Caraka such as Bṛmhāṇa, Langhana, Swedana, Stambhana, Rūkṣaṇa and Snehana. Guṇas concerned with the above are Guru, Laghu, Uṣṇa, Śīta, Rūkṣa and Snigdha respectively. Keeping these Guṇas in view, Rasas can be applied in the treatment of diseases as above.

Action of Rasas :

Action of Rasas may be studied on the level of Doṣas, Dhātus, Malas, Agni and Srotas.

A. Action on Doṣas :

Madhura, Amla and Lavaṇa Rasas increase Kapha and decrease Vāta; on the contrary, Kaṭu, Tikta and Kaṣāya increase Vāta and decrease Kapha. The Āgneya Rasas (Kaṭu, Amla and Lavaṇa) and Saumya Rasas (Madhura, Tikta and Kaṣāya) increase and decrease Pitta respectively. (Fig. 2)

B. Action on Dhātus :

Madhura is the only Rasa which promotes anabolic activity increasing all the Dhātus and vitality in general. (Table VIII). Amla Rasa, though stimulates such activities by helping Agni, has got decreasing effect on Śukra-

dhātu and as such is not recommended as tonic. Remaining four Rasas are Katabolic in effect. Particularly, Lavaṇa Rasa by increasing water content causes laxity in body.

EFFECT OF RASAS ON DOŚAS

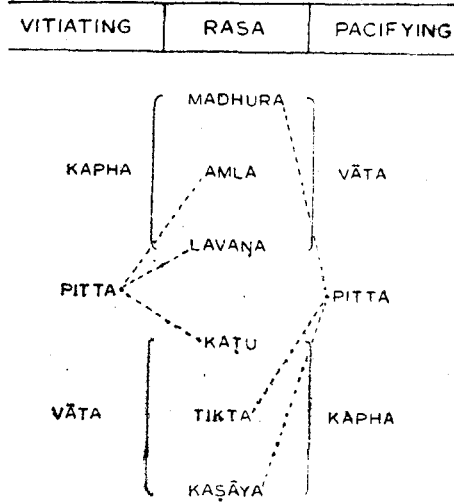


Fig. 2

Kaṭu, Tikta and Kaṣāya have absorbing effect. Particularly Tikta depletes Medas, Vasā, Majjā and Lasikā which are pathogenic factors in Prameha. So these Rasas are important for the treatment of Prameha (Diabetes).

C. Action on Malas :

The group of Pārthivāpya Rasas (Madhura, Amla, Lavaṇa) are laxative, diuretic and carminative While Vāyavya Rasas (Kaṭu, Tikta, Kaṣāya) have opposite effect e.g. they are Constipative, Anti-diueretic and cause obstruction in flatus. Kaṣāya Rasa is best for stambhana (Astrin- gent) action and as such is used in treatment of Diarrhoea, Polyuria, Haemorrhages etc.

D. Action on Agni :

Āgneya Rasas (Kaṭu, Amla, Lavaṇa) are appetiser (Dīpana) and Digestive (Pācana). Tikta though belonging to Saumya group stimulates agni by promoting Samāna Vāta and by absorbing the Kapha (excessive mucus secretion) which is responsible for Mandāgni. The other two Rasas, Madhura and Kaṣāya have adverse effect on Agni.

E. Action on Srotas :

Kaṭu, Tikta and Lavaṇa are srotaḥśodhana (Channel-cleaning), Kaṭu Rasa due to Vāyu and Agni absorbs the fluid and expels the obstructive material. This quality has been termed as Pramāthī (eliminating obstruction by churning) as opposed to Abhiśyandī (channel-obstructing). Tikta Rasa acts in the similar way by absorbing the fluid and slimy material due to Vāta and thus vacating space on account of Ākāśa. Due to Sūkṣma guna it permeates even to the minutest channels. Lavaṇa has no absorbing property but liquifies the solid mass and expels it due to Tikṣṇa guna.

The other three Rasas (Madhura, Amla, Kaṣāya) have no such effect, rather they may precipitate srotorodha.

F. General systemic action :

- Madhura : Pleasing, brain tonic, healings Anti-abortifacient, beneficial for burning sensation, thirst, heart, throat, skin, hairs; galactogogue, Antipoison.
- Amla : Pleasing, sialogogue, appetiser, digestive, promotes bleeding (Anti—coagulant).
- Lavaṇa : Moistening, breaking, appetiser, digestive, sialogogue, expectorent, diuretic, vitiates blood.
- Kaṭu : Nervous stimulant, resuscitator, mouth-cleaning, Anthelmintic, promotes bleeding (Anti-coagulant), useful in dyspepsia, cardiac and skin disorders.

Tikta : Anthelmintic, blood-purifier, antipyretic, removes pus, toxins, serous discharges; useful in anorexia, skin diseases, burning sensation.

Kaṣāya : Healing, astringent, absorbent, Anti-diuretic, normalises skin pigmentation.

Therapeutic uses :

Madhura : 1. General debility, geriatric conditions, deficiency of semen.

2. Disorders of Vāta and Pitta.

3. Habitual abortions and deficiency of breast-milk.

Amla : 1. Loss of appetite, dyspepsia.

2. Diseases of Vāta.

Lavaṇa : 1. Loss of appetite, dyspepsia.

2. Cough (as expectorant)

3. As diuretic

4. Disorders of Vāta.

Kaṭu : 1. Loss of appetite, Indigestion, as Anthelmintic, dysentery and sprue.

2. As dentifrice.

3. In disorders of Kapha and Vāta.

4. Obesity, Diabetes.

5. Cough, Coryza, Asthma.

6. Skin diseases.

Tikta : 1. Loss of appetite, dyspepsia, worms, Gastritis, Jaundice.

2. Skin diseases.

3. Fever

4. Obesity and diabetes.

5. Excessive discharges, Pus etc.

Kaṣāya : 1. Diarrhoea

2. Haemorrhage, wounds

3. Polyuria

4. Respiratory disorders

Contra-Indications :

Rasas are contra-indicated in disorders having Doṣas which are excited by them as follows :—

Madhura : diseases caused by Kapha such as cough, Asthma, Diabetes, Filariā, Goitre etc.

Amla : disorders of Pitta and Rakta such as gastritis, Internal Haemorrhage, Jaundice, etc.

Lavaṇa : Disorders of Pitta and Rakta, skin diseases, swelling, Ascites, Hypertension, Haemorrhage, Gastritis etc.

Kaṭu : Disorders of Pitta and Rakta as above, Semen disorders, Retention of Urine.

Tikta : Disorders of Vāta, Semen-deficiency.

Kaṣāya :

1. General debility
2. Loss of appetite
3. Disorders of Vāta.

Diseases caused by excessive use :

Rasas, if used excessively, may produce undesirable effects by exciting similar doṣas such as—

Madhura : obesity, depression, heaviness, loss of appetite, abnormal growths, cough, Asthma, coryza, digestive disorders, vomiting, cold fever, hoarseness of voice, goitre, lymphadenitis, Tumours, filaria, conjunctivitis etc.

Amla : Thirst, disorders due to excess of pitta, disorders of blood, laxity in muscles, dropsy, inflammation and burning sensation.

Lavaṇa : Disorders due to excitation of Pitta and Rakta, thirst, unconsciousness, fever, erosions, necrosis,

Skin diseases, dropsy, falling of teeth, impotency, impairment of sense organs, grey hair, falling of hair, gastritis, erysipelas, eczema.

Kaṭu : Unconsciousness, impotency, languor, debility, wasting, vertigo, burning sensation, thirst, trembling, neuralgia etc.

Tikta : Wasting, roughness in channels, debility, depression, unconsciousness, vertigo, dryness of mouth etc.

Kaṣāya : Dryness of mouth, heart-ache, tympanitis, hoarseness of voice, constipation, impotency, cyanosis, obstruction in flatus, urine, stool and semen; debility, wasting, depression, stiffness, paralysis etc.

Order of administration of Rasas :

A. In medicine :

In treatment of diseases Rasas should be used in a definite order according to Doṣa as follows :

<i>Doṣa</i>	I	II	III
1. Vāta	Lavaṇa	Amla	Madhura
2. Pitta	Tikta	Madhura	Kaṣāya
3. Kapha	Katu	Tikta	Kaṣāya.

B. In diet :

I	II	III
Madhura	Amla-Lavaṇa	Kaṭu-Tikta-Kaṣāya.

In meals, one should start with Madhura and finish with Kaṭu-Tikta-Kaṣāya. In between Amla and Lavaṇa should be taken. But if the food is excessively spicy, the meal should end with Madhura.

Table IX
Properties and Actions of Rasas

Rasa	Properties	Action	Disorders Caused by excessive use
1. Madhura	Snigdha, Śīta, Guru	Bulk-promoting, Vitaliser, Tonic, laxative, Diuretic, increases Kapha, decreases Vāta-Pitta.	Obesity, Anorexia, Respiratory disorders, Goitre, Lymphadenites, Filaria, Diabetes, Worms etc.
2. Amla	Snigdha, Uṣṇa, Guru	Appetiser, digestive, Carminative, useful in Anorexia and harmful for semen, increases Kapha-Pitta and reduces Vāta.	Blood-disorders, swellings, inflammations, burning sensation, Skin diseases, Anemia, Haemorrhage, Vertigo, defects of vision.
3. Lavaṇa	Snigdha, Uṣṇa, Guru	Moistening, appetiser, digestive, breaking, expectorant, harmful for Semen, increases Kapha-Pitta and reduces Vāta.	Impotency, grey hairs, falling of hairs, Haemorrhage, Gastritis, Erysipelas, Skin disorders.
4. Kaṭu	Rūkṣa, Uṣṇa, Laghu	Mouth-cleaning, appetiser, digestive, bulk-reducing, Anthelmintic, useful in Dyspepsia, Increases Vāta-Pitta and decreases Kapha.	Impotency, Unconsciousness, Vertigo, debility, burning Sensation, Thirst.
5. Tikta	Rūkṣa, Śīta, Laghu	Appetiser, digestive, Anthelmintic, Antipyretic, Anti-poison, Increases Vāta, decreases Pitta- & Kapha.	Emaciation, debility, Vertigo, dryness of mouth, nervous diseases.
6. Kaṣāya	Rūkṣa, Śīta, Laghu	Astringent, absorbent, Healing, Harmful for Semen, Increases Vāta, decreases Pitta and Kapha.	Dryness of mouth, Cardiac pain, Tympanitis, Obstruction (Constriction) in channels, Impotency, Nervous disorders.

CHAPTER IV

VIPĀKA

Defnition :

Vipāka is the transformed state of ingested substance after digestion. This is also called 'Niṣṭhāpāka' as opposed to Awasthāpāka¹ (stages of digestion) or Prapāka (initial transformation).

It is said to take place at the time of division of Rasa and Mala after digestion is completed but, in my opinion, it is finalised after the next pāka by Bhūtagnis in liver where most of the drugs are metabolised.

Difference between Awasthāpāka and Vipāka may be summarised as below :

Awasthāpāka (Prapāka)

1. Transformation in stages
2. Production of Doṣas as Malas
3. Perceivable

Niṣṭhāpāka (Vipāka)

1. Final transformation
2. Production of Doṣas as Dhātūs.
3. Inferable from actions.

Types of Vipāka :

As there are two final effects on body, Bṛmhaṇa and Laṅghana, the Vipāka is said (by Suśruta) to be of two

¹ There are three stages of digestion-Madhura, Amla & Kaṭu. the first stage begins immediately after ingestion with excess of mucus secretion. The next stage is Amlapāka during which there is secretion of acids and digestive enzymes. The third stage is Kaṭu in which there is excess of Vāyu (Gas formation) due to bacterial fermentation in colon.

types—Guru and Laghu. Caraka takes three Vipākas as Madhura, Amla and Kaṭu. Out of these three Madhura is the same as Guru while Amla and Kaṭu may be included in Laghu². Evidently the former classification is according to effect on Dhatus while the latter one is based on three doṣas. Madhura, Amla and Kaṭu stand for Kapha, Pitta and Vāta respectively. These are the two views mostly accepted by the scholars.

There are certain other views like ṣaḍ-vipākavāda (Six Vipākas according to six Rasas definitely or indefinitely according to predominance of a certain Rasa), Pañca-vipākavāda (Five Vipākas according to five Mahābhūtas) which are matters of interesting discussion but not generally accepted.

Effect of Vipākas :

The effect of Vipākas, according to Caraka, is as in Table X.

Table X

Effect of Vipākas

According to Caraka

<i>Vipāka</i>	<i>Guṇa</i>	<i>Doṣa</i>	<i>Dhātu</i>	<i>Mala</i>
1. Madhura	Snigdha, Guru.	Kapha-increasing	Semen-increasing	Laxative & Diuretic.
2. Amla	Snigdha, Laghu	Pitta-increasing	Semen-decreasing	-do-
3. Kaṭu	Rūkṣa, Laghu.	Vāta-increasing	-do-	Constipative Anti-Diuretic

² Suśruta does not agree to accept the Amla Vipāka because it is a state of incomplete digestion and not the final state.

According to *Suśruta* :

<i>Vipāka</i>	<i>Doṣa</i>	<i>Dātu</i>	<i>Mala</i>
1. Guru	Kapha- increasing, Vātapitta- decreasing.	Semen- increasing	Laxative, Diuretic.
2. Laghu	Vātapitta- increasing, Kapha- decreasing.	Semen- decreasing	Constipa- tive, Anti- diuretic.

Genesis of Vipāka :

Vipāka is again based on Pañcamahābhūtās. During digestion, when there is predominance of Pṛthvī and Jala, it causes Madhura (Guru) Vipāka. On the contrary, in case of predominance of the other three Mahābhūtās (Agni, Vāyu and Ākāśa) there is Kaṭu (Laghu) Vipāka.

Degrees of Vipāka :

As Rasas have been grouped according to three degrees, Vipāka is also said to be of three degrees.

	M	A	L	Kt.	T.	Ks.
1. Madhura Vipāka	I	II	III			
2. Kaṭu Vipāka				II	III	I

The Guṇas may also effect the degree of vipāka. For instance, Dravyas having snigdha guṇa will have Vipāka of degree I while those having Rūkṣa guṇa will not have so.

Difference between Rasa and Vipāka :

Vagbhata says—'The effect of Vipāka is the same as that of Rasa.' this poses a question what is the necessity of Vipāka separate from Rasa when there is no difference in their effect ? In fact, Vipāka is quite distinct from Rasa. Rasa

is known immediately by the contact of Dravya with the tongue while Vipāka can't be perceived and is only known by inference on the basis of its effects. The effect of Rasa is extended only up to the level of digestion but Vipāka has got systemic effect after metabolism. Rasas, due to their peculiar characters, have various psychological responses immediately but at the level of Vipāka, as it is beyond perception, The feeling of well-being or otherwise comes delayed. This may be summarised as in Table XI.

Table XI*Difference between Rasa and Vipāka :*

<i>Rasa</i>	<i>Vipāka</i>
1. Taste sensation	1. State of metabolic transformation.
2. Immediate response	2. Delayed response
3. Effect localised and extended to the level of digestion.	3. Systemic effect after metabolism.
4. Immediate Psychological response	4. Delayed response of well-being or otherwise.
5. Perceivable	5. Inferable.

Now, it is clear that the systemic actions ascribed to Rasas actually pertain to their respective Vipākas.

CHAPTER V GUṆAS

Definition :

Guṇa is that which is located in Dravya inherently, is causative agent and devoid of property and action.

It means that Guṇa itself has no action but it qualifies the Dravya for such action.

Number and Classification :

There are forty one Guṇas in all which can be grouped into four categories :

1. Gurvādi (Physico-pharmacological)	— 20
2. Parādi (Para-pharmacological)	— 10
3. Viśiṣṭa (specific)	— 5
4. Ādhyātmika (Psychological)	— 6
	<hr/>
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1. Gurvādi Guṇas :

They are twenty in number and in ten pairs as follows (Table XII).

1. Guru	Laghu
2. Manda	Tikṣṇa
3. Śīta	Uṣṇa
4. Snigdha	Rūkṣa
5. Slakṣṇa	Khara
6. Sāndra	Drava
7. Mṛdu	Kaṭhina

8. Sthira	Sara
9. Sūkṣma	Sthūla
10. Vtśada	Picchila

In each pair the two partners having opposite characters balance each other. For example, if there is excess of Guru Guṇa, Laghu Guṇa should be administered to counteract it. These Guṇas are again manifestation of Mahābhūtas which are indicated by them (Guṇas). As Guṇas can't be isolated in pure and abstract form from the Dravya, the use of Guṇas will always have to be considered in the form of Dravya. For this it is necessary to know the Dravyas in terms of Guṇas.

Gurvādi Guṇas are physical as well as pharmacological properties. Guru means a Dravya having more weight and also which produces Gurutva (Heaviness, increase in weight or bulk) in the body. Laghu is quite opposite to the above. Sometimes the words 'Guru' and 'Laghu' are used to denote Heavy and Light in context of digestion. The substances which are hard in digestion are termed as Guru and those which are easily degestible are called as Laghu. In fact, the latter usage is concerned with the physical character of the substance which affects the response of digestion.

Gurvādi Guṇas are in body tissues on one hand and in diet and drugs on the other hand which influence the former (body tissues). Because they are found in body tissues and the substances influencing them, they are also called as 'Śārīra Guṇas'.

Some other terms in addition to the above twenty Guṇas are seen particularly in Suśruta & Vagbhata such as Vyavāyi, Vikāśi etc. Hence the commentators are of the view

that the number should not be limited to twenty as there may be various Guṇas in different contexts. Enumeration of twenty guṇas only indicate their prominence and popularity.

Parādi Guṇas :

These Guṇas are used in various contexts particularly in Pharmacy and Medicine. They are ten in number as follows :

1. Para (Preferable)
2. Aparā (Not preferable)
3. Yukti (Rational)
4. Saṁkhyā (Enumeration)
5. Saṁyoga (Conjunction or combination)
6. Vibhāga (Disjunction or division)
7. Pṛthaktva (Separateness)
8. Parimāṇa (Weights and measures)
9. Saṁskāra (Preparation or processing)
10. Abhyāsa (Regular use)

Viśiṣṭa Guṇas :

The five specific sense-objects are called as Viśiṣṭa Guṇas. They are Śabda (Sound), Sparśa (Touch), Rūpa (Vision), Rasa, (Taste) and Gandha (Smell).

Ādhyātmika Guṇas :

They are psychological qualities such as :

1. Buddhi (intellect)
2. Icchā (Desire)
3. Dweṣa (Aversion)
4. Sukha (Pleasure)
5. Duḥkha (Pain)
6. Prayatna (Volition)

Importance of Guṇas :

Importance of Guṇas is proved by the following facts :

1. Guṇa supercedes the Rasas and thereby affect the resultant action. For instance, water increases Kapha owing to its natural sweetness but in hot water, the Uṣṇa guṇa supercedes and shows opposite effect e.g. decreases Kapha.
2. In some cases, Guṇa helps Rasa and thereby potentiates its action by way of synergism. For instance, Āmalakī is taken as the best one in the group of Amla Dravyas because of its Mṛdu and Śīta Guṇas.
3. Vipāka also more or less depends on Guṇas. Drugs having śītā, Snigdha, Guru and Picchila Guṇas will have Guru Vipāka while the others (Uṣṇa, Rūkṣa, Laghu and Viśada) Laghu Vipāka.
4. Guṇas may be used by various ways internal as well as external such as anointing, bath, Paste etc. while Rasas can be administered internally only.

Table XII

Gurovādi Guṇas

Guṇa	Bhautika Compositon	Effect in Doṣas	Main action	Exempling substance
1. Guru	P+J	Kapha-Vātā	Bṛhna (Bulk-increasing)	Māṣa
2. Laghu	T+V+A	Vāta-Kapha	Langhana (Bulk-reducing)	Mudga
3. Śīta	J	Vāta+Kapha-Pitta	Stambhana (Cooling)	Candana
4. Uṣṇa	T	Pitta-Vāta-Kapha	Swedana (Heating)	Aguu
5. Snigdha	J	Kapha-Vāta	Kledana (Moistening)	Madhuyāsti
6. Rūkṣa	P+T+V	Vāta-Kapha	Śoṣana (Absorbing)	Yava
7. Manda	P+J	Kapha+Pitta	mandana ¹ (slowing)	Curd
8. Tikṣṇa	T	Pitta-Kapha	Tejana ² (Sharpening)	Citraka
9. Sthira	P	Kapha	Dhāraṇa (stabilising)	Muśālī
10. Sara	V	-Kapha	Preraṇa (Driving)	Senna
11. Mr̥du	J+A	Kapha	Ślathana (Loosening)	Fats
12. Kaṭhina	P	Vāta	Dṛḍhikarṇa (Hardening)	Calcium
13. Viśada	P+T+V+A	Vāta	Kṣhalana (cleaning)	Alkali
14. Picchile	J	Kapha	Lepana (anointing)	Isafgola
15. Ślakṣṇa	T	Pitta	Ropaṇa (Healing)	Dugdha-pāṣāṇa
16. Khara	V	Vāta	Lekhana (Scraping)	Copper sulphate
17. Sūkṣma	T+V+A	Vāta	Vivarṇa (Piercing)	Alcohol
18. Sthūlā	P	Kapha	Samvarṇa ³ (obstructing)	Cakes
19. Sāndra	P	Kapha	Prasādana (Solidifying)	Butter
20. Drava	J	Kapha	Vilodana (liquifying)	Milk

1-2. Hamadri has given Śamana and Śodhana (A. H. Su. 1.18).

CHAPTER VI VĪRYA

Definition :

Vīrya is the potency by which the drug acts. Vīrya is more dominant in drugs while Rasa is more dominant in dietitic substances.

It is observed that there is a principle in drug which is responsible for its action and in the absence of which there is no action. Thus on the law of agreement in presence and absence (Anvaya-Vyatireka) the existence of Vīrya is proved (C. Su. 26). It is seen in daily practice that a particular part of the plant is used and not all parts at random. The drug also loses action after a certain period or on defective processing. All this led to formation of a hypothesis regarding Vīrya.

Nature of Vīrya :

Vīrya is interpreted differently in terms of Guṇa, Karma or Dravya but the first view (Guṇa-Vīryavāda) is accepted in practice. According to this, Guṇas potent enough to produce action are termed as Vīrya. Out of twenty Guṇas the following eight have been deemed as having potentiality to reach the state of Vīrya :

- | | |
|----------|---------|
| 1. Laghu | 2. Guru |
| 3. Śīta | 4. Uṣṇa |

- | | |
|------------|------------------------|
| 5. Snigdha | 6. Rūkṣa |
| 7. Mṛḍu | 8. Tikṣṇa ¹ |

Suśruta replaced Laghu and Guru by Viśāda and Picchila Probably because he mentioned Laghu and Guru as two types of vīpāka and thus hesitated to put them again as Vīrya. Caraka himself, in the context of Ṣatkarma (Six thereapeutic measures) and also while grouping Rasas according to Guṇas, has left Mṛḍu and Tikṣṇa and has limited himself to Six Guṇas. Suśruta has enlisted ten Karmaṇya (Active or potent) Guṇas (Above + Viśāda & Picchila). Nagarjuna, following Suśruta, has also presented a list of ten Karmaṇya (active or potent) Guṇas. It does not mean that other Guṇas are silent spectators and have no action at all. Enumeration of eight Vīryas only indicates the relative importance of these Guṇas in practice but in no way negates the action of other remaining Guṇas.

Again on the ancient style of generalisation, Vīryas have been grouped into two as Śīta and Uṣṇa which represent the primordial factors of Soma and Agni, initiators of creation of the living world. On the level of Doṣa, Śīta Vīrya represents Kapha Varga and Uṣṇa Vīrya Pitta Varga, Vāta remaining as buffer or catalytic (Yoga-vāha). Caraka has given a long list of Śīta Vīrya and Uṣṇa Vīrya dravyas in context of Candanādyā taila and Agurvādyā taila respectively (Chikitsa, Ch. 3).

¹ In my Opinion, 'Mṛḍu' should be replaced by 'Manda'. In the Context of karmas described by Caraka they should be eight instead of Six, ascribing Mandana and Tejana action to Manda and Tikṣṇa Vīryas respectively. It looks incongruous not to ascribe any action to the above two Vīryas because in this condition their existence as Vīrya itself would fall in danger. Accordingly I have made modification in the table of Guṇas in this respect (see Table. XII)

In view of Caraka, any principle which is responsible for action is Vīrya. For instance, if action is on account of Rasa, the same is Vīrya in that context. Thus the connotation of Vīrya will vary according to context. He does not bind himself to the technical concept of Vīrya according to which a particular potent Guṇa is termed as Vīrya. However, he has mentioned the technical concept without any adverse comment which shows his silent agreement to this as well.

Śivadāsa, in his commentry, says that Vīrya is the potency which is located in a particular fraction of the drug where the potency lies in concentrated form. This, more or less, synchronises with the modern concept of active chemical fractions of the drug which are responsible for action.

Nagarjuna has not fixed any number of Vīryas. He holds that Vīrya may be of unlimited number according to action. He also calls Vīryas in terms of action for which they are responsible. Nimi, one of the followers of Nagarjuna, has enumerated fifteen Vīryas according to prominent actions as follows :

Bhautic Composition

1. Adhobhāga	J + P
2. Ūrdhvaabhāga	T + V
3. Ubhayatobhāga	P + T + V
4. Sāṅgrāhika	P + V
5. Saṁśamana	V + J + P
6. Dīpana	P + T
7. Jivaniya	P + J
8. Prāṇaghna	} V + T
9. Madana	
10. Śitikaraṇa	J
11. Śothakara	P + J

12. Śothaghna	A + V
13. Pācana	T
14. Dāraṇa	V + T
15. Ropaṇa	P + J + V

In practice, the concept of two Viryas, Śītā and Uṣṇa, is the most popular one and accepted by all the texts of Dravyagūṇa (Nighaṇṭus).

Bhautika Composition of Viryas :

1. Śīta	P + J
2. Uṣṇa	T
3. Snigdha	J
4. Rūkṣa	V
5. Guru	P + J
6. Laghu	T + V + A
7. Mṛdu	J + A
8. Tikṣṇa	T

Those who accept Viśada and Picchala in this list in place of Laghu and Guru, take Viśada as composed of Vāyu and Agni while Picchila as of Jala.

Effect of Viryas :

	<i>Effect on Doṣas</i>	<i>General Effect</i>
1. Śīta	Pacifies Pitta, aggravates Kapha and Vāta.	Exhilarant, moistening, cooling, life-promoting, tonic, increases semen.
2. Uṣṇa	Pacifies Kapha and Vāta, aggravates Pitta.	Heating, Digestive, causes loss of consciousness, diaphoresis, emesis, purgations, solution, thirst, Vertigo, depression, decreases Semen.

3. Snigdha	Pacifies Vāta	Oleation, bulk-increasing, promotes, sexual vigour, Prevents old age.
4. Rūkṣa	Aggravates Vāta, Pacifies Kapha	Astringent, roughening, healing.
5. Guru	Pacifies Vāta	Anointing, bulk-increasing, promotes union and sexual vigour, and semen, filling.
6. Laghu	Pacifies Kapha	Roughening, fluid-absorbing, healing, reduces fat and body weight (bulk).
7. Mr̥du	Pacifies Pitta	Saturates rakta and mamsa, softening.
8. Tikṣṇa	Pacifies Kapha	Constipative, promotes secretions, tearing.

The extent of the action of Vīrya is right from the contact (Nipāta)—the point of onset-till it is excreted from the body (Yāvadhivāsa) Which indicates duration of action. Thus Vīrya is known both by Perception and inference while Rasa is known only by Perception and Vipāka by inference.

Determination of Vīrya :

General rule :

Substance having Madhura Rasa and Madhura Vipāka will generally be Śītavīrya such as Madhuyaṣṭī while those having Amla and Kaṭu Rasas as well as Vipākas will be Uṣṇavīrya such as Amlavetasa (Amla) and Citraka. (Kaṭu).

Exceptions :

	<i>Rasa</i>	<i>Vīrya</i>
1. Māmsa (Meat)	Madhura	Uṣṇa
2. Āmalaka	Amla	Not Uṣṇa

3. Harītaki	Kaṣāya	Uṣṇa
4. Guḍūci	Tikta	Uṣṇa
5. Brhat Pañcamūla	Kaṣāya-Tikta	Uṣṇa

Importance of Vīrya :

As Vīrya dominates over all the principles, the action of drug is determined mostly by Vīrya. A few instances would suffice to show this :

1. Brhat Pañcamūla	Kaṣāya- Tikta	Pacifies	Vāta due to Uṣṇa Vīrya.
2. Kulattha	Kaṣāya	Pacifies	Vāta due to Snigdha Vīrya.
3. Palāṇḍu (Onion)	Kaṣāya	Pacifies	Vāta due to Snigdha Vīrya.
4. Ikṣu-Rasa	Madhura	aggravates	Vāta due to Śīta Vīrya.
5. Pippali	Kaṭu	Pacifies	Pitta due to Mṛdu-Śīta Vīrya.
6. Āmalaka	Amla	Pacifies	Pitta due to Mṛdu Śīta Vīrya.
7. Saindhava	Lavaṇa	Pacifies	Pitta due to Mṛdu Śīta Vīrya.
8. Kākamācī	Tikta	aggravates	Pitta due to Uṣṇa Vīrya.
9. Matsya (Fish)	Madhura	aggravates	Pitta due to Uṣṇa Vīrya.
10. Mūlaka	Kaṭu	aggravates	Kapha due to Snigdha Vīrya.
11. Kapittha	Amla	Pacifies	Kapha due to Rūkṣa Vīrya.
12. Madhu	Madhura	Pacifies	Kapha due to Rūkṣa Vīrya

CHAPTER VII

PRABHĀVA

Definition :

The specific potency of a drug is known as Prabhāva.

Nature of Prabhāva :

It is seen that two drugs though having similar Rasa, Vipāka and Vīrya differ in action. This difference in action is owing to the specific chemical (Bhautika) composition of the drug and its action can't be explained by general rule on the basis of Rasa, Vipāka and Vīrya. For instance, Dantī and Citraka are similar in Rasa (Kaṭu), Vipāka (Kaṭu) and Vīrya (Uṣṇa) but the former is purgative in action while the latter is not.

On the side of body response, the drugs acting on specific tissue, organ, or disorder is said to have Prabhāva and the action is directed to disease and not towards Doṣas. For instance. cardiotonic action of Arjuna, Anthelmintic activity of Viḍanga, Antitoxic effect of Śirīṣa are said to be due to Prabhāva.

Thus two things contribute to the nature of Prabhāva :

1. Specificity of chemical composition.
2. Specificity of the site of action.

In early days, as chemistry was not developed, this could not be explained satisfactorily. There are other measures as god-worship, putting on stones, recitation of

Mantras, various charms which are said to work due to Prabhāva. Such actions also could not be known and as such Prabhāva is called as Acintya (inexplicable or empirical) in contrast to Vīrya which is cintya (explainable or rational). Vīrya is Cintya Śakti while Prabhāva is Acintya Śakti.

Action of Prabhāva :

The actions due to Prabhāva are of various types which may be grouped as follows :

1. Physical — Extraction of foreign body with magnet.
2. Pharmacological—Emetics, purgatives, vṛṣya etc.
3. Toxicological—Anti-poisonous.
4. Bactericidal and Vermicidal—Anthelmintic, Rakṣoghna etc.
5. Spiritual—Mantras, worship, stones, charms etc.

Suśruta and his followers have included these actions under Vīrya, though they have indicated their agreement to the concept of Prabhāva by the words like 'Amimānsya,' 'Acintya' and 'Anavadhāraṇīya'.

Basis of Prabhāva :

Prabhāva can be discussed on the basis of Bhautika composition of the drug. Drugs having similar composition of itself and its dependent properties act by virtue of Vīrya while those having difference in composition between itself and its properties act in a different way by its specific composition in respective of properties which are subverted. The former and the latter groups of Dravyas are known as Samāna-Pratyayārbdha (composed of similar Bhūtas) and vicitra-pratyayārbdha (composed of dissimilar Bhūtas) respectively. Some instances are given below :

1. Madhura- Guru	Godhūma Yava	Vātahara Vātakara	S. P. V. P.
2. "	Dugdha Matsya	Śītavīrya Uṣṇavīrya	S. P. V. P.
3. "	Pig Tiger	Mādhura-Vipaka Kaṭu-Vipāka	S. P. V. P.
4. Kaṣāya	Dhātaki- puṣpa Haritaki	Sita Vīrya, Grāhī (Astiringent) Uṣṇavīrya, Recana (Purgative)	S. P. V. P.
5. Amla	Āmalakī Dāḍima	Laxative Astringent	S. P. V. P.
6. Śītavīrya	Ghṛta	Appetiser	V. P.
7. Uṣṇavīrya	Vasā	Anti-appetiser.	V. P.
8. Kaṭuvipaka	Mudga	Pittaśāmaka	V. P.
9. Madhura- Vipāka	Māṣa	Pittavardhaka	V. P.

CHAPTER VIII

MUTUAL RELATION OF PROPERTIES

There are some rules governing the mutual relation of properties of drugs which further decide their action. They are as follows :

Rule I—Generally Rasa, Vipāka and Vīrya of drugs will be as below :

<i>Rasa</i>	<i>Vipāka</i>	<i>Vīrya</i>	<i>Example</i>
1. Madhura	Madhura	Śīta	Madhuyaṣṭī
2. Amla	Amla	Uṣṇa	Amlikā
3. Lavaṇa	Madhura	Uṣṇa	Saindhava
4. Kaṭu	Kaṭu	Uṣṇa	Marica
5. Tikta	Kaṭu	Śīta	Nimba
6. Kaṣāya	Kaṭu	Śīta	Dhātaki

This is for Samāna-pratyayārbdha Dravyas. In Vicitra-Pratyayārbdha Dravyas there may be some variation as in Pippalī the Rasa is Kaṭu but the Vipāka becomes Madhura.

Rule II—Normally the strength of Rasa, Vipāka, Vīrya and Prabhāva is in progressive manner. Thus Rasa will be superceded by Vipāka, the same by Vīrya while Prabhāva supercedes all.

For instance, Madhura Vipāka in Pippalī suprcedes Kaṭu Rasa and thereby exerts Vṛṣya action. In Bṛhat Pañcamūla, Uṣṇa Vīrya supercedes both Rasa (Kaṣāya &

Tikta) and Vipāka (Kaṭu) and produces its action as Vātaśamana. Danti acts as purgative which dominates all three Rasa (Kaṭu) Vipāka (Kaṭu) and Vīrya (Uṣṇa).

Rule III—In cases where the strength of these properties are proportionally dissimilar, the stronger one subdues the weaker ones and thereby exerts its action.

For instance, the flowers of Arka (red calotropis) exert their heamostatic action by virtue of the strongest Rasas (Madhura-Tikta) subduing Vipāka (Kaṭu) and Vīrya (Uṣṇa). The Vipāka (Madhura) of Śuṅṭhī being the strongest acts as Vṛṣya by subduing the adverse ones e.g. Rasa (Kaṭu) and Vīrya (Uṣṇa). In Hingu (Asafoetida), Vīrya (Uṣṇa) is the strongest which subdues Rasa (Kaṭu-Tikta) and Vipāka (Kaṭu) and thus acts as Vāta Śamana. Āmalaka acts as Tridoṣa śamana by prabhāva which is the strongerst one subduing Rasa (Amla), Vipāka (Madhura) and Vīrya (Śīta).

Rule IV—The weaker properties also are not completely devoid of action but all contribute more or less to the total effect of the drug. Thus the effect of a drug is the sum total of the actions of Rasa, Vipāka, Vīrya and Prabhāva.

For instance, Guḍuḍī is Kapha-Pittahara due to Rasa (Tikta), Vātahara due to Vīrya (Uṣṇa), Vṛṣya due to Vipāka (Madhura) and Anti-leprotic due to Prabhāva.

CHAPTER IX

KARMA

Definition :

Karma is that which causes Samyoga (Conjunction) and Vibhāga (disjunction) irrespective of any other factor and is located in Dravya. In the context of Pharmacology this relates to action on organs, Doṣas, Dhātūs and Malas which is required for homeostasis of the person. In other words, Karma is the response of the living tissue to Drvya.

Theory of Drug action :

The mode of action of drugs is based on the theory of Pañca Mahābhūta. As said above, the body is composed of five Mahābhūtas and similar is the composition of drugs. Drugs when used combine with the selective Mahābhūta and by altering its quantity and quality produce their action by further influencing the respective Doṣas, Dhātūs and Malas accordingly. This is a sort of selective mechanism more or less like the Lock and Key theory based on structure-function relationship. As in the living body Pañca Mahābhūta is represented by Tridoṣa, there is a tradition of describing the action in terms of Doṣas instead of Mahābhūtas. The Bhautika state of drugs, on the other side, is indicated by Rasa.

For instance, if Madhura Rasa (Pārthivāpya) is administered, it would effect the Pārthiva and Āpya Bhūtas and

would thereby increase the Kapha Doṣā, Dhātus like Rasa, Māmsa, Medas, Majjā and Śukra and Malas like stool and urine which have predominance of Pṛthvī and Ap Dhātus. Reverse will be the effect on administration of Tikta Rasa.

Action may be localised or general (systemic). Rasas have mostly local effect and some general effect till digestion is completed. The Rasa, in the final form, circulates through Rasa dhātu all over the body and influences the Doṣas and metabolic processes. When it comes in contact with Doṣas which are in Dhātū form (maintaining the body) it increases or decreases them according to similar or dissimilar properties. On metabolic processes it may have anabolic effect if its Vipāka is Guru and Katabolic one if it is Laghu Vipāka. There is a third category of specific actions which are specific from the point of view of drug and body response towards it. Rasa, Guṇa and sometimes Vīrya have local action; Vipāka and Vīrya have systemic actions and Prabhāva has got specific action External administration (Bahiḥparimārjana) of drugs are mostly directed towards local action while internal administration (Antaḥparimārjana) towards systemic action.

Action may also be grouped as direct or indirect. The pungent action of Kaṭu Rasa on tongue is direct while the increase in secretions from eye, mouth, nose etc. is due to reflex mechanism and is indirect. The action of purgative drugs is direct on intestinal contents and indirect on the flow of bile.

Classification of actions :

Drugs have been placed in a group on the basis of similar properties which are defined by observing action

of a large number of drugs in way of generalisation. Caraka has described fifty groups of drugs according to action each group containing ten drugs. He has further said that other new drugs may be included in those groups if similar properties are found in the same. For instance, Śīta, Snigdha, Madhura are main properties of the drugs in the Jivaniya group and as such any new drug having these properties is entitled to join that group.

Broadly, Karmas may be divided in two groups Saṁśodhana (Purificatory) and Saṁśamana (Pacificatory). Vamana, Virecana, Āsthāpana, Anuāsana and Nasya are five purifactory measures known as Pañca Karma. The Saṁśamana karmas may again be grouped into six such as Snehana (Oleation), Rūkṣaṇa (Roughening), Brīhhaṇa (Bulk-increasing), Laghana (Bulk-decreasing), Swedana (heating) and Stambhana (cooling).

There is a large number of actions mentioned in Ayurvedic texts. However, some of the important actions are enumerated here systemwise :

Nervous system :

	<i>Example</i>
1. Medhya (intellect-promoting and useful in mental disorders.)	Śaṅkhaṣuṣṭi
2. Madakārī (Narcotic)	Opium
3. Saṁjñā-sthāpana (Resuscitative)	Vacā
4. Nidrā-janana (Hypnotic)	Sarpagandhā
5. Vedanā-sthāpana (Analgesic)	Guggulu.

Sense-organs :

1. Cakṣuṣya (vision-promoting)	Triphalā
2. Nasya (errhines)	kaṭphala
3. Swedana (Diaphoretic)	Vatsanābha

4. Snehana (Oleation)	Fat
5. Rūkṣaṇa (Roughening, Antilipid)	Yava
6. Varṇya (Complexion-promoting)	Sārivā
7. Kaṇḍūghna (Antipuritic)	Nimba
8. Kuṣṭhaghna (useful in skin disease, Antileprotic)	Khadira
9. Udarda-praśamana (useful in urticaria, anti-allergic)	Tinduka
10. Roma-sañjanana (Hair-promoting)	Elephant teeth.
11. Roma-śātana (Depilatories)	Orpiment.

Circulatory system :

1. Hr̥dya (Cordials)	Arjuna
2. Śoṭhahara (useful in swellings, Anti-inflammatory)	Daśamūla

Respiratory system :

1. Kāсахara (Bronchial sedatives, Anti-tussive)	Drākṣā
2. Śwāsahara (Anti-dyspnic)	Śaṭi
3. Chedana (Expectorant)	Yavakṣāra
4. Hikkā-nigrahaṇa (Anti-hiccough)	Mayurapiccha
5. Kaṇṭhya (beneficial for throat)	Malayavacā

Digestive system :

1. Āsyasravaṇa (Sialogogue)	Tumburu
2. Tṛṣṇā-nigrahaṇa (Antidyspic)	Hribera
3. Tṛptighna (Anti-Saturation)	Ārdraka
4. Rocana (Flavouring)	Citrus fruits
5. Dīpana (Appetiser)	Hingu
6. Pācana (Digestive)	Citraka
7. Agnisādana (Anti-appetiser)	Apāmārga-bija

8. Vidāhī (gastric irritants)	Red Pepper
9. Viṣṭambhī (Anti-carminative)	Jack fruit
10. Anulomana (Carminative)	Yavāni
11. Vamana (Emetic)	Madana Phala
12. Chardi-nigrahaṇa (Anti-emetic)	Elā
13. Recana (Purgative)	Trivṛt
14. Purīṣa-saṅgrahaṇiya (Astringent)	Kuṭaja
15. Purīṣa-virajaniya (Faecal depigmenter)	Jambū
16. Śūla-praśamana (Intestinal anti- spasmodic)	Śuṅṭhī
17. Āsthāpana (Corrective enemata)	Pātalā
18. Anuvāsana (Unctuous enemata)	Taila
19. Krimighna (Anthelmintic)	Viḍanga

Reproductive system :

1. Prajā-sthāpana (Anti-abortionifacient)	Dūrvā
2. Ārtava-janana (Emmenagogue)	Kumārī
3. Stanya-janana (galactogogue)	Śatāvārī
4. Stanya-śodhana (galacto-depurent)	Devadāru
5. Vājikaṛaṇa (Aphrodisiac)	Kapikacchū
6. Śukra-śodhana (Semen-depurant)	Kuṣṭha

Urinary system :

1. Mūtra-virecanīya (Diuretic)	Tṛṇa Pañcamūla
2. Mūtra-virajaniya (urinary depigmenter)	Lotus flower
3. Mūtra-saṅgrahaṇiya (Anti-diuretic)	Udumbara
4. Aśmarī-bhedana (lithontriptic)	Kulattha
5. Mūtra-viśodhana (Urinary antiseptic)	Kakkola

General metabolism (Sārvadhātuka karma) :

1. Jwaraghna (Antipyretic)	Kirātatikta
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2. Dāha-praśamana (Refrigerant)	Candāna
3. Śīta-praśamana (Calefacient)	Aguru
4. Jivanīya (Vitaliser)	Aṣṭavarga
5. Balya (Tonic)	Balā
6. Sandhānīya (Healing)	Madhuyast
7. Rasāyana (Rejuvenative)	Āmalakī
8. Viṣaghna (Anti-poisonous)	Śīriṣa
9. Br̥nhana (bulk-promoting)	Māmsa
10. Laṅghana (bulk-reducing)	Yava
11. Śramahara (Energy-compensator, Acopic)	Alcohol
12. Aṅgamarda-praśamana (Anti-bodyache)	Laghu Pañcamula.

Specific Dhātus :

1. Śoṇita-sthāpana (Haemostatic)	Nāgakeśara
2. Rakta-prasādana (Blood-purifier)	Mañjiṣṭhā
3. Medohara (Anti-lipid)	Guggulu

Specific Doṣas :

1. Vāta-śamana (Vāta-Pacifying)	Rāsnā
2. Vāta-kopana (Vāta-vitiating)	Kalāya
3. Pitta-śamana (Pitta-pacifying)	Uśīra
4. Pitta-kopana (Pitta-vitiating)	Sarṣapa
5. Kapha-śamana (Kapha-pacifying)	Trikatu
6. Kapha-kopana (Kapha-vitiating)	Sugar

Śrotas :

1. Pramāthī (Channel-clearing)	Marica
2. Abhiṣyandī (Channel-obstructing)	Curd

Certain substances and drugs have been mentioned as the best ones for a specific action or a group of actions. They are as follows :

<i>Drug or substance</i>	<i>Action</i>
1. Alcohol	Energy-sparer
2. Milk	Vitaliser
3. Meat	Bulk-promoting
4. Salt	Flavouring
5. Acid fruits	Cordials
6. Honey	Kapha-Pitta-Praśamana
7. Ghee	Vāta-Pitta-Praśamana
8. Oil	Vāta-Kapha-Praśamana
9. Emetics	Kapha-hara (Expectorant)
10. Purgatives	Pittahara (cholagogue)
11. Enemata	Vātahara
12. Alkali	Depressing sexual potency.
13. Goat Milk	Useful in wasting, diarrhoea and Internal haemorrhage.
14. Sugar cane	Diuretic
15. Barley	Increasing faecal bulk.
16. Kulattha	Causing Acid gastritis
17. Māṣa	Increasing Kapha-Pitta.
18. Madanaphala	Emetics and enemata.
19. Trivṛt	Simple purgative.
20. Āragwadha	Laxative.
21. Snuhī-kṣīra	Drastic purgative.
22. Apāmārga	Śirovirecana (Errhines).
23. Viḍanga	Anthelmintic
24. Śīriṣa	Anti-poisonous
25. Khadira	Anti-leprotic
26. Rāsnā	Vāta-Śamana
27. Āmalaka	Gerontologic
28. Harītakī	Channel-cleaning
29. Eraṇḍamūla	Vṛṣya and Vātaśamana
30. Pippalīmūla	Appetiser, digestive, carminative

31. Citraka (roots) Appetiser, digestive, useful in anal pain and swelling, piles.
32. Puṣkarmūla In hiccough, dyspnoea, cough and chest pain.
33. Musta Astringent, appetiser and digestive
34. Hribera Cooling, appetiser, digestive, anti-emetic, astringent.
35. Aralu Astringent, appetiser and digestive.
36. Dūrvā Astringent, appetiser, haemostatic.
37. Guḍūcī Astringent, vātaśamana, appetiser, useful in constipation and disorders of Kapha and Rakta.
38. Bilwa Astringent, appetiser, vata-kapha-śamana.
39. Ativiṣā Appetiser, digestive, astringent, tridoṣa-hara.
40. Kamala-Parāga Astringent, haemostatic.
41. Durālabhā Pitta-kapha-Śamana.
42. Gandha -
Priyaṅgu Haemostatic.
43. Kuṭaja (Bark) Kapha-Pitta-Rakta-Śamana, astringent-absorbent, checks mucus, bile & blood (in stool)
44. Kāśmarya(Fruit) Haemostatic.
45. Pṛṣniparṇī Astringent, vātahara, appetiser and aphrodisiac.
46. Śalaparṇī Aphrodisiac, Tridoṣa-hara.
47. Balā Astringent, tonic, Vāta-hara.
48. Gokṣura Tonic, removes vāta and dysuria.
49. Hiṅgu Expectorant, appetiser, breaking, carminative, vāta-kapha-hara.

50. Amlavetasa Breaking, appetiser, carminative, Vāta-kapha-hara.
51. Yavakṣāra Digestive, purgative, useful in piles.
52. Butter milk In Dysentery, oedema, piles and (Takra) disorders due to excess of fat.
53. Candana and Udumbara Cooling paste.
54. Rāsnā and Aguru Heating paste.
55. Lāmajjaka and Uśīra As paste in burning sensation, skin diseases and excessive sweating,
56. Kuṣṭha In Vātahara massage and fomentation.
57. Madhuyasṭi. Useful For eyes, semen, hairs, throat, complexion, strength; depigmenting, healing.

Vāgbhata I (Aṣṭāṅgasaṅgraha, SU. 13) has added the following to the above list :

58. Vāsā For internal haemorrhage.
59. Kaṇṭakārī Anti-tussive.
60. Lākṣā For fresh wounds.
61. Nāgabalā For wasting and haemoptisis.
62. Bhallātaka and Citraka (Root) For dry piles.
63. Kuṭaja For bleeding piles.
64. Lājā Anti-emetic.
65. Haridrā Anti-diabetic.
66. Castor oil For Hernia, Intestinal colic and gaseous tumour.
67. Laśuna (Garlic) Gaseous tumour and Vāta.
68. Iron For Anaemia.

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| 69. Guggulu | For Medas and Vāta. |
| 70. Triphalā | For defects of Vision. |
| 71. Triphalā-
guggulu | For Ulcers. |

Vagbhata II has added the following :

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|-----------------------------------|-----------------------------------|
| 72. Musta and
Parpaṭa | for fever. |
| 73. Silājatu | for urinary disorders. |
| 74. Āmalakī and
Haridrā | for Diabetes. |
| 75. Pippalī | for spleen enlargement. |
| 76. Rasāñjana | for obesity. |
| 77. Guḍuḍī | for Neuritis and nervous leprosy. |
| 78. Brāhmī | for Apasmāra (Epilepsy) |
| 79. Old ghee | for Insanity. |
| 80. Jīngiṇi latex
(by Nasya) | for pain in shoulder and arms. |

Vāgbhata I (A. S. Su. 7. 210-263) has demonstrated a large number of peculiar actions with the help of concrete instances which emerge in different circumstances. The difference in action of such drugs though result of observation is an interesting topic for further study and research. For instance, Dadhi (curd) causes oedema but Takra (Butter-milk) even with fat removes it. Similary, ghee though more snigdha is not so beneficial in Ardita (Facial paralysis) as Navanīta (fresh butter). All these situations are challenge to the intellect and reason of the physician.

SECTION II
PHARMACY AND ADMINISTRATION
OF DRUGS.

CHAPTER I

NĀMA-RŪPA-JÑĀNA

Identification of drugs :

In ancient times, as there was intimate contact with nature, identification of drugs posed no problem. Drugs were commonly known; search about their properties and uses was the main objective. Hence it is said that those who want to identify plants should contact the persons intimately connected with forests such as shepherds, ascetics, hilly tribesmen etc.

Morphological description of plants is also not found in texts because of the above reason. However, prominent characters of the plants have been mentioned by way of synonyms. There is a class of Nighantus which describe the drugs by synonyms only.

Synonyms have been framed according to :

1. Morphological characters—such as Śatamūli, Saptaparṇa, Trikaṇṭaka etc.
2. Simile—as Kākajaṅghā, Halinī, Śaṅkhaṣṭī etc.
3. Place of origin or supply—Māgadhī (Pippalī), Drāviḍī (Elā), Bāhlika (Hingu).
4. Time—Śārādī (Jasmine), Varṣābhū (Punarnavā).
5. Property—Pitā (Haridrā), Vājigandhā, Tiktā, Ūṣaṇa.
6. Action and therapeutic uses—Dadrughna (Cakramarda), Arṣoghna (Sūraṇa) etc.
7. General use—Yajñīya (Khadira), Agnimantha.

8. Tradition—Guggulu, Kuṭannata etc.

9. Historical importance—Bodhi-druma (Aśwattha).

In spite of this, gradual increase in number of synonyms created great confusion particularly when one word is used as homonym for several words. For instance, the word 'Kramuka' is used for three different drugs—Pūga, Lodhra and Tūda. In such cases physician has to take decision according to the context but on many occasions the attempt proves futile.

Local and regional names particularly current in tribal areas are important which provide clue for the original Sanskrit word and thereby help in identification of Plants¹. Though not correct in all cases, linguistic peculiarity of the local name may be helpful in some cases but besides this other points such as actions and uses will also have to be kept in consideration.

Collection of drug :

In this context, place and time are two important facts to be considered which influence the efficacy of the drug.

Place (Deśa)—Place has been divided into three :

1. Ānūpa (Aquatic or Humid.)
2. Jāngala (Arid or Hilly.)
3. Sādhāraṇa (Medium.)

Besides this, Soil, in which the plant grows, has been divided in five groups according to Pañca Mahābhūtas :

1. Pārthiva — Stony, hard, black, with stout trees and grasses.

¹ Prof. Balwant Singh has cleared up controversy about several drugs on this basis. See—Glossary of Vegetable drugs in *Bṛhat-trayī* (Chowkhamba, Varanasi, 1972).

2. *Āpya* — Smooth, *śīta*, in neighbourhood of water, whitish, with smooth cereals, grasses & soft plants.
3. *Āgneya* — of mixed colour, with small gravels, having a few pale trees and grasses.
4. *Vāyavya* — Rough, ashy or grey, with cavities, having less watery plants.
5. *Ākāśīya* — Light blue, soft, irregular, with cavities and tasteless water, having trees with feeble heartwood and big mountains. full of vegetation.

Implication of types of soil is important in collection of drugs because a drug used for a particular action will be more efficacious if taken from the soil having favourable Bhautika composition. For instance, Purgative drugs should be taken from the soil having predominance of Pṛthvī and Jala. Similarly, Emetics will be more potent if grown in the soil having Agni and Ākāśa.

Description of the ideal land for collection of drugs has also been given (S. Su. 37; C. Ka. 1). Such land should be even, free from big cavities, stones and anthills; far from cremation ground, temples and sandy places; devoid of alkali; hardly brittle, smooth, soft, stable, black or white or red; with grasses, unploughed, unobstructed by big trees and having irrigational facilities.

Time :

Caraka has suggested different seasons for collection of different parts of the plant :

1. Branches — Rainy season, spring
2. Leaves — " "

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| 3. Root | — | Summer or late winter |
| 4. Bark | } | — Autumn |
| 5. Tuber | | |
| 6. Latex | | |
| 7. Heart-wood | — | Early winter. |
| 8. Flower | } | — In seasons when they are available. |
| 9. Fruit | | |

Some scholars say that root, leaves, bark, latex, heartwood and fruit should be collected in Prāvṛṭ (early rains), Varṣā (Rainy season), Śarad (Autumn), Hemanta (early Winter), Griṣma (summer) respectively. Rājānighaṇṭu says—Tuber, root, flowers, leaves and the whole plant should be taken in Hemanta, Śīśira, Vasanta, Griṣma and Śarad respectively. Śārṅgadhara advises to collect all plants afresh in Śarad except emetics and purgatives which should be taken at the end of Vasanta. Most of the plants are to be collected in Puṣya, Aświni or Mṛgaśira Nakṣatras.

Suśruta, according to the concept of Agniṣomiya, suggests that Sumya (Śītavīrya) and Āgneya (Uṣṇavīrya) dravyas should be collected in Saumya (Varṣā, Śarad, Hemanta) and Āgneya seasons (Śīśira, Vasanta, Griṣma) respectively. He further says that the Saumya drugs, if collected from Saumya soil and in Saumya season, will be more Madhura, Snigdha and Śīta in properties. Śārṅgadhara, following this, says that the plants growing in Vindhya and Himalayan region are Āgneya and Saumya in nature respectively.

The drug itself should be in ideal condition. It should be fresh, not affected by insects, poison, sharp instrument, sun, air, fire and water; free from dirt, having large,

strong, deep and mature root, fully mature with normal Rasa, colour, smell, characters and grown in favourable season. Such drug should be used in treatment.

Collection of animal products :

Blood, hairs, nails etc. should be collected from the animals in adult stage and milk, urine and stool should be taken after their food is completely digested.

Storage :

After the drug is collected, it should be kept in good covered containers on sufficient height so that it may not be contaminated with fire, water, humidity, smoke, dust, mouse and other animal. It should be equally suitable for all the seasons. Store-room should be well ventilated but free from winds, having doors in the east and the north. It should be fumigated and sprayed daily. There should be cloth-bags, earthen pots, wooden racks and long nails to keep the drugs.

Period of expiry :

All raw drugs have been suggested to be used in fresh state except Ghṛta, Guḍa, Honey, Dhānyaka, Pippalī, and Viḍaṅga. Usually the drugs retain their potency till one year after which they lose their efficacy.

Regarding Medicinal preparations, the period of Potency has been given as follows :

1. Powders—2 months
2. Pills and Avalehas—One year.
3. Ghṛta and Taila—4 months.

Asavas (Fermented beverages). Metals and Mercurial preparations improve their potency as time passes on.

CHAPTER II

PHARMACEUTICAL PROCESSING AND PREPARATIONS

The raw drug has to be purified and transformed into a useful and agreeable form so that it can be used as a medicine.

Śodhana (Purification) is the first process, which is applied for removal of Physical and chemical impurities of the drug. It also lessens or eliminates the toxic effect of such drugs as in case of Aconite, Bhallataka etc. Particularly for minerals and poisons it is a must.

Rasaśālā (Pharmacy) alongwith its equipments has been described in detail in Rasaratna Samuccaya (Ch. 7).

The Pharmaceutical preparations may be divided broadly in four groups :

A. *Kaṣāya* :

Literally it means extract. Five forms of *Kaṣāya* are well known :

1. Swarasa (Expressed juice)
2. Kalka (Paste or powder)
3. Kwātha (decoctions)
4. Hima (cold infusion)
5. Phāṇṭa (Infusion).

Swarasa is a heavy preparation. Heaviness decreases gradually downwards so that the Phāṇṭa comes as the lightest. From the point of potency, Swarasa is the most

potent preparation. Hence, out of the five, the form should be selected according to general condition and digestive power of the patient as well as the severity of disease. If the patient is strong, his digestion is good and disease is acute heavy preparations should be selected otherwise light ones.

B. Fatty Preparations :

The drugs are processed and cooked with Ghee or Taila according to prescribed method. Evidently fat-soluble fraction comes out with Ghee or Tail just as water-soluble fraction is extracted in kaṣaya.

C. Fermented Preparations :

Āsava and Ariṣṭa are common preparations in this group. Āsava is that where drugs mixed with water is kept for a certain period for fermentation. When decoction of drug is used for this it is called as 'Āriṣṭa'. Drakṣāśava and Drakṣāriṣṭa are well known preparations of this group.

D. Other Preparations :

1. Awaleha (Confection).
2. Gutikā (Pills).
3. Pānaka or Śārkara (syrups).
4. Kṣāra (Alkali).
5. Sattwa (Extract).

The potency of a compound formulation may be modified by adding or subtracting some ingredient or by necessary modification in time, processing and administration.

There are several dietetic preparations which are prescribed for patients according to ailment. Some of the important preparations are as below :

1. Yūṣa (Soup)
2. Yavāgū (Gruel)
3. Maṇḍa (Boiled cereal-water)
4. Māṁsa-rasa (Meat soup)
5. Takra (Butter milk)

MĀNA (Measures)

Māna is of three types :

1. Pautava Māna (Measures of weight)
2. Druvaya Māna (measures of volume)
3. Pāyya māna (measures of length)

Pautava Māna :

It is of two types : 1. Māgadha 2. Kāliṅga. The former was prevalent in Magadha Deśa and the latter in Kāliṅga Deśa. Māgadha Māna has been regarded as superior to Kāliṅga Māna. Probably it may be due to political reason when Kalinga was subdued by Magadha (in the empire of Asoka).

Māgadha Māna is popular which is as follows :

30	Paramānu	=	Vaṁśī
6	Vaṁśī	=	Marīci
6	Marīci	=	Rājikā
3	Rājikā	=	Sarṣapa
8	Sarṣapa	=	Yava
4	Yava	=	Ratti (Guñjā)
6	Ratti	=	Māṣa
4	Māṣa	=	Śāṇa
2	Śāṇa	=	Kola
2	Kola	=	Karṣa
2	Karṣa	=	Śukti
2	Śukti	=	Pala

2 Pala	= Prasṛta
2 Prasṛta	= Kuḍava
2 Kuḍava	= Mānikā
2 Mānikā	= Prastha
4 Prastha	= Āḍhaka
4 Āḍhaka	= Droṇa
2 Droṇa	= Śūrpa
2 Śūrpa	= Droṇī
4 Droṇī	= Khāri
100 Pala	= Tulā
2000 Pala	= Bhāra

For easy reference, it may be noted that Māṣa, Śāṇa, Karṣa, Pala, Kuḍava, Prastha, Āḍhaka, Droṇa, Droṇī and Khāri are four times in progressive manner. Such as Śāṇa is four times of Māṣa and so on.

Comparing with the Metric system, Māṣa, kola and Karṣa are approximately 1 gm; 5 gm. and 10 gm. respectively. one Ratti is 125 Mg.

Kālinga Māna is as follows :

12 Gaura sarṣapa	= Yāva
2 Yava	= Guñjā
3 Guñjā	= Valla
8 Guñjā	= Māṣa
4 Māṣa	= Śāṇa
6 Māṣa	= Gadyāṇa
10 Māṣa	= Karṣa
4 Karṣa	= Pala
4 Pala	= Kuḍava.

The rest is as in Māgadha Māna.

Druwaya Māna :

Vagbhata (A. H. SU. 20) has described this unit of

measure. It is Bindu which is a drop fallen from the index finger after its portion upto two nodes is dipped in the fluid. Rest is as follows :

- 8 Bindu = Śāṇa
 32 Bindu = Śukti
 64 Bindu = Pāṇi śukti

This is in relation to Nasal drops etc. but for other practical purposes Kuḍava or Añjali is the standard unit which is the measure of fluid contained in a container of 4 cubic Aṅgula. Caraka has used the Añjali Pramāna in relation to such measurement. Kuḍava comes to about 160ml.

Pāyya Māna :

The unit of the measure of length is Aṅgula, which is equal to the length of 8 Yava grains pierced together by a needle. This comes to about $\frac{3}{4}$ inch. Rest is as follows :

- 12 Aṅgula = Vitasti
 21 Aṅgula = Aratni
 2 Vitasti = Haṣṭa
 4 Haṣṭa = Vyāma
-

CHAPTER III ADMINISTRATION OF DRUGS

Ideal drug :

The drug is used for prevention and cure of diseases. Ideal drug should have four qualities :

1. *Availability* : The drug should be easily available in large quantity, if necessary, and cheap so that it may be within reach of the common man.
2. *Efficacy* : The drug should have efficacy adequate enough to eradicate the disease and at the same time it should not produce undesirable side effect.
3. *Pharmaceutical forms* : It should be such as to be transformed in various pharmaceutical preparations so that it may be used according to the need and convenience of the patient.
4. *Potency* : It should be perfect with all its properties. Rasa, Virya, Guṇa etc. So that it may be potent enough to produce desired pharmacological actions.

Virodha (Incompatibility) :

When two or more drugs are combined, incompatibility is the most important point to be kept in mind. Caraka has described it in detail though in context of diet such as incompatibility in relation to Deśa (place), Kāla (time), Agni (digestion), Mātrā (Dose), Sātmya (Suitability), Doṣa,

Saṁskāra (Processing), Vīrya, Koṣṭha (response to purgation), Awasthā (condition), Krama (Order), Parihāra (Avoidance), Upacāra (Prescription), Pāka (Cooking), Saṁyoga (Combination), Hṛd (flavour), Sampat (potency) and Vidhi (rules). Though Vāgbhaṭa I recognised the incompatibility of drug he did not put proper emphasis on it. For practical purposes, in relation to drugs, the following classification may be useful :

1. *Māna-virodha* (Quantitative incompatibility)—Honey and ghee in equal quantity are harmful.
2. *Guṇa-virodha* (physical & chemical incompatibility)—Combination of two or more drugs having opposite Guṇas (Rasas, Vipākas, Vīryas etc.). Such as combination of salt and milk (Rasa-virodha), fish and milk (Vīrya-virodha), radish and milk (Vipāka-virodha).
3. *Karma-virodha* (Pharmacological Incompatibility or Antagonism)—Such as Dhātaki (Astringent) and Danti (Purgative). Where the combination potentiates action it is called Sahakārya (Synergism) Such as Punarnavā and Maṇḍūra.

Dosage or Posology :

Consideration of dose is very important to achieve the desired result because if the dose is too large it may cause harmful side effects and if it is too small it would not be effective. Hence the dose may be so regulated that the drug may produce the desired effect but may not harm the tissues. It should be decided according to the condition of disease and the patient.

Although there can't be any hard and fast rule about dosage which may vary according to Doṣa, Agni, Bala,

Vaya, Vyādhi, Dravya, and Koṣṭha, Śārṅadhara has suggested dosage according to age and preparations. According to him for one month old child the dose should be one Ratti (125 mg.) which is to be given in the form of confection with milk, honey, sugar and ghee. The dose is to be increased at the rate of one Ratti per month upto one year. Thereafter the increase should be one Māṣa (1 gm.) per year up to the age of sixteen years. This should be maintained up to the age of seventy, then decreased gradually in regressive manner. This is for powders as well as pastes but in case of decoction it should be four times.

According to preparation, the dose has been suggested as follows :

1. Swarasa	—	$\frac{1}{2}$ Pala (20 ml.)
2. Kalka	—	1 karṣa (10 gms.)
3. Cūrṇa	—	1 Karṣa ¹
4. Kwātha	—	1 Pala (40 ml.)
5. Phāṇṭa	—	2 Palas (80 ml.)
6. Ghṛta	—	1 Karṣa
7. Taila	—	1 Karṣa
8. Hima	—	1 pala (40 ml.)
9. Awaleha	—	1 Karṣa
10. Āsava-Ariṣṭa	—	2 Karṣa (20 ml.)
11. Guṭikā	—	1 Karṣa Per day.
12. Rasausadhas	—	1-2 Ratti

In Kalpas of single drugs particular for Rsayana use, A specific dosage is prescribed in which at first the dose is increased in gradual progressive manner and

¹ Now-a-days given $\frac{1}{2}$ karṣa.

then decreased in the same but regressive manner. The dosage of Bhāllataka Rasayana has been fixed in this way (Fig. 3-6).

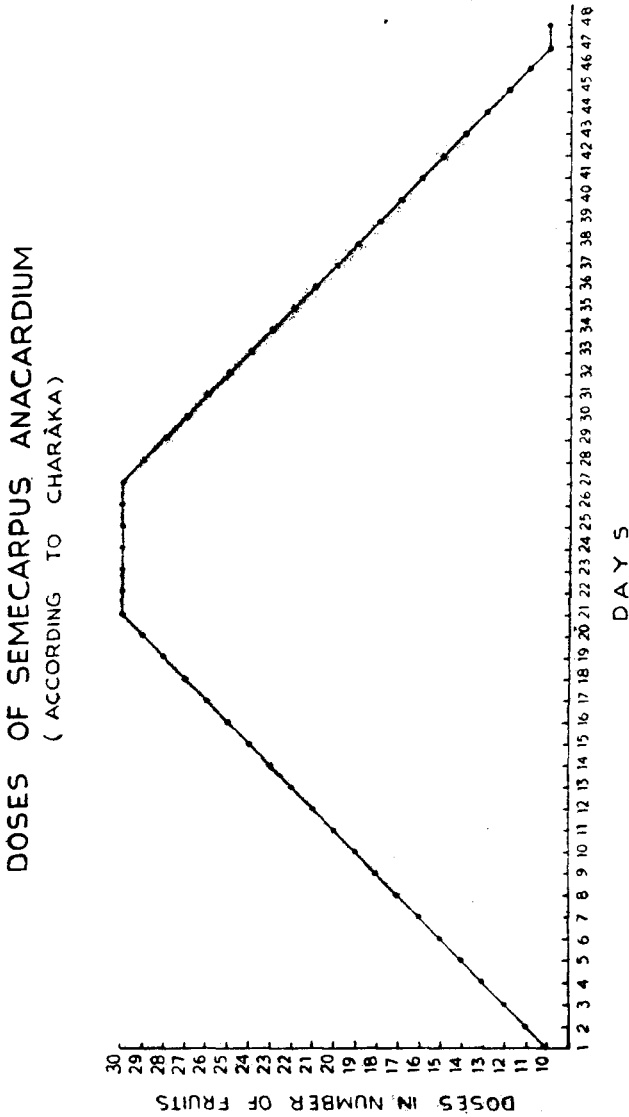


Fig. 3

DOSES OF SEMECARPUS ANACARDIUM
(ACCORDING TO ASHTANGA SANGRAHA)

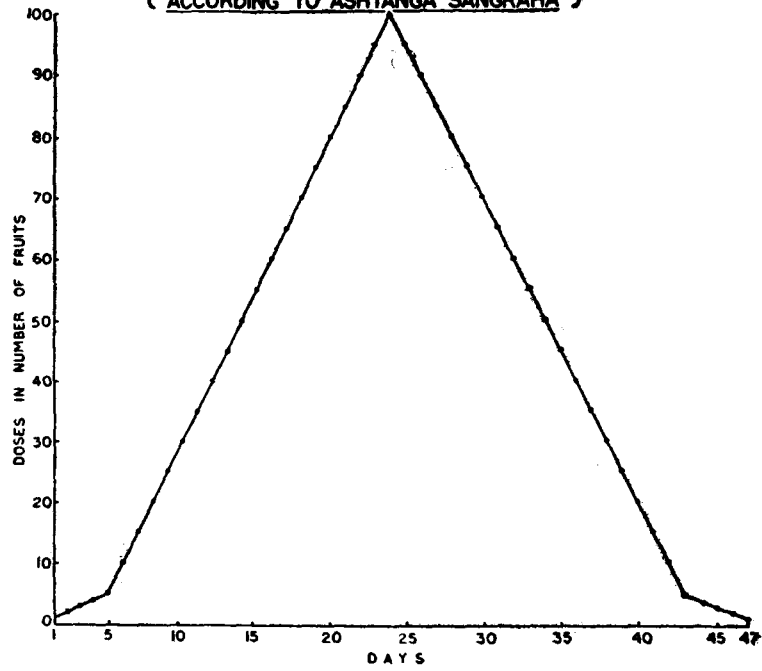


Fig. 4

DOSES OF SEMECARPUS ANACARDIUM
(ACCORDING TO SUSHRUTA)

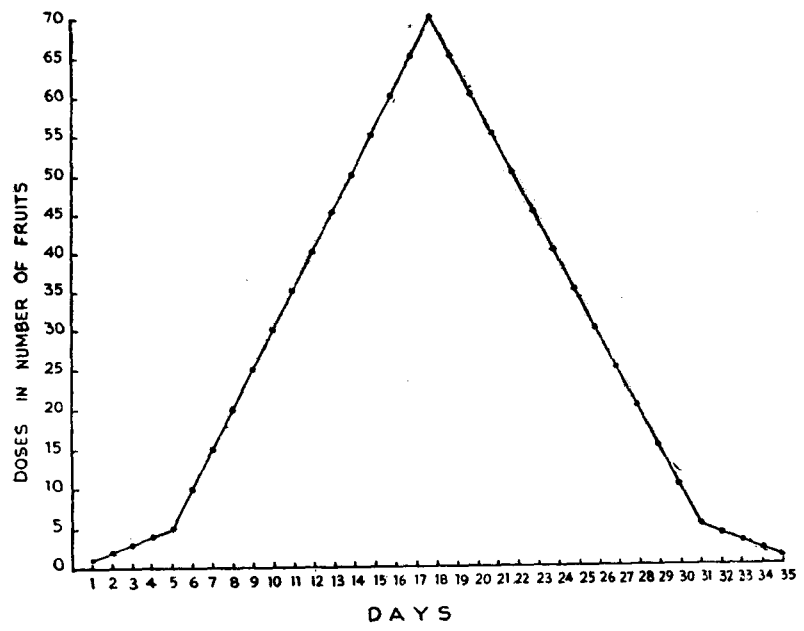


Fig. 5

DOSES OF SEMECARPUS ANACARDIUM
(ACCORDING TO ASTANGA HRIDAYA)

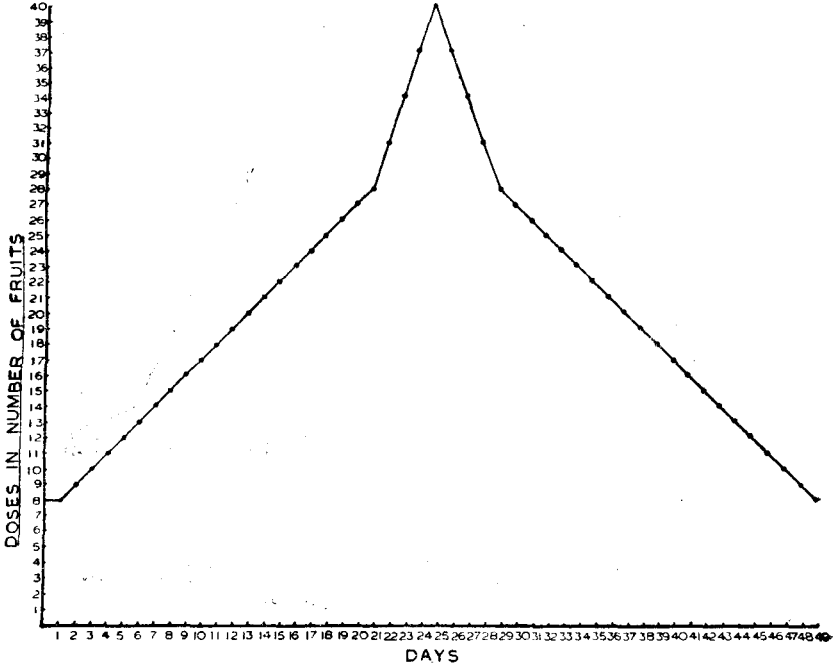


Fig. 6

Anupāna (Vehicle) :

Anupāna is a very important factor which helps in absorption, assimilation as well as efficacy of the drug. It also checks the undesirable side effects of the drug. This should be decided according to the constitution of the patient as well as condition of Doṣa. In Vātic conditions Snigdha-Uṣṇa; in paittic Madhura-Śīta and in kaphaja Rūkṣa-uṣṇa Anupāna is recommended.

The main vehicles used are cold and warm water, honey, ghee, butter, sugar, jaggery, milk etc. The pharmaceutical preparations like Swarasa, Phāṇṭa, Kwātha,

Hima, Arka etc. are also used as vehicles. One drug particularly Rasauṣadha, may be used in various diseases with different vehicles. For instance, Makaradhwaḡa may be useful in fever (jwara) when given with Ārdraka-swarasa (Ginger juice) and in internal Haemorrhages (Raktapitta) with Vāsā swarasa.

Out of the above vehicles, one may select :

1. According to Drug — Such as warm water after Ghṛta.
2. According to Patient — Such as alcoholic preparations for debilitated and honey-water for obese.
3. According to Disease — Such as milk in Rakta-pita, Ārdraka in Jwara.

Vāgbhaṭa II (A. H. UT.) has given a long list of vehicles according to diseases such as :

- | | |
|---------------------------------------|-------------------------|
| Śūla (Intestinal colic) | - Hingu + Ghṛta |
| Jīrṇa Jwara (chronic fever) | - Pippalī + Madhu |
| Vāta-Vyādhi (Neurological diseases) | - Rāsnā + Ghṛta |
| Śwāsa (Bronchial Asthma) | - Trikaṭu + Madhu |
| Śīta (Cold) | - Tāmbūla + Marica |
| Prameha (Diabetes) | - Triphalā + Śilājatu |
| Sannipāta (Typhoid) | - Ārdraka Juice + Madhu |
| Grahaṇī (Dysentery) | - Takra |
| Viṣa (poison) | - Swarṇa |
| Vamana (Vomiting) | - Parched paddy grain |
| Atisāra (Diarrhoea) | - Kuṭaja |
| Raktapitta (Internal Haemorrhage) | - Vāsā |

Arśa (piles)	- Citraka
Krimi (Worm)	- Viḍāṅga
Ajirṇa (Indigestion)	- Warm water
Kṣaya (Wasting)	- Meat soup, Milk
Pāṇḍu (Anemia)	- Punarnavā
Kāsa (Cough)	- Vāsā

The drugs and substances mentioned in Agrya-Prakarāṇa (SU. 25) of caraka may also be used as Anupāna.

Bhaiṣajya-Kāla (Time of Administration) :

The following times have been prescribed for administration of drugs :

1. *Abhakta* (on empty stomach) :

The drug exerts strongest action if given on empty stomach hence this should be prescribed for strong persons and in disorders due to aggravation of kapha.

2. *Prāgbhakta* (before meal) :

This is useful in diseases due to Apāna Vāyu and also for toning up the intestinal muscles and for reducing fat.

3. *Madhyabhakta* (during meal) :

This is prescribed in diseases due to Samāna Vāyu and gastrointestinal disturbances particularly paittika ones.

4. *Adhobhakta* (After meals) :

After lunch the drug should be given in diseases of Vyāna Vāyu and after dinner in those of Udāna Vāyu. This strengthens the upper part of the body, is used in its disorders particularly Kaphaja ones and also for Brīṇhaṇa.

5. *Samabhakta* (Mixed with food) :

This is prescribed in children, delicate persons and

those having aversion to medicines, **Anorexia** and in diseases spread all over the body.

6. *Antarābhakta* (Between meals in day) :

The drug is taken in afternoon after the midday meal is digested and sufficiently before the evening meal. This is used in persons having good digestion and in disorders due to Vyāna Vāyu.

The same is applicable in relation to meal in night.

7. *Sāmudga* (Before as well as after meals) :

Pācana, Awaleha, Gūrṇa etc. are used alongwith light meal in hiccough, trembling, convulsions, disorders of thigh, upper and lower parts of the body.

8. *Muhuḥ Muhuḥ* (Off and on) :

It does not matter whether the patient has taken meal or is empty stomach, the drug is to be given off and on as in cases of dyspnosa, cough, hiccough, thirst, vomiting and poisoning.

9. *Sagrāsa* (with first morsel) :

The medicine is mixed with the first morsel of meal and is taken as such. Cūrṇa, Vaṭikā, Leha etc. are used in this way for the purpose of dīpana and Vājikaraṇa. Hingwaṣṭaka Cūrṇa is well known example of this. This is useful in disorders of Prāṇa Vāyu.

10. *Grāsāntara* (Between morsels) :

This is useful in disorders of Prāṇa Vāyu, particularly in heart disease.

11. *Niṣā* (In the night at bed-time) :

This is useful in disease of head, mouth, eye, ear, nose and throat. Vamana and Dhūma are used in this way.

Śārṅgadhara has made it concise in five including all the subdivisions in the same :

1. Morning
2. Midday meal
3. Night meal
4. Off and on
5. Bed-time.

Bhaiṣajya-Mārga (Channels of administration) :

Drug is administered through the channels of skin, mouth, eye, ear, nose, anus, urethra and vagina. The channel is selected according to the location of Doṣa.

1. Mouth—This route is selected for :

I. Local action—Gaṇḍūṣa (gargles), Pratisāraṇa (Paints)

II. Action on Gastrointestinal tract—Dīpana, Pācana, Vamana, Virecana etc.

III. Action on Respiratory system—Dhūmapāna.

IV. General action—Generally the drugs are given by oral route. Thus they are digested, absorbed and circulated all over the body and exert desirable action.

2. Nose—By this route drugs are given for the following purposes :

I. Local action—Nasya

II. Action on Respiratory system—Fumigations

III. Action on Head—Śirovirecana

3. Eye—Seka, Āścyotana, Piṇḍī, Biḍāla, Tarpaṇa, Varti, Puṭapaka and Añjana (Drops, Paste and Collyriun) are used by this way for eye diseases.

4. Ear . . —Washing, fumigation and drops are used by this route in diseases of ear.
5. Anus —Āsthāpana and Anuvāsana enemata are administered by this route. Phala varti (suppository) is used in cases of constipation.
6. Urethra—Uttara Basti is administered by this way in cases of urinary disorders.
7. Vagina—In vaginal and uterine disorders fumigations, suppositories, swabbing, plugging, washing etc. are administered by this route.
8. Skin—External applications in cases of skin diseases, oedema, arthritis, nervous diseases, ulcers, etc. are used in form of Abhayanga, Pariṣeka, Lepa etc.

Injection into blood :

There is one reference in the Buddhist text, Saddharma Puṇḍarīka, of injecting the drug into blood through a needle. In Caraka, through incision in the skin drug is brought in direct contact with blood in cases of poisoning. Śārṅgadhara has also followed this. He says—Even the unconscious patient gets up when the drug is brought in contact with blood.

General observation :

Drug should be administered after fully examining the patients in respect of ten points (Prakṛti, Doṣa, Bala etc.). The drug should be favourable to patients. For children, drugs should be Mṛdu Vīrya, Kasāya—Madhura, Milky and in small doses. Not too fatty, Rūkṣa, Uṣṇa, Amla, Guru and Kaṭuvipāka drug or diet should be administered to children. In breastfed infants drugs are administered to the

wet-nurse as well. In women, particular care should be taken of the menstrual period and pregnancy while administering any drug.

SECTION III
LITERATURE

CHAPTER I ANCIENT PERIOD

The literature of Dravyaguna may be divided into three periods as follows :

- | | |
|--------------------|------------------------------|
| 1. Ancient Period | Upto 7th Cent. A. D. |
| 2. Medieval Period | 8th to 15th Cent. |
| 3. Modern Period | 16th Cent A. D. and onwards. |

Vedic Nighantu :

The Ṛgveda, the oldest extant source, deals with a number of drugs which may be called as the oldest drug stock of Āyurveda. The number of drugs increased gradually due to addition in knowledge by advance of time and that is why the number of drugs in the Atharvaveda is quite larger than in the Ṛgveda.

The history of Nighaṅṭu literature is also very old. There is existence of the Vedic Nighaṅṭu which was the basis of Nirukta, one of the six Aṅgas of the Vedic literature. Nighaṅṭu contained only the synonymous words which contained implicit meaning. This was the ancient method of conveying the idea in concise form. The Āyurvedic Nighaṅṭus also followed this pattern and earlier Nighaṅṭus described the drugs by way of synonyms. Quite later on properties and actions were added to it and a new pattern of Nighaṅṭus was evolved where properties and synonyms were described together. For example, the initial form of the Dhanwantari Nighaṅṭu (Dravyāvali) contained only synonyms which properties and actions were added to later on.

Saṁhitottara Nighaṅṭu :

It is said that in one of the manuscripts of the Suśruta Saṁhitā there was appended a nighaṅṭu.¹ Although no

¹ Hemarāja Sharma : Introduction, Kāśyapa Saṁhitā, p. 57.

definite information is available regarding the nature of contents it may be presumed that there was a tradition of appending a Nighaṅṭu at the end of the old Samhitās or the Nighaṅṭu might have been the part of the Samhitā itself and as such creation of the original author. Even if the point is debatable, there is no doubt that the old Samhitās contained sufficient valuable concepts and materials regarding Dravyagūṇa. The importance which was assigned to the subject can very well be imagined by the fact that the Caraka Samhitā starts with the Auśadha-Catuṣka (Drug-quadruped) and ends with the Annapāna-Catuṣka (Food and Drinks Quadruped). Sūtrasthāna, Vimāna-Sthāna, Chikitsā-sthāna and Kalpa-sthāna are replete with the material of Dravyagūṇa. The concepts have been dealt with in Ch. 26 of the Sūtrasthāna and properties of mainly dietetic substances have been given in the subsequent chapters. There is no any separate chapter containing description of drugs alongwith properties and actions either in Caraka Samhita or Suśruta Samhitā, although here and there such descriptions are found. This appears first time in the Aṣṭāṅga Samgraha of Vāgbhata I where a separate chapter (Su. 12) has been devoted to this and a pattern of systematic description of classified drugs has been evolved. This has been followed by Vāgbhaṭa II (Su. 6).

Rasavaiśeṣika :

The date of Rasavaiśeṣika can't be fixed with certainty but if its author, Nāgārjuna, is identical with the redactor of the Suśruta Samhitā, the work may be assigned to the 5th cent. A. D. and may be taken as the oldest extant text on the concepts of Dravyagūṇa.

CHAPTR II MEDIEVAL PERIOD

The majority of the Nighaṅṭu literature is produced during this period. The following works are noteworthy.

Aṣṭāṅga Nighaṅṭu :

The author of this book is Vāhaṭācārya as its colophon indicates. Several Manuscripts are available particularly in the libraries of South India. Recently this work has been published.¹

It is very difficult to say whether this Vāhaṭācārya is identical with the author of the Aṣṭāṅga-Hṛdaya or the Aṣṭāṅga Saṁgraha which is the basis of this work. The text contains synonyms of drugs belonging to various gaṇas of the Aṣṭāṅga-Saṁgraha. In the end, some other drugs and substances have been described. It can not be the work of Vāgbhaṭa I as it contains some of the drugs mentioned in the Aṣṭāṅga-Hṛdaya and not found in Aṣṭāṅga-Saṁgraha. Moreover, it has described such drugs like Pūti which are not found in the Aṣṭāṅga-Hṛdaya and as such its authorship can't be ascribed even to Vāgbhaṭa II. It further leads to conclude that it belongs to some later period when such drugs were already introduced in Āyurvedic Medicine. Jejjāṭa and Mādhava, the author of the Paryāyaratnamālā

¹ P. V. Sharma (Ed.)—The Aṣṭāṅga Nighaṅṭu of Vāhaṭācārya, Kuppaswami Shastri Research Institute, Madras, 1973.

(Both 9th Cent. A. D.) as well as Cakrapāṇi (11th Cent. A. D.) have probably utilised this work. Hence this may be placed before them in the 8th Cent. A. D.

Paryāyaratnamālā :

The last verse shows that the work is composed by Mādhava, son of Indra kara and resident of Śilāhrada. Many scholars taking 'Indra kara' as 'Indu kara' make this Mādhava identical with the author of the Rugviniścaya (Mādhavanidāna) and place him in the 7th Cent A. D.

Out of so many Mādhavas (Aufrecht has mentioned 50 or so) Three are prominently above others distinct from each other :

1. Mādhava—The author of Nidāna and Cikitsā (Mādhava-cikitsita) and son of Candra kara¹. He has not mentioned his place.
2. Mādhava—The author of Paryāyaratnamālā; son of Indra kara (not Indu kara) and resident of Śilāhrada probably Patharghaṭṭā, the site of the University of Vikramśilā, near Bhagalpur (Bihār); most probably connected with the university (as teacher).
3. Mādhava—The author of Dravyaḡaṇa.

Taking this into consideration, the view of Dr. Tārāpada Choudhary that this Mādhava is identical with the author of

¹ In the Colophon of Mādhava-cikitsita mādhava has been said as the son of Candra kara. In the text of Nidāna nowhere father's name is mentioned. Only in 14th Cent. A. D. Vācaspati has said Indu kara as father of Mādhava which can't be relied upon.

the Rugviniścaya and as such his date may be fixed as 7th cent. A.D.¹ is untenable. Moreover, the following points are noteworthy :

1. The Rugviniścaya has been quoted and followed by Vṛnda (9th Cent. A. D.) while the Paryāyaratnamālā has not been quoted by any author prior to Sarvānanda (12th Cent. A. D.), the illustrious commentator on the Amarakośa.
2. The Mādhava Nidāna does not contain description of 'Bradhna-roga' while it is described in Vṛnda's work and the Paryāyaratnamālā. This fact carries the latter work later than the former one.
3. The Paryāyaratnamālā contains Pārada (Mercury), Gandhakā (Sulphur), Abhrakā (Mica) etc. which indicates somewhat developed state of Rasa-śāstra while, on the other hand, the Mādhava-Cikitsita does not contain any Rasa-yoga. This puts the Paryāyaratnamālā later than the Mādhava-cikitsita.
4. on one side, the Paryāyaratnamālā has got Persian influence on the word 'Vātingan' for brinjal (Persian-Bādingān) while on the other side, it has imitated a verse from a work 'Śiśupālavadhān' (2, 112) of Poet Māgha belonging to late 7th or 8th Cent. A. D.
5. The Dhanwantari Nighaṅṭu has described Ahiphena, Bhangā, Yaśada etc. which are not found in the Paryāyaratnamālā. Some verses from Rasaratnasamuccaya are quoted in the former work while there is none in the

¹ T. P. Chowdhary (Ed.)-Paryāyaratnamālā, Patna University Journal, Vol. II, 1964, Introduction, P. 1-2.

latter work. It is to be noted that the word 'Vijayā' is used for Haritakī and Tarkarī and not for Bhangā.

All these facts place the Paryāyaratnamālā earlier than the Dhanwantari Nighaṇṭu.

Therefore, Mādhava, the author of the Paryāyaratnamālā may be placed between 8th and 10th e.g. 9th Cent. A. D.

Nighaṇṭu :

Cakrapāṇi has quoted some verses from a Nighaṇṭu (C. Su. 27.4, Ci. 7.70) which shows that this work was popular in 11th cent. A. D. and was composed earlier probably in 9th or 10th cent. A. D. It has also been quoted by Kṣīraswāmī (11th cent. A. D.), Sarvānanda¹ (12th cent. A. D.) both commentators on the Amarakośa; Śrikanṭhadatta² (13th cent. A. D.), Āḍhamalla³ (14th cent. A.D.) and Śivadāsa Sena⁴ (15th cent. A.D.) which shows its popularity till 15th cent. A. D. Now the work is not known.

Siddhaśara Nighaṇṭu :

This is a work by Ravigupta, son of Durgagupta, a Buddhist scholar. This is also known as Sārōttara Nighaṇṭu because it is appended to the author's main work Siddha Sāra, a work on medicine. Its several verses are borrowed by Vṛnda in his Siddhayoga (900 A.D.) and it is often quoted

¹ The Amarakośa (with commentaries of Kṣīraswāmī and Sarvānanda) Trivandrum Sanskrit series Vol. 2 (1915) pp. 2, 100, 292; Vol. 3 (1917), pp. 216, 243; Vol. 4 (1917), p. 13.

² Vṛndamādhava, Anandāśrama, Poona 1.201, 32 6

³ Śārūgadharma Saṁhitā, Khaṇḍa 2, 6-9-11.

⁴ Cakradatta, Calcutta, p. 70, 137.

by Candraṭa (early 10th cent A. D.). Thus this can't be placed after 9 th cent. A. D.

The text contains 193 verses in śloka meter. At the end Dravyāvali (a list of drugs) is given¹.

*Dhanwantri Nighaṇṭu*² :

Traditionally it was regarded as the oldest Nighaṇṭu. some scholars say that the Vanauşadhi Varga of the Amarakośa is based on this work and as such its date must be earlier than that of the Amarakośa (5th-6th cent. A. D.). But other scholars place The Amarakośa itself as late as 10th cent A. D³. Let us consider the evidences in this respect :

External Evidences :

1. Hemādri, the commentator of Aṣṭāṅgahṛdaya and authority on religious texts, refers to Dhanwantari Nighaṇṭu Hemādri's date is the end of the 13th cent. and the beginning of the 14th cent. A. D. Hence the Dhanwantari Nighaṇṭu must be before this.

¹ Prof. R. E. Emmerick. Hamburg University (W. Germany)

Has given a detailed critical study of the work and its contents on the basis of some Sanskrit, Tibetan and khotanese manuscripts. For this see his following articles :—

- I. The Sanskrit Text of Siddhasāra — Bulletin of the school of oriental and African studies, London, Vol. XXXIV, Part 1, 1971, pp. 91-112.
- II. On Ravigupta's Gaṇas — B. S. O. A. S., London, Vol. XXXIV, Part 2, 1971, pp. 363-75.
- III. New light on the Siddhasāra — B. S. O. A. S., London, Vol. XXXVII, Part 3, 1974, pp. 628-54.

² Anandāśrama, Poona, 1896, 1925.

³ Trikāṇḍaśeṣa, Bombay, 1916, Introduction, p. 7.

2. Niścala Kara (13th cent. A. D.) has mentioned the name of Dravyāvalī, but not the Dhanwantari Nighaṇṭu.

3. Arunadatta, the commentator on Aṣṭāṅgahr̥daya, has quoted the Dhanwantari Nighaṇṭu.

Arunadatta flourished in the middle of the 13th cent. A. D. and as such the work must have preceded this.

4. Hemacandra, in his commentary on Abhidhānacintāmaṇi, has referred to Dhanwantari. The date of Hemacandra is 12th cent. A. D. and as such Dhanawantari Nighaṇṭu must be prior to this.

5. It is surprising that Dallana (12th cent. A. D.) has not mentioned any Nighaṇṭu in his commentary on Suśruta although he has given a good and vivid description of plants and other drugs. This is a fact which deserves serious consideration and analysis. If there was Dhanwantari Nighaṇṭu what prevented him from using this. The other alternative is that he might be connected with the authorship of the work which he would have taken after completing the commentary. In other words, the commentary of Dallana may be before the work. As a corollary to this, Dallana might have preceded the Dhanwantari Nighaṇṭu.

6. Vardhamāna, in his *Gaṇaratnamahodadhi*, has quoted a verse from the Dhanwantari Nighaṇṭu but not by name.

Vardhamāna has given the date of composition of his work as A. D. 1140. Hence the Dhanwantari Nighaṇṭu must have preceded that.

7. Chakrapāṇi (11th cent. A. D.), the commentator of Caraka Saṃhitā, has mentioned *Nighaṇṭu* and

Nighaṅṭukāra at two places but he does not quote the Dhanwantari Nighaṅṭu anywhere.

8. Kṣīraswāmī, the commentator on Amarakoṣa, quotes Dhanwantari Nighaṅṭu and *Indu Nighaṅṭu*. Kṣīraswāmī's date is 11th cent. A. D. Hence the date of the Dhanwantari Nighaṅṭu must be before this. Indu, the author of the Nighaṅṭu quoted here, must be a person different from that of the same name who wrote the *Śaśīlekhā* commentary on Aṣṭāṅga Saṁgraha because this commentary has not been referred to by any author before Hemādri (13th-14th cent. A. D.). Indu has utilised Dhanwantari Nighaṅṭu as well as *Aṣṭāṅga Nighaṅṭu* in this commentary. On this basis, the authors of Indu Nighaṅṭu and the Dhanwantari Nighaṅṭu may be taken as contemporary and may be placed before Kṣīraswāmī (11th cent. A. D.).

Internal evidences :

In introduction after salutation to Dhanwantari, the author says that he is composing this book as a short treatise dealing with drugs taking the essential facts from the ocean-like literature of Nighaṅṭus. It shows that there was a vast literature on Nighaṅṭu at the time of its composition. The name of this work is Dravyāvalī which has come out of the mouth of Dhanwantari and has been composed for the benefit of the Vaidyas' sons (traditional Vaidyas), enumerating the drugs in seven groups (vargas) such as *guḍūcyādi*, *śatapuṣpādi*, *candanādi*, *karavīrādi*, *āmṛādi*, *suvarṇādi* and *miśrakādi* alongwith their uses. In the end, he says that the synonyms of these drugs will follow in order, but instead of this Dhanwantari Nighaṅṭu starts with salution to Dhanwantari and with contents of *Rasa*, *Vīrya*, *Vipāka*, etc.,

of drugs. This shows that the two works are quite different from each other.

If they were the same there would not have been a separate salutation, a different name of the work and contents different from those proposed in the introduction.

There is also difference in nature of the facts which places these works (*Dravyāvalī* and *Dhanwantari Nighaṇṭu*) in different periods. The former work seems to be an earlier one while the latter one seems to be of the later period. The following facts in relation to the *Dhanwantari Nighaṇṭu* deserve consideration.

1. There are several drugs mentioned and described in it which are definitely of the medieval period not before 12th cent. A. D. such as *Ahiṣhena* (opium), *Āyapāla* (croton), *Agnijāra* (ambara), which were introduced in this country by Muslims. The words *mleccha* and *yavana* have been used probably for Muslims.

2. The detailed descriptions of *Pārada* alongwith its saṁskāras and *gandhaka* show the advanced state of *Rasa-śāstra*. Most of the facts and verses have been taken as such from *Rasaratna Samuccaya* a work of the 13th cent. A. D.

3. The mention of *yaśada* (zinc) further leads this work to at least 14th cent. A.D. because before that *yaśada* has not been mentioned in any work not even in *Rasaratna Samuccaya*. Thus *Dhanwantari Nighaṇṭu* will be a contemporary of *Rasaratnasamuccaya*.

4. There is also reference of *Siddhauśadhi* and *Nāgārjuna* which indicate the advanced state of tantricism and *Rasa-śāstra*.

In the former portion (Dravyāvalī) none of the above facts is found except the word 'Rasa' for pārada.

As mentioned above, the Dhanwantari Nighaṅṭu has not been mentioned explicitly by any author in the Āyurvedic field before Aruṇadatta. Taking this into account it may be placed before Aruṇadatta in the 13th cent. A. D. The same position is of Indu who has been referred to first by Hemādri. In the commentary on Aṣṭāṅga Saṁgraha Indu has quoted several verses from Nighaṅṭu out of which some are found in Dhanwantari Nighaṅṭu and others in Aṣṭāṅga Nighaṅṭu which seems to be an earlier work followed by both Indu and Dhanwantari Nighaṅṭu. If Indu, the commentator and lexicographer, is the same person the question of the date of Kṣīraswāmī will have to be reconsidered because he has referred to both Indu and Dhanwantari Nighaṅṭu. The only difficulty is that some of the quotations of Dhanwantari Nighaṅṭu cited by him are not found in the extant book. Hemacandra (12th cent. A. D.) has quoted both Kṣīraswāmī and Dhanwantari Nighaṅṭu. Hence they must be before that period. It may be possible that Kṣīraswāmī might be referring to Dravyāvalī as Dhanwantari Nighaṅṭu and Indu also might be a person different from the commentator Indu.

As regards the reference of the work in Vardhamāna's Gangaratanamahodadhī, it is also not explicit but the verse is found in Dhanwantari Nighaṅṭu the quoted verse should be assigned to Dravyāvalī which might have been mixed with Dhanwantari Nighaṅṭu later on.

Conclusion :

1. The Dravyāvalī and the Dhanwantari Nighaṅṭu are two different works composed by different authors and at

different periods. The only similarity is that both the works start with salutation to Dhanwantari. Dhanwantari is not concerned with the authorship of any of these works at all.

2. From external and internal evidences, the Dravyāvalī may be placed in the 10th cent. A. D. as it is quoted by Kriṣṇaswāmī (11th Cent. A. D.) and the Dhanwantari Nighaṇṭu in the 13th cent. A. D., not before and after as it quotes Rasaratnasamuccaya (13th Cent. A. D.) and is quoted by the authors like Aruṇadatta (13th Cent. A. D.). After a lapse of some time both these works were confused to be one and of the same author.

3. The actual text of the Dravyāvalī referred to by the authors is not available at present¹. It seems that the whole text of this work was mingled up with the Dhanwantari Nighaṇṭu. In the existing text of Dhanwantari Nighaṇṭu the portion dealing with synonyms might be from Dravyāvalī and that dealing with properties and actions might be from Dhanwantari Nighaṇṭu. It should be noted that Dravyāvalī contained only synonyms of drugs like other Nighaṇṭus of that period. Perhaps the Dhanwantari Nighaṇṭu is the first to deal with properties and actions of drugs. In most of the manuscripts the author of the work is Mahendra Bhogika. Most probably he is the person who gave final shape to the work². The subject matter of the text has been classified into seven chapters (vargas) as follows :

¹ Some manuscripts are available in Mithila Research institute; Darbhanga.

² P. V. Sharma : The Date of Dhanwantari Nighaṇṭu, I. J. H. S., Vol. 5, No. 2, 1970, pp. 364-370.

1. Guḍūcyādi
2. Śatapuṣpādi
3. Candanādi
4. Karavīrādi
5. Āmrādi
6. Suvarṇādi
7. Miśrakādi

Indu Nighaṇṭu :

Kṣīraswāmī (11th Cent. A. D.) has quoted many verses from Indu Nighaṇṭu which indicates its popularity at that time. The author of Śivakoṣa (17th Cent. A. D.) has also quoted some verses from it but at present it is not available.

Some scholars take Indu, the author of Nighaṇṭu and Indu, the commentator on the Aṣṭāṅga-Saṅgraha and Aṣṭāṅga-Hṛdaya as one and the same but in face of the facts this view can't be accepted. Indu, the commentator has not been quoted by any author earlier than Hemādri (13th Cent. A. D.) while Indu, the author of the Nighaṇṭu has been quoted as early as in 11th Cent. A. D. by Kṣīraswāmī. Therefore, probably they are different persons belonging to different periods.

As Indu Nighaṇṭu is quoted by Kṣīraswāmī (11th Cent. A. D.) the work must have been composed latest in 10th Cent. A. D.

Candranandana-Nighaṇṭu (10th Cent. A. D.)

Candra-Nighaṇṭu (10th Cent. A. D.)

Nimi-Nighaṇṭu (10th Cent. A. D.)

*Haramekhaviā-Nighaṇṭu*¹ (965 A. D.)

¹ Pub. Trivandrum.

All the above four works have been quoted by Kṣīra-swāmi (11th Cent. A. D.) and as such have been placed earlier than him.

*Dravyaguṇa-Saṁgraha*¹ :

Its author is Cakrapāṇidatta (11th Cent. A. D.), the well-known commentator on the Caraka-Saṁhitā, Nārāyaṇa was his father and Bhānudatta his elder brother, both connected with the court of Nayapāla, the King of Bengal (1038-1055 A. D.).

The text contains description of dietitic substances and is divided into 15 chapters.

Aruṇadatta Nighaṇṭu :

Vardhamāna in his Gaṇaratna-Mahodadhi (1140 A. D.) has quoted a verse from Aruṇadatta regarding properties of Rasona (Garlic). From this it is evident that there was some Nighaṇṭu composed by Aruṇadatta. The question is whether this Aruṇadatta is the same as the lexicographer and the commentator on the Aṣṭāṅga-Hṛdaya ? Most probably the lexicographer Aruṇadatta is the author of this Nighaṇṭu and is different from Aruṇadatta, the commentator who belonged to the later period. It is to be noted that Hemacandra, the illustrious lexicographer also composed a work on Nighaṇṭu (Nighaṇṭuśeṣa) as well apart from his lexicon, Abhidhāna-Cintāmaṇi. The date of the lexicographer Aruṇadatta may be fixed as 11th Cent. A. D. or beginning of 12th Cent. A. D.

¹ The text is published with the commentary of Śivadāsa Sena from Calcutta (1871). Another edition is from Gaṅgā Viṣṇu Śrī Kṛṣṇadāsa, Bombay (1925).

Vāṣpacandra-Nighaṅṭu :

Vopadeva (13th Cent. A. D.) has quoted many verses from this work in his commentary on Siddhamantra. This shows that Vāṣpacandra was also an author of Dravyaguṇa apart from being a famous commentator on ancient Samhitas. The date of Vāṣpacandra is fixed as 12th Cent. A. D.

*Nighantuseṣa*¹

This work is composed by the Jain scholar and lexicographer Hemacandra (12th Cent. A. D.). It contains only synonymous words and the subject matter is divided into six chapters as Vṛkṣakāṇḍa, Gulmakāṇḍa, Latākāṇḍa, Śākakāṇḍa, Tṛṇakāṇḍa and Dhānyakāṇḍa. Rudrākṣa, Putrañjīva, Cānakyamūlaka, Yāvanāla etc. have been described in the text. Among Hemacandra's other works Abhidhāna-cintāmaṇi, Anekārtha-Samgraha and Deśi Nāmamālā are noteworthy.

Soḍhala Nighaṅṭu :

The Nighaṅṭu of Soḍhala popularly known as Soḍhala Nighaṅṭu is an important work on Indian Materia Medica. In one of the MSS,² the title of the work is '*Guṇa-Samgraha*', while in the other³ it is '*Nāma-Samgraha*'. Probably both these manuscripts are complimentary to each other and thus the title of the text may be as *Nāmaguṇa-Samgraha* having synonyms and properties of drugs. The work has not been published as yet and as such the above two MSS are the sources of information for this study.

¹ Pub. with Vallabha Gaṇi's commentary, Ahmedabad, 1968.

² MS. No. 349 of 1880-81 of Govt. MSS. Library, Bhandarkar Oriental Research Institute, Poona.

³ MS. No. 927 of 1884-87 of Govt. MSS. Library, Bhandarkar Oriental Research Institute, Poona.

AUTHOR

Valuable informations are available in the MS. about the author. He belonged to the Rayakawāla family of Brāhmaṇas in Vatsa Gotra. His father's name was Bhāskara who himself was a scholar of Āyurveda.¹ Soḍhala and his father were followers of Vāgbhaṭa and as such the former has quoted him and his works Aṣṭāṅga-Saṁgraha and Aṣṭāṅga Hṛdaya with reverence. In addition to Āyurveda, Soḍhala was a scholar of Sāhitya, Jyotiṣa and Vyākaraṇa and was a good poet too. He was a devotee of Sūrya as appears from the salutary verses.

DATE :

Soḍhala has said in the introductory verses that the students had to face great difficulty in books having no list of drugs (Dravāvali) and proper classification and arrangement of subject matter compiled with defective nomenclature and as such with the idea of removing this difficulty he composed this work after consulting popular works of Agniveśa etc. and arranged in groups of Guḍūcyādi etc. with proper nomenclature of drugs. This would also solve controversies among various texts and would describe the properties of drugs with their Rasa, Vīrya, Vipāka etc. in not too detailed or too concise form so that the same might be easily understood. He has also mentioned Karāla etc. among ancient authors and Vāgbhaṭa, a comparatively later author. Between Aṣṭāṅga-Saṁgraha and Aṣṭāṅga-Hṛdaya, he preferred the latter because of the concise style and as

¹ Father's name is taken as Swaccha, Nandana or candana by different scholars but his salutation to Bhānu (Bhāskara) is significant. Śārṅgadeva in his Saṅgītaratnākara says himself as the son of Soḍhala and the grandson of Bhāskara.

such has quoted much from the same, although he has borrowed much from Caraka and Śuśruta as well. In *Gadanigraha* he has followed the Rogaviniścaya of Mādhava and Vṛnda's Siddha Yoga.

This work has got intimate relation with the Dhanwantri Nighṅṭu. Dravyāvali (list of drugs described) and the groups of drugs are the same as in the Dhanwantri Nighaṅṭu with a little difference that the seventh group is the Lakṣmaṇādi in Soḍhala's while it is Miśrakādi in the Dhanwantri Nighṅṭu. The style adopted by the Dhanwantri-Nighṅṭu became obsolete after lapse of time and it was just an attempt for revival of the same by Soḍhala. At the same time he left unnecessary details given in Dhanwantari Nighṅṭu and made it concise so as to enable the students to grasp the subject easily and in a short time. Thus Soḍhala made a balance between the merits and demerits of the Dhanwantari Nighṅṭu in his work.

The date of the Dhanwantri Nighṅṭu¹ is 10th Cent. A. D. and taking into account some interval between these two works the Nighṅṭu of Soḍhala may be placed in the 12th Cent. A. D.

He also seems to have utilised the commentary of Dallaṇa on Śuśruta Saṁhitā as appears from his description of Madhu². The date of Dallaṇa is early 12th Cent. A. D. Hence the date of Soḍhala can't be anterior to this. Coming to the lower limit. Bhāvamisra (16th Cent. A. D.) has taken enough material from Soḍhala's Nighṅṭu such as description of Haritakī, Cavikā-Gajapipalī, Karpūra,

¹ Sharma, P. V.; *The Date of Dhanavantari Nighṅṭu*, I. J. H. S., Vol. 5 No. 2 (1970) pages. 364-370.

² Dallaṇa (*Suśruta, Sūtra*, 45. 133).

Pārasika Yavāni, Latākastūrī, Balācatuṣṭaya etc., the magical action of Cetakī, a variety of Haritakī has been the contribution of Soḍhala and was borrowed by Bhāvamiśra. Madanapāla (14th Cent. A. D.) has also followed Soḍhala in his Nighaṇṭu. Śārṅgadhara (13th Cent. A. D.) has followed the style and content of the works of Soḍhala particularly Gadanigraha. Keśava (13th Cent. A. D.) also seems to have taken some help from Soḍhala Nighaṇṭu. A drug named 'Narapuṣpa' is found in Keśava's *Siddhamantra* as well as Soḍhala Nighaṇṭu while it is absent in Dhanwantari Nighaṇṭu. Vopadeva (13th Cent. A. D.) has also utilised Soḍhala's work in explaining most of the things in his commentary on Keśava's above work The *Pseudo-Hārīta Saṁhitā* resembles in many portions with the Soḍhala Nighaṇṭu.¹ The date of the Pseudo-Hārīta Saṁhitā has been fixed near about 12th Cent. A. D.² Looking to all these facts, the date of the Soḍhala Nighaṇṭu should not be later than 12th Cent. A. D. Therefore, Soḍhala may be placed in later 12th Cent. A. D.

As regards the internal evidences, the following facts are to be noted :

1. There is no mention of Yaśada among Dhatus. Yaśada is not found in texts before 14th Cent. A. D.
2. There is no mention of Jayapāla which has been elaborately described and used in various preparations by Śārṅgadhara (13th Cent. A. D.).

¹ The description of Haritakī seems to have been borrowed from Soḍhala by the Pseudo-Hārīta.

² Sharma, P. V.—The *Pseudo-Hārīta Saṁhitā*, I. J. H. S., Vol. 10, No 1, 1975.

3. There is mention of the use of Bhaṅgā, Ahiphena, Akarakarā, Rūmī Mastakī etc in Gadanigraha which were introduced in India near about 12th Cent. A. D. by influence of Arabic medicine. These have not found place in Soḍhala Nighaṅṭu.
4. There is mention of Pārada and its Saṁskāras which were developed in the medieval period near about 10th Cent. A. D.
5. Kaṅkuṣṭha was a synonym of Svarṇakṣīrī previously as found in Aṣṭāṅga Nighaṅṭu¹ (8th Cent. A.D.). In the commentary of Dallaṇa (12th Cent. A. D.) it is taken as the Niryāsa of Svarṇakṣīrī and in later texts it is separately mentioned. In Soḍhala Nighaṅṭu too, Kaṅkuṣṭha is mentioned separately from Svarṇakṣīrī.

In some respects the descriptions in the Dhanvantari Nighaṅṭu are more developed than in the Soḍhala-Nighaṅṭu. For instance, Aralu and Śyonāka are two different drugs which have been mixed together as synonyms in later period. In Soḍhala Nighaṅṭu they are described separately while in Dhanvantari Nighaṅṭu they have been mentioned as synonyms.

The Dhanvantari Nighaṅṭu is not the creation of one day. It took about three centuries in taking its present shape. The earlier portion, Dravyāvali, has its origin in 10th Cent. A.D. while the later portion took final shape by the 13th Cent. A. D. It seems that the Soḍhala Nighaṅṭu followed *Dravyāvali* but preceded the final form. It also shows that the MS. B of the Soḍhala Nighaṅṭu is of a later date.

¹ Sharma, P. V., *The Aṣṭāṅga Nighaṅṭu of Ācārya Vāhaṭa*, Journal of Oriental Research, Madras, 1973.

The most significant fact in deciding his date is his connection with kings Bhillama, Jaitra and Siṅghaṇa of yadava dynasty of Devagiri (see saṅgītaratnākara). He died probably in 1225 A. D. during the reign of Siṅghaṇa (1212-1247 A.D.).

Gada-Nigraha, the other work of Soḍhala seems to be later than his Nighaṇṭu because most of the drugs used in the former have not found place in the Nighaṇṭu such as Bhaṅgā, Ahiphena etc. One salutary verse comes in both the works. Perhaps it has come in Gada-Nigraha from the Nighaṇṭu.

Text

The text starts with salutation to Lord Dhanvantari and the Sun-God. Then the author explains the purpose and the object of the work alongwith the style and the content. It has been emphasised that the physician who does not know the properties of diet and drugs is not fit to be a royal physician.

Then begins Dravyāvali, the list of contents under various groups. The entire text is divided into the following groups :

1. Guḍūcyādi Varga
2. Śatapušpādi Varga
3. Candanādi Varga
4. Karavīrādi Varga
5. Āmrādi Varga
6. Suvarṇādi Varga
7. Lakṣmaṇādi Varga
8. Pānīyādi Varga
 - a) Pāniya Varga
 - b) Kṣīra Varga
 - c) Dadhi Varga

- d) Takra Varga
- e) Navanīta Varga
- f) Ghr̥ta Varga
- g) Taila Varga
- h) Madhu Varga
- i) Ikṣu Varga
- j) Madya Varga
- k) Mūtra Varga
- l) Śuka-Dhānya Varga
- m) Jūrṇā Varga
- n) Tṛṇadhānya Varga
- o) Śimbidhānya Varga
- p) Kṛtānna Varga
- q) Anupāna Varga
- r) Mārṇsa Varga
- s) Miśrakādhyāya Varga

After this, the basic concepts of Dravyaguṇa such as Dravya, Rasa, Vīrya, Vipāka and Prabhāva have been described in short on the basis of ancient texts mainly Aṣṭāṅga Hṛdaya.¹

*Mādhava-Dravyaguṇa*² :

It is also known as 'Bhāvaswabhāvavāda, Mādhava, the author of this work is different from the two other Mādhavas, authors of the Rugviniścaya and the Paryāyaratnamālā respectively. This Mādhava Kavi comes under the following geneological table which is connected with

¹ P. V. Sharma : The Nighaṇṭu of Sodhala, A. B. O. R. I., Vol. LII. Poona, 1972.

² Mādhava-Dravyaguṇaḥ, edited by P. v. Sharma, Chowkhamba Vidyabhavan, Varanasi, 1973.

Śrīkaṇṭhadatta, the Well-known disciple of Vijayarakṣita and the author of the Madhukoṣa commentary on the latter half of the Rugviniścaya and also of the commentary Vyākhyāku-
sumāvali on Vṛnda's Siddhayoga :

Śrīkaṇṭhadatta
|
Cakradatta
|
Mādhava
|
Puruṣottama

As this work is quoted by Bopadeva (13th Cent. A. D.) in his commentary on Siddhamantra and itself follows Sodhala (12th Cent. A. D.), its date may be fixed as 1250 A. D.¹ Āḍhamalla, Śivadāsa Sena and Śivakoṣa have also quoted it which shows its popularity. Toḍarānanda in his Āyurveda-Saukhya has included this text entirely leaving (intentionally ?) the portion of the last verse containing the author's name.

The subject matter has been divided into 29 chapters. It contains descriptions of Jayapāla, Vijayā and Ahiphena.

Keśava's Son, Bopadeva, wrote a scholarly commentary known as Prakāśa on Siddhamantra².

Siddhamantra :

The Siddhamantra of Vaidyācārya Keśava is now a forgotten work of Indian Materia Medica. It was published

¹ See Introduction to the above publication.

² P. V. Sharma : Son's commentary on Father's work, J. R. I. M., Vol. VI, No. 3, 1971.

in 1898 From Jnānasāgar Press, duly edited by Vaidya Śankara Dāji Śāstrī with the assistance of śrī Bhālacandra.¹

The book is named as Siddhmantra-Prakāsa although there is no commentary. In introduction the editor has remarked that the Siddhmantra-Nighaṇṭu was not available. However, the present work by the same author deals with the subject and is like a catalogue of the same. He further adds that nothing particular is known about the author except some informations given at the end of the book which is as follows :

‘Keśava is the author of this work, who is born of Mahādeva, received training in Āyurveda from Bhāskara and honoured by Śirṅharāja.’

Śirṅharāja is Śiṅghaṇa(1212-1247), an illustrious king in the Yadava dynasty of Devagiri and Bhāskara, Keśava’s teacher, is probably the father of Soḍhala. Thus Keśava may be placed in the first quarter of the 13th Cent. A. D.

Commenting on this his son Bopadeva states.—

“Mahādeva was a native of Vedapada in Mahārāṣṭra, Bhāskara was a royal physician of Vedapura and Śirṅharāja was a King of Daṇḍaka region.” From Bopadeva’s another work ‘Śataślokī’ it is known that the place ‘Vedapada’ was situated at the bank of river Varadā and was Capital of Śirṅharāja.

The Text :

The text starts with felicitations to Dhanwantari’s words regarding drugs.

¹ A photostat copy of this edition was obtained from the India Office Library, London, by the author.

Keśava has adopted a reverse method of describing the drugs in this Nighaṇṭu. The common practice was to describe the drug by its Rasa, Guna, Vipāka, Virya, and Prabhāva and decide its action on Doṣas and organs by inference with the help of these informations. In the present text the drugs have been arranged according to their effect on Doṣas and the Raṣa, Virya, Vipāka etc. have to be inferred on this basis. The drugs have been classified in eight groups as follows :

1. Vātaghna Varga
2. Pittaghna Varga
3. Kaphaghna Varga
4. Vāta-Pittaghna Varga
5. Kapha-Vātaghna Varga
6. Kapha-Pittaghna Varga
7. Doṣaghna Varga
8. Doṣala Varga

The author has taken decision in a peculiar manner on the points where the scholars differed from each other. Further he has gone deep into the subject and has described fifty seven types of drugs according to mode of effect on Doṣas. Further he adds that the properties of drugs are also found in their parts, types and products leaving, certainly, the exceptions. The object of this very short treatise is to make the vaidyas understand the effects of drugs easily and short in time.

The Commentary :

The title of the text is signified by the fact that as Siddhamantra by mere utterance enables a person to perceive the desired objects likewise by this text the drugs become clear to physicians in a very short time.

Hṛdayadīpaka :

The author of this work is Bopadeva or Vopadeva, son of Keśava and disciple of Dhaneśwara as mentioned in the concluding portion of the book. He was a resident of the place known as Vedapura situated on the bank of the river Varadā in Mahārāṣṭra which was the capital of a king named Sīmrhārāja. His teacher, Dhaneśwara or Dhaneśa was a vaidya who belonged to the same place. In one manuscript it is as Dhaneśwara Bhaṭṭa but in others it is only Dhaneśwara. In the Introductory verses of the Prakāśa commentary he mentions his parents as 'Ārogya' and 'Vaidyanātha, which may be for 'Lakṣmi' and 'Keśava'. This is supported by the introductory verse of the Hṛdayadīpaka where salutation has been offered to 'ṁrī Vaidyanātha' with epithets of 'Aja' and 'Akṣara' which again denote Keśava.

Bopadeva was attached to Hemādri the well-known author of the commentary, Āyurveda Rasayanā, on Aṣṭāṅga-hṛdaya as a friend and colleague. Hemādri was the chief Minister of Mahādeva (1260-1271) and later on of his successor Rāmacandra (1271-1309) of Devagiri. Bopadeva is said to be the Pandit to king Mahādeva, therefore, the date of Bopadeva is fixed accordingly as latter half of the century. He has written a book 'Harilīlā' on the advice of the Minister, Hemadri, and also his biography perhaps in the last phase of his life. The books 'Harilīlā' and 'Muktāphala' are said to be commented upon by Hemādri himself.

Bopadeva was an erudite scholar of Āyurveda, Vyākaraṇa, Sāhitya, Jyotiṣa and Dharmasāstra. He was a good poet as well as a good physician. His contributions are

important in various fields of knowledge. Perhaps he used his pen in the entire sphere of his scholarship. He himself has presented a list of his works in the concluding portion of his book 'Harilīlā'. According to this he wrote 10 books on Vyākaraṇa, 9 on Āyurveda, 1 on Jyotiṣa, 3 in Sāhitya and 3 on Bhāgawata. Thus the total number of his books comes to 26. Aufrecht¹ has given the following note about Bopadeva :

Bopadeva :

Son of Keśava, pupil of Dhaneśa. He was Pandit to Mahādeva, king of Devagiri. He is quoted in the Mādha-vīya Dhātuvṛtti.

1. Kavikalpadruma
2. Kāvya-kāmadhenu
3. Triṃśacchlokī Aśaucasaṅgraha
4. Dhātukoṣa and Dhātupāṭha (two first named works)
5. Paramahatṃsapriyā
6. Paraśurāmapratāṭikā (Śrāddhakāṇḍa)
7. Bhāgawatapurāṇa Dwādaśa-Skandhānukrama
8. Mahimnastawaṭikā
9. Mukṭāphala
10. Mugdhabodha
11. Rāma Vyākaraṇa (Perhaps the same work as the last)
12. Śataślokī and Śataślokī-Candrakalā

¹ Catalogus Catalogorum. Part-I (1962), p. 616.

Gurupada Hāldāra has enumerated the following works of Bopadeva in his book Vṛddhatrayī (Page 467).

1. Mugdhabodha Vyākaraṇa
2. Siddha Mantra Prakāśa
3. Śārngadhara Samhitā-Ṭikā
4. Śataślokī with commentary
5. Candrikā commentary on Hemādri's Śataślokī

13. Śārṅgdharasamhitā—Gūḍhārthadipikā
14. Siddhamantra—Prakāśa(Sometimes attributed to his father)
15. Harilīlā
16. Hṛdayadīpa Nighaṇṭu
17. Some anonymous treatise of his on drama is several times quoted in the Nirṇaya Sindhu, in Ācāra Mayūkha and once in Śrāddha Mayūkha
- 18 Vopadevaśataka Kāvya.

Object and plan of the work :

It seems that the Aṣṭāṅga-hṛdaya was the popular handbook of Āyurveda and as such explanatory commentaries as well as books on its various aspects were the demand of the day. Particularly the drugs always attracted the scholars as this was the most important instrument of therapeutics. This tradition was coming down since long. The present work is intended to explain the drugs mentioned in Swalpa Vāgbhāṭa or Aṣṭāṅga-hṛdaya as the author calls it a Nighaṇṭu to enlighten the subject matter of the Aṣṭāṅga-hṛdaya in the concluding portion of the work.

The subject matter of the work is well divided into eight Vargas (Chapters) namely :

1. Catuṣpāda Varga
2. Tripāda Varga

-
6. Hṛdayadīpa Nighaṇṭu
 7. Muktaṭphala
 8. Commentary on Mahimnastotra
 9. Harilīlā
 10. Kavikalpadruma
 11. Kāvya Kāmadhenu.

3. Dwipāda Varga
4. Ekapāda Varga
5. Dwināma Varga
6. Ekanāma Varga
7. Nānārtha Varga
8. Miśaraka Varga.

It follows the metrical style of Paryāya Ratnamālā of Mādhava rather than the alphabetical style of Viśwa-Prakāśa, Medinī etc.

In Miśraka Varga, the items other than drugs such as diet, Pañcakarma, other therapeutic measures etc. have been described.

Place of Hṛdayadīpakā in Nighaṇṭu literature :

The family of Bopadeva has a great contribution in the field of Nighaṇṭu literature to its credit. Bopadeva's father, Keśava, wrote a book 'Siddha Mantra' containing valuable informations on drugs. Bopadeva not only wrote a commentary called 'Prakāśa' on this work but also composed the present book on Nighaṇṭu. 12th Century is famous for great lexicographers like Medinī, Maheśwara, Hemacandra, Halāyudha etc. With this rich background it was but natural for Bopadeva to take up this work with success. This was the age of Bopadeva and Madanapāla who preceded Bhāva Miśra by two centuries. This it is a valuable link between the ancient and modern Nighaṇṭus utilising the rich accumulated knowledge in the then existing lexicons. Hṛdayadīpaka was a very popular Nighaṇṭu and there was no sign of decadence in its popularity even after appearance of Bhāva Prakāśa as is evident from the large number of MSS. available in various libraries located in different corners of

the country with the dates of transcription till 19th Century. In Saraswati Bhavan, Varanasi alone there are six MSS. of this work, four in Devanagari and two in Bengali script.

Somewhere, the name of this work appears as Hṛdaya-dīpaka Nighaṅṭu but actually it seems to be Hṛdayadīpaka only as appears from the beginning of the book (वक्ष्ये हृदयदीपकम्) and also from the Colophon in the end of each Varga (इति हृदयदीपके चतुष्पादवर्गः etc.) The word 'निघण्टु' ("वर्गैर्निघण्टुं संक्षिप्य" "चक्रे निघण्टुममलम्") only conveys the subject matter of the text and does not seem to be a part of the title of the book¹.

Āyurveda Mahodadhi (Suṣeṇa Vaidyaka) :

It is mainly a text of Dravyagūṇa containing description of dietary articles. Thus it is also known as 'Annapānavidhi. There is description of Piṇḍa Kharjūra and Suvarṇakadalī. Dhattūra has been used in aphrodisiac preparations. In one of the manuscripts there is 'siṅghaṇa cūrṇa' which clearly indicates its existence after the date of king Siṅghaṇa (1212-1247 A. D.). Suṣeṇa has been mentioned in Haṁsarāja-Nidāna and Langhana-Pathyanirṇaya of Dipacanda Vācaka. Its verses have also been quoted in Madanapāla Nighaṅṭu. In view of these facts, Suṣeṇa may be placed in 14th Cent. A. D.

Dāmodara, son of Viṣṇubhaṭṭa and resident of Vidarbha, has written a commentary known as Ārogyacintāmaṇi on this work.

Madanapāla Nighaṅṭu² (Madana Vinoda) :

This work is composed by king Madanapāla of the Tikā

¹ P. V. Sharma : The Hṛdayadīpaka of Bopadeva, J. R. I. M., Vol. 3, No. 2, 1969.

² (a) Pub. with Hindi com. (by Ram Prasad Sharma.), Gangā Viṣṇu Śrīkṛṣṇa Dās, Bombay, 1954.

vibodhaka'. Its author is Kaiyadeva, grandson of Padma-nābha and son of Śārṅga (sāraṅga?) belonging to Bharadwāja Gotra. As indicated in the introductory verses, Kaiyadeva also composed a dictionary of synonymous words known as Nāmaratnākara. This Nighaṅṭu was intended to describe the properties of the drugs mentioned in the nāmaratnākara.

Gode has fixed its date as before 1450 A. D. as it is quoted in Rāghavabhatt's commentary (1493 A. D.) on Lakṣmaṇa-deśikendra's Śāradā-Tilaka². It has mostly followed the Madanapāla Nighaṅṭu and as such it may be placed after that nearabout 1425 A. D.

The subject matter has been divided into 9 chapters as Oṣadhivarga, Dhātuvarga, Dhānyavarga, Dravavarga, Pakwānnavarga, Māmsavarga, Vihāravarga, Miśrakavarga and Nānārthavarga. Among notable drugs described are Kaṅṭakarañja, Babbūla, Sindūrī, Mārkaṇḍī, Balācatuṣṭaya etc. Bakāyana has been taken by 'Mahānimba. 'Śākhāmla' is a synonym of Amlavetasa which shows that today's market drug sold in the name of Amlavetasa was prevalent also at that time. Descriptions of drugs are similar to those in Bhāvaprakāśa and as such it may be presumed that this work was followed by Bhāvamiśra closely.

¹ The first part of the book was published in 1928. (Meharchand Laksmanadas, Lahore) with a critical commentary by Acarya Surendra Mohan.

² P. K. Gode : Kaiyadeva and a medical or Botanical Glossary ascribed to him, A. B. O. R. I., Vol. XIX (1938-39), pp. 188-190.

CHAPTER III MODERN PERIOD

Bhāva Prakāśa :

Bhāvamiśra is an important landmark in history of Indian Medicine as he stands at the junction of the medieval and modern periods which is the turning point for its future course and also because of the fact that it revived the style of Saṁhitās and contributed a good deal to various aspects of Āyurveda by adding new ideas and drugs. His most popular work is Bhāva-Prakāśa (a light on medical ideas and substances or a light by Bhava Miśra) which is the basis of the present study. This is the last work in so-called Laghu-Trayī (smaller triad) of Indian Medicine which includes Cakradatta (or Mādhava Nidāna) and Śārṅgadharā besides Bhava-Prakāśa.

The author has given clue about his identity in the introductory verse of the book. He writes that this book (light) is being produced by Bhāvamiśra by compiling the ideas from his predecessors to dispel darkness of ignorance in medicine. From colophon it appears that he was the son of Śrī Laṭakana (Miśra). By the surname and direct reference of 'Vipra' and 'Bhūmideva' he seems to be a Brāhmaṇa.

He has not mentioned his native place anywhere. Some scholars say that he belonged to the region of Varanasi or Kanyakubja but they have not given any reason for the same. He has mentioned Viṣṇupada by the word 'Śrīpati-

'pada' which indicates his connection with Gayā which is the seat of the famous temple of Viṣṇupada. He has also used regional names prevalent in Magadh. He has also described types of Banana such Swarna, Champaka etc. which are commonly grown at Hajipur in Bihar.

In the field of Materia Medica Bhāva Miśra has made valuable contributions. Although he followed his predecessors in many respects he was able to adopt several new drugs which were introduced in medical practice at that time by contact of foreigners, Muslims as well as Europeans. His predecessor, Madanapāla had made his path easier by including in his Materia Medica drugs like Pārasika Yavāni, various products of opium, Bhangā, Jayapāla, Ākārakarabha Kharbuja, Piṇḍakharjūra, Sulemāni, Amṛtphala (Nāsapati) etc. which were introduced in this country by Muslims.

While describing Vacā he has mentioned Pārasika Vacā (Bāla Vaca) and Dwīpāntra Vacā (Copacini). The latter drug is indicated in Phiranga Roga (syphilis), a venereal disease introduced in this country by Portuguese and other Europeans.

Apart from this the following drugs described by him are noteworthy :

1. Pudīnā—A plant having strong smell
2. Chohārā—A type of Kharjūra
3. Dārusitā (Dālacini)
4. Mārkaṇḍikā (Senna ?)
5. Sauvīra (A type of Badara fruit)
6. Kalambaka
7. Candrasūra
8. Kulañjana (Mahābhari vacā)
9. Āmragandhi Haridrā

10. Araṇya Haridrā
11. Cukra
12. Latā Kastūrī
13. Gandha Kokilā
14. Gandha Mālati
15. Cillaka
16. Taṅkāri
17. Carmakārāluḥka
18. Elāyaka
19. Āmrāvarta
20. Makhāna
21. Kumudabīja
22. Cīnāka
23. Ciciṇḍā
24. Āluḥka
25. Garjara
26. Khasa Taila
27. Sarjarasa Taila

Some of the peculiarities of description are as follows :

1. Puṣkaramūla has been said as a variety of Kuṣṭha. Actually they are different plants.

2. While describing Swarṇakṣīri, its root has been termed as Coka.

3. Karpūra has been said to be of two types. Pakwa and Apakwa.

4. Kastūrī has been described as of three types according to place of its origin such as Kāmarupa (Assam), Nepal and Kashmir.

5. Tagara has been said to be of two types Tagara and Piṇḍa Tagara.

6. Kuñkuma has been described as of three varieties according to place of origin such as Kāśmīra, Bāhlika (Balkha) and Pāraśika (Iran). Kuñkuma grown in Kashmir is regarded as the best one.

7. Aśmantaka has been mentioned as one of the synonyms of Kāñcanāra.

8. Karañja is said to be of three types, Naktamāla, Pūtikarañja and Karañji. The second and third ones have been termed as Prakīrya and Udaķīrya.

9. Kukkuradru of Madanapāla has been described as Kakundara.

10. Gajapippali has been described as fruit of Cavikā.

11. Vṛddhadāraka has been described as chagalāntrī. Madanapāla has mentioned it as of two types Mahāśyāmā and chagalāntrī.

12. Dugdhapāśāna has been termed as Gaura Khaṭi.

13. In context of groups of drugs, Aṣṭavarga has been described in detail giving the source of all the drugs coming under the group. It is also said that these drugs are very rare and difficult to be obtained even by kings and as such their substitutes have been prescribed.

A group of four seeds named as Caturbīja has been described.

14. Dhānya (cereals) has been said to be of five kinds (Dhānya-Pañcaka) such as Śālidhānya, Brihidhānya, Śūkadhānya, Śimbīdhānya and Kṣudradhānya.

In minerals, gold has been mentioned of five types and silver as of three types. In metals, zinc (Yaśada) has been described which is conspicuously absent even in Rasaratna-Samuccaya. Various sources of pearl have also been men-

tioned. There are mentioned several varieties of Banana as Māṇḍikya, Martya, Amṛta, Campaka etc. These are grown at Hajipur (Muzaffarpur) in Bihar state.

15. Due to non-availability and difficulty in procuring the drugs, substitutes have been prescribed and a long list of the same (Pratinidhi dravyas) is found in the text. But at the same time it is mentioned that the main drug in the preparation can not be substituted.¹

16. Criteria and tests for genuine drugs have been prescribed.² Soil has been described as of four types Brāhma (white), Kṣātra (red), Vaiśya (yellow) and Śūdra (black) in contrast with the five types according to Pañca Mahābhūta described by Suśruta. It is also indicated that the drugs growing in these soils may be used in people belonging to respective Varna³. The plant kingdom has been divided in five groups—Vanaspati, Vānaspatya, Kśupa, Vallī and Oṣadhi⁴. These descriptions are similar to those in Rāja Nighaṇṭu.

17. The parts of the plants used in medicine are mentioned with examples⁵.

18. The basic concepts of Dravyaguna have been very clearly put up in one verse⁶.

19. The definition of terms like Dīpana, Pācana etc. been given according to Śārṅgadhara (1. 6. 213–237).

¹ 1. 6. 138–167.

² 1. 6. 111–120.

³ 1. 5. 115.

⁴ 1. 5. 122.

⁵ 1. 6. 101–102.

⁶ 1. 6. 196.

C. Medicine :

Surprisingly enough, Dravya, one of the four components of Cikitsā has been taken as wealth instead of drug which shows that wealth was an important consideration in medical profession¹.

He has very closely followed the Śārṅgadhara Saṁhitā which is said to be of 13th Cent. A. D. In Nighaṅṭu portion he has followed the Madanapāla Nighaṅṭu (1374 A. D.) particularly in relation to the drugs introduced during the medieval period such as opium, Bhangā, Pārasika Yavānī etc. As regards the lower limit, Bhāva Prakāśa has been quoted by Yogaratnākara (late 17th Cent. A. D.) and Trimalla Bhaṭṭa in Bṛhad Yoga Taraṅgiṇī which is placed near about 1650 A.D. Lolimbarāja (early 17th Cent. A.D.) has also followed Bhāva Prakāśa.

Harṣakīrti (17th Cent. A. D.²) in his Yogacintāmaṇi has borrowed Rativallabha Pūga Pāka, Kāmeśwara Modaka and other preparations from Bhāva Prakāśa. This work is definitely later than Bhāva Prakāśa as Rasa-Karpūra along-with mercury ointment has been prescribed for syphilitic hard chancre termed as 'Candrikā' as in Yogaratnākara. The word 'Nāsūra' has been used for sinus³.

The most important point among internal evidences is the description of Phiraṅga Roga (Syphilis) alongwith its treatment with Rasa-Karpūra and other medicines. This disease was introduced in India by the contact of Portuguese and other European people near about 15th Cent. A. D. Although Rasa-Karpūra has been described in Rasa-Prakāśa

¹ 1. 6. 88.

² For the date of Harṣakīrti, see introduction to Sāradyākhyā Nāmamālā of Harṣakīrti, Poona, 1951.

³ Nighaṅṭu Phala, 127

Sudhākara the detailed description of the disease apart from Upadamśa and its treatment with Rasa-Karpūra is found in Bhāva Prakāśa for the first time. Copacīnī has also been indicated in this disease.

The author has used so many times Paścima deśa, Paśchād deśa and Paradwīpa. He has also mentioned the word 'Mudgal' for Mughals. This also indicates that he was at the time of Mughals. The words 'Mleccha' and 'Yavana' are also used perhaps for Muslims.

Jolly says that there is a manuscript of Bhāva Prakāśa in Tubingen dated 1558 A. D. But on examining it closely it does not come for help. The earliest manuscript of the work is in Śrī Raṇavīra Research Library, Jammu which is dated Sam. 1722 (1665 A. D.)

Looking to all these facts, Bhāva Mīśra may be placed between 15th and 17th Cent. A. D. e. g. 16th Cent. A. D.

Other Works.

Aufrecht has mentioned Guṇaratnamālā as one of his works apart from Bhāva Prakāśa. While commenting the author has quoted once a passage from the former work (2. 24. 2). Thus it seems that Guṇaratnamālā was composed by him earlier than Bhāva Prakāśa.¹

Bhāva Mīśra is an important landmark in History of Indian Medicine. He is the last author in Laghu-trayī of Ayurveda and the first one in the modern age. His date is 16th Cent. A. D. He occupies the same place in Indian

¹ Several Commentaries have been written on Bhāva Prakāśa Nighaṇṭu. Among which the two are important ones; one by Vishwanath Dwivedi (Motilal Banarasidass, 1941) and the other by Krishna Chandra Chunekar (Chowkhamba, 4th ed; 1969).

Medicine as Bhaṭṭoji Dīkṣita in Samskrit Grammer and Paṇḍitarāja Jagannātha in Poetics, all of them belonging to nearly the same period.¹ His Nighaṇṭu is still the most popular text-book of Dravyaguṇa.

*Rāja Nighaṇṭu*² :

It is also known as 'Nighaṇṭurāja' or 'Abhidhāna-cūḍāmaṇi'. Its author is Narahari Paṇḍita, son of Īśwarasūri and resident of Kashmir. Narahari was an erudite scholar of all branches of Samskrit learning and was also well versed in regional languages of Karnataka, Maharashtra, Andhra etc.

This work was composed after going through the previous Nighaṇṭus and koṣas like Dhanwantari, Madanapāla, Halāyudha, Viśvaprakāśa, Amarakoṣa, Trikaṇḍaśeṣa, Rājakoṣa etc. particularly it is based on the Dhanwantari Nighaṇṭu. As it has mentioned Madanapāla, its date must be after 14th Cent. A. D. as regards its relation with the Bhāvaprakāśa Nighaṇṭu, it seems to be posterior to that because it has described drugs like Karpūra taila, Taila Pipīlikā, Kālāñjana, Jhaṇḍu, Sarvakṣāra which are absent in the Bhāvaprakāśa Nighaṇṭu. Moreover, Rāja Nighaṇṭu has mentioned Kulañjana explicitly while it is as Mahābhari Vacā in the Bhāva Prakāśa. The Dwīpāntara Vacā (Copacini) of Bhāvaprakāśa has been described probably in the name of Himāvalī by Rājanighaṇṭu. In view of these facts, the Rājanighaṇṭu may be placed in the 17th Cent. A. D, after the Bhāva Prakāśa. The identical verse

¹ P. V. Sharma : Bhāva Miśra—A Landmark in History of Indian Medicine, J. R. I. M., Vol. VII, No. 1, 1972.

² Pub. Calcutta, 1933 (2nd ed.); Anandashram, Poona, 1925 (with Dhanwantari Nighaṇṭu).

found in both the texts is probably borrowed by Rājanighaṇṭu from Bhāva Prakāśa. (1. 5. 95).

The subject matter has been divided in 23 chapters. Among noteworthy drugs described are Liṅginī, Somavallī, Kaivartikā, Kaṭvī, Amṛtasravā, Dhūmrpatrā, Rudantī, Hastiśuṇḍī, Dugdhaphenī, Māyāphala, Kāraskara etc. The notable contribution of Rājanighaṇṭu is that it not only included Dravyaguna in Aṣṭāṅgas of Ayurveda but gave it the first place.

*Vaidyāwataṁsa*¹ :

This is a short treatise on Nighaṇṭu by Lolimbarāja, the well-known author of the Vaidyajīwanam. It contains description of dietary articles in seven chapters and 57 verses in all.

The date of Lolimbaraja is the first quarter of the 17th Cent. A. D.

*Dravyagūṇa Śataka*² :

The work on Materia Medica in one hundred verses entitled Śataślokī, Dravyagūṇa-Śataślokī or Dravyagūṇa-Śataka of Trimalla Bhaṭṭa is an important work. It contains description of properties and uses of the substances coming under the group of food (Āhāra-varga). In Ayurveda substances used in treatment are divided in two broad groups—auśadha (drugs) and āhāra (food). They are different in the respect that the former has got predominance of vīrya while the latter is predominant in rasa. Like

¹ Pub. with Hindi commentary (by Brahmanand Tripathi) Motilal Banarasidass, Varanasi, 1967.

² Pub. with Hindi Commentary (by Śāliagrām Vaiśya), Khemaraj Sri Krishnadas, Bombay, 1896.

medicinal substances or drugs the food materials, preparations and other components have received due attention of the scholars and a distinct section of literature has developed in this branch. Perhaps the first available work coming under this group is the *Dravyaguṇa-Saṅgraha* of Cakrapāṇidatta (A.D.1060). The present work follows this tradition and comes under this group. Apart from the content, the Peculiar style has drawn attention of the scholars. There were physician scholars equipped with poetic genius and qualities who composed their works in a distinct style having literary beauty and grace. Thus these works do not contain only the author's skill in medicine but also show their poetic abilities and are specimens of good literary work. This has also led to development of a distinct class of literature in Ayurveda under which notable are Lolimbarāja's *Vaidyajīwana*, Mevā Ram's *Vaidyakaustubha* including the present work.

CONTENTS

The work starts with the verse of salutation to Lord Śiva along with Girijā and Gaṇeśa and ends with the same to Pārvatī. Apart from the above two verses for maṅgalācaraṇa, there are ninety-nine verses devoted exclusively to the subject, thus the total number of verses coming to one hundred and one. In the initial verse after maṅgalācaraṇa the six rasas along with their action on doṣas have been described. Thereafter starts the proper subject matter which has been divided into the following groups (*vargas*) :

1. Jala-varga (water)
2. Dugdha-varga (milk and its products)
3. Dhānya-varga (cereals)
4. Māmsa-varga (meat)

5. Śāka-varga (vegetables)
6. Īkṣu-madhu-varga (sugar and honey)
7. Taila-varga (oils)
8. Phala-varga (fruits)
9. Śuṅṭhyādi-varga (spices)
10. Kṛtāna varga (food preparations)
11. Sandhāna varga (fermented liquors)
12. Madya varga (alcoholic beverages)
13. Abhyaṅgādi varga (massage and bath)
14. Tāmbūlādi varga (betel and its adjuvants)
15. Suvarṇādi varga (metals and mercury)

It is clear that the maximum number of verses are for food preparations and the minimum for liquors and massage-bath. Pārada (mercury) has been described in the last verse under the suvarṇādi varga alongwith other metals such as suvarṇa (gold), rūpya (silver), tāmra (copper), vaṅga (tin), abhraka (mica) and loha (iron). Conspicuously yaśada (zinc) and nāga (lead) are absent. In jalavarga various types of water coming from different sources have been described. Similarly in dugdha-varga milk and its various products like curd, butter, butter-milk, ghee have been described elaborately. Not only the general properties of milk have been given but also minute variations in properties due to variable factors have been noted such as milk of different species of animals like cow, buffalo and she-goat*; fresh warm, cold, boiled hot and cold and unboiled milk taken at different times—forenoon, noon, afternoon and night.

* No other animals except these three have been mentioned which shows the popularity of the milk of these animals.

Besides some new food preparations in Kṛtānna varga, the author has included lūkikā, śami-śimbī, karīra and phoga under śāka-varga and añjīra, amṛtaphala and daśāṅgula under phala varga. Most of the things he has borrowed from his predecessors particularly Madanpāla.

Author, his date and works

In this work there is no information about the author except that he was a poet too and Śiva and Pārvatī were his favourite God and Goddess. His other work commonly known as Yogatarāṅgiṇī comes to our rescue with valuable informations. In the introductory portion of the text he says that Siṅganna Bhaṭṭa alias Āravella, a Tailanga Brāhmaṇa belonging to Āpastamba Śākhā, born at Koḍapalli but now residing at Kāśī, was grand-father and Vallabha, father of the author. Trimalla had two younger brothers, Rāma and Gopa, and a son, Śaṅkara Bhaṭṭa the author of Rasapradīpa. Trimalla Bhaṭṭa was a scholar of ancient Ayurvedic texts having acquired knowledge of the tradition from a guru and also attained experience in the profession.

The author has quoted the verse regarding 'Kāsaghni Guṭikā' from Vaidyajīvana of Lolimbarāja. The date of Lolimbarāja has been fixed as A. D. 1608 by Jolly. Some scholars place him in A. D. 1633. On the other side, the author has been quoted by Yogaratnākara. The date of Yogaratnākara has been fixed in the end of 17th century A. D. one of the MSS. of the work at Ānandāśrama, Poona, is dated A. D. 1746 and as such it must be before that. Thus Trimalla may be placed near about A. D. 1650 a century after Bhāva Miśra and between Lolimbarāja, and Yogaratnākara. This is justified by the fact that one of the MSS. of Dravyaguṇa Śataśloki at Baroda is dated

Samvat 1725 (A. D. 1665). In a short time the work became popular as is evident from the MSS. of the work found in almost all the parts of the country from Jammu to Madras and Banaras to Baroda.

The author has followed Bhāva Prakāśa. The diagnosis and treatment of phiraṅga roga popularised by Bhāva Miśra was followed by Trimalla who has quoted Rasakarpūra originally found in Bauddha Sarvasva. There was frequent exchange of scholars from foreign countries at the time of the author. *Kulañjana* was introduced by Bhāva Miśra by the name of 'Mahābharī vacā' which has been recommended as substitute of vacā by Trimallā. The famous verse regarding '*Ṛtu-Haritaki*' of Bhāva Prakāśa has been borrowed by Trimalla. Further, the drugs like ahiphena, mājūphala, mastakī, bola, etc., have been used abundantly.

Among his other works Aufrecht has mentioned the following ones :

1. Yogatarāṅgiṇī
2. Vṛtta māṅikyamālā
3. Vaidya candrodaya

Rasadarpaṇa and a commentary on Sukhalatā's *Śataśloka* are also said as his works.

Thus Trimalla Bhaṭṭa advanced the tradition of Bhāva Miśra and Lolimbarāja together because of the rare combination of sound scholarship, professional ability and poetic genius in him.

There are several commentaries on this work. Kṛṣṇadatta, son of Śivadatta Miśra (Author of Śivakoṣa) has written Dravyadīpikā commentary in Sanskrit.

*Śivakoṣa*¹ :

This a work of Śivadatta Miśra based on synonymous style. Śivadatta Miśra was the son of Caturbhujā of the Karpūriya (Kapūriyā) family who himself was a great scholar of Ayurveda and other branches of Samskrit learning. Śivadatta acquired his knowledge in Ayurveda from his father which is mentioned in his several works. Caturbhujā himself was the author of the Rasakalpadruma. Some scholars assign a commentary on Rasahr̥daya to Caturbhujā but this seems to be a different person being Khandelwal Brahman of Kural family.²

Śivadatta Miśra was a resident of Kashi and his name is included in the list of Paṇḍitas of Kashi who eulogised Kavīndrācārya Saraswati in 17th Cent. A. D. the period of Śivadatta Miśra has been fixed as 1625-1700 A. D.³. the date of completion of the Śivakoṣa has been mentioned by the author himself as 1677 A. D.

The conspicuous thing is that the author himself has written a commentary known as 'Śiva-Prakāśa' on this work. The commentary is valuable from the fact that a large galaxy of previous authors and commentators have been quoted in the same which, on one hand, shows the extensive knowledge of the commentator and, on the other hand, throws light on the previous literature.

Samjñā Samuccaya is also one of his works a manuscript of which is dated 1719 A. D. Śivadatta Miśra's

¹ R. G. Harshe (ed.) : Deccan College, Poona, 1952.

² T. G. Kale : Introduction, Rasa-Hr̥dayatantra, Motilal Banarasi-Dass, 1927.

³ P. K. Gode : Karpūriya Śivadatta and his Medical Treatises, Poona Orientalist, Vol. VII, Nos. 1-2.

son, Kṛṣṇadatta Miśra was also a good scholar of Ayurveda and Dravyaguna who wrote a commentary known as 'Dravyadīpikā' on the Dravyaguṇa-Śataka by Trimalla Bhaṭṭa. He has also quoted a number of authors in his commentary.

*Rājavallabha Nighaṅṭu*¹ :

This Nighaṅṭu is composed by Rājavallabha Vaidya and redacted by Nārāyaṇa Dāsa. The date of the work is 18th Cent. A. D.². The text deals with dietary articles and is divided in six chapters. The work is published (Bombay, Sam. 1952, 1968).

Nighaṅṭu Ratnākara :

This is a voluminous work composed by Viṣṇu Vāsudeva Godbole and published in 1807 (Nirnayasaḡar, Bombay). Later it was published in 1936 duly edited by Kṛṣṇa Shastri Navare with Marathi translation. It contains many modern drugs like Amaruda (Guava), Anjira (Fig), Kājūtaka (Cashew), Tamākhu (Tobacco), Sītāphala (Custard apple) etc. Its Hindi translation by Ravidatta Vaidya was published by Nawal Kishore Press, Lucknow (2nd ed., 1892).

Nighaṅṭu Saṁgraha :

Its author is Raghunāthji Indrajī alias Kato Bhaṭṭa. He was grandson of Murāri, a resident of Porbandar (Gujeat), second son of Indrajī who shifted to Junagadh and elder brother of wellknown Archaeologist, Bhagwānlāl Indrajī. He belonged to Prasnorā Nāḡar Brāhman family.

¹ Pub. with com. (by Śāligrām Vaiśya), Venkateswara, press, Bombay, 1895.

² U. C. Gupta : Introduction, Vaidyaka Śabda Sindhu.

The work was completed on 19th March 1893. It contains description of 607 drugs among which 578 are plants. Several new drugs have been incorporated in the text. Now the book is not available.

Śāligrāma Nighaṇṭu bhūṣaṇa :

Commonly known as Śāligrāma Nighaṇṭu is combined portion of Vols. 7 & 8 of the Br̥h̥nighaṇṭu Ratnākara published by Khemraja Śrikr̥ṣṇadass, Bombay. Its author is Lālā Śāligrāma Vaiśya, son of Anandarūpa (Khusāl Rām) of Moradabad (U. P.)

The work was completed in 1896 A. D. The text is divided in two sections. First section contains 23 chapters and the second one 2 chapters. There is also supplement in the end. Many modern drugs have been included in the text.

A number of works have been at the credit of Lālā Śāligrāma among which Śāligramauśadha Śabdāsāgara' (Khemaraj Shrikr̥ṣṇadas, Bombay, 1925) is important from our point of view.

Vanauśadhi Guṇādarśa :

This important work in Marathi by Śaṅkarādāji Shastri Pade was published in seven volumes (3rd ed., 1909-13 A. D.). This may be taken as the last Nighaṇṭu of the 19th Century which showed the path to the coming generation.

CHAPTER IV
20th CENTURY

Vanaśadhi Darpaṇa :

Its author is Kavirāj Birajā Caraṇa Gupta, a disciple of Kavirāj Vijaya Ratna Sen, the well-renowned Vaidya of Calcutta. Gupta was patronised by the King of Cooch Bihar and the work was published in two volumes under his patronage in 1908-9. Foreword is written by Kaviraj Vijaya Ratna Sen. It has given description of many new substances like Ananas, Isafgol, Coffee, Pāpaya, Red pepper etc. In introduction the author has given valuable information about the literature of Ayurveda particularly Nighaṇṭus.

Vanaśpati Śāstra :

It is actually description of the flora of the Barda forest of Gujarat which came out in 1910. Its author Jaikrishna Indrajī Thākar, was a born genius in this field who rose from a scrap to the enviable position of eminence whose help had become inevitable even for the foreigner botanists. Stalwarts like Kirtikar and Bapalal acquired much from his valuable contact. Later on in 1926 he published flora of Kutch region.

Nighaṇṭu Ādarśa :

This was originally published in Gujarati in two volumes in 1928 (Revised 2nd ed. 1966). First volume of Hindi edition is published from Chowkhamba, Varanasi (1968).

Its author is Vaidya Bāpālāji (b. 17-9-1896) who laboured hard to clear up the doubts regarding identity of Ayurvedic plants and drugs. He has given all the relevant material from the Ayurvedic texts as well as modern medical and botanical works. He also ransacked other branches of learning in search of the material regarding plants and during this search he published 'Plants in Samskrit literature' (1953) after surveying a number of literary works. His other important works are 'Plants in Vṛddha-trayī' (1931), Flora of Gujarat, Dravyaguṇa Śāstra' etc. At the age of eighty he is still working with the same zeal and enthusiasm. His recent work 'Study on Caraka' has been published by Oriental Research Institute, Baroda (1973).

In solving the problems of Controversial drugs his contributions are significant. He was Chairman of the Controversial drugs subcommittee (Ayurvedic Pharmacopoea Committee) Govt. of India. His latest views are embodied in the article 'Controversial Drugs in Indian Medicine' being published serially in Journal of Research in Indian Medicine (C. C. R. I. M. & H.).

Rūpa Nighaṇṭu :

Its author Rūpalal Vaiśya (b. 1871), resident of district Chapra in Bihar was born genius in this field. Although by profession he was a clerk in the Railways for a long time posted at Benaras (now Varanasi), he devoted all his time in studying, describing and painting the plants. He ran his 'Buti Pracaraka Karyalaya' at Englishia line Mohalla near Varanasi Railway station. He was also assistant editor of the Magazine 'Būṭidarpaṇa' published from

Lahore. His first publication 'Sandigdha būṭi citrāvalī' (Vol. I) came out from this office (1927). It contains description of some plants with photographs. Rūpa Nighaṇṭu was published by Nagari Pracarini Sabha, Kashi (1934) and his other work 'Abhinava būṭi darpaṇa' came out from Chowkhamba, Varanasi in two volumes (1940).

Sandigdha Nirṇaya (Vanaśadha Śāstra) :

The work is composed by Pt. Bhagirath Swami who apart from academic scholarship travelled far and wide in search of medicinal plants. He has given description and critical discussion of plants alongwith photographs. The work was published from Calcutta (1936). He has also some other works, Ātmasarvaswa, Laghu Ayurveda Vijñāna, Sidhaśadhamaṇimālā, to his credit.

Swamiji was born in 1876 in a village of Jaipur district (Rajasthan), studied at Kanpur and worked at Calcutta. His father was Hanuman.

Vanaśadhi Candrodaya :

A voluminous work in 10 volumes contained description of plants arranged alphabetically. This is composed by Candrarāja Bhaṇḍārī and published from Bhanpura, Indore (1938; 2nd ed. 1945-6).

Dravyaguṇa Vijñānam :

In the fifth decade of this century Ācārya Yādavajī Trikamji of Bombay composed this valuable work which proved to be a developing link between the past and future works. The work is published in two volumes (Vol. I- Baidyanath Ayurveda Bhavan, 3rd ed. 1953; Vol. II, Nirnayasar, Bombay, 2nd ed., 1947-50). He followed

the arrangement of botanical families and included some modern drugs like digitalis.

Acharya Yadavaji was born in 1881 at Porbandar (Gujarat), His father was Vaidya Trikamji Moradhanji who later shifted to Bombay. Yadavaji was educated at Porbandar and Bombay and learnt several languages including Urdu and Bengali. In spite of his active engagement in medical profession, he always devoted his spare time regularly in academic pursuits. He edited a large number of ancient texts and made them available to the Ayurvedic world. He was more than once President of the All India Ayurvedic Congress, Member of the well-known Chopra and Pandit Committees and First Principal of the Ayurvedic College, Banaras Hindu University and Postgraduate Training Centre in Ayurveda at Jamnagar. He revived and initiated the old tradition of Symposia and Seminars in the form of 'Śāstra carcā Pariṣad'. He produced a number of scholars and writers in the field of Ayurveda by his sincere guidance and encouragement. He died in 1956 at Jamnagar.

Dravyagūṇa-Vijñāna :

This work in three volumes by the present author was published in 1955-56 by Chowkhamba Vidyabhavan, Varanasi. For the first time the basic concepts were critically discussed there and drugs were described scientifically according to their actions on different systems of the body. This new approach attracted the students and scholars alike and as such it soon became the only text of choice in the country and abroad. Third edition is coming out very soon. Vol. IV and V are also

planned to be added on Vedic plants and clinical phramacology respectively.

Auṣadhi Vijñāna Śāstra :

Kaviraj Vishwanath Dwivedi (b. 1910), the author of this book, is a well known authority on the subject. He was Professor & Head of the Deptt. of Dravyaguṇa at the Post-graduate Training Centre at Jamnagar for years. His views on Dravyaguna first became public in the form of a commentary on Bhāvaprakāśa Nighaṇṭu (Motilal Banarasi dass, 1941). Subsequently his other works came out as follows : Kriyātmaka Auṣadhiparicaya-Vijñāna (Chowkhamba, 1966). Ayurveda Kī Auṣadhiyān Aur Unakā Vargīkaraṇa (Jamnagar, 1966).

The present text is published by Shri Baidyanath Ayurveda Bhavan, Nagpur (1970). All these publications are valuable and interesting readings for the scholars.

Glossary of Vegetable Drugs in Bṛhatrayī :

The author of this work, Thakur Balwant Singh (b. 1-7-1903) has devoted his whole life in the study and search of plants. Although a student of Botany he acquired interest in Ayurvedic Medicinal plants by contact of his colleagues in the Ayurvedic College at Banaras Hindu University. He led excursions to different regions of the country and published several articles and books. His first book 'Vanauṣadhidarśikā' came out in 1947 followed by 'Prārambhika Udbhid Śāstra (Chowkhamba, 1949) and 'Bihar kī Vansapatiyān' (Baidyanath Ayurveda Bhavan, 1955). The achievements of his lifelong search and study are embodied in the present text (Chowkhamba, 1972). Dr. Krishna Chandra Chunekar (Lecturer in Dravyaguna, Institute of Medical

Sciences, Banaras Hindu University) has collaborated in this work.

Other notable authors and workers in this field are :

1. Puruṣottama Shastri — Āyurvedīya Oṣadhi Vijñāna. Hirlekar
2. P. V. Dhamanakar — Āyurvedīya Auṣadhi Śaṅkhaśodhana. (Nasik, 5th Ed. 1951).
3. Hīramanji Motiramji - - Sacitra Vanaspati Guṇādarśa Jangale Vol. I-II (Baghali, Maharashtra).
4. Gaṅgadhara Shastri — Āyurvedīya Auṣadhi Guṇadharmasāstra, Vol. I-IV (Ahmednagar).
5. Shankaradatta Gauḍa — Śaṅkara Nighaṇṭu (Jabalpur, 1935).
6. Datta Ram Chaube — Abhinava Nighaṇṭu.
7. Baldeva Prasad Mishra — Āyurveda Cintāmaṇi (Bombay, 1937).
8. Antubhai Vaidya — Vanaspati-Paricaya (Bombay, 1952).
9. Daljit Singh — Yūnāni Dravyaguṇā Vijñāna (1949). Yūnāni Dravyaguṇādarśa- Vol. I-II (Lucknow, 1972-74.)
10. Mahendar Kumar Shastri — Laghu Dravyaguṇādarśa-Sacitra (Bombay, 2nd ed., 1957).
11. Ramesh Bedi — A Large number of tracts on single drugs.

Home Remedies

There is a good deal of literature on home remedies which are used traditionally in villages. These books are known by the titles 'Būṭī Pracāra', Ṭoṭakā cikitsā', 'Auśadhi-Śataka', Gṛhadravycikitsā' etc. Vaidya Ramnath, Professor at Gurukul Kangri has published some good books. Some other names known in this field are Harinarayan Sharma, Ram Lagan Pandeya, Umedilal Vaiśya, Kedarnath Pathak, Gaṇapati Singh Verma, Ram Sanehi Dikshit and Amolchandra Shukla. Krishna Gopal Pharmacy (Ajmer) has also published some populr volumes on this topic. Pt. Candrashekhara Dhara Sharma (Champanan, Bihar) was well-known for his devotion to and publication on 'Gūlar' entitled 'Gūlara Guṇavikāsa' (Chowkhamba, 15th. ed., 1965). The latest book is 'Tulasi' from Pt. Brahmadata Sharma (Dabur, 1975).

Works by modern authors (Non-Vaidyas)

Valuable works have been published on Indian Medicinal plants by the scholars and Botanists interested in this field. The following are important ones :-

1. Wealth of India (Raw material) - Vol. I - IX
(C. S. I. R., Delhi.)
2. K. M. Nadkarni : Indian Materia Medica
(Bombay, 3rd. ed. 1954.)
3. Kalipada Biswas : Bhāratīya Vanauśadhi
(Calcutta 1950.)
4. R. N. Chopra : Indigenous Drugs of India
(Calcutta, 1958, 2nd. ed.)
5. Chopra, Badhwar and Ghosh : Poisonous Plants of
India (I. C. A. R., Delhi, 1949.)

6. Chopra, Nayar & Chopra : Glossary of Indian Medicinal Plants (C. S. I. R., Delhi, 1956.)
7. Chopra, Chopra & Verma : Supplement to the glossary of Indian Medicinal Plants (Delhi, 1969.)
8. Bhimacandra Chatterji : Economic Botany of India.
9. K. R. Kirtikar & B.D. Basu : Indian Medicinal Plants Vol. I - IV (Allahabad, 1918; 2nd ed. 1933.)
10. H. V. Savnur : A Handbook of Ayurvedic Materia Medica (Belgaon, 1950.)
11. K. C. Bose : Pharmacopoea Indica (1932.)
12. George Watt : Dictionary of Economic Products of India, (London, 1889-93, 1908, Rep. 1972.)
13. Moodeen Sheriff : Supplement to Pharmacopoea Medica.
14. Dymock : Pharmacographia Indica (Bombay, 1883; London 1889-93.)
15. Dymock : The Vegetable Materia Medica of Western India (Bombay, 1883.)
16. Roxburgh : Flora Indica (1832-1874.)
17. Ainslie : Materia Medica of Hindustan (Madras, 1813; 2nd ed. London, 1826).
18. Kanailal Dey : Indigenous Drugs of India (1896.)
19. R. N. Khowry : Materia Medica of India and their therapeutics.
20. U. C. Dutt : Materia Medica of the Hindus (2nd ed. 1922.)
21. Sakharam Arjun : Bombay Drugs (Bombay, 1879.)

Flora

Flora of India and its different regions have been published. 'Flora of British India' (Hooker) and Flora Indica (Roxburgh & Wallich) are important publications on Indian flora. Among regional Flora the works of Haines, Duthie, Kanjilal, Cook, Brandis, Maheswari etc. are well-known. Balwant Singh has published reports on the survey of Himalayan region and Bihar. Maya Ram Uniyal has prepared a report on the Himalayan plants and Ramesh Bedi has done informative work on plants of Bhutan.

Research Publications :

On establishment of the seperate departments of Pharmacology in Medical Colleges, Research work on Indian Medicinal Plants and drugs started in right earnest. Chopra, Mukerji, Bose and Gujral have done valuable work in investigating the plant material on modern scientific methods. In recent years, Dr. R. B. Arora has published important papers and Monographs. The following publications are also noteworthy.

1. K. Narayan Iyer et al. - Pharmacognosy of Indian Medicinal Plants Vol. I-IX (Trivendrum, 1951-66).
2. Mehra, Bhatnagar & Handa - Resarches in Pharmacognosy in India (Chandigarh, 1970)
3. Godbole, Pendse & Bedeker - Glossary of vegetable drugs in Vagbhata (Poona, 1966).
4. Kamat & Mahajan - Medicinal Plants in Dhanwantāriya Nighaṅṭu (Poona, 1972).

5. K. C. Chunekar : - Vānaspatika Anusandhāna
darśikā (Chowkhamba, 1969)

Ayurvedic Journals like Dhanwantari, Sacitra Ayurveda etc. have published special numbers on Medicinal Plants which contain relevant material.

Other Accessory Material

A. Commentaries :

The commentaries on ancient and Medieval Texts contain valuable information on drugs and their substitutes. Commentators tried to describe the drug by way of morphological characters and local names and they also mentioned the substitute if the drug was controversial. Dalhana, the commentator on Suśruta Samhita stands topmost in this respect. It will be an interesting study if the descriptions or explanations given by commentators are collected and analysed in case of each drug to arrive at a correct picture of its position in different periods.¹

B. Dravyagūṇa in Non-medical literature :

The material of Dravyagūṇa, as it is scattered, can be collected also from the non-Medical literature. Valuable

¹ The following papers may be seen :

P. V. Sharma and G. P. Sharma : Jejjata (9th Cent. A. D.) and his information about Indian Drugs, I. J. H. S., Vol. 7, No. 2, 1972.

Idem : Son's commentary on Father's work; I. J. R. I. M., Vol. VI, No. 3, 1971.

Idem : Son's commentary on Father's work II, J. R. I. M., Vol. II, No. 3, 1972.

G. P. Sharma & P. V. Sharma : Śivadāsa Sen-A scholar commentator on Indian Medicine of later medieval Period (15th Cent. A. D.), I. J. H. S., Vol. VI, No. 2, 1971.

informations regarding drugs are found in Vedic literature, Purānas, Smṛtis, Buddhist scripture, Jātakas, Jain scriptures, Great Epics (Ramayana and Mahābhārat) etc.¹

¹ Following Publications may be seen :

Bapalal : Samskrit Sāhitya Men Vanasapati (Ahemdabad, 1953).

P. V. Sharma : Amarkoṣa kā Vanauṣadhi Varga, Sachitra Ayurveda. November, 1974.

Idem : Indian Medicine in the classical age (Chowkhamba, 1972).

B. C. Law : Ancient Indian Flora, Indian Culture, Vol. XV, Nos. 1-4 July 1948-June 1949.

Jyotirmitra : Medicinal Plants of the Ramayana of Vālmiki, Nagarjuna, Feb. 1969.

References

1. Caraka Saṁhitā — Su. 1-4, 13, 22, 25-27.
(with com. of Vi. 1, 8
Cakrapaṇi) Ch. 1-2, 30
Ka. 1-12
2. Suśruta Saṁhitā — Su. 1, 11, 36-46
(with com. of Dalhaṇa) 5 (49-54), 6. (14-17),
10, 13, 26, 27-31
Ka. 1
3. Aṣṭāṅga Saṁgraha, — Su. 1, 6-10, 12-18, 23, 25-33
Ka. 1-8
Ut. 40, 48-50
4. Aṣṭāṅga Hṛdaya — Su. 1, 5-6, 9-10,
(with com. of Ka. 1-2,
Aruna Datta and Ut. 35, 39-40
Hemadri)
5. Bhela Saṁhitā — Su. 12, 27, 28,
Vi. 1.
Ka. 1-9
6. Kaśyapa Saṁhitā — Su. 22,
Ka. 4-10
7. Śārṅgadhara — Pt I-Ch. 1-2, 4
Saṁhitā Pt II-Ch. 1-12
Pt III-Ch. 4, 8-11, 13
8. Bhāva Prakāśa—Miśra Varga, Nighaṇṭu
9. Dhanwantari Nighaṇṭu
10. Rāja Nighaṇṭu

11. Kaiyadeva Nighaṅṭu
12. Aṣṭāṅga Nighaṅṭu
13. Glossary of Vegetable Drugs in Bṛhatrayi—B. Singh
& K. C. Chuneekar.
14. Indigenous Drugs of India—R. N. Chopra.
15. Glossary of Indigenous Drugs—R. N. Chopra et al.
16. Indian Materia Medica—K. M. Nadkarni.
17. Indian Medicine in the Classical Age—P.V. Sharma.

Su.	=	Sūtra Sthāna
Vi.	=	Vimāna Sthāna
Ch.	=	Chikitsā Sthāna
Ka.	=	Kalpa Sthāna
Ut.	=	Uttara Sthāna

Appendix I

List of Drugs under the Mahākaṣāya groups of Caraka

- | | |
|------------------------------|----------------------------|
| (1) <i>Jīvanīya</i> | 8. Bhāradwāji |
| 1. Jīvaka ¹ | 9. Payasyā (Kṣīravīdārī) |
| 2. Rṣabhaka | 10. Rṣyagandhā (Atibalā) |
| 3. Medā | (3) <i>Lekhanīya</i> |
| 4. Mahāmedā | 1. Musta |
| 5. Kākoli | 2. Kuṣṭha |
| 6. Kṣīra Kākoli ² | 3. Haridrā |
| 7. Mudgaparṇi | 4. Dāru Haridrā |
| 8. Māṣaparṇi | 5. Vacā |
| 9. Jīvantī | 6. Ativiṣā |
| 10. Madhuka (Madhuyasṭi) | 7. Kaṭurohiṇi (Kaṭukā) |
| (2) <i>Bṛmhanīya</i> | 8. Citraka |
| 1. Kṣīriṇi | 9. Citrabilwa |
| 2. Rājakaṣavaka (Dugdhiḱā) | 10. Haimavatī |
| 3. Aśwagandhā | (4) <i>Bhedanīya</i> |
| 4. Kākoli | 1. Suvahā (Trivṛt) |
| 5. Kṣīrakākoli | 2. Arka |
| 6. Vāṭyāyani (Balā) | 3. Urubūka (Eraṇḁa) |
| 7. Bhadrādanī | 4. Agnimukhī (Lāṅgalī) |
| (Nāgabalā) | 5. Citrā (Dantī) |

¹ For botanical names of the plants see appendix III.

² These six alongwith Rḁdhi and Vṛddhi constitute a group known as Aṣṭavarga (A group of eight drugs). Bhāva Mīśra has recommended Vidārī, Śatāvartī, Aśwagandhā and Vārāhī as substitutes for each of the four pairs respectively. Jīvanīya gaṇa of the Bhāvaprakāśa consists of Aṣṭavarga and the last four drugs (7-10) of this group. It is not known why Caraka has left Rḁdhi and Vṛddhi here. May be due to limitation of number (10).

6. Citraka
 7. Cirabilwa
 8. Śaṅkhinī (Aparajitā)
 9. Śakulādani (Kaṭukā)
 10. Swarnaḥṣirīṇī
- (5) *Sandhānīya*
1. Madhuka (Madhuyaṣṭī)
 2. Madhuparṇī (Guḍūci)
 3. Pṛṣniparṇī
 4. Ambaṣṭhaki (Pāthā)
 5. Samaṅgā (Lajjālu)
 6. Mocarasa
(Śālmali-Niryāsa)
 7. Dhātaki
 8. Lodhra
 9. Priyaṅgu
 10. Kaṭphala
- (6) *Dīpanīya*
1. Pippali
 2. Pippalimūla
 3. Cavya
 4. Citraka
 5. Śṛṅgavera (Śuṅṭhī)
 6. Amlavetasa
 7. Marica
 8. Ajamodā
 9. Bhallātakāsthi
 10. Hiṅgu Niryāsa
- (7) *Balya*
1. Aindri (?)
 2. Rṣabhi (Kapikacchu)
 3. Atirasā (Śatāvārī)
 4. Rṣyaproktā (?)
 5. Payasyā (Kṣīravidārī)
 6. Aśwagandhā
 7. Sthirā (Śālaparṇī)
 8. Rohiṇī (?)
 9. Balā
 10. Atibalā
- (8) *Varṇya*
1. Candana
 2. Tunga (Punnāga)
 3. Padmaka
 4. Uśira
 5. Madhuka (Madhuyaṣṭī)
 6. Mañjiṣṭhā
 7. Sārivā
 8. Payasyā (Kṣīravidārī)
 9. Sitā (Dūrvā)
 10. Latā (Priyaṅgu)
- (9) *Kaṇṭhya*
1. Sārivā
 2. Ikṣumūla
 3. Madhuka (Madhuyaṣṭī)
 4. Pippali
 5. Drākṣā
 6. Vidārī
 7. Kaiṭarya (Kaṭphala)
 8. Haṁspadī
 9. Bṛhatī
 10. Kaṇṭakārikā

(10) *Hṛdya*

1. Āmra
2. Āmrātaka
3. Lakuca
4. Karamarda
5. Vṛkṣāmla
6. Amlavetasa
7. Kuvala
8. Badara
9. Dāḍima
10. Mātuluṅga

(11) *Tṛptighna*

1. Nāgara (Śuṅṭhi)
2. Cavya
3. Citraka
4. Viḍaṅga
5. Mūrvā
6. Guḍūci
7. Vacā
8. Musta
9. Pippali
10. Paṭola

(12) *Arśoghna*

1. Kuṭaja
2. Bilwa
3. Citraka
4. Nāgara (Śuṅṭhi)
5. Ativiṣā
6. Abhayā (Haritaki)
7. Dhanvayāsaka
8. Dāru Haridrā

9. Vacā

10. Cavya

(13) *Kuṣṭhaghna*

1. Khadira
2. Abhayā (Haritaki)
3. Āmalaka
4. Haridrā
5. Aruṣkara (Bhallātaka)
6. Saptaparṇa
7. Āragwadha
8. Karavīra
9. Viḍanga
10. Jāti (Patra)

(14) *Kaṇḍūghna*

1. Candana
2. Nalada (Uśīra)
3. Kṛtamāla (Āragwadha)
4. Naktamāla (Karañja)
5. Nimba
6. Kuṭaja
7. Sarṣapa
8. Madhuka (Madhuyasṭi)
9. Dāruharidrā
10. Musta

(15) *Krimighna*

1. Akṣīva (Śigru)
2. Marica
3. Gaṇḍīra (Kāṇḍīra)
4. Kebuka
5. Viḍaṅga
6. Nirguṇḍī

- | | |
|----------------------------|-----------------|
| 7. Kiñihī (Śweta śiriṣa) | 4. Musta |
| 8. Śwadamṣṭrā (Gokṣura) | 5. Mūrvā |
| 9. Vṛṣaparṇikā (?) | 6. Guḍūci |
| 10. Ākhuparṇikā | 7. Vatsakaphala |
| (Mūṣākarṇi) | (Indrayava) |

(16) *Viṣaghna*

1. Haridrā
2. Mañjiṣṭhā
3. Suvahā (Trivṛt)
4. Sūkṣma Elā
5. Pālinḍī (Kṛṣṇa Sārivā)
6. Candana
7. Kataka
8. Śiriṣa
9. Sindhuvāra
10. Sleşmātaka

8. Kirātatikta

9. Kaṭurohiṇī
10. Sārivā

(19) *Śukra-janana*

5. Pālinḍī (Kṛṣṇa Sārivā)
6. Candana
7. Kataka
8. Śiriṣa
9. Sindhuvāra
10. Sleşmātaka

1. Jīvaka
2. Rṣabhaka
3. Kākoli
4. Kṣīrakākoli
5. Mudgaparṇi
6. Māṣaparṇi
7. Medā

(17) *Stanya-janana*

1. Viraṇa (usīra)
2. Śāli
3. Ṣaṣṭika
4. Ikṣuvālikā (?)
5. Darbha
6. Kuśa
7. Kāśa
8. Gundra
9. Itkaṣa
10. Kattṛṇamūla

8. Vṛddharuhā (Śatāvārī)
9. Jaṭilā (Uccaṭā bheda)
10. Kulingā (Uccaṭā)

(20) *Śukra-sodhana*

(18) *Stanya-sodhana*

1. Pāṭhā
2. Mahauṣadha (Śuṅṭhī)
3. Suradāru (Devadāru)

1. Kuṣṭha
2. Elavāluka
3. Kaṭphala
4. Samudraphena
5. Kadambaniryāsa
6. Ikṣu
7. Kāṇḍekṣu (Ikṣu-bheda)
8. Ikṣuraka
9. Vasuka
10. Uśira

(21) *Snehopaga*

1. Mr̥dwikā (Drākṣā)
2. Madhuka (Madhuyasṭi)
3. Madhuparnī (Guḍūci)
4. Medā
5. Vidāri
6. Kākoli
7. Kṣīrakākoli
8. Jivaka
9. Jivanti
10. Śālaparnī

(22) *Swedopaga*

1. Śobhāñjanaka (Śigru)
2. Eraṇḍa
3. Arka
4. Vṛṣcīra (Varṣābhū)
5. Punarnavā
6. Yava
7. Tila
8. Kulattha
9. Māṣa
10. Badara

(23) *Vamanopaga*

1. Madhu
2. Madhuka (Madhuyasṭi)
3. Kovidāra
4. Karbudāra
5. Nīpa
6. Vidula (Hijjala)
7. Bimbī
8. Śaṇapuşpi
9. Sadāpuşpi (Arka)

10. Pratyakpuşpi

(Apāmārga)

(24) *Virecanopaga*

1. Drākṣā
2. Kāśmarya
3. Parūṣaka
4. Abhayā (Haritaki)
5. Āmalaka
6. Bibhitaka
7. Kuvala
8. Badara
9. Karkandhu
10. Pīlu

(25) *Āsthāpanopaga*

1. Trivṛt
2. Bilwa
3. Pippali
4. Kuṣṭha
5. Sarṣapa
6. Vacā
7. Vatsakaphala

(Indrayava)

8. Śatapuşpā

9. Madhuka (Madhuyasṭi)
10. Madanaphala

(26) *Anuvāsanoopaga*

1. Rāsnā
2. Suradāru (Devadāru)
3. Bilwa
4. Madanaphala
5. Śatapuşpā

6. Vṛścīra (Varṣābhū)
 7. Punarnavā
 8. Swadamṣṭrā (Gokṣura)
 9. Agnimantha
 10. Śyonāka
- (27) Śirovirecanopaga
1. Jyotiṣmatī
 2. Kṣavaka
 3. Marica
 4. Pippali
 5. Viḍaṅga
 6. Śigru
 7. Sarṣapa
 8. Apāmārga tandula
 9. Śwetā (Aparājītā)
 10. Mahaśwetā
(Śweta śīriṣa)
- (28) Chardi-nigrahaṇa
1. Jambū Pallava
 2. Āmrāpallava
 3. Mātuluṅga
 4. Amla Badara
 5. Dāḍīma
 6. Yava
 7. Ṣaṣṭika
 8. Uśīra
 9. Mṛt
 10. Lājā
- (29) Trṣṇā-nigrahaṇa
1. Nāgara (Śuṅṭhī)
 2. Dhanvayāsaka
 3. Musta
 4. Parpaṭaka
 5. Candana
 6. Kirātatikta
 7. Gudūci
 8. Hribera
 9. Dhānyaka
 10. Paṭola
- (30) Hikkā-nigrahana
1. Śaṭī
 2. Puṣkaramūla
 3. Badarabīja
 4. Kaṅṭhakārikā
 5. Bṛhati
 6. Vṛkṣaruhā (Vandāka)
 7. Abhayā (Haritakī)
 8. Pippali
 9. Durālabhā
(Dhanvayāsa)
 10. Kuliraśṛṅgi
(Karakataśṛṅgi)
- (31) Purīṣa-saṅgrahaṇīya
1. Priyaṅgu
 2. Anantā (Sārivā)
 3. Āmrāsthi
 4. Kaṭwaṅga (Aralu)
 5. Lodhra
 6. Mocarasa
 7. Samaṅgā (Lajjālu)
 8. Dhātakīpuṣpa
 9. Padmā (Bhārṅgi)

10. Padma (Kamalā)
Keśara
- (32) *Purīṣa-virajānīya*
1. Jambū twak
 2. Śallakī twak
 3. Kacchurā
(Dhanvayāsa)
 4. Madhuka
(Madhuyasṭī)
 5. Śālmali
 6. Śrīveṣṭaka
(Sarala-niryāsa)
 7. Bhrṣṭamṛt
 8. Payasyā (Kṣīravidārī)
 9. Utpala
 10. Tila
- (33) *Mūtra-saṅgrahaṇīya*
1. Jambū
 2. Āmra
 3. Plakṣa
 4. Vaṭa
 5. Kapītana
 6. Udumbara
 7. Aśwattha
 8. Bhallātaka
 9. Aśmantaka
 10. Somavalka
(Kaṭṭhala)
- (34) *Mūtra-virajānīya*
1. Padma (Kamalā)
2. Nalinā
 3. Saugandhika
 4. Puṇḍarika
 5. Śatapatra
 6. Utpala
 7. Kumuda¹
 8. Madhuka
(Madhuyasṭī)
 9. Priyaṅgu
 10. Dhātakīpuṣpa
- (35) *Mūtra-virecanīya*
1. Vṛkṣādani (Vandāka)
 2. Śwadamṣṭrā (Gokṣura)
 3. Vasuka
 4. Vaśira (Apāmārga)
 5. Pāṣāṇabheda
 6. Darbha
 7. Kuśa
 8. Kāśa
 9. Gundra
 10. Itkaṭa
- (36) *Kāsa-hara*
1. Drākṣā
 2. Abhayā (Harītakī)
 3. Āmalaka
 4. Pippalī
 5. Duralabhā
(Dhanvayāsa)
 6. Śrṅgī (Karkāṭa Śrṅgī)

1 1-5 varieties of Kamala & 6-7 varieties of Kumuda.

7. Kaṇṭakārikā
 8. Vṛścira (Varṣābhū)
 9. Punarnavā
 10. Tāmalakī
(Bhūmyāmalakī)
- (37) *Śwāsa-hara*
1. Śaṭī
 2. Puṣkaramūla
 3. Amlavetasa
 4. Elā
 5. Hīngu
 6. Aguru
 7. Surasā (Tulasi)
 8. Tāmalakī
(Bhūmyāmalakī)
 9. Jivanti
 10. Caṇḍā
- (38) *Śwayathu-hara*
1. Pāṭalā
 2. Agnimantha
 3. Śyonāka
 4. Bilwa
 5. Kāśmarya
 6. Kaṇṭakārikā
 7. Bṛhatī
 8. Śālaparṇī
 9. Pṛśniparṇī
 10. Gokṣura
- (39) *Jwara-hara*
1. Sārivā
 2. Śarkarā
3. Pāthā
 4. Mañjiṣṭhā
 5. Drākṣā
 6. Pīlu
 7. Parūṣaka
 8. Abhayā (Haritaki)
 9. Āmalaka
 10. Bibhītaka
- (40) *Śrama-hara*
1. Drākṣā
 2. Kharjūra
 3. Priyāla
 4. Badara
 5. Dāḍima
 6. Phalgu
 7. Parūṣaka
 8. Ikṣu
 9. Yava
 10. Śaṣṭika
- (41) *Dāha-Praśamana*
1. Lājā
 2. Candana
 3. Kāśmaryaphala
 4. Madhuka
(Madhuyasṭī)
 5. Śarkarā
 6. Utpala (Nila)
 7. Uśīra
 8. Sārivā
 9. Guḍūci
 10. Hribera

(42) *Śīta-praśamana*

1. Tagara
2. Aguru
3. Dhānyaka
4. Śrīgavera (Śuṅṭhī)
5. Bhūtika (Rohiṣa)
6. Vacā
7. Kaṅṭhakāri
8. Agnimantha
9. Śyonāka
10. Pippali

(43) *Udarda-praśamana*

1. Tinduka
2. Priyāla
3. Badara
4. Khaḍira
5. Kadara
6. Arimeda
7. Saptaparṇa
8. Aśwakarṇa
9. Arjuna
10. Asana

(44) *Aṅgamarda-Praśamana*

1. Vidārigandhā
(Śālaparṇī)
2. Pṛśniparṇī
3. Bṛhati
4. Kaṅṭhakārikā
5. Eraṇḍa
6. Kākoli
7. Candana
8. Uśira

9. Elā

10. Madhuka
(Madhuyasṭi)

(45) *Śūla-prasamana*

1. Pippali
2. Pippalimūla
3. Cavya
4. Citraka
5. Śrīgavera (Śuṅṭhī)
6. Marica
7. Ajamodā
8. Ajagandhā (Barbarī)
9. Ajāji (Jiraka)
10. Gaṇḍira (Kāṇḍira)

(46) *Śoṇita-sthāpana*

1. Madhu
2. Madhuka
(Madhuyasṭi)
3. Rudhira (Kuṅkuma)
4. Mocarasa
5. Mṛtkapāla
6. Lodhra
7. Gairika
8. Priyaṅgu
9. Śarkarā
10. Lājā

(47) *Vedanā-sthāpana*

1. Śāla
2. Kaṭphala
3. Kadamba
4. Padmaka

5. Tumba (Alābu)
 6. Mocarasa
 7. Śirīṣa
 8. Vañjula (Jalavetasa)
 9. Elavāluka
 10. Aśoka
- (48) *Sañjñā-sthāpana*
1. Hiṅgu
 2. Kaiṭarya (Kaṭphala)
 3. Arimeda
 4. Vacā
 5. Coraka
 6. Vayaḥsthā (Brāhmī)
 7. Golomī (Bhūtakeśī)
 8. Jaṭilā (Jaṭāmāmsī)
 9. Palañkaṣā (Guggulu)
 10. Aśokarohiṇī (Kaṭukā)
- (49) *Prajā-sthāpana*
1. Aindri (?)
 2. Brāhmī
3. Śatavīryā (Śatāvārī)
 4. Sahasravīryā
(Śatāvārī-bheda)
 5. Amoghā (Lakṣmaṇā)
 6. Avyathā (Harītakī)
 7. Śivā (Dūrva)
 8. Ariṣṭā (Nāgabalā)
 9. Vāṭyapuṣpi (Balā)
 10. Viśwaksenakāntā
(Priyaṅgu)
- (50) *Vayaḥ-sthāpana*
1. Amṛtā (Guḍūci)
 2. Abhayā (Harītakī)
 3. Dhātri (Āmalakī)
 4. Yuktā (Rāsnā)
 5. Śwetā (Aparājitā)
 6. Jīvantī
 7. Atirasā (Śatāvārī)
 8. Maṇḍūkaparṇī
 9. Sthirā (Śālaparṇī)
 10. Punarnavā
-

Appendix II

List of Drugs under Gaṇas of Suśruta

- | | |
|---|----------------------------|
| (1) <i>Vidārigandhādi</i> | 2. Madana |
| 1. Vidārigandhā
(Śālaparṇī) ¹ | 3. Gopaghoṇṭā |
| 2. Vidāri | 4. Kuṭaja |
| 3. Sahadevā (Atibalā) | 5. Pāthā |
| 4. Viśwadevā (Nāgabalā) | 6. Kaṇṭaki |
| 5. Śwadamaṣṭrā (Gokṣura) | 7. Pāṭalā |
| 6. Pṛthakparṇī (Pṛṣniparṇī) | 8. Mūrvā |
| 7. Śatāvāri | 9. Indrayava |
| 8. Sārivā | 10. Saptaparṇā |
| 9. Kṛṣṇa Sārivā | 11. Nimba |
| 10. Jiraka | 12. Kuruṇṭaka |
| 11. Rṣabhaka | 13. Dāsī Kuruṇṭaka |
| 12. Mahāsahā (Māṣaparṇī) | 14. Guḍūci |
| 13. Kṣudra Sahā
(Mudgaparṇī) | 15. Citraka |
| 14. Bṛhati | 16. Śāriṅgeṣṭā |
| 15. Kaṇṭakāri | 17. Karañja-dwaya |
| 16. Punarnavā | 18. Pūtika (Cirabilwa) |
| 17. Eraṇḍa | 19. Paṭola |
| 18. Harṁsapādi | 20. Kirātatikta |
| 19. Vṛścikāli | 21. Suṣavī (Kāravellaka) |
| 20. Rṣabhī (Kapikacchū) | (3) <i>Varuṇādi</i> |
| (2) <i>Āragwadhādi</i> | 1. Varuṇa |
| 1. Āragwadha | 2. Ārtagaḷa |
| | 3. Śigru |
| | 4. Madhu śigru |

1. For botanical names of the plants see appendix III.

- | | |
|---|--------------------------------------|
| 5. Tarkāri | 12. Vasuka |
| 6. Meṣaśṛṅgi | 13. Vaśira |
| 7. Pūtika | 14. Bhallūka (Śyonāka) |
| 8. Naktamāla | 15. Kuraṅṭikā |
| 9. Moraṭa | 16. Indivara (Kuraṅṭikā-
bheda) |
| 10. Agnimantha | 17. Kapotavaṅkā (?) |
| 11. Saireyaka-dwaya
(Pīta-Nīla) | 18. Śwadamṣṭrā
(Gokṣura) |
| 12. Bimbī | (5) <i>Sālasārādi</i> |
| 13. Vasuka | 1. Sālasāra (Śāla) |
| 14. Vaśira (Apāmārga) | 2. Ajakarṇa |
| 15. Citraka | 3. Khadira |
| 16. Śatāvari | 4. Kadara |
| 17. Bilwa | 5. Kālaskandha
(Arimeda) |
| 18. Ajaśṛṅgi (meṣaśṛṅgi) | 6. Kramuka (lodhra) |
| 19. Darbha | 7. Bhūrja |
| 20. Bṛhati | 8. Meṣaśṛṅgi |
| 21. Kaṅṭakāri | 9. Tiniśa |
| (4) <i>Vīratarwādi</i> | 10. Candana |
| 1. Vīrataru | 11. Rakta candana |
| 2. Sahacara-dwaya
(Saireyaka, Pīta and Nīla) | 12. Śimśapā |
| 3. Darbha | 13. Śiriṣa |
| 4. Vṛkṣādani (Vandāka) | 14. Asana |
| 5. Gundra | 15. Dhava |
| 6. Nala | 16. Arjuna |
| 7. Kuśa | 17. Tāla |
| 8. Kāśa | 18. Śāka |
| 9. Aśmabhedaka
(Pāṣāṇabhedaka) | 19. Naktamāla (Karañja) |
| 10. Agnimantha | 20. Pūtika (cirabilwa) |
| 11. Moraṭa | 21. Aśwakarṇa |

22. Aguru

23. Kāliyaka

(6) *Rodhrādi*

1. Rodhra (Lodhra)

2. Śābara Rodhra

3. Palāśa

4. Kuṭannaṭa (Śyonākā)

5. Aśoka

6. Phaṅji

7. Kaṭphala

8. Elavāluka

9. Śallakī

10. Jīngiṇī

11. Kadamba

12. Śāla

13. Kadali

(7) *Arkādi*

1. Arka

2. Alarka

3. Karaṅja-dwaya

4. Pūtika (cirabilwa)

5. Nāgadantī

6. Māyūraka (Apāmārga)

7. Bhārṅgi

8. Rāsnā

9. Indrapuṣpī (?)

10. Kṣudraśwetā

(Aparājītā)

11. Mahāśwetā

(śweta śirīṣa)

12. Vṛścikālī

13. Alavaṇā (Jyotiṣmatī)

14. Tāpasa Vṛkṣa

(Iṅgudī)

(8) *Surasādi*

1. Surasā (Tulasī)

2. Śweta Surasā

3. Phaṅijjhaka

(Maruvaka)

4. Arjaka

5. Bhūstrṇa (Rohiṣa)

6. Sugandhaka

(Gandhatṛṇa)

7. Sumukha (Rājikā)

8. Kālamala (Barbarī)

9. Kāsamarda

10. Kṣavaka

11. Kharapuspā (?)

12. Viḍanga

13. Kaṭphala

14. Surasī

15. Nirguṇḍī

16. Kulāhala (Muṇḍī)

17. Undurukarṇikā

(Muṣākarṇī)

18. Phaṅji

19. Prācībala

(Kākajaṅghā)

20. Kākamācī

21. Viṣamuṣṭika

(Mahānimba)

(9) *Muṣkakādi*

1. Muṣkaka

- | | |
|---------------------------|------------------------|
| 2. Palāśa | (11) <i>Elādi</i> |
| 3. Dhava | 1. Elā (sūkṣma) |
| 4. Citraka | 2. Tagara |
| 5. Madana | 3. Kuṣṭha |
| 6. Vṛkṣaka (kuṭaja) | 4. Jatāmāmsi |
| 7. Simśapā | 5. Dhyāmaka (Rohiṣa) |
| 8. Vajravṛkṣa (Snuhī) | 6. Twak |
| 9. Triphalā | 7. Patra |
| (10) <i>Pippalyādi</i> | 8. Nāgapuṣpa |
| 1. Pippalī | (Nāgakeśara) |
| 2. pippalimūla | 9. Priyaṅgu |
| 3. Cavya | 10. Hareṇuka |
| 4. Citraka | 11. Vyāghranakha |
| 5. Śuṅṭhī | 12. Śukti (Nakha) |
| 6. Marica | 13. Caṇḍā |
| 7. Gajapippalī | 14. Sthauṇeyaka |
| 8. Hareṇuka | 15. Śriveṣṭaka |
| 9. Elā (Sūkṣma elā) | 16. Coca |
| 10. Ajmodā | 17. Coraka |
| 11. Indrayava | 18. Elavāluka |
| (kuṭaja-bija) | 19. Guggulu |
| 12. Pāṭhā | 20. Sarjarasa |
| 13. Jiraka | 21. Turuṣka |
| 14. Sarṣapa | 22. Kunduruka |
| 15. Mahānimba phala | (Śallāki-niryāsa) |
| 16. Hiṅgu | 23. Aguru |
| 17. Bhāṅgī | 24. Sprkkā |
| 18. Madhurasā (Mūrvā) | 25. Uśira |
| 19. Ativiṣā | 26. Bhadrādāru |
| 20. Vacā | (Devadāru) |
| 21. Viḍaṅga | 27. Kuṅkuma |
| 22. Kaṭurohiṇī (Kaṭukā) | 28. Punnāga-keśara |

(12) *Vacādi*

1. Vacā
2. Musta
3. Ativiṣā
4. Abhayā (Haritakī)
5. Bhadradāru
(devadāru)
6. Nāgakeśara

(13) *Haridrādi*

1. Haridrā
2. Dāru Haridrā
3. Kalaśī (Pṛṣniparṇī)
4. Kuṭajabija
(Indrayava)
5. Madhuka
(Madhuyaṣṭī)

(14) *Śyāmādi*

1. Śyāmā (Trivṛt)
2. Mahāśyāmā
(Vṛddhadāru)
3. Trivṛt
4. Dantī
5. Śaṅkhinī (Aparājītā)
6. Tilwaka
7. Kampillaka
8. Ramyaka
(Mahānimba)
9. Kramuka (Pūga)
10. Putraśreṇī (Dravantī)
11. Gavākṣī (Indravāruṇī)
12. Rājavṛkṣa
(Āragwadha)

13. Karañja

14. Pūtika
15. Guḍūci (Cirabilwa)
16. Saptalā
17. Chagalāntri
18. Sudhā (snuhī)
19. Suvarṇakṣīrī

(15) *Bṛhatyādi*

1. Bṛhatī
2. Kaṇṭakāri
3. Kuṭajaphala
(Indrayava)
4. Pāṭhā
5. Madhuka
(Madhuyaṣṭī)

(16) *Paṭolādi*

1. Paṭola
2. Candana
3. Kucandana (Rakta-
candana)
4. Mūrvā
5. Guḍūci
6. Pāṭhā
6. Kaṭurohiṇī (Kaṭukā)

(17) *Kākolyādi*

1. Kākoli
2. Kṣīrakākoli
3. Jivaka
4. Rṣabhaka
5. Mudgaparṇī
6. Māṣaparṇī

7. Medā
8. Mahāmedā
9. Chinnaruhā (Guḍūci)
10. Karkaṭa śṛṅgī
11. Tugākṣirī
(vaṁśalocana)
12. Padmaka
13. Prapaunḍarika (?)
14. Ṛddhi
15. Vṛddhi
16. Mṛdwikā (Drākṣā)
17. Jivantī
18. Madhuka
(Madhuyaṣṭī)
- (18) *Uṣakādi*
1. Uṣaka
2. Saindhava
3. Śīlājatu
4. Kāsisa-dwaya
5. Hiṅgu
6. Tutthaka
- (19) *Sārivādi*
1. Sārivā
2. Madhuka
(Madhuyaṣṭī)
3. Candana
4. Kucandana
(Raktacandana)
5. Padmaka
6. Kāśmaryaphala
7. Madhūkapuṣpa
8. Uśira
- (20) *Añjanādi*
1. Añjana
2. Rasāñjana
4. Nāgapuṣpa
(Nāgakeśara)
4. Priyaṅgu
5. Utpala (Nila)
6. Nalada (Uśira)
7. Nalina (Kamala)
Keśara
8. Madhuka (Madhuyaṣṭī)
- (21) *Parūṣakādi*
1. Parūṣaka
2. Drākṣā
3. Kaṭphala
4. Dāḍima
5. Rājādana (Kṣīriṇi)
6. Katakaphala
7. Śākaphala
8. Triphalā
- (22) *Priyaṅwādi*
1. Priyaṅgu
2. Samaṅgā (Lajjālu)
3. Dhātaki
4. Punnāga
5. Nāgapuṣpa
(Nāgakeśara)
6. Candana
7. Kucandana
(Raktacandana)
8. Nāgakeśara
(Mocarasa)

9. Rasāñjana
10. Kumbhika
11. Srotoñjana
12. Padma (kamala)
keśara
13. Yojanavalli
(Mañjiṣṭhā)
14. Dīrghamūlā
(Dhanvayāsa)
- (23) *Ambaṣṭhādi*
 1. Ambaṣṭhā (mācikā)
 2. Dhātākī kusume.
 3. Samaṅgā (Lujjālu)
 4. Kaṭwaṅga (Aralu)
 5. Madhuka
(Madhuyaṣṭi)
 6. Bilwapeśikā
 7. Sābara Rodhara
 8. Palāsa
 9. Nandivṛkṣa
 10. Padma (kamala)
keśara
- (24) *Nyagrodhādi*
 1. Nyagrodha
 2. Udumbara
 3. Aśwattha
 4. Plakṣa
 5. Madhūka
 6. Kapitana
 7. Kakubha (Arjuna)
 8. Āmra
 9. Kośāmra
10. Corakapatra
(Lākṣāvṛkṣa ?)
11. Jambū
12. Kṣudra Jambū
13. Priyāla
14. Madhuka
(Madhuyaṣṭi)
15. Rohiṇi (?)
16. Vañjula (Jalavetasa)
17. Kadamba
18. Badarī
19. Tīndukī
20. Śallakī
21. Rodhra (Lodhra)
22. Sābara Rodhra
23. Bhallātaka
24. Palāśa
25. Nandivṛkṣa
- (25) *Guḍūcyādi*
 1. Guḍūci
 2. Nīmba
 3. Kustumburu
(Dhānyaka)
 4. Cādana
 5. Padmaka
- (26) *Utpalādi*
 1. Utpala
 2. Utpala (Rakta)
 3. Kumuda
 4. Kuvalaya
 5. Saugandhika
 6. Puṇḍarīka

7. Madhuka
(Madhuyasṭi)
- (27) *Mustādi*
1. Mustā
 2. Haridrā
 3. Dāru Haridrā
 4. Haritaki
 5. Āmalaki
 6. Bibhitaka
 7. Kuṣṭha
 8. Haimavati
 9. Vacā
 10. Pāṭhā
 11. Kaṭurohiṇi (Kaṭukā)
 12. Śārṅgeṣṭā
 13. Ativiṣā
 14. Drāviḍi (Sūkṣma elā)
 15. Bhallātaka
 16. Citraka
- (28) *Triphalā*
1. Haritaki
 2. Āmalaka
 3. Bibhitaka
- (29) *Trikaṭu*
1. Pippali
 2. Marica
 3. Śrṅgavera (Śuṅṭhi)
- (30) *Āmalakyādi*
1. Āmalaki
 2. Haritaki
3. Pippali
4. Citraka
- (31) *Traṇṇvādi*
1. Traṇṇu
 2. Sīsa
 3. Tāmra
 4. Rajata
 5. Kṛṣṇa loha
 6. Suvarṇa
 7. Lohamala
- (32) *Lākṣādi*
1. Lākṣā
 2. Ārevata
 3. Kuṭaja
 4. Aśwamāra (Karavira)
 5. Kaṭphala
 6. Haridrā
 7. Dāruharidrā
 8. Nimba
 9. Saptacchada
(Saptaparṇa)
 10. Mālati (Jāti)
 11. Trāyamāṇā
- (33) *Laghu Pañcamūla*
1. Gokṣura
 2. Bṛhati
 3. Kaṇṭakāri
 4. Pṛṣniparṇi
 5. Śālaparṇi
- (34) *Mahat Pañcamūla*
1. Bilwa
 2. Agnimantha

- | | |
|---------------------------------|------------------------------|
| 3. Śyonāka | 2. Gokṣura |
| 4. Pātalā | 3. Saireyaka |
| 5. Kāśmarya | 4. Śatāvārī |
| (35) <i>Vallī Pañcamūla</i> | 5. Gṛdhranakhī (Hirṃsrā) |
| 1. Vidāri | (37) <i>Tṛṇa Pañcamūla</i> |
| 2. Sārivā | 1. Kuśa |
| 3. Rajanī (Mañjiṣṭhā) | 2. Kāśa |
| 4. Guḍūci | 3. Nala |
| 5. Ajaśṛṅgi (Meṣaśṛṅgi) | 4. Darbha |
| (36) <i>Kaṇṭaka Pañcamūla</i> | 5. Kāṇḍekṣu |
| 1. Karamarda | |
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Appendix III

*Botanical names¹ of the plants mentioned under Mahakaṣayas
and Gaṇas of Caraka and Suśruta.*

1. Agnimantha	Premna latifolia Roxb. Var. mucronata Clarke.
2. Aguru	Aquilaria agallocha Roxb.
3. Ajagandhā	Gynandropsis gynandra (Linn.) Briquet
4. Ajāji	Cuminum cyminum Linn.
5. Ajakarna	Dipterocarpus turbinatus Gaertn.
6. Ajamodā	Trachyspermum roxberghianum (Dc.) sprague.
7. Alarka	Calotropis gigantea (Linn.) R. Br. Ex. Ait.
8. Āmalaka	Emblica officinalis Gaertn.
9. Amlavetasa	Garcinia pedunculata Roxb.
10. Āmra	Mangifera indica Linn.
11. Āmrātaka	Spondias pinnata kurz.
12. Añjana	Hardwickia binata Roxb.
13. Apāmārga	Achyranthes aspera Linn.
14. Aparājitā	Clitoria ternatea Linn.
15. Āragwadha	Cassia fistula Linn.
16. Aralu	Ailanthus excelsa Roxb.
17. Ārevata	Rheum emodi Wall. (?)
18. Arimeda	Acacia leucophloea Willd.

¹ For this, identification of plants made by Prof. Balwant Singh has been followed in general for which the author is grateful to him.

19. Arjaka	<i>Orthosiphon pallidus</i> Royle.
20. Arjuna	<i>Terminalia arjuna</i> W. & A.
21. Arka	<i>Calotropis procera</i> (Ait.) R. Br.
22. Asana	<i>Pterocarpus marsupium</i> Roxb.
23. Aśmantaka	<i>Bauhinia malabarica</i> Roxb.
24. Aśoka	<i>Saraca indica</i> Linn.
25. Aśwagandhā	<i>Withania somnifera</i> Dunal.
26. Aśwakarṇa	<i>Terminalia tomentosa</i> W. & A.
27. Aśwattha	<i>Ficus religiosa</i> Linn.
28. Atibalā	<i>Abutilon indicum</i> (Linn.) Sw.
29. Ativiṣā	<i>Aconitum heterophyllum</i> Wall.
30. Badara	<i>Zizyphus jujuba</i> Lam.
31. Balā	<i>Sida cordifolia</i> Linn.
32. Bhadraudanī (Nāgabalā)	<i>Sida veronicaefolia</i> Lam.
33. Bhāradwājī	<i>Hibiscus cancellatus</i> Roxb.
34. Bhārṅgī	<i>Clerodendrum seratum</i> (Linn.)
35. Bhūmyāmalakī	<i>Phyllanthus urinaria</i> Linn.
36. Bhūrja	<i>Betula utilis</i> D. Don.
37. Bhūtakeśī	<i>Selinium tenuifolium</i> Wall.
38. Bibhītaka	<i>Terminalia belerica</i> Roxb.
39. Bilwa	<i>Aegle marmelos</i> Corr.
40. Bimbī	<i>Coccinia indica</i> W. & A.
41. Bṛhatī	<i>Solanum indicum</i> Linn.
42. Brāhmī	<i>Bacopa monnieri</i> (Linn.) Pennell.
43. Caṇḍā	<i>Angelica archangelica</i> Linn.
44. Candana	<i>Santalum album</i> Linn.
45. Cavya	<i>Piper chaba</i> Hunter.
46. Chagalāntrī	<i>Argyreia speciosa</i> Sweet.
47. Cirabilwa	<i>Holoptelia integrifolia</i> Planch.
48. Citraka	<i>Plumbago zeylanica</i> Linn.
49. Cōca	<i>Cinnamomum cassia</i> Blume.

- | | |
|-------------------------------|---|
| 50. Coraka | <i>Angelica glauca</i> Edgw. |
| 51. Dāḍima | <i>Punica granatum</i> Linn. |
| 52. Dantī | <i>Baliospermum montanum</i> Muell-Arg. |
| 53. Darbha | <i>Imperata cylindrica</i> Beauv. |
| 54. Dāru Haridrā | <i>Berberis aristata</i> Dc. |
| 55. Dāsī kuraṇṭaka | <i>Barleria strigosa</i> Linn. |
| 56. Devadāru | <i>Cedrus deodara</i> (Roxb.) Loud. |
| 57. Dhanvayāsa | <i>Fagonia cretica</i> Linn. |
| 58. Dhānyaka | <i>Coriandrum sativum</i> Linn. |
| 59. Dhātakī | <i>Woofordia fruticosa</i> Kurz. |
| 60. Dhava | <i>Anogeissus latifolia</i> Wall. |
| 61. Drākṣā | <i>Vitis vinifera</i> Linn. |
| 62. Dūrvā | <i>Cynodon dactylon</i> (Linn.) Pers. |
| 63. Elavāluka | <i>Prunus carasus</i> Linn. |
| 64. Eraṇḍa | <i>Ricinus communis</i> Linn. |
| 65. Gaja Pippalī | <i>Scindapsus officinalis</i> schott. |
| 66. Indravāruṇi | <i>Citrullus colocynthis</i> schrad. |
| 67. Gokṣura | <i>Tribulus terrestris</i> Linn. |
| 68. Gundra | <i>Typha elephantina</i> Roxb. |
| 69. Gopaghonṭa | <i>Zizyphus xylopyra</i> Willd. |
| 70. Gṛdhranakhī
(Hīmsrā) | <i>Capparis sepiaria</i> Linn. |
| 71. Guggulu | <i>Commiphora mukul</i> (Hook ex
Stocks) Engl. |
| 72. Guḍuḍī | <i>Tinospora cordifolia</i> (Willd.) Miers. |
| 73. Haimawatī | <i>Iris germanica</i> Linn. |
| 74. Hāmsapādi | <i>Adiantum lunulatum</i> Burn. |
| 75. Hareṇuka | <i>Vitex agnus-costus</i> Linn. |
| 76. Haridrā | <i>Curcuma longa</i> Linn. |
| 77. Harītakī | <i>Terminalia chebula</i> Retz. |
| 78. Hīṅgu | <i>Ferula foetida</i> Regel. |
| 79. Hribera | <i>Coleus vettiveroides</i> K. C. Jacob. |

80. Ikṣu *Saccharum officinarum* Linn.
 81. Ikṣuraka *Astercantho longifolia* Nees.
 82. Iṅgudi *Balanites aegyptiaca* (Linn.) Delile.
 83. Itkaṭa *Sesbania bispinosa* (Jacq.) Faw. & Rend.
 84. Jalavetasa *Salix tetrasperma* Roxb.
 85. Jambū *Syzygium cumini* (Linn.) Skeels.
 86. Jātī *Jasminum grandiflorum* Linn.
 87. Jaṭilā *Nardostachys Jatamansi* DC.
 (Jaṭāmānsi)
 88. Jīṅgiṇī *Lannea grandis* (Dennst.) Engl.
 89. Jīvaka *Microstylis wallichii* Lindl.
 90. Jīvantī *Leptadenia reticulata* W. & A.
 91. Jyotiṣmatī *Celastrus paniculatus* Willd.
 92. Kādali *Musa paradisiaca* Linn.
 93. Kadamba *Anthocephalus cadamba* Miq.
 94. Kadara (Śweta khadira) *Acacia suma* Buch. Ham.
 95. Kākamāci *Solanum nigrum* Linn.
 96. Kākoli *Roscoea procera* Wall.
 97. Kālamāla *Ocimum basilicum* Linn.
 (Barbarī)
 98. Kāliyaka *Coscinium fenestratum* (Gaertn.)
 Coleb.
 99. Kamala *Nelumbo nucifera* Gaertn.
 100. Kampillaka *Mallotus philippinensis* Muell-Arg.
 101. Kāṅḍira *Ranunculus sceleratus* Linn.
 102. Kaṅṭakārī *Solanum xanthocarpum* Schrad. & Wendl.
 103. Kaṅṭaki *Flacourtia indica* Merr.
 (Vikankata)
 104. Kapikacchu *Mucuna pruriens* DC.

105. Kapitana	<i>Thespasia populnea</i> Soland. ex Correa.
106. Karamarda	<i>Carissa carandas</i> Linn.
107. Karañja	<i>Pongamia pinnata</i> (Linn.) Merr.
108. Kāravellaka	<i>Momordica charantia</i> Linn.
109. Karavīra	<i>Nerium indicum</i> Mill
110. Karbudāra	<i>Bauhinia Variegata</i> Linn.
111. Karkaṭaśṛṅgi	<i>Pistacia integerrima</i> Stew. ex Brandis.
112. Kāśa	<i>Saccharum spontaneum</i> Linn.
113. Kāsamarda	<i>Cassia occidentalis</i> Linn.
114. Kāśmārya	<i>Gmelina arborea</i> Linn.
115. Kataka	<i>Strychnos potatorum</i> Linn. f.
116. Kaṭphala	<i>Myrica nagi</i> Thunb
117. Kattṛna	<i>Cymbopogon citratus</i> (Dc.)
118. Kaṭukā	<i>Picrorhiza kurroa</i> Royle, ex Benth.
119. Kebuka	<i>Costus speciosus</i> (Koem.) Sm.
120. Khadira	<i>Acacia catechu</i> Willd.
121. Kharjūra	<i>Phoenix sylvestris</i> Roxb.
122. Kirātatikta	<i>Swertia chirata</i> Buch. Ham.
123. Kośāmra	<i>Schleichera oleosa</i> (Lour.) Merr.
124. Kovidāra	<i>Bauhinia purpurea</i> Linn.
125. Kramuka (Pūga)	<i>Areca catechu</i> Linn.
126. Kṛṣṇa sārivā	<i>Cryptolepis buchanani</i> Roem. & Schult.
127. Kṣavaka	<i>Centipeda minima</i> (Linn.) A. Br. et. Aschers.
128. Kṣīra kākoli	<i>Roscoea</i> Sp.
129. Kṣīriṇi	<i>mimusops hexandra</i> Roxb.
130. Kṣudra Jambū	<i>Eugenia heyneana</i> Wall.
131. Kulattha	<i>Dolichos biflorus</i> Linn.
132. Kumbhika	<i>Carreya arborea</i> Roxb

133. Kuraṅṭaka	<i>Barleria prionitis</i> Linn.
134. Kuraṅṭikā (Śitivārikā)	<i>Celosia argentea</i> Linn.
135. Kuṣa	<i>Desmostachya bipinnata</i> Stapf.
136. Kuṣṭha	<i>Saussurea lappa</i> C. B. Clarke.
137. Kuṭaja	<i>Holarrhena antidysenterica</i> Wall.
138. Kuvala	<i>Garcinia cowa</i> Roxb.
139. Lajjālu	<i>mimosa pudica</i> Linn.
140. Lakuca	<i>Artocarpus lakoocha</i> Roxb.
141. Lāṅgali	<i>Gloriosa superba</i> Linn.
142. Lodhra	<i>Symplocos racemosa</i> Roxb.
143. Mācikā	1. <i>Tamarix gallica</i> Linn. 2. <i>T. aphylla</i> Karst.
144. Madanaphala	<i>Randia dumetorum</i> Lam.
145. Madhuka	<i>Glycyrrhiza glabra</i> Linn.
146. Madhūka	<i>Madhuca indica</i> J. F. Gmel.
147. Madhu Śigru	<i>Moringa concanensis</i> Nimmo.
148. Mahāmedā	<i>Polygonatum</i> Sp.
149. Mahānimba	<i>Melia azederach</i> Linn.
150. Mahāśyāmā (Vṛddhadāru)	<i>Ipomoea petaloidea</i> Chois.
151. Mañjiṣṭhā	<i>Rubia cordifolia</i> Linn.
152. Marica	<i>Piper nigrum</i> Linn.
153. Māṣa	<i>Phaseolus mungo</i> Linn.
154. Māsaparnī	<i>Teramnus labialis</i> Spreng.
155. Mātulūṅgī	<i>Citrus medica</i> Linn.
156. Medā	<i>Polygonatum verticillatum</i> All.
157. Meṣaśṛṅgī	<i>Gymnema sylvestre</i> R. Br.
158. Moraṭa	<i>Maerua arenaria</i> Hook. f. & Th.
159. Mudgaparnī	<i>Phaseolus trilobus</i> Ait.
160. Muṅḍī	<i>Sppaeranthus indicus</i> Linn.
161. Mūrvā	<i>Marsdenia tenacissima</i> W. & A.

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| 162. Muṣākarṇī | <i>Ipomoea reniformis</i> Chois. |
| 163. Muṣkaka | <i>Schrebera swietenioides</i> Roxb. |
| 164. Mustā | <i>Cyperus rotundus</i> Linn. |
| 165. Nāḡadantī | <i>Croton oblongifolius</i> Roxb. |
| 166. Nāḡakeśara | <i>Mesua ferrea</i> Linn. |
| 167. Nala | <i>Phragmites maxima</i> Blatter and MC.
Cann. |
| 168. Nandīvrkṣa | <i>Ficus retusa</i> Linn. |
| 169. Nimba | <i>Azadirachta indica</i> A. Juss. |
| 170. Nīpa | <i>Adina cordifolia</i> Benth. and Hook. f. |
| 171. Nirguṇḍī | <i>Vitex negundo</i> Linn. |
| 172. Padmaka | <i>Prunus cerasoides</i> D. Don. |
| 173. Palāśa | <i>Butea monosperma</i> (Linn.) |
| 174. Parpaṭa | <i>Fumaria officinalis</i> Linn. |
| 175. Paruṣaka | <i>Grewia asiatica</i> Linn. |
| 176. Pāśānbhedā | <i>Bergenia ligulata</i> (Wall.) Engl. |
| 177. Pāṭalā | <i>Streospermum suaveolens</i> Dc. |
| 178. Pāṭhā | <i>Cissampelos pariera</i> Linn. |
| 179. Paṭola | <i>Trichosanthes dioica</i> Roxb. |
| 180. Patra | <i>Cinnamomum tamala</i> Nees. and
Eberm. |
| 181. Payasyā
(Kṣīravidāri) | <i>Ipomoea paniculata</i> R. Br. |
| 182. Phalgu | <i>Ficus carica</i> Linn. |
| 183. Phaṇījjhaka | <i>Origanum majorana</i> Linn. |
| 184. Phaṇji | <i>Rivea ornata</i> Chois. |
| 185. Pīlu | <i>Salvadora persica</i> Linn. |
| 186. Pippalī | <i>Piper longum</i> Linn. |
| 187. Plakṣa | <i>Ficus lacor</i> Buch. Ham. |
| 188. Prācībala
(Kākajaṅghā) | <i>Vitex peduncularis</i> Wall. |
| 189. Priyāla | <i>Buchanania lanzan</i> Spreng. |

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| 190. Priyaṅgu | <i>Callicarpa macrophylla</i> Vahl. |
| 191. Pṛṣniparṇī | <i>Uraria picta</i> Desv. |
| 192. Punarnavā | i) <i>Boerhaavia diffusa</i> Linn.
ii) <i>B. repens</i> Linn. |
| 193. Punnāga | <i>Calophyllum inophyllum</i> Linn. |
| 194. Puṣkaramūla | <i>Inula racemosa</i> Hook. f. |
| 195. Putraśreṇī
(<i>Dravantī</i>) | <i>Croton tiglium</i> Linn. |
| 196. Rājakaṣavaka
(<i>Dugdihikā</i>) | 1. <i>Euphorbia thymifolia</i> Linn.
2. <i>E. Prostrata</i> W. Ait. |
| 197. Rakta candana | <i>Pterocarpus santalinus</i> Linn. f. |
| 198. Rāsnā | <i>Pluchea lanceolata</i> Oliver and Hiern. |
| 199. Rṣabhaka | <i>Microstylis</i> Sp. |
| 200. Rohiṣa | <i>Cymbopogon martinii</i> (Roxb.) Wats. |
| 201. Śāka | <i>Tectona grandis</i> Linn. f. |
| 202. Śāla | <i>Shorea robusta</i> Gaertn. |
| 203. Śālaparṇī | <i>Desmodium gangeticum</i> Dc. |
| 204. Śāli | <i>Oryza sativa</i> Linn. |
| 205. Śatī | <i>Hedychium spicatum</i> Ham. ex Smith. |
| 206. Śāllakī | <i>Boswellia serrata</i> Roxb. |
| 207. Śālmālī | <i>Śālmalia malabarica</i> Schott. |
| 208. Śaṅapuṣpī | <i>Crotalaria verrucosa</i> Linn. |
| 209. Saptalā | <i>Euphorbia dracunculoides</i> Lam. |
| 210. Saptaparṇa | <i>Alstonia scholaris</i> R. Br. |
| 211. Sarala | <i>Pinus roxburghii</i> Sargent |
| 212. Sārivā | <i>Hemidesmus indicus</i> R. Br. |
| 213. Sārīgeṣṭā | <i>Cardiospermum halicacabum</i> Linn. |
| 214. Sarṣapa | <i>Brassica campestris</i> Var. <i>Sarson</i> Prain. |
| 215. Śatapuṣpā | 1. <i>Peucedanum graveolens</i> Linn.
2. <i>Foeniculum vulgare</i> Mill. |
| 216. Śatāvārī | <i>Asparagus racemosus</i> Willd. |
| 217. Śīgru | <i>Moringa pterygosperma</i> Gaertn. |

218. Śirīśapā	Delbergia sisso Roxb.
219. Sindhuvāra	Vitex trifolia Linn. f.
220. Śirīṣa	Albizzia lebbek Benth.
221. Śleṣmātaka	Cordia myxa Roxb.
222. Snuhī	Euphorbia neriifolia Linn.
223. Sprkkā	Delphinium zalil Aitch. and Hemsl.
224. Sthauṇeyaka	Taxus baccata Linn.
225. Sūkṣma Elā	Elettaria cordamom Maton.
226. Sumukha (Rājikā)	Brassica juncea (Linn.) Czern and COSS.
227. Śuṇṭhī	Zinziber officinale Roscoe.
228. Surasa (Tulasī)	Ocimum sanctum Linn.
229. Surasī	Limonia crenulata Roxb.
230. Swarṇakṣirī	Euphorbia thomsoniana Boiss.
231. Śweta śirīṣa	Albizzia procera (Roxb.) Benth.
232. Śweta śursa	Ocimum canum Sims.
233. Śyonāka	Oroxylum indicum Vent.
234. Tagara	Valeriana wallichii DC.
235. Tāla	Borassus flabellifer Linn.
236. Tarkārī	Clerodendrum phlomidis Linn. f.
237. Tinduka	Diospyros tomentosa Roxb.
238. Tila	Sesamum indicum Linn.
239. Tilwaka	Viburnum nervosum D. Don.
240. Tiniśa	Ougeinia dalbergioides Benth.
241. Trivṛt	Ipomoea turpethum R. Br.
242. Trāyamāṇā	Gentiana kurroo Royle.
243. Twak	Cinnamomum zeylanicum Blume.
244. Tumbū (Alābu)	Lagenaria siceraria Standl.
245. Turuṣka	i. Liquidamber orientalis Miller. ii. Altingia excelsa Noronha.
246. Udumbara	Ficus racemosa Linn.
247. Utpala	Nymphoea stellata Willd.

248. Uśīra	<i>Vetiveria zizanioides</i> (Linn.) Nash.
249. Vacā	<i>Acorus calamus</i> Linn.
250. Vandāka	<i>Lioranthus</i> <i>longiflorus</i> Desv.
251. Varṣābhū	<i>Trianthema portulacastrum</i> Linn.
252. Varuṇa	<i>Crataeva nurvala</i> Buch. Ham.
253. Vāsuka	<i>Osmanthus fragrans</i> Lour.
254. Vaṭa	<i>Ficus bengalensis</i> Linn.
255. Viḍaṅga	<i>Embelia ribes</i> Burm. f.
256. Vidāri	<i>Pueraria tuberosa</i> DC.
257. Vidula	<i>Barringtonia acutangula</i> (Linn.) Gaertn.
258. Virataru	<i>Dichrostachys cineria</i> W. & A.
259. Vṛkṣāmla	<i>Garcinia indica</i> Chois.
260. Vṛścikāli	<i>Pergularia extensa</i> N. E. Br.
261. Yava	<i>Hordeum vulgare</i> Linn.

Appendix IV

Glossary of Botanical and Sanskrit names of Vegetable drugs mentioned under Mahākaṣāyas and Gaṇas of Caraka and Śuśruta.

1. Abutilon indicum (Linn.) Sw.	Atibalā
2. Acacia catechu Willd.	Khadira
3. Acacia leucophloea Willd.	Arimeda
4. Acacia suma Buch-Ham.	Kadara (Śweta khadira)
5. Achyranthes aspera Linn.	Apāmārga
6. Aconitum heterophyllum Wall.	Ativiṣā
7. Acorus calamus Linn.	Vacā
8. Adiantum lunulatum Burn.	Haṁsapadi
9. Adina cordifolia Benth and Hook. f.	Nīpa
10. Aegle marmelos Corr.	Bilwa
11. Ailanthus excelsa Roxb.	Aralu
12. Albizzia lebeck Benth.	Śirīṣā
13. Albizzia procera (Roxb.) Benth.	Śweta śirīṣā
14. Alstonia scholaris R. Br.	Saptaparṇa
15. Altingia excelsa Noronha.	Turuṣka
16. Angelica archangelica Linn.	Caṇḍā
17. Angelica glauca Edgw.	Coraka
18. Anogeissus latifolia Wall.	Dhava
19. Anthocephalus cadamba Miq.	Kadamba
20. Aquilaria agallocha Roxb.	Aguru
21. Areca catechu Linn.	Kramuka (Pūga)
22. Argyreia speciosa Smet.	Chagalāntri
23. Artocarpus lakoocha Roxb.	Lakuca
24. Asparagus racemosus Willd.	Śatāvri

25. <i>Astercantha longifolia</i> Nees.	Iksuraka
26. <i>Azadiracta India</i> A. Juss.	Nimba
27. <i>Bacopa monnieri</i> (Linn.) Pennel.	Brāhmī
28. <i>Balanites aegyptiaca</i> (Linn.) Delile.	Inḡudi
29. <i>Baliospermum montanum</i> Muell-Arg.	Dantī
30. <i>Barleria prionitis</i> Linn.	Kuraṅṭaka
31. <i>Barleria strigosa</i> Linn.	Dāsī-Kura- ṅṭaka
32. <i>Barringtonia acutangula</i> (Linn.) Gaertn.	Vidula
33. <i>Bauhinia malabarica</i> Roxb.	Aśmantaka
34. <i>Bauhinia purpurea</i> Linn.	Kovidāra
35. <i>Bauhinia variegata</i> Linn.	Karbudāra
36. <i>Berberis aristata</i> DC.	Dāruharidrā
37. <i>Bergenia ligulata</i> (Wall.) Engl.	Pāṣāṅabheda
38. <i>Betula utilis</i> D. Don.	Bhūrja
39. <i>Boerhaavia diffusa</i> Linn.	Punarnavā
40. <i>Borassus flabellifer</i> Linn.	Tāla
41. <i>Boswellia serrata</i> Roxb.	Śallaki
42. <i>Brassica campestris</i> Var. Sarson Prain.	Sarṣapa
43. <i>Brassica juncea</i> (Linn.) Czern. and Coss.	Sumukha (Rājikā)
44. <i>Buchanania lanzan</i> Spreng.	Priyāla
45. <i>Butea monosperma</i> (Linn.) Kuntze.	Palāśa
46. <i>Callicarpa macrophylla</i> Vahl.	Priyaṅgu
47. <i>Calophyllum inophyllum</i> Linn.	Punnāga
48. <i>Calotropis gigantea</i> (Linn.) R.Br. ex. Ait.	Alarka
49. <i>Calotropis procera</i> (Ait.) R. Br.	Arka
50. <i>Capparis sepiaria</i> Linn.	Gr̥dhranakhī (Himśrā)
51. <i>Careya arborea</i> Roxb.	Kumbhika
52. <i>Carissa carandus</i> Linn.	Karamarda
53. <i>Cassia fistula</i> Linn.	Āragwadha

54. <i>Cassia occidentalis</i> Linn.	Kāsamarda
55. <i>Cedrus deodara</i> (Roxb.) Loud.	Devadāru
56. <i>Celastrus paniculatus</i> Willd.	Jyotiṣmatī
57. <i>Celosia argentea</i> Linn.	Kuraṅṭikā (Śitivārikā)
58. <i>Centipeda minima</i> (Linn.) A. Br. et Aschers.	Kṣavaka
59. <i>Cinnamomum cassia</i> Blume	Coca
60. <i>Cinnamomum tamala</i> Nees. and Eberm.	Patra
61. <i>Cinnamomum zeylanicum</i> Blume.	Twak
62. <i>Cissampelos pariera</i> Linn.	Pāṭhā
63. <i>Citrullus colocynthis</i> Schrad.	Indravāruṅī
64. <i>Citrus medica</i> Linn.	Mātuluṅga
65. <i>Clerodendrum phlomidis</i> Linn. f.	Tarkāri
66. <i>Clerodendrum serratum</i> (Linn.) Moon.	Bhārnṅī
67. <i>Clitoria ternatea</i> Linn.	Śārnkhinī (Aparājitā)
68. <i>Cocconia india</i> W. & A.	Bimbi
69. <i>Coleus vettiveroides</i> K. C. Jacob.	Hribera
70. <i>Commiphora mukul</i> (Hook. ex Stocks.) Engl.	Guggulu
71. <i>Cordiospermum halicacabum</i> Linn.	Śārngeṣṭā
72. <i>Coriandrum sativum</i> Linn.	Dhānyaka
73. <i>Cordia myxa</i> Roxb.	Śleṣmātaka
74. <i>Coscinium fenestratum</i> (Gaertn.) Colebr.	Kāliyaka
75. <i>Costus speciosus</i> (Koen.) Sm.	Kebuka
76. <i>Crataeva nurvala</i> Buch. Ham.	Varuṅa
77. <i>Crocus sativus</i> Linn.	Kuṅkuma
78. <i>Crotalaria verrucosa</i> Linn.	Śaṅapuṣpi
79. <i>Croton oblongifolius</i> Roxb.	Nāgadantī
80. <i>Croton tiglium</i> Linn.	Putraśreṇi
81. <i>Cryptolepis buchanani</i> Roem. and Schult.	Kṛṣṇa sārivā.
82. <i>Cuminum cyminum</i> Linn.	Ajāji (Jiraka)

83. <i>Curcuma longa</i> Linn.	Haridrā
84. <i>Cymbopogon citratus</i> (Dc.) Stapf.	Kattṛṇā
85. <i>Cynodon dactylon</i> (Linn.) Pers.	Dūrvā
86. <i>Cymbopogon martini</i> (Roxb.) Wats.	Bhūstrṇa (Rohiṣa)
87. <i>Cyperus rotundus</i> Linn.	Musta
88. <i>Dalbergia sissoo</i> Roxb.	Śimśapā
89. <i>Delphinium zalil</i> Aitch. and Hemsl.	Sṛkkā
90. <i>Desmodium gangeticum</i> Dc.	Śālaparṇi
91. <i>Desmostachya bipinnata</i> Stapf.	Kuśa
92. <i>Dichrostachys cinerea</i> W. & A.	Vīratāru
93. <i>Diospyros tomentosa</i> Roxb.	Tinduka
94. <i>Dipterocarpus turbinatus</i> Gaertn.	Ajakaṇa
95. <i>Dolichos biflorus</i> Linn.	Kulattha
96. <i>Elettaria cardamomum</i> Maton.	Sūkṣma elā
97. <i>Emblīca officinalis</i> Gaertn.	Āmalaka
98. <i>Embelia ribes</i> Burm. f.	Vidaṅga
99. <i>Eugenia heyneana</i> Wall.	Kṣudra Jambū
100. <i>Euphorbia dracunculoides</i> Lam.	Saptalā
101. <i>Euphorbia neriifolia</i> Linn.	Snuhi
102. <i>Euphorbia thomsoniana</i> Boiss.	Śvarṇakṣīri
103. <i>Euphorbia thymifolia</i> Linn.	Rājākṣavaka (Dugdḥikā)
104. <i>Fagonia cretica</i> Linn.	Dhanvayāsa
105. <i>Ferula foetida</i> Regel.	Hīṅgu
106. <i>Ficus bengalensis</i> Linn.	Vaṭa (Nyagrodha)
107. <i>Ficus carica</i> Linn.	Phalgu
108. <i>Ficus lacor</i> Buch. Ham.	Plakṣa
109. <i>Ficus racemosa</i> Linn.	Udumbara
110. <i>Ficus religiosa</i> Linn.	Aśwattha

111. <i>Ficus retusa</i> Linn.	Nandivṛkṣa
112. <i>Flacourtia indica</i> Merr.	Kaṇṭaki (Vikankata)
113. <i>Foeniculum vulgare</i> Mill.	Śatapušpā
114. <i>Fumaria officinalis</i> Linn.	Parpaṭa
115. <i>Garcinia cowa</i> Roxb.	Kuvala
116. <i>Garcinia indica</i> Chois.	Vṛkṣāmla
117. <i>Garcinia pedunculata</i> Roxb.	Amlavetasa
118. <i>Gentiana kurroo</i> Royle.	Trāyamāṇā
119. <i>Gloriosa superba</i> Linn.	Lāṅgali
120. <i>Glycyrrhiza glabra</i> Linn.	Madhuka (Madhuyaṣṭi)
121. <i>Gmelina arborea</i> Linn.	Kāśmarya
122. <i>Grewia asiatica</i> Linn.	Parūṣaka
123. <i>Gymnema sylvestre</i> R. Br.	Meṣaśṛṅgi
124. <i>Hardwickia binata</i> Roxb.	Añjana
125. <i>Hedychium spicatum</i> Ham. ex Smith	Śaṭi
126. <i>Hemidesmus indicus</i> R. Br.	Sārivā
127. <i>Hibiscus cancellatus</i> Roxb.	Bhāradwāji
128. <i>Holarrhena antidysentrica</i> Wall.	Kuṭaja
129. <i>Holoptelia integrifolia</i> Planch.	Cirabilva
130. <i>Hordeum vulgare</i> Linn.	Yava
131. <i>Imperata cylindrica</i> Beauv.	Darbha
132. <i>Ipomoea paniculata</i> R. Br.	Payasyā (Kṣira vidārī)
133. <i>Ipomoea pataloidea</i> Chois.	Vṛddhadāru
134. <i>Ipomoea reniformis</i> Chois.	Mūṣakarṇi
135. <i>Ipomoea turpethum</i> R. Br.	Trivṛt
136. <i>Inula racemosa</i> Hook. f.	Puṣkaramūla
137. <i>Iris germanica</i> Linn.	Haimavati
138. <i>Jasminum grandiflorum</i> Linn.	Jāti
139. <i>Lagenaria siceraria</i> Standl.	Tumba(Alābu)

141. <i>Lannea grandis</i> (Dennst.) Engl.	Jiṅgini
142. <i>Leptadenia reticulata</i> W. & A.	Jivanti
143. <i>Limonia crenulata</i> Roxb.	Surasi
144. <i>Liquidamber orientalis</i> Miller.	Turuṣka
145. <i>Loranthus longiflorus</i> Desv.	Vandāka
146. <i>Maduca indica</i> J. F. Gmel.	Mdhūka
147. <i>Maerua arenaria</i> Hook f. and Th.	Moraṭa
148. <i>Mallotus philippinensis</i> Muell-Arg	Kampillaka
149. <i>Mangifera indica</i> Linn.	Āmra
150. <i>Marsdenia tenacissima</i> W. & A.	Mūrvā
151. <i>Melia azedarach</i> Linn.	Mahānimba
152. <i>Mesua ferrea</i> Linn.	Nāgakeśara
153. <i>Microstylis</i> sp.	Ṛṣabhaka
154. <i>Microstylis Wallichii</i> Lindl.	Jivaka
155. <i>Mimosa pudica</i> Linn.	Lajjālu
156. <i>Mimusops hexandra</i> Roxb.	Kṣīriṇī
157. <i>Momordica charantia</i> Linn.	Kāravellaka
158. <i>Moringa concanensis</i> Nimbo.	Madhuśigru
159. <i>Moringa ptrygosperma</i> Gaertn.	Śigru
160. <i>Mucuna pruriens</i> DC.	Kapikacchū
161. <i>Musa paradisiaca</i> Linn.	Kadali
162. <i>Myrica nagi</i> Thunb.	Kaṭphala
163. <i>Nardostachys jatamansi</i> DC.	Jaṭilā
	(Jaṭāmānsi)
164. <i>Nelumbo mucifera</i> Gaertn.	Kamala
165. <i>Nerium indicum</i> Mill.	Karavīra
166. <i>Nymphoea stillata</i> Willd.	Utpala
167. <i>Ocimum basilicum</i> Linn.	Kālamāla
	(Barbari)
168. <i>Ocimum canum</i> Sims.	Śweta surasā
169. <i>Ocimum sanctum</i> Linn.	Surasā
	(Tulasī)

170. <i>Origanum majorana</i> Linn.	Phañijhaka
171. <i>Oroxylum indicum</i> Vent.	Śyonāka
172. <i>Orthosiphon pallidus</i> Royle.	Arjaka
173. <i>Oryza sativa</i> Linn.	Śāli
174. <i>Osmanthus fragrans</i> Lour.	Vasuka
175. <i>Ougeinia dalbergioides</i> Benth.	Tiniśa
176. <i>Pergularia extensa</i> N. E. Br.	Vṛṣcikālī
177. <i>Peucedanum graveolens</i> Linn.	Śatapuspā
178. <i>Phaseolus mungo</i> Linn.	Māṣa
179. <i>Phaseolus trilobus</i> Ait.	Mudgaparṇī
180. <i>Phoenix sylvestre</i> Roxb.	Kharjūra
181. <i>Phragmites maxima</i> Blatter & Mc Cann	Nala
182. <i>Phyllanthus urinaria</i> Linn.	Bhūmyā- malakī
183. <i>Picrorhiza kurroa</i> Royle ex Benth.	Kaṭukā
184. <i>Pinus roxburghii</i> Sargent	Sarala
185. <i>Piper chaba</i> Hunter.	Cavya
186. <i>Piper longum</i> Linn.	Pippalī
187. <i>Piper nigrum</i> Linn.	Marica
188. <i>Pistacia integerrima</i> Stew ex Brandis	Karkaṭaśṛṅgi
189. <i>Pluchea lanceolata</i> Oliver & Hiern	Rāsnā
190. <i>Plumbago zeylanica</i> Linn.	Citraka
191. <i>Poygonatum</i> sp.	Mahāmedā
192. <i>Polygonatum verticillatum</i> All.	Medā
193. <i>Pongamia pinnata</i> (Linn.) Merr.	Karañja
194. <i>Premna latifolia</i> Roxb. Var. mucronata Clarke.	Agnimantha
195. <i>Prunus cerasoides</i> D. Don.	Padmaka
196. <i>Prunus cerasus</i> Linn.	Elavāluka
197. <i>Pterocarpus marsupium</i> Roxb.	Asana (Bijaka)
198. <i>Pterocarpus santalinus</i> Linn. f.	Rakta candana

199. <i>Pueraria tuberosa</i> DC.	Vidāri
200. <i>Punica granatum</i> Linn.	Dāḍima
201. <i>Randia dumetorum</i> Lam.	Madanaphala
202. <i>Ranunculus sceleratus</i> Linn.	Kāṇḍira
203. <i>Rheum emodi</i> wall.	Ārevata
204. <i>Ricinus communis</i> Linn.	Eraṇḍa
205. <i>Rivea ornata</i> Chois	Phañjī
206. <i>Roscoea</i> sp.	Kṣirakākoli
207. <i>Roscoea procera</i> Wall.	Kākoli
208. <i>Rubia cordifolia</i> Linn.	Mañjiṣṭhā
209. <i>Saccharum officinarum</i> Linn.	Iksu
210. <i>Saccharum spontaneum</i> Linn.	Kāśa
211. <i>Salix tetrasperma</i> Roxb.	Jalavetasa
212. <i>Salmalia malabarica</i> Schott & Endl.	Śālmali
213. <i>Salvadora persica</i> Linn.	Pilu
214. <i>Santalum album</i> Linn.	Candana
215. <i>Saraca indica</i> Linn.	Aśoka
216. <i>Saussurea lappa</i> C. B. Clarke	Kuṣṭha
217. <i>Schleichera oleosa</i> (Lour.) Merr.	Kośāmra
218. <i>Schrebera swietenoides</i> Roxb.	Muṣkaka
219. <i>Scindapsus officinalis</i> Schott.	Gaja pippali
220. <i>Selinium tenuifolium</i> Wall.	Bhūtakeśī
221. <i>Semecarpus anacardium</i> Linn. f.	Bhallātaka
222. <i>Sesamum indicum</i> Linn.	Tila
223. <i>Sesbania bispinosa</i> (Jacq.) Fawcett and Rendle.	Itkaṭa
224. <i>Shorea robusta</i> Gaertn.	Śāla
225. <i>Sida cordifolia</i> Linn.	Balā
226. <i>Sida Veronicaefolia</i> Lam.	Nāgabalā
227. <i>Solanum indicum</i> Linn.	Bṛhati
228. <i>Solanum nigrum</i> Linn.	Kākamācī

229. <i>Solanum xanthocarpum</i> Schrad. & Wendle	Kaṅṭakāri
230. <i>Sphaeranthus indicus</i> Linn.	Muṇḍi
231. <i>Spondias pinnata</i> Kurz.	Āmrātaka
232. <i>Stereospermum suaveolens</i> DC.	Pāṭalā
233. <i>Strychnos potatorum</i> Linn. f.	Kataka
234. <i>Swertia chirata</i> Buch. Ham.	Kirātatikta
235. <i>Symplocos racemosa</i> Roxb.	Lodhra
236. <i>Syzygium cumini</i> (Linn) skeels	Jambū
237. 1. <i>Tamarix gallica</i> Linn.	Mācikā
2. <i>T. aphylla</i> Karst.	
238. <i>Taxus baccata</i> Linn.	Sthaṇṇeyaka
239. <i>Tectona grandis</i> Linn. f.	Śāka
240. <i>Teramnus labialis</i> Spreng.	Māṣaparni
241. <i>Terminalia arjuna</i> W. A.	Arjuna
242. <i>Terminalia belerica</i> Roxb.	Bibhītaka
243. <i>Terminalia chebula</i> Retz.	Haritaki
244. <i>Terminalia tomentosa</i> W. A.	Aśwakaṛṇa
245. <i>Thespesia populnea</i> Soland ex Correa	Kapītana
236. <i>Tinospora cordifolia</i> (Willd.) Miers	Guḍūci
247. <i>Trachyspermum ammi</i> (Linn.) Sprague	Bhūtika (yavāni)
248. <i>Trachyspermum roxburghianum</i> (DC.) Sprague	Ajamodā
249. <i>Tribulus terrestris</i> Linn.	Gokṣura
250. <i>Trianthema portulacastrum</i> Linn.	Varṣābhū
251. <i>Trichosanthes dioica</i> Roxb.	Paṭola
252. <i>Typha elephantina</i> Roxb.	Gundra
253. <i>Uraria picta</i> Desv.	Pr̥ṣniparṇi
254. <i>Valeriana wallichii</i> DC.	Tagara

255. <i>Vetiveria zizanioides</i> (Linn.) Nash.	Uśīra
256. <i>Viburnum nervosum</i> D. Don.	Tilwaka
257. <i>Vitex agnus-costus</i> Linn.	Hareṇuka
258. <i>Vitex negundo</i> Linn.	Nirguṇḍī
259. <i>Vitex peduncularis</i> Wall.	Prācībala (Kākjaṅghā)
260. <i>Vitex trifolia</i> Linn. f.	Sindhuvāra
261. <i>Vitex vinifera</i> Linn.	Drākṣā
262. <i>Withania somnifera</i> Dunal.	Aśwagandhā
293. <i>Woodfordia fruticosa</i> Kurz.	Dhātakī
264. <i>Zinziber officinale</i> Roscoe	Śuṇṭhī
265. <i>Zizyphus xylopyra</i> Willd.	Gopaghoṭṭā
266. <i>Zizyphus jujuba</i> Lam.	Badara.

Appendix V

A list of Nighaṅṭus and texts of *Dravyagūṇa* in Sanskrit.

S.No	Title	Author	Location. of Ms.	Published editions
1	2	3	4	5
1	Abhidhāna Candrikā	Bhīmasena	ACC	—
2	Abhidhāna Cintāmaṇi	Cakrapāṇidāsa	GOM (Saka 1721)	1. Madras, 1881, (Telugu Script)
3	Abhidhāna Ratnamālā (Śāḍrasanighaṅṭu)	—	SAO, ARM, GOM, TML, ALM, OLM, SBB, IOL, NLP— Quoted by Malli- nāth on Sisupāli- vadhān I-12, XVII-18-See NCC	2. Madras, 1939, Reprint of 1928 ed. (Telugu Script)
4	Abhidhāna Cūdāmaṇi (See Rājānighaṅṭu)	Narahari	GOM, OLM, BOR, OIB, IHM, GMP. MLA, TML, OLU, IOL.	1. Anandasrama, Poona 1925 (with Dhanwan- tari Nighaṅṭu) 2. Jivanand ed., Calcutta

5	Abhidhāna Mañjari	Bhīṣagācārya	—	—	Nirṇaya Sāgar Press, Bombay, 1793 (with Hindu Com.)
6	Abhinava Nighaṇṭu	Dattaram Chaube	—	—	Bombay, 1900
7	Abhinava Nighaṇṭu	—	—	NCC	—
8	Agastya Nighaṇṭu	Agastya	—	NCC	—
9	Andra Nighaṇṭu	Vararuci	—	TKS	—
10	Akārādi Nighaṇṭu or Dhanwantari Nighaṇṭu	Amṛtanandin	—	NCC	—
11	Akārādi Nighaṇṭu	—	—	Evidently the Vaidya- anighaṇṭu See NCC.	—
12	Akārādi Vaidya nighaṇṭu	—	—	NCC	—
13	Anupānavidhi	Suśeṇadeva	—	ROR	—
14	Aṣṭāṅga Nighaṇṭu or Aṣṭā- ṅghrdaya Nighaṇṭu	Vāhaṭa	—	GOM, TML, ASC, NLP, See NCC.	Kuppuswami Sastri Research Institute Madras, 1973, Ed. P. V. Sharma
15	Aṣṭāṅghrdaya Dravya- vijñāna.	—	—	NCC.	—
16	Atharva Nighaṇṭu	—	—	NCC	—
17	Audhidadravya-Nāma- guṇa-vimarsa	—	—	GOM; See NCC.	—
18	Auśadha Grahaṇa Prākavidhi	—	—	NCC.	—
19	Auśadha Guṇapāṭha	—	—	NCC	—

1	2	3	4	5
20	Auśadha Nāmāvali	Govardhana	ABS, ASC (Author-Govardhana Nath Mishra)	Benares (ASC. MS.)
21	Auśadhanāmāvali	Vaidya Vijaya Śaṅkara	HAM	
22	Auśadha Nigbanṭu	—	MJK	
23	Auśadha Prakaraṇa (of Haremkhala Tantra)	—	PGI (S. 1926)	
24	Auśadha-Pratinidhi-Kalpanā	—	SBB	
25	Auśadhi Koṣṭ	—	BOR	
26	Auśadhi Nāma Māla (Lagbu Nighanṭu)	Vyāsaśeṣava Rāma	BOR, ASB.	Indian Drug Research Association, Poona 1962.
27	Auśadhi Koṣa (with Sans. & Kannada)	—	NCC.	
28	Auśadhikoṣa (with Marathi equivalents)	—	NCC.	
29	Auśadhi Koṣa (equivalents in Marathi & Gujarati)	—	NCC	Ahmedabad, 1899.
30	Auśadhi Nāmāvali	—	BOR (Same as Vaidya Nāmamālā)	—
31	Ayurveda Cintāmaṇi	Baladeva Prasad Mishra	—	Lakṣmi Venkaṭeśwara Press, 1937 (with author's Hindi Com.)

32	Ayurveda-Dravyaguṇa	—	NCC	—
33	Ayurvedokta Dravyaguṇā- bhidhānam	Bholanath Mukho- pachhyaya	—	Calcutta.
34	Ayurvediya-Dravyā- bhidhāna	K. B. Lal Sengupta	—	Calcutta, 1875
35	Bhaiṣajya Guṇārṇava	Pūjyapāda	IOL	—
36	Bhaiṣajya-Vijñānam	Ishana chandra Visharada	—	Calcutta.
37	Bhāva Prakāśa Kośa	—	—	C. K. Sen, Calcutta.
38	Bhāvaswabhāva (Vāda)	Mādhava	ASB, OIB, BHU, SBB, NLP	Chowkhamba Vidya Bhavan, Vnsi, 1973. Ed. P. V. Sharma.
39	Bheṣaja Nāma Mālā (Dravyanirṇaya Nighaṇṭu)	—	GLN	—
40	Bhogyadravyaguṇaviśayaḥ	—	GOM	—
41	Bhojarāja Nighaṇṭu	—	KBC	—
42	Bṛhannighaṇṭu Ratnākara	—	ARM	—
43	Bṛhan Nighaṇṭu Ratnākara	Śāligrāma Vaiśya	KBC	—
44	Dakṣiṇāmūrti Nighaṇṭu	—	GOM, NLP, ADV, (Author-Venka- teśwara)	See Śāligrāma Nighaṇṭu bhūṣaṇa.
45	Dhanañjaya Kośa(Nighaṇṭu)	Dhanañjaya	GLM	—
46	Dhanwantari Guṇāguṇa Yogaśata	—	ASC	—

1	2	3	4	5
47	Dhanwantari Nighaṇṭu	—	SAO, BJK, OLM, OIB, ASC, FSM, SBB, IOL, ALM, GOM, TML, vali Nighaṇṭu	Anandasrama, Poona, 1896 (with Paryāyār ṇava), (with Rāja Nighaṇṭu) 1925.
48	Dhanwantariya Nighaṇṭu	Trimalla	ROR	
49	Dravyacihna	—	KBC	
50	Dravyadaśārtha Nirūpaṇa	Puruṣottama S/o Mādhava GS/o	GOM	
51	Dravyaguṇa	Cakradatta	MJK	
52	Dravyaguṇa	Nārāyaṇa Dāsa	NLP, RLM	
53	Dravyaguṇa	—	NLP	
54	Dravyaguṇa	Gopāla	RLM	
55	Dravyaguṇādarśa Nighaṇṭu	—	RLM	
56	Dravyaguṇādhiraṇḍa	—	RLM	
57	Dravyaguṇa Kalpavalli	Hariśāna Sen.	GOM	
58	Dravyaguṇākara	Hariśāna Sen.	ALM, GOM, KBC, (Author—Mudgala)	
59	Dravyaguṇa Pāṭha	—	GOM, SAO	
60	Dravyaguṇa Saṅgraha	—	GOM	
61	Dravyaguṇa Saṅgraha	—	GOM, SBB	
62	Dravyaguṇa Saṅgraha	Cakrapāṇi	RLM	I Devendra Nath Sen Calcutta, 1871.

63	Dravyaguṇa Saṅkalanam	—	ARM
64	Dravyaguṇaśataka	—	GLM
65	Dravyaguṇaśataśloki or Śataka	Trimalla S/o Vallabha-Bhaṭṭa	BOR, OIB, SBB, CSC, ROR, ASC, ALM, BHU, GOM, JMK.
66	Dravyaguṇa Vicāra	Trimalla Bhaṭṭa	SBB, ACC (Author Ratnākara)
67	Dravyaguṇa Vimarśa	—	SBB
68	Dravyaguṇa Viveka	—	ASC
69	Dravyamuktāvali (with Guṇāpāṭha)	—	GOM
70	Dravyamuktāvali	—	RAS, ADV.
71	Dravyanāmaguṇa-kathanam	—	GLN
72	Dravyanirṇaya Nighaṇṭu	—	GLN
73	Dravyanāma Nirṇaya	—	ASC
74	Dravyaniścaya Sāra Saṅgraha	—	GOM
75	Dravya Padārtha Pratinidhi	—	OIB
76	Dravya Parikṣā	—	ASC
77	Dravyaprakāśa	—	ASC
78	Dravyaprakāśaka	Rucidatta	CSC
79	Dravyaratnākara	—	ASC, GOM, ADV (Author-Mudgala)

Venkateswara Press,
Bombay, 1896.

1	2	3	4	5
80	Dravyaratnāvali	—	GOM, SAO, OLM ARM, OLM, GMP OLM, GMP GLN OLM GOM KBC	
81	Dravyasaṅgraha	—		
82	Dravyasāra Saṅgraha	—		
83	Dravyasiddhi (Guṇapāṭha?)	—		
84	Dravyavaiśeṣika	—		
85	Dravyāvali	Mādhava or Mahādeva		
86	Dravyāvali (Dravyakoṣa)	Candraṭa	GPH ASC	
87	Dravyāvali Nāmanirṇaya	—		
88	Dravyāvali Nighaṅṭu (Nighaṅṭunāmāla)	Mahendra Bhogika S/O Kṛṣṇa Bhogika	BOR, SBB. Some of the MSS are named as Dhan- wantari Nighaṅṭu, Nighaṅṭu Seṣa or Dravyāvali Samuccaya. ROR	See Dhanawantri Nighaṅṭu
89	Dravyāvali Samuccaya	Mahendra Jain S/O Kṛṣṇa Vaidya.	ROR	See Dhanwantari Nighaṅṭu
90	Ekadravya-Q, in Yoga- Ratna Samuccaya of Ananta Kumāra.	—	NCC	
91	Ekadravya vinīscaya	—	MLT, Sec NCC	

92	Ekākṣara Nighaṅṭu	—	MJK, NLP.
93	Ekākṣara Nighaṅṭu	Sadācārya	TKS
94	Ekākṣara Nighaṅṭu	Mādhava	TKS
95	Ekākṣara Nighaṅṭumālā	—	NLP
96	Ekākṣari Nighaṅṭu	Pṛitīkara S/O Kṛiṣṇa	OIB
97	Gadavinoda Nighaṅṭu	—	NCC
98	Gaṅganighaṅṭu	Candra Nandana	ASC, ACC
99	Guṇḍūcyādi Nighaṅṭu (See Dhanwantari Nighaṅṭu.)	Dhanwantari	NCC
100	Guṇacandrikā	Ghanaśyāma Sūri	NCC
101	Guṇacintāmaṇi (Referred to in Cīkītsāsārasaṅgraha)	—	NCC
102	Guṇādarśa	—	NCC
103	Guṇāguṇa	Trimalla	Ananda, See NCC
104	Guṇāguṇa Grantha	—	TRU, ROR, See NCC.
105	Guṇāguṇa Śataśloki	Trimalla	Ananda.
106	Guṇāguṇī	Suśeṇa	NCC
107	Guṇajūāna Nighaṅṭu	—	NCC
108	Guṇakarmanirdēśa	—	NCC
109	Guṇamālā	—	NCC
110	Guṇa Nighaṅṭu	—	NLP
111	Guṇa Paṭala	—	NCC.
112	Guṇapāṭha	Arunagiri Bhiṣak S/O Ramcandra	GOM, MLT, TML OLM, IOL

1	2	3	4	5
113	Guṇapāṭhakāvya	(of Bhārgava- gotra)	Ananda, See NCC	—
114	Guṇaratnākara	— Vrajabhūṣaṇa	ACC, MLB, BIK, BOR, OLM, See NCC.	—
115	Guṇaratnamālā	Bhāvamiśra	ASC, SBB, IOL, MJK, ROR (with Stabaka)	—
116	Guṇa Saṅgraha	Sodhala	BOR	
117	Guṇasāra Samuccaya	Nṛsīṃha Paṇḍita of Kashmir.	OLM	
118	Guṇayoga Prakāśa	—	NCC	J. R. I. M. (BHU),
119	Hanuman Nighaṇṭu	—	ASC	Vol. 3, No. 2, 1969, Ed.
120	Hṛdayadīpaka Nighaṇṭu	Bopādeva	TML, ASC, OIB, ROR, MLU, MJK, NLP.	P. V. Sharma
121	Indrakoṣa (Rājendrakoṣa)	Rāmcandra S/O Prabhākara (com- posed under order of Indra Singh, King of Gauḍadeśa.	ASC (S. 1868) quoted by Kṛṣṇa Rāma Bhaṭṭa in Palāṇḍu Sataka.	
122	Indra Nighaṇṭu	Indu	Quoted by Kṣīra swāmi.	
123	Indu Nighaṇṭu			

124	Kaiyadeva Nighaṅṭu	—	See, Pathyapathya Vibodhaka. GLN
125	Kāśirāja Nighaṅṭu (Same as Madanapāla Nighaṅṭu)	—	
126	Keśava Nighaṅṭu (Keśava-kalpadruma)	Keśava	NCC
127	koṣa Kalpataru (Druma)	Viśwanath Vaidy (1629-76 A. D.) S/O Narayana of Atreyagotra. Physician at Devālaya in Vidarbha; Patronised by Jam Sattarsal of Navanagar; composed prior to 1649 A. D.)	NCC
128	Laghu Nighaṅṭu	—	See Auśadhi Nāmamāla
129	Madanapāla Nighaṅṭu or Madanavinoda.	Madanapāla	GOM, ASB, OIB, ASC, ROR, (S/O Haricandra) CSC, GLM, SBB, MJK.
130	Mahaśuśadha Nighaṅṭu	Aryadaskumar Singh	—

See Kalpadrukōṣa

1. Nandkiśora Sāstri, Benaras, 1933.

2. Lakṣmi Venkateśwara Press, Bombay, 1961
Chowkhamba Vidya Bhavana, 1971.

1	2	3	4	5 (with Hindi Com.)
131	Mūlikā Prakaraṇam	—	TML	—
132	Mūlikānukramaṇikā	—	TML	—
133	Mūlikā Siddhi Saṅgraha	—	TML	—
134	Nāmaguṇa Sāra Saṅgraha	—	BOR	—
135	Nāmamālā	Bhojarāja	TKS	—
136	Nāmamālā Śabda Sanketa- kalkā	Dhanwantari	SBB	—
137	Nāmamālā Sūtra (Madan- Vinoda Nighaṇṭu)	Madana Pāla	BHU	See M ₁ danavinoda.
138	Nāmamāṭṛka Nighaṇṭu	Varadarāja	TKS	—
139	Nāmaratnakāra Nighaṇṭu	Madanapāla	ASC	—
140	Nāmasaṅgraha Nighaṇṭu	Bhārgavācārya	TKS	—
141	Nāmāvali	Govardhana (Nātha)	NCC (Alwar, Bik, BOR), MJK (author-Govar- dhana Dhīra)	See Auśadhanāmāvali
142	Nighaṇṭu	—	BHU	—
143	Nighaṇṭu	Jaimini	TKS	—
144	Nighaṇṭu	Bopadeva	SBB, ROR, GLN	See Hrdayadīpaka Nighaṇṭu
145	Nighaṇṭu	Kaiyadeva	MLU	See Pathyāpathy vi- bodhaka.
146	Nighaṇṭu	—	OIB, ABS, SBB	—

147	Nighaṅṭu Cūdāmaṇi	—	SBB	See Dhanwantari
148	Nighaṅṭu Dravyāvāli	Mahendra	ROR, SBB (Nighaṅṭu-Mahendra Vaidya).	Nighaṅṭu
149	Nighaṅṭu Nāma Guṇa Saṅgraha	Dhanwantari	—	See Dhanawantari
150	Nighaṅṭu Nāmamālā	—	—	Nighaṅṭu
151	Nighaṅṭu Nāmāvali	Govardhana Nātha	ROR, BOR, MLA	See Dravyāvāli
152	Nighaṅṭu Prakāśa	Jośi Vaidya Bapu Gangadhara	HAM	Nighaṅṭu
153	Nighaṅṭu Kośa	—	ROR	Bombay, 1967
154	Nighaṅṭuratnākara	Viṣṇu Vāsudeva Godbole	HAM	Nirṇaya Sāgara, Bombay, 1936.
155	Nighaṅṭu Ratnākara	K. Navre	—	
156	Nighaṅṭu Samaya	Dhananjaya	ROR	
157	Nighaṅṭu Śara Bhajanam	—	GLN	
158	Nighaṅṭu Śeṣa	Hemacandra	BOR	L. D. Bhāratiya Sanskriti Vidya Mandira, Ahmedabad 9, 1968.
159	Nighaṅṭu Saṅgraha	Several authors	OLM	1850.
160	Nighaṅṭu Saṅgraha	Raghunathji Indrajī (kato	—	

1	2	3	4	5
161	Nighaṅṭu Sāra	Bhatta) Rādhākīṣṇa	SBB, MJK (Nighaṅṭusāra Saṅgraha) Ananda.	
162	Nighaṅṭu Sāra	Raghunāyaka	SBB	
163	Nighaṅṭu Sāra	—	ASC.	
164	Nighaṅṭu Sāra	Aśoka Malla	ROR	
165	Nighaṅṭu Śāstra	Mahendra	BOR	
166	Nighaṅṭu Seṣa (Dravyāvali Samuccaya)	Bhogika		See Dhanwantari Nighaṅṭu
167	Nighaṅṭu Vaidyakam See Dhanwantari Nighaṅṭu.	Dhanwantari	ROR, SBB	
168	Nirṇaya Nighaṅṭu	Vaidyanātha	SBB	
169	Paryāya Mañjari	—	GOM, OLM	
170	Paryāyaratnamālā	Mādhava	ASC, BHU, SBB, NLP (author- Maheśwara Miśra)	Patna University Journal, Vol. II, 1946, Ed.—Tarapada Chowdhury.
171	Paryāya Muktvāvali	Haricaraṇa Sena	ASC, TPC, ADV. (author-Hema- candra sena)	Journal of Bihar Re- search, Society, Vols. XXXI & XXXII, Patna, 1947. Ed.— Tarapada Choudhury. Anandāśram, Poona, 1896 (with Dhan-
172	Paryāyārṇava	Nilakaṅṭha Miśra	NLP	

				wantari Nighaṅṭu)
173	Pathyāpathya Nighaṅṭu See Pathyāpathya Vibodhaka.	---	BOR, Anand.	
174	Pathyāpathya Nighaṅṭu	Viśwanātha Sen	KBC, ADV	Khemaraja, Bombay. (with Hindi Com.) Benaras, 1869. Lahore, 1928.
175	Pathyāpathya Nighaṅṭu	Kavi Trimalla	HAM	
176	Pathyāpathya Vibodhaka (Kaiyadeva Nighaṅṭu)	Kaiyadeva S/O Sāraṅga S/O Padmanābha	TML, OIB, BOR, ALM, ROR, FSM, DSV, NLP, RLM. Ananda, ASC, CSC SBB (Nighaṅṭuraja) See 'Abhidhāna- cūdāmaṇi'	
177	Rāja Nighaṅṭu	---	CSC, TML, DSV, ASC, NLP (Nighaṅṭu)	1. Calcutta, 1933 (2nd Ed) 2. Ananda, 1925, Poona.
178	Rājavallabha Dravyaguṇa or Nighaṅṭu	Nārāyana Dāsa Kavirāja	OIB MLT, ARM (Bāhaṭa) GOM ACC, TKS, RLM	1. Calcutta, 1968. 2. Venkateśwara Press, Bombay, 1895 (with Hindi Com.)
179	Rasamūlikā Nighaṅṭu	Bāhaṭa	ACC, TPC, (auth- or-Sureśwara)	
180	Rasa Nighaṅṭu	Mādhava S/O Kodaṅḍarāma Cakrapāṇi	ASC, ACC (author- Kalyāṇa Malla)	
181	Śabda Candrikā	---		
182	Śabda Pradīpa	Surapāla		
183	Śabdaratna Pradīpa	---		

1	2	3	4	5
184	Śabd-ratnāvalī	—	RLM	
185	Śabdasaṅgraha Nighaṅṭu	Agastya	TKS	
186	Śabdāsāra Nighaṅṭu	—	TKS	See Abhidhāna ratnamālā
187	Śadrasa-Nighaṅṭu	—	—	
188	Śadrasarūpagaṇa	Lakṣmaṇa Candra (Sam. 1903)	ROR	
189	Śākaguṇāh	—	OIB	
190	Śāka Nighaṅṭu	Śīta Rāma Śāstri	JIM	
191	Śāligrāma Nighaṅṭu Bhūṣaṇa	Śāligrāma Vaiśya	—	Venkateswara Press, Bombay, 1953
192	Saṅjñā Samuccaya	Śīvadatta Miśra	RLM	
193	Sārasaṅgraha	—	ROR, GOM, MLK, Ananda	
194	Sarasvatī Nighaṅṭu	Śāśwata	TKS, Ananda GLN	Colombo, 1885.
195	Sārottara Nighaṅṭu	—	GOM	
196	Śataṣadhāni	—	ADV, KBC	
197	Śeṣarāja Nighaṅṭu	Kaśava Paṇḍita	GOM, BOR,	Bombay, 1892 Ed.
198	Siddhamantā	S/O Mahādeva	ASC, NLP.	Śaṅkaradāji Pade
199	Siddhasāra Nighaṅṭu	—	ASC, BJA, MJK,	Poona, 1952.
200	Śivakoṣa (with Com.	Śīvadatta Miśra	BOR, BLO GLN	
201	Śiva Prakāśa). Siddhasādhamaṅgrahaṇa Vidhi	—	—	

202	Siddhaśadhā Nighaṅṭu	—	TKS	
203	Sūryārāyāndhra Nighaṅṭu, Vol. 1-7.	—		
204	Tāmbūlaguṇa	—	GLN	
205	Tāmbūlamanjari	—	OIB	
206	Upavana Vinoda	Śāraṅgadhara	KBC	
207	Upavana Vinoda	Malayasūri	NCC	
208	Upavana Vinoda Kautuka	Kavindrācārya	NCC	
209	Vaidyaka Guṇasāra	—	ROR	
210	Vaidyakoṣa	Cakrapāṇi	GPH	
211	Vaidyakoṣa	—	ASB	
212	Vaidyakoṣa	Candraṭa	GPH	
213	Vaidyakoṣa	Dauji	HAM	
214	Vaidyaka Nighaṅṭu Viśeṣa	—	SBB	
215	Vaidyakaśabda Sinḍhu	Umeśacandra Gupta	—	Calcutta, 1894.
216	Vaidyanāmamālā	—	BOR	
217	Vaidyanighaṅṭu	Mahendra (?)	BOR	
218	Vaidya Nighaṅṭu	Bhāvamiśra	BOR	
219	Vaidya Nighaṅṭu	—	GOM, TML, OLM, SBB, (Vaidyaka Nighaṅṭu)	
220	Vaidyaka Nighaṅṭu	—	MLU	
221	Vaidya Nighaṅṭusāra	Cikkana Pandita	OLM	

1	2	3	4	5
222	Vaidyavataṁsa	Lolimarāja	ROR, BOR, ASC, OIB, GMP, MJK	1. Ahmedabad, 1908 (with Gujarati Trans). 2. Motilal Banarasi- das, 1967 (with Hindi Com)
223	Vastuṅaḡa	—	OIB	
224	Vastuṅa Kalpavalli	—	GOM	
225	Vastuṅa Nirṇaya	—	GOM	
226	Vṛkṣāyurjñanam	—	MLU (S. 1931)	
227	Vṛkṣāyurveda	—	MLT	

ABBREVIATIONS

ABS	= Akhil Bharatiya Sanskrit Pariṣad, Lucknow.
ACC	= Aufrecht's Catalogus Catalogorum.
ADV	= Atrideva's Āyurveda kā Bṛhad Itihāsa.
ALM	= Ādyar Library, Madras.
Ananda	= Anandāśrama, Poona.
ARM	= Ārṣa Rasāyana Śālā Muktyala
ASB	= Royal Asiatic Society, Bombay.
ASC	= Asiatic Society, Calcutta.
AUL	= Āndhra University Library.
BJA	= B. J. Institute, Ahmedabad.
BJK	= Bharatiya Jñanapītha, Kashi.
BHU	= Banaras Hindu University, Collections at Central Library & Bharat Kala Bhavan.
BLO	= Bodelian Library, Oxford.
CSC	= Calcutta Sanskrit College.
DSV	= Darbhanga Sanskrit Viswavidyālaya.
FSM	= Florentine Sanskrit MSS (Aufrecht)
GLN	= Govt. Library, Nepal.
GMP	= Govt. Mss. Lib. (Professors), Bombay.
GOM	= Govt. Oriental MSS. Lib; Madras.
GPH	= Gurupada Haldar (Vṛddhatrayi.)
HAM	= Bhagawat Singhji: History of Āryan Med, Science.
IHM	= Institute of Hist. of Med., Hyderabad.
IOL	= India Office Library, London.
JIM	= Jolly's Indian Medicine.
KBC	= Kavirāj Birajācaran (Vanaśadhi Darpaṇa).
MJK & RLJ	= Ranavir Pustakalaya, Jammu & Kashmir.

MLA	=	Maharaja Lib. Alwar.
MLB	=	Maharaja Lib. Bikaner.
MLT	=	Manuscript Library, Trivandrum.
MLU	=	Oriental Lib. Udaipur.
NCC	=	New Catalogus Catalogorum. (Raghavan, Madras).
NLP	=	National Library, Paris.
OIB	=	Oriental Institute, Baroda.
OLM	=	Oriental Lib. Mysore.
OLU	=	Oriental MSS. Lib., Ujjain.
PGI	=	Post graduate Institute of Indian Medicine Library, B. H. U.
RAS	=	Kalpद्रुकोषा.
RLM	=	Rajendra Lal Mitra : Notes on Search of of Sam. MSS.
ROR	=	Rajasthan Oriental Research Institute, Jodhpur.
SAO	=	Sanskrit Academy, Osmania University.
SBB	=	Saraswati Bhavan, Varanasi.
TKS	=	Trikāṇḍaseṣa (Appendix).
TML	=	Saraswati Mahal Library, Tanjore.
TPC	=	Tārāpada Chowdhury (Paryaya Ratnamālā)
TRU	=	Travancore University.
ULT	=	University Lib., Tubingen.

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