

THE
MATERIA MEDICA

OF THE HINDUS

BY

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WITH

A GLOSSARY OF INDIAN PLANTS

BY

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REVISED EDITION.

WITH ADDITIONS AND ALTERATIONS

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PREFACE TO THE SECOND EDITION.

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THAT the ancient Hindus made considerable progress in the science of medicine is fully acknowledged by European savants who have studied both the western and eastern systems, ancient and modern. Hindu medicine, however, is specially indebted to Dr. Wise for the masterly way in which he placed its merits before the western world.

The efficacy of medicines is best proved by the cures they effect. The beneficial results, specially in chronic cases, obtained by the use of drugs prepared according to the Hindu system is often found to be simply marvellous. The large number of Hindu physicians successfully practising in Calcutta, in competition with Allopathic, Homœopathic and Yunani practitioners, is a standing testimony to the value of indigenous drugs manipulated according to the directions left behind by the sages of old. The rule among the natives of Bengal seems to be to resort to western systems in the first stage of diseases, *it being the general belief that the ancient Hindu system is slow in giving relief to the sufferer.* But the trials of the two systems, that are daily taking place side by side of each other, are now gradually creating a conviction in the public mind, that the Hindu system though slow is ultimately sure in its results, and that it never produces those after disturbances which the administration of violent foreign medicines so affects the debilitated systems of patients. If the Hindu system of medicine is so beneficial for the alleviation of human misery in this world, it is necessary that the knowledge which hitherto lay hid in ancient Sanskrit works should be placed within the reach of all searchers after truth. It is with this view that the late Dr. Uday Chand Dutt published the present work in 1870. The book was universally received with favour as the best contribution ever made to the literature on the subject of the indigenous drugs of India, and within a few years the first edition was entirely

Though there was a great demand for this valuable work, a second edition was not brought out owing to the untimely death of the author. Great interest has, however, been awakened of late in the subject of Indian medicines. At the Medical Congress held in Calcutta in 1894, a Drugs Committee was appointed with the late Dr. Kanny Lall Dey as Joint President, and the Government of India have also since then appointed a Commission with the object of considering "the desirability of extending the use of indigenous drugs of India." The advisability of using serviceable Indian medicines as remedial agents is also admitted by medical men all over the country. As a result, a considerable fresh demand has lately sprung up for this work, to meet which we now publish a new edition. Every pains have been taken to make this edition as accurate as possible, and a considerable amount of new information, which the publishers gathered in the course of their long experience as Ayurvedic physicians, have been added to it. With these remarks we now venture to place the work in the hands of the public, hoping that it will be found useful by medical practitioners and prove beneficial to suffering humanity at large.

CALCUTTA.	}	KAVIRAJ ASHUTOSH SEN
NOVEMBER, 1922		AND KAVIRAJ PULIN KRISHNA SEN.

PREFACE.

THIS work is not a literal translation of any particular treatise, but a compilation from standard Sanskrit Medical works, arranged somewhat upon the plan of Waring's Manual of Therapeutics, and intended to give a concise exposition of the *Materia Medica* of the Hindus. Dr. Wise, in his commentary on the Hindu system of Medicine, has given a pretty full and accurate account of the Anatomy, Surgery and Pathology of the Hindus. With regard to his work I may here repeat, what I have stated in the preface to my translation of the *Nidāna*, "That the natives of India cannot be too grateful to him for the trouble he has taken in bringing to light the contents of their ancient medical works, and establishing their right position in the history of medicine." The scope and plan of his book did not, however, admit of his treating of Sanskrit *Materia Medica* in the manner of modern works on the subject. I have, therefore, undertaken to publish this work under the impression that it will prove an acceptable contribution to the history of drugs, and will form a basis for further researches on indigenous medicines.

In the first part of the work I have given an account of the mineral medicines used by the Hindus, the mode in which they are prepared for use, their chemical composition, and the principal combinations in which they are employed in different diseases. With regard to the *Vegetable Materia Medica*, I have endeavoured to give the correct scientific names of the plants described, by procuring the drugs through practising Kavirajas, or native physicians, and having them identified in the Royal Botanic Gardens.

In describing the general properties of individual articles I have not followed the Sanskrit texts literally. Sanskrit writers, under this head, after recounting their sensible properties, enter into minute details regarding their cooling or

heating effects on the system, and their special influence on the humours which are supposed to support the machinery of life, namely, air, bile, phlegm and blood. These details are not so much the result of observation and experience as the outcome of an erroneous system of pathology and therapeutics. I have, therefore, selected for notice such portions of the texts as relate to the practical use of the drugs and their tangible effects on the system. This latitude in departing from the texts, has enabled me to bring together in one place, useful hints regarding the uses of particular drugs from different Sanskrit treatises on therapeutics. I have occasionally added remarks on their history and economic uses where I thought I had new or additional information to afford on the subject. These remarks are for the most part based on personal knowledge.

In describing the preparation and uses of medicines employed in different diseases I have confined myself strictly to the texts of the authors whom I have quoted, and have given the original Sanskrit verses in foot-notes. I have not incorporated with them the results of modern researches on indigenous drugs, or my personal experience of their use. These I have reserved for a future essay. My object here has been to show the extent of knowledge attained by Hindu physicians by their own practice and observation.

In the selection of the prescriptions for illustrating the uses of medicines in individual diseases I have, as a rule, given preference to such recipes as are commonly used by native physicians. Where there are several well-known medicines of similar composition and use, I have described in detail only one, and given under it the names of the others with a brief allusion to their composition. My main object in including the names of the principal or generally known preparations of the Hindu *Materia Medica* in the text and index, is to enable the practitioner of European Medicine to get an idea of their nature and composition when he comes to hear of their having been used by patients who had been under native treatment before coming under his care, as is very often the case. The list is by no means an exhaustive one, nevertheless I have, at the risk of being tedious,

endeavoured to include under some head or other most of the combinations which were pointed out to me by experienced native physicians, as generally used in practice.

In detailing the uses of particular combinations of medicines, Sanskrit writers are, sometimes, in the habit of indulging in exaggerated statements. Thus for example a medicine, which is really used in a special disease, say jaundice, is described in the chapter devoted to the treatment of this disease, but a host of other diseases may also be recited as cured by it. Native physicians who regard these writings as sacred, explain these irrelevant statements by saying that they are secondary uses. I have, for the most part, omitted them in my translations of the texts, hence their English renderings will sometimes appear deficient or incomplete.

The names of the works given below the Sanskrit texts merely shew that those texts are to be found in them, and not that they were originally composed by the authors or compilers of those books. The combinations or formulæ generally used, are to be found in most compilations, and it is not always practicable to trace them to their original sources. In quoting these authorities I have, as a natural consequence of the principle upon which the prescriptions were selected, had to give preference to works that are used as text books by native physicians.

The number of Sanskrit medical works, and especially of small compilations on the treatment of diseases, is too numerous and indefinite to admit of detailed enumeration here. The enquirer after them is sure to find, in different parts of the country or seats of learning, many little manuals, essays and digests of which he did not hear before. It would seem that in the absence of printing, teachers of medicine used to prepare small compilations containing such prescriptions as they were in the habit of using for the guidance of their pupils, who copied them for personal use. These manuals are often dubbed with fancy names, and have more or less circulation according to their merit or the extent of influence of their authors. There are however a few works which owing to their comprehensive character, ancient date, or real merit, are well-known throughout India. I will here notice them briefly.

The two works called Charaka Sanhitá and Susruta Áyurveda are the oldest and most celebrated treatises on Hindu medicine now extant. An older work called Ayurveda is mentioned in both these works as having formed a part of the Atharva Veda. It is said to have been originally composed by Brahmá, the creator, and to have consisted of a thousand chapters and a hundred-thousand *slokas*. Afterwards, in consideration of the short lives and small intellects of human beings, it was abridged into eight chapters as follows :—

1. *Salya* or surgical treatment.
2. *Sálakya* or diseases of the head, eyes, ears and face.
3. *Káyachikitsá* or treatment of general diseases.
4. *Bhutavidyá* or diseases caused by evil spirits.
5. *Kaumára-bhritya* or the treatment of infants and of the puerperal state.
6. *Agada* or antidotes to poisons.
7. *Rasáyana* or medicines which promote health and longevity.
8. *Vájikarana*, or aphrodisiacs.

The Áyurveda with a hundred thousand *slokas* is probably a myth, but the abridged Áyurveda with its eight divisions seem to have had a real existence, although it is not available in the present day. It probably became obsolete after works of Charaka and Susruta were composed.

Charaka is generally believed to be older than Susruta and consequently to be the oldest work on Sanskrit Medicine now extant. In the introduction to this work it is said that Átreya, a learned devotee, taught the holy Áyurveda to six pupils; namely, Ágnivesa, Bhela, Játukarna, Parásara, Háríta and Kharapáni. Ágnivesa first wrote a treatise on medicine, and afterwards Bhela and others followed, each producing a separate work and thereby acquiring great renown. The work of Ágnivesa was regarded as the best. It was edited or corrected by Charaka in whose name it is now current. At the end of each book of this work it is said, that *tantra* or scientific treatise was composed by Ágnivesa and corrected by Charaka. A later writer Vágbhatta in his introduction to his *Ashtānga-hridaya-sanhitá* says, that that work had been compiled from the treatises

of Agnivesa, Hārīta, Bhela, Sāsuvata, Susruta, Kavala, and others. From this it would seem that the six disciples of Ātreya, mentioned in Charaka, were not mythical beings, but authors of books, for two of them, namely, Agnivesa and Bhela are mentioned by Vāgbhatta. It would appear also, that at the time Vāgbhatta lived, Agnivesa's work was not called by the name of Charaka, and Susruta had also been written. Hence it follows that Charaka's edition of Agnivesa, that is the work now called Charaka, was probably edited after Susruta had been written. Ātreya is said to have lectured somewhere near the Himalaya, and his name occurs very frequently in the Vedas. His father Atri was a renowned sage, and the author of a law treatise which is current in his name. There is no clue to the nativity of Charaka, but Drīdhabala, who added some chapters to his work, calls himself a native of Panchanada or the Panjab. * Susruta, on the other hand, is said to have been written in Benares, From the facts detailed above, it is clear that the work called Charaka was composed at a very early age. I will not attempt to hit at the century before Christ in which it was probably written as it is a question which can be best discussed by professed antiquarians. I may notice, however, that the book is composed in an antiquated style and appears to have been written before the spread of the Puranic form of Hinduism, as the names of modern gods and goddesses do not occur in it, and the author does not, at the commencement of the work, offer his salutations to any mythological deity, as is usual with later writers. Beef was not then, apparently, a forbidden food, for Charaka speaks of it as an article of diet that should not be taken daily. †

* अक्षरार्थे दृढवली जातः पञ्चनदे पुरे । कृत्वा बहुभ्यस्तस्मै विज्ञेयश्च बलीयसम् ।
 सप्तदशोपधाध्यायेः सिद्धिकल्पैरपूरयत् ॥ शिष्याध्यायचरकसिद्धिस्थानम् ।

† कुशिकश्च सिद्धाटीश्च श्रीकरं गज्यमादिषु । मन्थान् दधि च माषांश्च शयकश्च च
 भीकयत् ॥ चरकसुप्रस्थान माषाशितोपधाध्यायः ।

The work next in point of age, namely, *Susruta*, is more systematic in its arrangement, contains better details of anatomy and pathology, and shews on the whole more advanced state of knowledge, both of general principles and of details of treatment.

The origin of the *Susruta Ayurveda* is thus described in the introduction to that work. Dhanvantari, the surgeon of heaven, descended upon earth in the person of Divadása, king of Benares, for the purpose of teaching surgery along with the other branches of medical knowledge by which the gods preserve themselves from decline, disease and death. *Susruta* and other pupils hesought him for instruction in surgical knowledge. Dhanvantari asked them what they wished to learn. The pupils replied "you will be pleased to make surgical knowledge the basis of your instruction, and to address your lectures to *Susruta*, who will take notes." Dhanvantari replied, "be it so. For surgery is the first and most important part of the *Ayurveda*, inasmuch as the healing of wounds was the first necessity for the medical art among the gods on account of their battles with the demons. Besides, surgical treatment effects rapid cures, has recourse to instruments, mechanical appliances, caustics and the actual cauter and is intimately connected with the other branches of medical science." Accordingly we find that *Susruta* devotes the greater portion of his work to such subjects as anatomy, surgical instruments and operations, inflammation and surgical diseases, care of the king and his troops in the battle-field, obstetrical operations, poisons, etc.

The general diseases such as fever, diarrhoea, chest diseases, etc., are treated of in the last book called "*Uttara-tantra*," but there are reasons for believing, that this portion did not originally form a part of the work, but was subsequently added by some writer with the object of giving completeness to it. This is evident from several reasons. The very name *Uttara* "supplemental" is enough to suggest the idea of its being an after thought, if not a subsequent work. Had it been an integral part of the original treatise, it would have been included in the original scheme. But at the end of the first chapter of the first book, an analysis of the contents of the entire work is given wherein it is said that this work consists of five parts

containing 120 chapters in all.* This is followed by a line to the effect, that in the Uttara-tantra the remainder of the subject will be described. This last line, however, is evidently an interpolation, for if the original writer of the work had divided his book into six parts, he would not have said that it consisted of five parts. Besides the Uttara-tantra has a separate introduction in which the writer says it is compiled from the works of learned sages on the six divisions of *Kāyachikitsā* or the treatment of general diseases, and from the work of Videhidhipa on *Sālakya Sāstra* or diseases of the head, eyes, ears and nose.

If therefore we leave out of consideration the Uttara tantra of Susruta, the work resolves itself mainly into a treatise on the principles of medicine as bearing on surgical diseases. It would thus appear, that from a very early age, Hindu medical practitioners were divided into two classes, namely, *Salya chikitsaka* or surgeons and *Kāyachikitsaka* or physicians. The surgeons were also called *Dhanvantaryia sampradāya* after *Dhanvantari* the reputed teacher of Susruta, or from *Dhanvantari* the mythological surgeon of the gods. This division existed before the work of Charaka was compiled, for as pointed out by *Kavirāja Brajendra-kumar Sen Gupta*, Charaka, like our modern physicians, refers his readers to surgeons when surgical aid is necessary, as for example in the passage quoted below. † We may conclude, therefore, that Charaka is the oldest treatise on Medicine and Susruta the oldest treatise on Surgery now extant.

These two works, namely, Charaka and Susruta mark the highest phase of development of the Hindu system of Medicine in ancient times. Their comprehensive character and superior merit probably led, in course of time, to the extinction of the

* बीजं चिकित्सितस्येतत् समाप्तं प्रकीर्तितम् । सर्विभ्रमध्यायप्रथमस्य व्याख्या भविष्यति । तच्च सर्विभ्रमध्यायप्रथमं पञ्चमं स्थानेषु । तत्र सूत्रस्थानं विद्यानं प्रारौच्य चिकित्सितं कल्पेत्प्रथमज्ञानं संविभ्रम्योपरे तन्मे प्रेषानर्थान् व्याख्यास्यामः । इति सुश्रुतः प्रथमाध्यायः ।

† तत्र धन्वन्तरीयानामचिकित्साः क्रियन्वित्तो र्व्यानां कृतयोप्यानां व्यचयीष्वपि रोपयेत् ॥ चरकचिकित्सितस्थानगुणाधिकारः ।

manuscripts of authors who had preceded them. Succeeding writers and practitioners came to regard these works as of divine origin and beyond the criticism of man. Accordingly they dared not add to or amend what these ancient sages had recorded regarding the general principles of medicine and special pathology, but confined their labours to making better arranged and more compendious compilations for the use of students, and to explaining or dilating upon the texts of Charaka and Susruta, while in the matter of surgical practice, there has been a gradual decline in knowledge and experience till at the present day an educated surgeon of the Dhanvantariya sampradāya is a phenomenon unknown in Hindustan.

The next compilation on Hindu Medicine is said to be the *Aṣṭāṅga-śrīdhara-saṁhitā* by *Siṅha Gupta Sena Vāgbhatta*. This work is a mere compilation from Charaka and Susruta methodically arranged. It contains little or nothing that is original or that is not to be found in the works from which it was compiled. This circumstance, together with the fact of Vāgbhatta being always mentioned by later writers as an old authority, seems to show that his work was compiled not long after those of Charaka and Susruta. Like these two writers he does not mention the use of mercury in the treatment of diseases.

Next in point of age, are the two works called respectively the *Nidāna* by *Mādhava Kara* and *Chakradatta-saṅgraha* by *Chakrapāni Datta*. The first is a concise treatise on the causes, symptoms and prognosis of diseases, compiled from various authors, and has been used from a long time as the text-book on pathology by students of Hindu Medicine throughout India. Professor Wilson is of opinion that "the Arabians of the eighth century cultivated the Hindu works on Medicine before those of the Greeks; and that the Charaka, the Susruta, and the treatise called *Nidāna* were translated and studied by the Arabians, in the days of *Harun and Mansur* (A. D. 773), either from the originals, or more probably from translations made at a still earlier period into the language of Persia."

The treatise called *Chakradatta-saṅgraha*, describes in detail the treatment of diseases arranged in the order in which they are described in the *Nidāna* of *Mādhava Kara*, and to which it is a

companion volume. Its author deals chiefly with vegetable drugs. He gives a few prescriptions containing mercury, in which this metal is mixed with sulphur and vegetable substances, but the preparations of mercury produced by sublimation and chemical combination with salts, etc., were unknown to him. It would appear, therefore, that mercury was just coming into use in his time. He does not mention opium, so that his work, and consequently the *Nidāna*, must have been composed before the introduction of this drug into India by the Mussulmans

The last great work on Hindu Medicine is that called the *Bhāvaprakāsa*, compiled by Bhāva Misra. It is a comprehensive treatise, compiled from the works of preceding authors, with much additional information on the properties of drugs, accounts of new drugs, and of some new diseases, as for example, the syphilis introduced into India by the Portuguese and described in this work under the name of Phiringi roga. By the time this work was composed, opium had been largely employed in practice, the use of mercury had extended to almost all diseases, various preparations of gold, silver, tin, copper, orpiment, arsenic, etc., had come into fashion, superseding to a considerable extent the vegetable drugs of the older writer; in short, Hindu pathology and therapeutics had reached their acme. Dr. Wise says that *Bhāvaprakāsa* was composed about three hundred years ago. It cannot, at any rate, be a much older work. China root, called Chobehini in the vernacular, is described in it. According to Fluckiger and Handbury the use of this drug as a remedy for syphilis was made known to the Portuguese at Goa by Chinese traders, about (A. D. 1535). Hence the *Bhāvaprakāsa* must have been compiled after this period.

Besides the systematic treatises on the description and treatment of diseases above noticed, there are several works in Sanskrit devoted especially to the description of the synonyms and properties of individual medicines and articles of diet. The oldest treatise on this subject is the one called *Rājanirghanta*. It is generally ascribed to Dhanvantari, but Pundit Madhusudan Gupta estimated the age of this work at 600 years. As both mercury and opium are mentioned in this treatise, it cannot be older. Some later compilations on this subject are in general use at the

present day. In the North-West Provinces, the Nirghantu, compiled by Madanpála, is generally perused by students. In Bengal, a very superficial compilation, under the name of Rájavallabha, is in currency. In Orissa, a superior work, called Satkantha-ratnábharaṇa, is used.

The progress of chemistry or rather of the art of calcining, subliming and of otherwise preparing mineral substances for medical use, was comparatively slow in the early ages. Susruta used the natural salts, such as chloride of sodium, impure carbonates of potash and soda, borax, etc; he employed iron in anæmia, and briefly referred to the supposed properties of silver, copper, tin, lead and the precious stones, but he gave no detailed instructions regarding their calcination, preparation or administration in special diseases. Chakradatta gives some processes for reducing to powder iron, copper and talc, and a few prescriptions containing these remedies. The oldest work containing a detailed account of the calcination or preparation of the different metals (such as gold, silver, iron, mercury, copper, tin and lead), for internal use, with formulæ for their administration, is I believe a concise treatise on medicinal preparations by Śarangadhara. Opium and pellitory root are mentioned in this work, hence it must have been compiled during the Mussulman period. Since then a host of works on metallic preparations and combinations have been prepared both in Bengal and the North-West Provinces, and mineral medicines have been largely adopted in the treatment of diseases. The more important parts of the information contained in these works are embodied in the Bhāvaprakāsa and the two works on inorganic medicines generally used in Bengal, namely, Rasendra-chintāmani and Rasendrasārasaṅgraha. As observed on page 54, most of the mineral preparations of the Hindus consist of their few metallic remedies combined or mixed together in an endless variety of forms. Nevertheless we cannot help admiring the ingenuity and boldness of the Hindu physicians, when we find, that they were freely and properly using such powerful drugs as arsenic, mercury, iron, etc., while the Mussulman Hakims around them, with imperial patronage and the boasted learning of the west, recording such remarks regarding them as the following :—

"Soombookhar, 'the white oxide of arsenic.' There are six kinds of this, one named Sunkia the third Godanta, the fourth Darma, the fifth Huldea. The Yunani physicians do not allow this to form a part of their prescriptions, as they believe, it destroys the vital principle. The physicians of India, on the contrary, find these drugs more effectual in many disorders, than others of less power, such as the calx of metals. For this reason too I am in the habit of seldom giving these remedies internally, but I usually confine my use of them to external application and as aphrodisiacs which I prescribe to a few friends, who may have derived no benefit from Yunani prescriptions. It is better however to use as few of them as possible." ¹

"Para, 'Mercury.' It is very generally used throughout India in many ways, both in its native and prepared state, but in the latter we ought to be very cautious, for it is seldom sufficiently killed or removed from its native state, in which it is a dangerous drug." ²

"Loha, 'Iron.' It is commonly used by physicians in India, but my advice is to have as little to do with it as possible." ³

At the end of the present work is appended a glossary of Indian plants described by Sanskrit writers. In the body of the work I have selected for notice only such drugs and plants as have some definite use in a particular disease, or class of diseases. Numerous other plants used in medicine incidentally, or for economic purposes, are mentioned by Sanskrit writers, but these are not of sufficient importance in a medicinal point of view to deserve detailed notice in a work of this sort. I had prepared an alphabetical list of these plants with their vernacular and scientific names for my personal use. Dr. King kindly undertook to revise this glossary for me, and, at his suggestion, it is printed as an appendix to this work.

The Bengali equivalents of the Sanskrit terms in the glossary have been taken mainly from Sir Rájá Rádhákánta Deva's Encyclopædia of Sanskrit learning entitled the *Sabdakalpadruma*. The Hindi names have been obtained from the vernaculars given

1. Taleef Shareef. translated by George Playf.

2. *Idem*, page 26.

3. *Idem*, page 146.

in the *Bhāvaprakāśa*; the *Amrita-sāgar*, a Hindi translation of a treatise on Sanskrit medicine; and *Kesava-binoda-bhāśā Nirbhantu*, a Hindi treatise on therapeutics translated from the Sanskrit by Pandit Kesava-prasāda Dvivedi of the Agra College.

The scientific equivalents of these Sanskrit and vernacular terms have been gleaned chiefly from Roxburgh's *Flora Indica*, Jameson's Report on the Botanical garden of the North-West Provinces for 1855, O'Shaughnessy's Bengal Dispensary, Powell's Report on Punjab Products, etc. The translations of these writers have been verified, whenever it was practicable to do so, by identifying the plants in the Royal Botanic Gardens. The rest have been given chiefly on the authority of Roxburgh after carefully comparing his descriptions with the characters assigned to them by Sanskrit writers. Some plants, the identification of which was doubtful, have been omitted from the list. The scientific names of many of these plants have been ascertained for the first time, by Dr. King, after examination of specimens procured by me. Dr. King has also furnished the recent botanical names of numerous plants the old names for which have now become obsolete. With regard to the spelling of the Sanskrit and vernacular terms, I should mention that professor H. H. Wilson's system of transliteration, or as it is now sometimes called the Hunterian System, has been adopted, so far as is necessary to arrive at the correct pronunciation of the words, but the minute distinctions between the two varieties of the dental and palatal S, the four varieties of N, and the long and short sounds of some of the vowels, which are not always practically observed in pronouncing them, have not been insisted upon in correcting the proof-sheets. The vernacular terms have been for the most part, spelt as they are written in standard Bengali and Hindi dictionaries. The spoken language varies so much in different parts of the country and among different classes of people, that it would be hopeless to attempt any thing like a complete vocabulary of names as pronounced by the people of the different provinces of which Hindi and Bengali are the vernaculars.

One great peculiarity of the Sanskrit language consists in its having numerous synonyms for material objects, and medicines

form no exception to this rule. Almost all well known plants have several synonyms, and some have as many as twenty to forty names; gulancha has thirty-nine, chebulic myrobalan thirty, the lotus thirty-eight, with half as many for its varieties, and so on. Native physicians learn these synonyms by rote, just as they do their grammars and dictionaries. Sanskrit medical works, like most other works in the language, are composed in rhyme, and any one of the numerous synonyms of a drug may be used to designate it in prescriptions containing the article according to the fancy of the writer and the necessities of metrical composition. Many names again are common to numerous articles, and it is often impossible without the help of annotations to make out which drug is meant by a particular term. In the absence of any scientific description of plants, however, these synonyms sometimes serve to describe their prominent characters, and thus prove an aid to their identification. In the glossary appended to this work, I have not attempted to give a complete list of all these synonyms. As a general rule I have given only the principal or current name of each plant. Some plants have however more than one well-known and currently-used names. In such instances, I have given those names in the first column only, with a reference to the synonyms under which their vernacular and Sanskrit equivalents have been given.

I avail myself of this opportunity, publicly to tender my cordial thanks to those gentlemen who have assisted me in carrying this work through the press. To Dr. George King, Superintendent of the Royal Botanic Gardens, I feel myself particularly beholden. He has helped me most materially in a variety of ways and has thereby enabled me to avoid many errors and mistakes. On many occasions he has spent hours in identifying various drugs for me; and he has revised nearly all the last proofs, before the sheets were printed. The recent names of plants in the glossary are entirely due to his pen, and they entailed on him considerable and tedious labour. Without these names, I should have been obliged to content myself with the old names, gleaned from the works of Roxburgh and others, which are now only tolerated as synonyms, and which would have seriously impaired the usefulness of the glossary as a work of

reference. I am indebted to him, likewise, for his permission to allow Babu Prasanna Kumar Sen, Overseer of the Royal Botanic Gardens, to assist me in my enquiries, and this has enabled me to solve many a doubtful point in the translation of the scientific names of plants into the vernacular. During the absence of Dr. King from the Gardens, Mr. S. Kurz cordially helped me whenever I had occasion to seek his aid in identifying native medicines.

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THE
MATERIA MEDICA
 OF THE HINDUS.

INTRODUCTION.

MATERIAL OBJECTS AND CLASSIFICATION OF MEDICINES.

CHARAKA divides material objects into three classes, namely, mineral, animal and vegetable. Minerals consist of gold, silver and other metals; diamond, emerald and other gems; realgar, orpiment and other ores; and the various sorts of earths. Vegetables are divided into four classes, namely, *Vanaspati*, *Vriksha*, *Virudh* and *Oshadhi*. Those plants which produce fruits, without first showing their flowers, are called *Vanaspati*. Plants which produce fruits from flowers, which are known by their flowers and fruits, and which wave small branches from their trunks, are called *Vriksha*. Plants which during their growth are supported by other plants, like orchids are called *Virudh*, *Pratánavatyá* or *Vallili*. Lastly, those grasses, etc., which die after maturing their fruits, are called *Oshadhi*. Animals are divided into four classes, namely, *Jaráyuja* or mammalia, *Andaja* or oviparous, *Svedaja* or those produced from animal excretions, as parasites, etc., and *Udbhijja* or those produced under ground or from vegetable matter, as for example *Indragopta*, a sort of red insect.

All parts of vegetables may be used in medicine, namely,—

Root, as of *Chitraka* (*Plumbago Zeylanica*.)

Under ground stem, as of *Surana* (*Amorphophallus campanulatus*.)

Leaves, as of *Vásaka* (*Justicia Adhatoda*.)

Fruits, as the three Myrobalans.

Flowers, as of *Dhátaki* (*Woodfordia floribunda*.) Malati etc.

Extract, as Catechu, Opium, etc.

Bark, as of *Kurchi* (*Holarrhena antidysenterica*.) Asoka etc.

Wood, as of *Dárvi* (*Berberis Asiatica* or *aristata*.) Chandaa (sandal) etc.

Gum, as Myrrh, Assafœtida, etc.

Sometimes the entire plant is used as *Kantakāri* (*Solanum Xanthocarpum*.)

The skin, hair, wool, nails, horns, hoofs, milk, bile, honey, fat, marrow, blood, flesh, urine, fæces, semen, bones and nerves of animals are all used in medicine.

Susruta divides remedial agents into two classes, namely, *Pārthiva* or material and *Kūlakṛita* or effected by time, such as wind, sun-shine, shade, moon-light, darkness, heat, cold, rain, day and night, changes of the moon, months and seasons of the year, etc. These are all said to affect the humours of the body, and, through them, the diseases caused by their derangement. The influence of these agents, if properly regulated or availed of, sometimes cures disease, without the aid of material remedies.

Sanskrit writers do not agree in the mode in which they classify medicines when describing their properties. Charaka divides medicines into fifty classes, according to their supposed action on the different organs of the system, or on particular symptoms of diseases. These classes are as follows:—

1. जीवनीय *Jivaniya*—Medicines which prolong life.
2. वृद्धनीय *Vrinhaniya*—Medicines which promote nutrition and increase corpulency.
3. सिद्धनीय *Lekhaniya*—Medicines which thin the tissues, or reduce corpulency.
4. भेदनीय *Bhedaniya*—Promote excretions.
5. संधानीय *Sandhaniya*—Promote the union of fractured or divided parts. [power.
6. दीपनीय *Dipaniya*—Increase the appetite and digestive
7. बल्य *Balya*—Increase strength. Tonics.
8. वर्ण्य *Varnya*—Improve the complexion.
9. कण्ठ्य *Kanthyā*—Improve the voice, or cure hoarseness.
10. हृद्य *Hridya*—Promote cheerfulness or relish.
11. त्रिपिण्ड *Triptighna*—Remove a supposed phlegm which causes a sense of satiety.
12. पद्मोद्घ *Arsoghna*—Cure piles.
13. कुष्ठघ्न *Kushthaghna*—Cure skin diseases.
14. कण्डुघ्न *Kandughna*—Cure pruritis.
15. कृमिघ्न *Krimighna*—Cure worms.
16. विषघ्न *Vishaghna*—Act as antidotes to poisons.

17. स्तन्यजनन *Stanyajanana*—Promote secretion of milk.
18. स्तन्यशोधन *Stanyasodhana*—Improve the quality of milk.
19. शुक्रजनन *Sukrajanana*—Increase the secretion of semen.
20. शुक्रशोधन *Sukrasodhana*—Purify the semen.
21. स्नेहीपथीय *Snehopayoga*—Emollients.
22. स्वेदीपथीय *Svedopayoga*—Diaphoretics.
23. वमनोपथीय *Vamanopayoga*—Emetics.
24. विरेचनोपथीय *Virechanopayoga*—Purgatives.
25. आस्थापनीपथीय *Asthāpanopayoga*—Medicines for use in enemas.
26. अनुवासनीपथीय *Anuvāsanopayoga*—Medicines for oily enemas.
27. शिरोविरेचनोपथीय *Shirovirechanopayoga*—Promote discharge from the nose.
28. हृदिनिघ्नघ्न *Chhardīnigrahana*—Relieve vomiting.
29. तृष्णनिघ्नघ्न *Trishnānigrahana*—Relieve thirst.
30. हिक्कानिघ्नघ्न *Hikkānigrahana*—Relieve hiccup.
31. पुरीषसंघ्नघ्न *Purishasangrahanīya*—Render the faeces consistent.
32. पुरीषविरजनीय *Purishavirajaniya*—Alter the colour of the faeces.
33. मूत्रसंघ्नघ्न *Mutrasangrahanīya*—Reduce secretion of urine.
34. मूत्रविरजनीय *Mutravirajantiya*—Alter colour of urine.
35. मूत्रविरेचनीय *Mutravirechantiya*—Increase secretion of urine.
36. कासहर *Kāśahara*—Cure cough.
37. श्वासहर *Śvāsahara*—Cure difficult breathing or asthma.
38. शोथहर *Shothahara*—Cure anasarca or swellings.
39. श्वरहर *Shvashkara*—Fœdrituges.
40. श्रमहर *Shramahara*—Remove fatigue.
41. दाहप्रशमन *Dāhprasamana*—Relieve burning or heat of body.
42. शीतप्रशमन *Shitaprasamana*—Relieve sense of coldness.
43. ऊर्ध्वप्रशमन *Urdhwaprasamana*—Cure urticaria. [limbs.
44. अङ्गमर्दप्रशमन *Angamardaprasamana*—Relieve pain in the
45. गुल्मप्रशमन *Gulmaprasamana*—Cure pain in the bowels.
46. शोणितस्थापन *Shonitasthāpana*—Styptics.
47. वेदनास्थापन *Vedanasthāpana*—Anodynes.
48. प्रजास्थान *Sanjñasthāpana*—Restore consciousness.
49. प्रजास्थापन *Prajāsthāpana*—Cure sterility.
50. वयःस्थापन *Vayahasthāpana*—Prevent the effects of age.

Susruta divides medicines into thirty seven classes, named after the first article of each class. The medicines included in each class have certain common properties, such as acidity, sweetness, astringency, etc., are often used in combination, and can be substituted for one another. This has the advantage of bringing analogous substances under one head, but numerous medicines come to be written under two or more heads. The *Nighantu* and some other works on the properties of medicines adopt the following classification in describing them:—1. Strongly scented substances. 2. Moderately scented substances. 3. Weak scented substances. 4. Extracts. 5. Precious stones. 6. Metals. 7. Sweet plants. 8. Acid plants. 9. Potherbs. 10. Bitter herbs. 11. Flower plants. 12. Fruitbearing creepers. 13. Root-stocks. 14. Large trees. 15. Middle sized trees. 16. Small trees or shrubs. 17. Creepers. 18. Corn and Pulses. 19. Cooked food. 20. Different sorts of water. 21. Fluids as milk, honey, etc. 22. Necessaries of life, such as baths, dress, ornaments, etc. 23. The influence of the elements and imponderables etc.

THE PROPERTIES OF MATERIAL OBJECTS AND THE ACTION OF MEDICINES ON THE HUMAN SYSTEM.

MATERIAL objects, according to Sanskrit writers, have six sorts of tastes, twenty sorts of qualities, and two sorts of forces in them. The six tastes are sweet, acid, salt, bitter, acrid and astringent. The twenty qualities of objects are as follows:—Heavy, light, soft, dull, oily, consistent, watery, hot, fixed, sharp, tremulous, delicate, demulcent, smooth, harsh, transparent, hard, pungent, coarse and cold. The two forces are heating and cooling. All substances are supposed, after digestion, to assume one or other of three sorts of properties: thus sweets and salts are supposed to be turned after digestion into sweets; acids, into acids; and bitters, acrids and astringents, into acrids. Besides the above properties, each medicine has a special action of its own. It is that quality which shows itself superior to the usual properties of taste, force, and result of assimilation; as for example, *Danti* (*Baliopermum Montanum*,) which though similar in properties to *Chitraka* (*Plumbago Zeylanica*,) yet, unlike the latter, acts as a purgative. The result

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is owing to its special action, the nature or ultimate cause of which is beyond the comprehension of the Gods themselves.

The various actions of medicines on the human system are described in considerable detail. All diseases being supposed to be caused by derangement of the humours, namely, wind, bile, phlegm, blood, etc., all medicines are likewise supposed to have some influence upon one or other of these humours. *Susruta* divides medicines into two classes, with reference to their action on the humours, namely, *Sansamana* and *Sansodhana*. *Sansamana* are medicines which rectify the deranged state of the humours and calm their excited action, without promoting the excretions. *Sansodhana* are medicines which remove collections of bad humours and discharge them by the excretions. The first is subdivided into three orders, namely, medicines influencing wind, bile, and phlegm, respectively. The second includes emetics, purgatives, errhines and other depositories. *Sarangadhara* and other writers describe the actions of medicines in further detail and mention the following classes :—

दीपन *Dipana* are medicines which promote appetite, but do not aid in digesting undigested food.

पाचन *Pāchana* are medicines which assist in digesting undigested food, but do not increase the appetite. Some medicines have both these properties, that is, they are appetizers as well as digestives.

अनुलोमन *Anulomana* are medicines which digest the humours and set them free, that is, promote excretions and favour their discharge.

विरेचक *Virechaka* or purgatives are described under three heads, namely, संसृज *Sransana*, भेदन *Bhedana*, and रिचक *Rechaka*. Those medicines which hurry the chyle or materials for digestion, without allowing them to be properly digested, are called *Sransana*, as for example the pulp of *Cassia fistula*. Those medicines which set free scybala and other contents of the intestines, and discharge them from the bowels, without producing watery stools, are called *Bhedana*, as for example *Katuki* (*Priscoryhiza Kurroa*.) Those medicines which cause the discharge of the digested or undigested contents of the intestines in a liquid form, are called *Rechaka*, as for example, *Triphit* (*Ipomoea Turpethum*.) These last again are

subdivided into three orders, namely, *mrida* or mild, *madhyama* or intermediate, and *kruta* or drastic.

वमन *Vamana* or emetics are medicines which cause emesis of bile, mucus and other contents of the stomach.

हृदन *Chhedana* are medicines which remove by force as it were and discharge from the body adherent phlegm or other humours. Emetics, expectorants, errhines, caustics, etc., would probably come under this head. Black pepper and alkaline ashes are given as examples of this class of medicines.

लेहन *Lekhana* or attenuants remove bad humours and altered constituents of the body by thinning them gradually and thus clearing the system of them. Warm water, honey, barley etc. are examples of this class.

Medicines which promote the secretion of perspiration, urine, and milk are called, respectively, स्वेदन *Svedana*, मूत्रल *Mutrala* and क्षयजनन *Stanyajanana*.

प्रवाहि *Pramāthi* are medicines which facilitate the exit of collected secretions from their tubes or receptacles, as for example *Vecha* (*Acorus Calamus*).

घ्राहि *Grāhi* or inspissants are medicines which from their stomachic, digestive and heating qualities, dry the fluids of the body.

स्तम्भन *Stambhana* or constipators are medicines which from their drying, astringent and cooling qualities, and from their easy digestibility, increase the air and retain the secretions, as for example *Indrayava* (seeds of *Holarrhena antidysenterica*).

अभिश्यन्दि *Abhishtyandi* are substances which from their emollient qualities or heaviness, retain the secretions and cause heaviness and fulness of the body, as for example, *Dadhi* or curdled milk.

रसावन *Rasāyana* or alternative tonics are medicines which prevent or remove the effects of age, increase the vigour of healthy persons and cure the ailments of the sick.

बल *Balya* or tonics are medicines which increase strength.

वृष *Vrishana* are medicines which promote nutrition and increase the bulk of the body.

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वाजीकरण *Vājīkaraṇa* or aphrodisiacs are medicines which increase the sexual power.

विष *Visha* or poisons are said to be endowed with the following qualities, namely, व्याधी *Vyāvāyi*, that is affecting the entire system, as for example, opium and hemp. सूक्ष्म *Sukshma*, that is, penetrating into the minutest pores of the body. विकृति *Vikṛti*, that is drying the humours, depressing the system and causing relaxation of the joints, as for example betel-nuts. वापेय *Agnēya*, that is, heating or stimulant. मदवह *Madvaha*, that is depriving men of their senses and enveloping their minds in darkness as spirituous liquors. Taken in large doses, poisons destroy life, but, judiciously used, they act as curatives and restore health even in dangerous diseases.

Nine active or virulent poisons are mentioned by most writers, namely *vatsanābha*, *hāridra*, *saktu*, *pradīpana*, *saurāshtrika*, *eringi*, *kālakuta*, *halāhala*, and *brahmaputra*. These cannot all be identified at present. Most of them are apparently varieties of aconite, (see page 97). The following seven drugs are described, as minor poisons, viz., opium, *gunjā* (seeds of *Abrus precatorius*), *datura*, roots of *Nerium odorum* (*karavirā*), and *Gloriosa superba* (*lānguli*) and the milky juices of *Calotropis gigantea* (*arka*) and *Euphorbia nerifolia* (*enuki*). The mineral poisons mentioned in Susruta are *phenāsma bhasma* or white arsenic, and *haritāla* or orpiment. Of animal poisons, the poison of the serpent is the only one used in medicine.

WEIGHTS AND MEASURES

The scales of weights and measures used in ancient days differed in different parts of the country. Separate scales are described by modern compilers, under the names of *Māgadhī*, *Kālinga*, *Chāraka*, *Sausruta*, etc. The number of *gunjās* making a *tolā* varies in these scales from forty to ninety-six. The scale of weights and measures in ordinary use in Bengal, at the present day, has the *gunjā*, (seed of *Abrus precatorius*) for its lowest weight. The *gunjā*, however, is divided into fractional parts by other seeds, thus eighteen mustard seeds, four grains of paddy,

three grains of barley and two grains of wheat are respectively said to be equal to one *gunjā* गुञ्जा. This scale is as follows :—

- 6 *Gunjās* make one *ānā*.
- 12 *Gunjās* make one *māshā* माशा.
- 8 *Māshās* or 16 *ānās* make one *tolā* तोला.
- 8 *Tolās* make one *pala* पल.
- 8 *Palas* or 64 *Tolās* make one *seer* शराव.
- 2 *Seers* make one *Prastha* प्रस्थ.
- 8 *Seers* make one *ādhaka* आदक.
- 32 *Seers* make one *drona* द्रोण.
- 100 *Palas* or $12\frac{1}{2}$ *seers* make one *Tulā* तुला.

In the scale above described ninty-six *gunjās* make one tola. It would seem, however, that in ancient days Susruta's scale of forty *gunjās* to a *tolā* was in general use, for the doses of powders, confections, decoctions, etc., given in the older works, are considered monstrous for the present age, and much smaller doses are given in practice. Orthodox physicians explain the large doses by saying that they were intended for a superior race of men of ancient days. The subject is involved in much obscurity and this is scarcely the place to discuss it thoroughly. In giving the doses of medicines described in this work, I will state the quantities now prescribed by native physicians in current weights, hence they will differ from the Sanskrit texts from which the prescriptions will be translated.

There is a peculiarity in fluid measures which must also be noticed in order to prevent misapprehension of the Sanskrit texts. When a fluid article is ordered in measures of a *prastha* or two *seers* and upwards, twice the quantity mentioned should be taken. Thus if in a preparation it is stated, take of solid paste of certain substances one seer, oil two seers, and water eight seers, the quantities actually taken are solid paste one seer, oil four seers and water sixteen seers. In measures below two seers or in those indicated by *pala* such as eighty *palas*, sixty *palas* etc., the quantities are not doubled.

The doses of medicines are not fixed. They are regulated by the age, strength, and digestive power of the patient, the nature of the illness, the state of the viscera and humours, and lastly by the properties of individual drugs.

Supposing the full dose of a medicine for adults to be two tolas, the doses for children of different ages would be as follows:—For infants a month old, one *gunjā*, and an additional *gunjā* for each additional month. For children a year old, the dose would be one *māshā* or twelve *gunjās*, and an additional *māshā* for every year, till the full dose of sixteen *māshās* or two tolas is reached at the sixteenth year. From sixteen to seventy the full dose should be used, after which it should be again gradually reduced. When infants are unable to take decoctions and other bulky medicines, their nurses are made to take them. Sometimes small quantities of medicines are applied to the nipples, and the infants made to suck them.

Medicines may be administered during four periods of the day, namely, sunrise, mid-day, evening and night. Sometimes they are administered frequently. Morning is regarded as the best time for administering such medicines as purgatives, emetics, decoctions and pills which are generally given once daily. When no specific direction is given regarding the time of administration, morning must be taken for granted. Very often one sort of medicine is given in the morning and another in the afternoon. Some medicines for dyspepsia are given before, along with, and after meals.

FORMS OF MEDICINES.

चूर्ण *Churna* or powders are prepared by pounding dry substances in a mortar with a pestle and passing the powder through cloth.

स्रास *Sarasa* or expressed juice is prepared by pounding fresh vegetables in a mortar, expressing the juice and straining it through cloth.

कल्क *Kalka* or paste is prepared by grinding dry or fresh vegetable substances on a stone with a muller, and then making a thin paste, with the addition of water when necessary.

कषा *Kṣā* or decoctions are, as a general rule, prepared by boiling one part of vegetable substances with sixteen parts of water, till the latter is reduced to one-fourth. The medicines should first be pounded small, then boiled over a slow fire, and the decoction strained through cloth. When decoctions are prepared

with dry substances, eight parts of water are recommended to be used. Decoctions are administered with the addition of salt, honey, sugar, treacle, alkalies, clarified butter, oil, or some medicinal powders.

फाण्ड *Phānta* or infusions are prepared by steeping one part of powdered herbs in eight parts of hot water, for twelve hours during the night. They are administered in the same way as decoctions.

शीतकषाय *Śītakṣāya* or cold infusion is prepared by steeping one part of a drug in six of water for the night, and straining the fluid in the morning.

पानीय *Pāniya* is a weak form of decoction prepared by boiling one part of medicinal substances in thirty-two of water till the latter is reduced to one-half. This preparation is usually taken *ad libitum* for appeasing thirst or some such object.

प्रमथ्या *Pranathyā* is a sort of decoction in which the medicines are first reduced to a pulp and then boiled in eight parts of water till the latter is reduced to one-fourth. It is administered with the addition of honey.

मथ्य *Manthā* is an emulsion of medicines in fine powder with four parts of cold water.

क्षीरपाक *Kṣhīrapāka* or decoction in milk. The proportions in this preparation, are one part of medicine, eight of milk and thirty-two of water. The materials are boiled together, till the water is evaporated and the milk alone remains; the decoction is then strained.

यवगु *Yavāgu*. Sometimes medicines are added to powdered rice, wheat, barley, etc., and boiled with water into a gruel which is taken as aliment. The proportion of water in this preparation is six to one of solid materials. This preparation is called *Kalka-sādhya-yavāgu* or gruel made with medicinal paste, in contradistinction to another form called *Kvātha-sādhya yavāgu* or gruel made with a decoction of medicines, for which last see *Oryza sativa*.

अवलेह *Avaleha* or extract. To prepare it, decoctions, after being strained, are again boiled down to the consistence of a thick extract. This extract, when properly made, does not readily dissolve in water, can be drawn out into wires, and will receive impressions of coins on its surface. Extracts are administered with the addition of sugar, decoctions, or powders.

वटिका *Vatikā* and गुडिका *Gudikā* or pills and boluses. These are usually prepared by reducing a decoction of vegetable substances to a thick consistence and then adding some powders for making a pill-mass. Sometimes pill-masses are made of powdered medicines with the addition of treacle or honey.

मौदक *Modaka* are boluses prepared by adding powders to cold syrup and stirring them together till uniformly mixed. No boiling is required in this preparation.

खड्पाक *Kkandupāka* or confections. These are made by adding to syrup medicines in fine powder and stirring them over the fire till intimately mixed and reduced to proper consistence. Honey is often subsequently added to confections. Syrup may be made with sugar and water or milk or the strained decoction of some medicinal substance. Confections should be of the same consistence as extracts above described.

भावना *Bhāvanā* or maceration of powders in fluids. Powders, and especially mineral substances, are often soaked in various fluids, such as expressed juice of herbs, decoctions, etc., and then dried. For this process the quantity of fluid added to the powder should be sufficient to cover it. The mixture is then allowed to dry in the sun. A single operation of this sort is completed in twenty-four hours, but the process is generally repeated from three to seven times, and often with a variety of fluids, so that the resulting mass combines in it the active principles of various drugs.

पुटपाक *Putapāka* or roasting. In this process vegetable drugs are reduced to a paste which is wrapped up in *jambu* or *vatapatra* (leaves of *Eugenia Jambolana* and *Ficus Bengalensis*), firmly tied with fibres of some sort, covered with a layer of clay from half to one inch in thickness and roasted in cowdung fire. When the layer of clay assumes a brick-red colour on the surface, the roasting is known to be completed. The ball should now be withdrawn from the fire and broken, and the juice of the roasted drug expressed and administered, with the addition of honey or such other adjuncts as may be directed. Sometimes the roasted drug itself is given in the form of a powder or pill.

बन्धावर्ग *Sandhānavarga* or products of a tedious fermentation.

काँजिक *Kānjika*. This is a sour liquid produced from the acetous fermentation of powdered paddy. Two seers of powdered *āus dhān* (paddy grown in rainy season), are steeped in eight seers of water and laid aside in an earthen pot for fifteen days and upwards, when the mixture undergoes acetous fermentation. The resulting fluid is called *Kānjika* or *Dhānyāmla*, that is, the acid produced from paddy. *Kānjika* is a clear transparent fluid with an acid taste and vinous smell. It is cooling, refrigerent, and useful as a drink in fever, burning of the body, etc. It is sometimes applied externally upon the principle of wet-sheet packing, cloth steeped in the fluid being wrapped round the body for relief of high fever and heat of body. It is also used as a vehicle for other medicines and for preparing decoctions, oils, etc. Other grains besides paddy are sometimes used for acetous fermentation. If mustard or the seeds of *Raphanus sativus* (*mulaka*) are added to paddy, the resulting fluid is called *Sintāki*. If the husked grains of barley are boiled and steeped in water, the resulting acid liquor is called *Sauvira*. When the husks of fried *māshakalāya* (pulse of *Phaseolus Roxburghii*) and barley are boiled together for acetous fermentation, the acid is called *Tushāmvu Arnāla* is a sour gruel made from fermentation of boiled rice. A mixture called *Sukta* or *Chukra* is thus prepared :— Take of treacle one part, honey two parts, *kānjika* made as above described, four parts, whey eight parts, mix together in a clean earthen pot, and bury the pot in a heap of paddy for three days. The properties of these preparations are similar, they being regarded as cooling, refrigerent, diuretic, and useful in nervous diseases, rheumatism, dyspepsia, indigestion, urinary diseases, intoxication from spirituous drinks, etc. What is ordinarily spoken of as conjee water in English, is a decoction of rice and not the *kānjika* of Sanskrit Materia Medica.

द्रवक *Drāvaka* or distilled mineral acids. Several formulæ are given in different works for the preparation of mineral acids. A number of mineral substances or salts are heated in a retort and the distilled fluid collected in a glass receiver. The test of acids is said to be their property of dissolving a cowrie or shell thrown into them. The following are two examples of the compositions used for preparing mineral acids.

सल्पद्रावक *Svalpadrāvaka*. Take of alum, chloride of ammonium, borax, sulphide of antimony, impure carbonates of potash and soda called *yavakshāra* and *svaṛjikākshāra*, and rock salt, each eight tolās, nitre six tolās, orpiment four tolās ; powder, mix and rub them together repeatedly with lemon juice and dry. Introduce the mixture into the receptacle of a distilling apparatus, and distill over the fire. The dose of the acid thus distilled is two drops. It should be taken with six grains of long pepper. One week's use of this medicine is said to cure spleen disease, dyspepsia, etc.

सङ्घद्रावक *Sankhadrāvaka*. For this preparation take of sulphate of iron thirty-two tolās, alum and rock salt sixteen tolās each, nitre one hundred and twenty-eight tolās ; powder, mix and distill the mixture from a glass retort. The dose of this acid is said to be twelve minims. The tongue should be anointed with clarified butter before using this medicine. It should not also touch the teeth.

आसवादिष्ट *Asava* and *arishṭa* or medicated spirituous liquors. These are prepared from honey and treacle, with the addition of various medicinal substances. They are all steeped in water and laid aside in earthen jars for vinous fermentation. The proportion of the different ingredients, as a general rule, is as follows :— Water thirty-two seers, treacle twelve seers and a half, honey six seers and a quarter, medicinal substances one seer and a quarter, in powder or decoction. When raw vegetables are used for fermentation, the resulting fluid is called *Asava*. When the decoction of drugs only is added, the fermented liquor is called *Arishṭa*. These preparations combine the properties of spirituous drinks and those of the drugs used in preparing them. They are heating, stimulant, easily digested and stomachic. The preparation called *Drākshāriṣṭa* is made with honey, sugar and decoction of raisins, with the addition of a few aromatics, (see *Vitis vinifera*). Its action must be analogous to that of wines. It is used as a stimulant in exhausting diseases.

घृत तैलयोर्विधिः Medicated oils and *Ghrītas*. These are decoctions of vegetable drugs in oil or *ghrita* (clarified butter) and form a prominent feature of native practice. They are prepared in great varieties and are extensively used in almost all sorts of diseases. The *ghrītas* are chiefly used internally, and the oils are rubbed on the body. They are prepared by boiling vegetable drugs in

ghrita or oil, with the addition of water or other fluids such as *Kānjika*, milk or a decoction of drugs, etc. As a general rule, the proportion of the different ingredients used is as follows:— Medicinal substances, in form of paste, one part, *ghrita* or oil four parts, water or other menstruum sixteen parts. When the fluids used are thick, such as decoctions or the expressed juice of vegetables, the proportion of solid paste is reduced from one-fourth to one-sixth and one-eighth respectively of the oil or *ghrita*. Sometimes no solid paste is used at all.

If more than one variety of fluid is ordered, then up to four sorts the usual proportion of four of fluid to one of *ghrita* or oil is observed, and these are boiled separately with each fluid; but, when the number of fluids exceed four, each of the fluids ordered is taken in quantity equal to the oil or *ghrita*, and the whole boiled together.

उत्पाक *Ghrītopaka* or preparation of medicated *ghrita*. The *ghrita* or clarified butter is first of all heated on a fire so as to deprive it of any water that may be mixed with it. A little turmeric juice is then added to purify it, as it is said, but the object, I suppose, must be to colour it. *Ghrīta* thus purified is placed on a fire in an earthen, copper, or iron pan and melted with a gentle heat. Then the medicinal paste and fluids to be used are added, and the whole boiled together till the watery parts are all evaporated and the *ghrita* is free from froth. It is then strained through cloth and preserved for use. *Ghrīta* thus prepared should be imbued with the colour, taste and odour of the medicines with which it has been boiled. It is recommended that the preparation of *ghrita* by boiling be not completed in one day, and that the medicines be allowed to remain in contact with the butter for some time, so that their active principles may be thoroughly extracted. The boiling process is carried on to three degrees, called, respectively, *mridu*, *madhyama* and *khara pāka*. In the first, the boiled paste is somewhat soft; in the second, it is dry and just soft enough to be made into pills with the fingers. In the third form, it is turned hard and dry. The intermediate form is preferred for internal administration and injection into the rectum, while the over-boiled form is used for external application. The under-boiled form is said to be suitable for use as snuff.

तेलपाक *Tailapāka* or medicated oils. In preparing these, sesamum oil should be used unless otherwise specified. Sesamum oil, before being boiled with medicinal substances, is coloured and purified as follows:—First of all it is heated to deprive it of any water that may be mixed with it; then the following substances are steeped in it for twenty-four hours, viz., madder one sixteenth part in weight of the oil, turmeric, wood of *Symplocos racemosa* (*lodhra*), tubers of *Cyperus rotundus* (*mustaka*), a bark called *nalikā*, the three myrobalans, root of *Paronia odorata* (*bālā*) and the tender shoots of *Pandanus odoratissimus* (*ketaki*), each one sixty-fourth part in weight of the oil. These ingredients in fine powder should be soaked in the oil, with the addition of an equal quantity of water for a day. The mixture should then be boiled till the water is evaporated, and finally strained. To the oil thus prepared, medicinal substances, in the form of paste, decoction, etc., are added in the same proportions as for the preparation of *ghritapāka*. They are then boiled together till the watery parts are all evaporated. When cool the oil is strained through cloth so as to separate the solid particles. Some medicinal oils, and especially those used in the treatment of nervous diseases, rheumatism, etc., are subjected to a third process of boiling with various aromatic and fragrant substances. This is called the *Gandha pāka* or boiling for rendering the oil fragrant. The following substances, or as many of them as are available, are used for scenting medicated oils, namely, cardamoms, cinnamon, cloves, fenugreek seeds, saffron, leaves of *Cinnamomum Tamala*, white sandal wood, aloes wood, *jatāmansī* root, *Curcuma Zedoaria* (*sati*), *Cyperus rotundus* (*mustaka*), *kakkola* (an aromatic seed,) resin of *Pinus longifolius* (*gandharvirajā*), storax, long pepper root, root of *Andropogon muricatus* (*usira*), *nakhi* (*Unguis odoratus*),* pouch of civet cat (*khattāsi*), camphor, *mañak*, *Permelia perlata* (*saileya*), root of *Aplotaxis auriculata* (*kushtā*), seeds of *Abelmoschus moschatus* (*latākasturi*), etc.

* This *nakhi* according to Rumphius who describes ten kinds of the odiferous onyx which serve as the basis of the principal perfumes in the Indian Islands, (Herb. Amb. ii. c. 17) is the operculum or lid of the shells of *Purpura* and *Murex*. This being flat and something like a nail explains the origin of its name.—Boyle's *Antiquity of Hindu Medicine*, page 144.

For four seers of oil, one tola of each of the above ingredients should be taken, with the exception of camphor which should be four tolas. These ingredients, with the exceptions noticed below, are reduced to a paste with water and added to the oil, which is then boiled with an equal quantity of water till the latter is evaporated, and lastly strained. Camphor, musk, storax and the substance called *nakhi* should be added after the process of boiling is finished, and the oil strained. Oils for rheumatism and nervous diseases, are sometimes rendered fragrant by the addition of camphor alone.

Castor oil and mustard oil are sometimes used in the preparation of medicated oils. The proportions of oil, medicinal substances and fluids are the same as with sesamum oil, but the preliminary preparation of these oils is different. Mustard oil is purified by being boiled with the following ingredients, namely, emblic myrobalan, turmeric, tubers, of *Cyperus rotundus* (*mustaka*), rootbark of *Ægle Marmelos* (*vilva*), pomegranate bark, flowers of *Mesua ferrea* (*nágakesara*), *Nigella* seeds, root of *Paeonia odorata* (*bála*), the bark called *naliká*, and belleric myrobalan, two tolas each, and madder sixteen tolas, for four seers of oil. These should be boiled together with sixteen seers of water, till the latter is all evaporated, and the oil should then be strained. It is now fit for being boiled with medicinal substances, the process for which is the same as for sesamum oil above described.

For purifying castor oil, the following ingredients are used, namely, madder, tubers of *Cyperus rotundus* (*Mustaka*), coriander, the three myrobalans, leaves of *Sesbania aculeata* (*váijayanti*), *Pavonia odorata* (*hrivera*), wild dates, tender red buds of *Ficus Bengalensis* (*vatasunga*), turmeric, wood of *Berberis Asiatica* (*Ádruharidra*), the bark called *naliká*, ginger and the shoots of *Pandanus odoratissimus* (*ketaki*), each half a tola for four seers of oil. Castor oil should be boiled with equal parts of whey and *kánjika* (fermented paddy water) along with the above ingredients.*

* The processes above described, for the preliminary purification of oils before being boiled with medicinal substances are not adopted by the physicians of upper India. They are not mentioned by the ancient writers and are the inventions of recent Bengali authors.

INTRODUCTION.

ON THE DIFFERENT MODES IN WHICH MEDICINES ARE APPLIED.

BESIDES being taken internally, medicines are applied in various other ways, such as by injections into the rectum, urethra and female organs; application to the nose; to the mouth; to the eyes; to the skin in the shape of plasters, ointments, oils and fumigations, and to the lungs by inhalation.

वस्तिकर्म *Vastikarma* or injections into the rectum, were thrown in by means of a tube with a membranous bag tied to its end. The bag was recommended to be made of the bladder of some animal, such as bull, goat, etc. It was filled with the fluid to be injected and tied to one end of a tube, about eight inches long and with a tapering rounded extremity for introduction into the rectum. Injections into the urethra and vagina were thrown in by similar contrivances, the tubes being adapted in length and thickness to the passages for which they were intended.

फलवर्ती *Phalavarti* or suppositories were recommended to be made of the size of the patient's thumb. They were smeared with clarified butter and introduced into the rectum. The following is an example of a suppository. Take of assafœtida and rock-salt equal parts and make a suppository with honey, for use in tympanitis.

नस्य *Nasya* or the application of medicated substances to the nose, forms a prominent feature of native therapeutics. Two primary classes of medicines for this organ are recognized, namely *Sirovirechana* or medicines causing a flow of secretion from the nose and thus relieving cerebral congestion, and *Vrinhana* or medicated oils applied to the nose with the object of cooling the head and relieving affections of the neck and chest. For clearing the head and promoting discharge from the nose, the expressed juice of pungent drugs is poured into the nose, drop by drop, or powders are blown into the nostrils by means of a tube. The former process is called *Avapida* and the latter, *Pradhamana*. For cooling the head and relieving affections of the upper part of the body, various medicated oils are used. In one form of snuff called *Pratimarsha*, two or three drops of medicated oil are directed to be snuffed up the nostril till they reach the throat,

when they should be expectorated and not swallowed. In another form of application called *Marsha* about a drachm of oil is recommended to be gradually poured into each nostril from a spoon or shell.

कवल *Kavala*. Liquids used as gargles are so called. Sometimes a mixture of liquid and solid substances or solid balls of medicine are taken into the mouth and retained in it till they bring on a discharge from the nose and eyes. This mode of application is called **गण्डुष** *Gandusha*. When powders or thick solutions are applied to the teeth and gums with the finger, the process of medicament is called **प्रतिसारण** *Pratisarana*.

शिरोवस्ति *Sirovasti*, etc. or applications to the head. Oils or other fluids are applied to the head in four different ways. The first form called *Sirovasti*, consists in tying a piece of leather four and a half inches in breadth all round the head, luting its lower margin to the skin by a paste of pulse called *māshakalāya* and then filling the cavity thus formed on the top of the head with lukewarm oil. The oil is directed to be retained till relief of pain, or till there is discharge from the eyes and nose. It should then be removed and the head washed with warm water. This sort of medication is said to be useful in severe headache and shaking of the head. In the second form, oil or other fluid is poured in a stream on the head. This is called *Parisheka*. In the third form, called *Pichu*, cotton soaked in oil is applied to the scalp; and in the fourth, called *Aryanga*, the oil is simply rubbed on the head.

Applications of liquids and medicated oils to the ears are used in diseases of the head as well as of the ears. The external meatus is filled with the fluid which is allowed to remain in it from one to twenty minutes and is then withdrawn.

नेत्रकर्म *Netrakarma* or applications to the eyes receive various names according to the nature of the substances used and the manner in which they are applied. Pouring of drops into the eyes is called *Ashotana*. A poultice enclosed within a piece of cloth and applied over the lids is called *Pinda*. A paste applied to the lids is called *Vidāḷaka*. Medicines applied to the margin of the lids or to the conjunctiva with the finger or a metallic probe are called *Anjana*. These last may be in the shape of powder or liquid or

they may be made into sticks or pills which are rubbed with water before use. The probe for applying medicines to the margin of the lids should be six inches long with a rounded bulbous end. It may be made of gold, silver, copper, iron or stone. For habitual use of collyria a lead probe is preferred. When medicines are applied not only to the lids but also to the conjunctiva up to the margin of the cornea, the finger is recommended to be used, as it is soft and safe.

Applications to the skin. These consist of *ghritas*, oils, plasters, poultices, baths and hot applications for inducing perspiration. Medicated *ghritas* and oils have been already described. They are for the most part rubbed all over the body, except those intended for local ailments. Plasters called प्रलेप *Pralepa* are applied moist and cold. प्रदेह *Pradeha* or poultices are applied moist and hot. They are also thicker than plasters.

स्निदन *Svedana* or application of heat to the skin for inducing perspiration is carried out in four different ways, namely :—

1. तापस्निद *Tāpasveda* or the application of dry heat by means of heated plates, bricks, sand, cloth or the palm of the hand only. These are recommended to be heated by catechu-wood fire.

2. उष्णस्निद *Ushmasveda* or the application of hot steam. This is effected in various ways. The part to be heated is covered with wet cloth. Bricks, stones or iron plates are made red hot and sprinkled over with *kinjika* or some decoction, and are then applied to the part to be heated ; or an earthen pot with a small opening in the side is filled with hot water or decoction of some drugs, a tube is adjusted to the hole in the pot and the steam is applied to the covered body through it. A third method consists in heating the ground by burning catechu-wood over it, and after removing the fire sprinkling some decoction over the spot and making a bed of castor oil leaves on it. The patient is to lie on this bed and cover himself with a blanket. Or the ground may be covered with a thick layer of boiled pulse such as *mōshakalāya* and a bed made over it for the patient.

3. उपनाहस्निद *Upānāhasveda*. This means the application of heat by hot medicinal substances in the form of decoctions, pastes, or plasters, or of fomentation by cloth wrung out of hot fluids ;

or heat may be applied by enclosing hot medicinal substances or pastes within a cloth bag and applying the latter to the skin.

4. द्रवस्नानं *Dravasnāna*. This means the hot hip-bath and hot bath with warm water or decoctions. Milk, broth, oil, *kānjika* etc., may also be used for baths. The patient should sit in a tub with the fluid up to his navel, and which should also be poured over his body from above the shoulders, so as to bathe him thoroughly. The tub should be made of wood, silver, copper or iron, of square form and twenty-six fingers in measurement in all directions, that is in height, length and breadth. After the application of heat, the patient should take a hot bath, eat light food and keep himself covered in bed. If too much heat has been applied, and the patient suffers from pain in the joints, thirst, languor or giddiness, then he should be treated by cooling applications. The region of the heart, scrotum and eyes should be heated with great care and to a mild degree only.

धूमपानं *Dhūmapāna* or inhalations. Tapers or pastilles made of medicinal substances are set fire to, and their fumes inhaled through a tube by the mouth or nose. Pastilles for inhalation are thus prepared: a reed, half a cubit in length, is smeared or laid over with a paste of the drugs to be used, to two-thirds of its extent and is dried in the shade. When dry, the reed is withdrawn from the paste, leaving it in the form of a hollow tube. This is smeared with clarified butter and lighted. The lighted extremity is introduced into one end of the inhaling tube and the fumes drawn in by the other end through the mouth or nose, as the case may be, and emitted again through the mouth. In affections of the throat and chest, inhalation through the mouth is recommended, while in diseases of the head, eyes or nose, the fumes are drawn in through the nose. The tube for inhalation may be metallic or made of wood or ivory. Its length varies from two cubits to half a cubit, and its calibre should be sufficient to allow a large pea to pass through. The shorter tubes are used in administering expectorant and emetic fumes. Inhalations are useful in cough, asthma, catarrh, pain in the neck or head, etc. They may be used for soothing the air passages, for promoting discharge from them, for the relief of cough, or for inducing vomiting. Another form of inhalation, called *Samana*, is recommended to be used daily

after washing the face, bathing, breakfast, etc. The pastille for this was made of cardamoms and other aromatic substances. This sort of smoking is not seen in the present day. Probably it was in vogue before the introduction of tobacco and has been displaced by the latter.

धूपन *Dhupana* or fumigations were employed for ulcers and skin diseases. The pastilles for these were made as for inhalation. They are lighted and placed inside two earthen pots, placed face to face. A hole is made in the upper pot and a tube adjusted to it. The free or open end of the tube is now directed to the affected part and the fumes allowed to spread over it. Incenses and tapers composed of various medicinal substances are also burnt in rooms occupied by the sick, for removing unpleasent smells and supposed evil spirits.

चारकर्म *Ksháarakarma* or caustic applications. The ancient physicians of India, like their modern representatives, preferred opening abscesses by caustics, to incising them with the lancet. Hence caustics were described as superior to the lancet, inasmuch as, in addition to opening abscesses, they purified them by removing the derangement of the humours. The ashes of the following plants were used for the preparation of caustics, namely :—

- पाटला *Pátala*.—*Stereospermum suaveolens*.
 कुटज *Kutaja*.—*Holarrhena antidyenterica*.
 पलाश *Palása*.—*Butea frondosa*.
 अशकम्भ *Asvakarna*.—*Shorea robusta*.
 पारिभद्र *Páribhadra*.—*Erythrina Indica*.
 विभीतक *Vibhitaka*.—*Terminalia Bellerica*.
 चारवध *Aragvadha*.—*Cassia fistula*.
 लोध्र *Lodhra*.—*Symplocos racemosa*.
 अर्क *Arka*.—*Calotropis gigantea*.
 सुधि *Suhi*.—*Enphorbia neriifolia*.
 अपामार्ग *Apimárga*.—*Achyranthes aspera*.
 करञ्ज *Karanja*.—*Pongamia glabra*.
 वासक *Vásaka*.—*Justicia Adhatoda*.
 कदलि *Kadali*.—*Musa sapientum*.
 चित्रक *Chitraka*.—*Plumbago Zeylanica*.
 पुतिक *Putika*.—*Cassalpinia Bonducella*.
 देवदारु *Devadáru*.—*Cedrus Deodara*.

आफ्रीता *Asphatá*.—*Vallis dichotoma*.

करवीर *Karavira*.—*Nerium odorum*.

सप्तपर्णी *Saptaparni*.—*Alstonia scholaris*.

गाम्भारी *Gambhāri*.—*Gmelina arborea*.

गुच्चा *Gunjá*.—*Abrus precatorius*.

कोषातकी *Koshātaki*.—*Luffa pentandra*.

The roots, stems and leaves of these plants or of such of them as are available, are cut into pieces and burnt in a pit. The ashes are then collected and boiled in six times their weight of water till the solution becomes transparent, red, pungent and soapy to the feel. It should then be strained and again put on fire and the following substances added, namely, ashes of *Euphorbia nerifolia* (*smūhi*), and the burnt powders of bivalve and conch shells. The mixture should be constantly stirred and boiled till it is of a thick consistence. The proportion of shell-lime added varies from one fourth to one-eighth or one sixteenth part of the solution. Caustics of three strengths are thus obtained. Sometimes orpiment and realgar are added to increase their strength.

The part where the caustic is to be applied, should first be cleaned and rubbed. The caustic should then be applied with a probe. It should be allowed to remain in contact with the skin for such time as is occupied in uttering a hundred words and then removed. The skin becomes black from the application, when it is dressed with a paste of acids, clarified butter and honey. For hastening the removal of the slough, a paste or poultice composed of sesamum seeds, liquorice root, lemon juice and *kānjika* should be applied. Caustics are applied to external piles, sinnses, fistulae in ano, abscesses, warts, tumours, leprous patches, etc.

THE
MATERIA MEDICA OF THE HINDUS.
PART I.

INORGANIC MATERIA MEDICA.

GENERAL REMARKS ON MINERAL MEDICINES.

MINERAL or inorganic medicines are generally described under five heads, namely, *Rasa* or mercury which forms a class by itself; *Uparasa* or metallic ores and earths, *Dhātu* or metals, *Lavana* or salts, and *Ratna* or precious stones. The metals used in Sanskrit medicine are mercury, gold, silver, copper, tin, zinc, lead, iron, bell-metal, and brass. The *Uparasas* used are sulphur, talc or mica, two sorts of iron pyrites called *Svarnamāksika* and *Tāramāksika*, leadstone, orpiment, realgar, sulphate of copper, sulphate of iron, cinnabar, minium or red lead, sulphuret of lead, calamine (*kharpara*), *Silājatu* (a bituminous substance containing iron), alum, borax, chalk, calcined cowries and conch shells, *Gairika* a sort of red mountain earth or ochre, *Kankushta* a sort of mountain earth, *Saurāshtri* a fragrant earth from Surat, sand, clay, etc.

The precious stones described are, 1 *Hiraka*, diamond; 2 *Gōrutmat*, emerald; 3 *Pushparāga*, topaz; 4 *Mānikya*, ruby; 5 *Indranila*, sapphire; 6 *Gomeda*, a yellow gem of the colour of fat; 7 *Vaidurya*, a gem of a dark blue colour, the lapis lazuli; 8 *Mauktika*, pearls; 9 *Vidrūma*, corals. Collectively they are called *Navaratna* or the nine gems. *Rājavarta*, an inferior kind of diamond from Virat, and *Vaikrānta*, another inferior kind of diamond, are sometimes used instead of diamond.

Salts.—Of these the following are noticed by most writers, viz., *Saindhava*, rock salt; *Sāmbara*, Sambar lake salt; *Sauvachala*, sonchal salt; *Bit*, black salt; *Sāmudra*, sun-dried sea salt, commonly known as *Karkach*; *Audbhida*, a saline efflorescence on *reh* lands; *Pānsuja* or salt obtained from saline earth; *Yavakshāra*, impure carbonate of potash; *Sarjikākskhāra*, impure carbonate

soda: *Soraka*, mixed ashes, several plants: *Narasira*,
chloride of ammonium: *Soraka*, of potash, and *Tankana*,
The term *Ushara*, as to saline earth.

Metals and metallic compounds are subjected to a so-called process of purification in order to get rid of their impurities or deleterious qualities. If used in an unpurified state, they are supposed to induce certain diseases or morbid symptoms. The metals, for the most part, are purified by repeatedly heating their plates and plunging them in the following fluids, namely, oil, whey, sour conjee, cow's urine and the decoction of a pulse called *kulattu* (*Dolichos uniflorus*). Another method of purification consists in soaking the plates of heated metals in the juice of the plantain-tree.

Metals and metallic compounds are reduced to powder by various processes. The operation is called *marana*, which literally means killing or destruction of metallic character but practically a reduction to powder, either in the metallic state, or after conversion into an oxide or a sulphide. Various processes for the calcination of different metals are described in Sanskrit works on the subject. I will not burden these pages with a detailed account of these but shall only describe modes of preparation followed at the present day.

Although the Hindus had made some successful efforts in preparing a certain number of chemical compounds such as perchloride of mercury, sulphides of copper and silver, oxide of tin, some acids, alkalies, etc., yet their chemical operations were of a very rude and primitive character. The apparatus employed by them consisted of furnaces of different sorts, glass bottles and earthen pots arranged for sublimation of volatile compounds, retorts for distillation, sand and vapour baths, etc. The furnace for heating metals is usually a pit in the ground called गजपुत्र *Gajaputa*. It is made one and a quarter cubits in depth, length and breadth. This is filled with dried balls of cowdung. The metals or metallic compounds to be roasted are enclosed in a covered crucible and placed in the centre of the pit within the balls of cowdung, which are then set fire to and allowed to burn till consumed to ashes.

Mushāyantra or crucibles, are recommended to be made of husks of rice two parts, earth from ant-hills, iron rust, chalk and human hair cut into small bits, one part each. These

are rubbed together into a paste with goat-milk, and made into crucibles which are dried in the sun. Practically, however, goldsmith's crucibles or comon earthen cups are used. The compounds to be roasted are placed in one crucible, this is covered with a second, and the two are luted together with clay.

वायुकायन. The sand-bath called *Vāyukā yantra* is made by filling an earthen pot with sand and heating it over the fire. Metallic preparations sublimed within glass bottles are heated in sand-baths.

दीप्तायन. When medicines, tied in a piece of cloth or other material, are suspended and boiled in a pot of water, the apparatus is called *Dolī yantra*. The steam-bath called *Svedana yantra* is got up by covering the mouth of a pot of boiling water with a piece of cloth, placing the medicines to be heated by steam on this cloth, and then covering them with another pot.

For the sublimation of metals and metallic preparations, two sorts of apparatus are used. The first, called **ऊर्ध्वपातनयन** *Urdhva-pātana yantra*, consists of two earthen pots placed one above the other with their rims luted together with clay. The lower pot containing the medicine is put on fire while the upper one is kept cool with wet rags. The sublimate is deposited in the interior of the upper pot. Sometimes the lower pot is covered with a concave dish and water poured into its hollow to keep it cool and changed as often as it gets hot. The second plan consists in placing the medicines to be sublimed in the bottom of a glass bottle which has been strengthened with layers of clay and cloth wrapped round it, and then exposing it to heat in a sand-bath. The sublimate is deposited in the neck of the bottle, whence it is extracted by breaking the latter.

तिर्यक्पातनयन. *Tiryak pātana yantra*. This apparatus means the adjustment of retorts and receivers for sublimation and distillation. At the present day glass retorts of European manufacture are used. Country-made glass retorts are also available.

SULPHUR.

Sans. गन्धक Gandhaka.

Four varieties of sulphur are mentioned by Sanskrit writers, namely, red, yellow, white and black. Of these the red and black are not now available. The yellow variety or vitreous sulphur is called *ámlo-sir*, because its semi-transparent crystals resemble the translucent ripe fruits of the *ámalaki* (*Phyllanthus emblica*). It is preferred for internal use in combination with mercury. The white variety or ordinary roll sulphur is inferior to the yellow, and used for external application in skin diseases.

Sulphur is purified by being washed in milk. It is first dissolved in an iron ladle smeared with butter and then gradually poured into a basin of milk. When cool and solidified it is fit for use. Dose twelve to twenty-four grains with milk or other vehicle.

Sulphur is described as of bitter, astringent taste, with a peculiar strong smell. It increases bile, acts as a laxative and alterative, and is useful in skin-diseases, rheumatism, consumption, enlarged spleen etc. In combination with mercury it is used in almost all diseases. The circumstance of its readily combining with and fixing metallic mercury, has led to its extensive use in combination with that metal.

In skin-diseases sulphur is used both internally and externally. Internally it is given with milk or in the shape of a sulphurated butter, prepared from milk boiled with the addition of sulphur. The butter thus obtained is called *Gandha tana*, and is taken internally, and applied externally, in skin-diseases. Sulphur and *yavakshára* (an impure carbonate of potash), mixed with mustard oil, is applied in pityriasis psoriasis etc.² Sulphur enters into the composition of a large number of applications for skin diseases, the following is an example.

1. गन्धकैलम् । चावर्तमाने परसि दत्ता गन्धकजं रजः । तन्नासदधिजं सर्पिर्गन्धकैलं
कदम्बि हि । गन्धकैलं गन्धकुकुटं इति खेपाय मन्थनात् ॥ सन्देशमन्थनी ।

गन्धपायसप्रचूर्णेन बन्धारेण पीयितम् । शिष्या नामं प्रज्वल्य कटुत्वैकयुतेन वा ॥

*Adityapāka taila.*¹ Take of sesumum oil four seers, madder, the three myrobalans, lac, turmeric, orpiment, realgar and sulphur equal parts, in all one seer. Mix and expose to the sun. This oil is useful in eczema, scabies etc.

In rheumatism it is used in combination with bdellium, as in the following, called *Sinhanāda guggulu.*² Take of sulphur eight tolās, bdellium eight tolās, decoction of the three myrobalans seventy-two tolās, castor oil thirty-two tolās, mix and boil together in an iron vessel till reduced to the consistence of a confection. Dose about one drachm twice daily. It is useful in chronic rheumatism, lameness, cough, asthma, and skin-diseases.

MERCURY.

Sans. पारद *Pārada*. रस *Rasa*.

Mercury, though not mentioned by Charaka* and Susruta, has in later days come to be regarded as the most important medicine in the Hindu Pharmacopœia. *Pārada* literally means that which protects, and mercury is so called because it protects mankind

1. शार्दूलपाकतैलम् ॥ मञ्जिष्ठा विफला लाक्षा निशा शिखाशुगन्धकः । चूर्णितै-
सैलमादित्यपाकं पामादरं परम् ॥ चक्रः ।

2. सिंहादयुग्गुलुः । पलत्रयं कषायस्य विफलायाः सुचूर्णितम् । सौगन्धिकपल-
त्रयैकं कौशिकस्य पलत्रया ॥ कुङ्कुमं चित्रतैलस्य सर्वभाद्राय यत्रतः । पाचयेत् प्राक्कषिपैः
पात्रे सौहृदये हृदे ॥ हन्ति वार्तं तथा पित्तं श्लेष्मानं खड्गपकृत्साम् । त्रासं सुदुर्जयं हन्ति
काशं पचविधं तथा ॥ कृत्वाणि वातरक्तञ्च गुल्मशूलौदराणि च । आमशान्तं जयेद्वैतदपि
वैद्यविचर्जितम् ॥ चक्रः ।

* There is a passage in Charaka in the chapter on *Kushtha* or skin diseases which some physicians construe into a recommendation for the use of mercury. It is this सर्वव्याधिबिनाशनमयात् कुक्षी रसश्च निगृह्यतेत्तम्. It may be translated as follows. Reduced mercury which cures all diseases should be taken by those affected with skin-diseases. The term *rasa*, however, signifies mercury as well as many other things, such as myrrh, sulphur, gold etc, and since Charaka does not mention *parada*, the principal name for mercury, it is doubtful, if he really meant mercury by the term *rasa*. Supposing, however, he did mean mercury, its use was, at all events, in his time confined to skin

from all sorts of diseases. It is said that the physician who does not know how to use this merciful gift of God is an object of ridicule in society.

Good mercury is said to be bright like the mid-day sun externally, and of a bluish tinge internally. Mercury of a yellowish-white, purple, or variegated colour should not be used in medicine. Mercury, as met with in commerce, contains several sorts of impurities, such as tin, lead, dirt, stone, etc. If administered in an impure state it is said to bring on a number of diseases; hence it is purified before use. Various processes for purifying mercury are described in books. At the present day the following is generally adopted by *Kacirijus*. Mercury is first rubbed with brick-dust and garlic, then tied in four folds of cloth and boiled in water over a gentle fire for three-hours in an apparatus called *Dolā yantra*. When cool, it is washed in cold water and dried in the sun. Some practitioners use betle-leaves instead of garlic for rubbing the mercury with. Mercury obtained by sublimation of cinnabar is considered pure and preferred for internal use.¹ Cinnabar is first rubbed with lemon juice for three hours, and then sublimed in the apparatus called *Urdhhapātana yantra*. The mercury is deposited within the upper pot of the apparatus in form of a blackish powder. This is scraped, rubbed with lemon-juice and boiled in water, when it is fit for use. A peculiar form of mercury called *Shadyua bali jarita rasa*² is thus prepared. A little sulphur is placed in an earthen pot, and over it some mercury. The pot is heated in a sand-bath, and, as the sulphur begins to melt, cautiously and gradually more of it is added to or placed over the mercury, altogether to the extent of six times

1. द्विहुलीत्यरसः । सर्व्वीरनिम्बमूरीण सर्द्धितं द्विहुलं दिनम् । ऊर्षपातनयकेष
वाद्यः श्यात्रिष्यंशो रसः । कश्चुकेनांतयद्वाद्यैर्निष्कांती रससर्षणि ॥

रसेन्द्रसारसंघः ।

2. षड्गुण्यबलिजातिररसः । सुद्रभास्के रसं कृत्वा वासुकायन्मध्यमम् । षड्गुण्यं
बन्धकं तत्र विप्रेद्व्यात्यकं शनैः । तैस्त्रुपी यदा मन्वस्ततोऽवतारयेत् हुतम् । स्रज्ज्योति
दृष्टे शनैः खोटीद्वित्वा रसं जयेत् । सर्व्वीरनिषु स्रतथी रसो व्याधिनिर्मुह्नः ॥

रसेन्द्रसारसंघः ।

the weight of the mercury. When the whole is melted like oil the *pot should be quickly removed from the fire, and cooled till the mass is consolidated. It should then be broken, and the mercury extracted from within the mass. Mercury thus obtained is said to be superior to all other forms, but it is not much used at present.

The purified metal obtained by the processes above mentioned is employed for the preparation of mercurial compounds. Four preparations of mercury are described in books, namely, black, white, yellow and red, called respectively, *krishna*, *svata*, *pita* and *rakta bhasmas*.

1. *Krishna bhasma*. The black preparation is the black sulphide of mercury, made by rubbing together and dissolving over the fire three parts of mercury with one of sulphur.¹

2. *Rasakarpura*. The white preparation is the *Rasakarpura* or perchloride of mercury. Several processes are given for preparing it; one is as follows.² Take of mercury and chalk equal parts, and rub them together till the globules disappear. Rub this mixture of chalk and mercury with *pinu* (salt obtained from saline earth) and the juice of *Euphorbia neriifolia* (*snahi*) repeatedly. Enclose in a covered crucible and heat it within a pot full of rock salt. The perchloride of mercury will be deposited in the shape of a pure white powder under the lid of the crucible. The *Bhāvaprakāsa* gives the following process for its preparation.³ Take of purified mercury, *gairika* (red-ochre),

1. कृष्णभस्म । लोहपात्रेऽथवा तात्रे पल्लवं शुद्धमस्यकम् । स्वप्तिना द्रुते तस्मिन्
शुद्धसुतं पलमयम् ॥ त्रिग्राह चाखयेत् किञ्चित् लोहदर्व्या पुनः पुनः । गोमथी कदलीपत्रं
तस्मीपरि च दासयेत् ॥ रसेन्द्रसारसंग्रहः । •

2. श्वेतभस्म । पिष्टं पांसुपट्टं प्रगाढममलं बन्धाब्जना नेकम्, सूतं धानुमलं खट्टीकवर्धितं
तत्संपुटे रोषयेत् । अन्तःस्थं खवन्धस्य तस्य च तस्मिन् प्रजाख्यं बर्हिं हठात्, यत्नं पाञ्चमथेन्दु-
कुन्दचकलं भस्मीपरिच्छं शनैः ॥ रसेन्द्रसारसंग्रहः ।

3. अथ कर्पूररसस्य विधिः । तत्र पारदस्य संचितशोधनं कर्तव्यम् ।
शुद्धसुतसमं कुर्व्यात् प्रथमं नेरिकं सुधीः । इष्टकां खटिकां तद्यत् अटिकां सिन्धुजम्ब
च । बज्जीकं चारुलवणं भास्करकस्यनिकाम् । सर्वोप्येतानि संचूर्णं दासय
शोधयेत् । रसिसूक्ष्मयुतं सुधं यावद्यामं विमर्दयेत् । तत्र च संचितं सूतं ख्यातीमथे परि

brick dust, chalk, alum, rock salt, earth from ant-hill, *kohāri* lavana (impure sulphate of soda) and *bhūndaranjaka*, or red earth used in colouring pots, in equal parts, rub together and strain through cloth. Place the mixture in an earthen pot, cover it with another pot, face to face, and lute the two together with layers of clay and cloth. The pots so luted are then placed on fire, and heated for four days, after which they are opened, and the white camphor-like deposit in the upper pot is collected for use.

3. *Pita bhasma*. The yellow preparation called *Pitabhasma*¹ is directed to be prepared as follows. Take of mercury and sulphur equal parts, rub them together for seven days with the juice of *bhūmyāmalaki* (*Phyllanthus neruri*) and *hastisundi* (*Heliotropium Indicum*). Place the mixture in a covered crucible, and heat it in a sand-bath for twelve hours. The result will be a yellow compound.

4. *Rakta bhasma*. The red preparation called *Rakta bhasma* or *Rasa sindura*² is prepared in a variety of ways. The following is one of them. Take of mercury and sulphur equal parts, rub together with the juice of the red buds of *Ficus Bengalensis* (*vata*) for three days successively, introduce the mixture within a bottle and heat it in a sand-bath for twelve hours. A red deposit will

तस्याः स्थाख्या मुखे स्थाखीमपरा धारयेत् समान् । सर्वस्त्रकृष्टितप्तदा मुद्रयेदनशीमुखम् ।
संशोष्य मुद्रयेद्भूयो भूयः संशोष्य मुद्रयेत् । सम्यक् विशोष्य मुद्रां तां स्थाखीं बुख्यां विधारयेत् ।
अग्निं निरस्तरं दद्यात् यावद्दिनचतुष्टयम् । अङ्गारोपरि तद्यत्नं रक्षेद्यत्रादह्निर्जम् । शन-
वशाटयेद् यत्नमुद् स्थाखीगतं रसम् । कर्पूरवत् सुविमलं गृह्णीयाद् गुणधनरम् ॥

भावप्रकाशः ।

1. पीतमस । रसगन्धौ समौ कृत्वा हस्तिगण्डौद्रवैर्दम् । भूषाचिकरसैः पिशा पर्यक्तं
दिक्कमसम् । विध्वज्जालुकावन्ने मूषायां सन्निवेश्य सत् । दिनमेकं ददेद्दधि मन्दं मन्दं
निशासधि । एवं निष्पाद्यते पीतः शीतः सूतस्तु गृह्यते ॥

रसिन्दुसारसंघटः ।

2. रक्तमस वा रससिन्दुरः । पट्टमात्रं रसं सुद्धं तावन्मात्रानु गन्धकम् । विधिघनं
कञ्चली कृत्वा न्यशीधाङ्गुरवारिभिः ॥ भावनाभितथं दत्त्वा स्थाखीमध्ये निधापयेत् ॥ विरथ
कञ्चलीयत्नं वाक्काभिः प्रथरतेन ॥ दद्यात् तदन्ते मन्दाधिं पञ्चदशमचतस्रसम् । जायते

adhere below the neck of the bottle. It is taken out in the shape of dark red shining scales.

The four preparations of mercury above mentioned, though described in most works on metallic medicines, are not, practically used in the treatment of diseases under these names. In the present day the yellow preparation is not in use. The white form called *Rasakarpura* is now prepared, not according to the processes described in Sanskrit works, but by subliming the black sulphide of mercury with common or rock salt. In this form it is largely manufactured and sold in all the bazars. The red preparation is better known as *Rasa sindura*; and the black one as *Rasa parpati*. In fact, practically, prepared mercury means the red preparation or *Rasa sindura* and this is the form in which it is largely used. Besides this, the black and red sulphides of mercury are also used internally. The black sulphide is prepared by rubbing together equal parts of sulphur and mercury till the globules disappear. It is called *Kajjali*¹. The red sulphide or cinnabar is called *hingula*. These four preparations, namely, cinnabar, the black sulphide called *Kajjali*, the red preparation called *Rasasindura*, and the *Rasakarpura* of the bazar, are the four principal forms in which mercury is used in Hindu medicine; that is, they constitute the basis of all the formulæ containing mercury.

Mercury is said to be imbued with the six tastes, and capable of removing derangements of all the humours. It is the first of alterative tonics. Combined with other appropriate medicines it cures all diseases, acts as a powerful tonic and improves the vision and complexion.

In fevers of all descriptions, mercury is extensively used in combination with aconite, croton seed, *datura*, and other medicines. The following are a few illustrations.

Hingulesvara. Take of cinnabar, aconite, and long pepper, equal parts, rub together in a mortar and make into pills about

1. कज्जलिका । शुद्धं सुतं तथा मन्त्रं खल्ले तापविमर्शयेत् । सुतं न दृष्टव्यं थावन
 विदुः कज्जलिकारसैः ॥ एषा कज्जलिका ख्याता वृंहणी वीर्यवर्धनी । नामानुपापवीर्य
 सन्ध्यादिभिर्मात्रिणी ॥
 रसेन्द्रकारसंभवः ।

four grains each. They are given, beaten up with a little honey, in ordinary remittent fever.¹

*Taruna jvarāri.*² Take of mercury, sulphur, aconite and croton seeds, equal parts, rub together with the juice of *Aloc Indica* and make into four grain pills. These pills act on the bowels and relieve fever. They are administered with sugar and water.

In diarrhoea and dysentery, mercury is used in a great variety of forms. The following are a few examples.

*Vajrakapāta rasa.*³ Take of mercury, sulphur, opium, *mocharasa*, (gum of *Bambae Malabaricum*), the three myrobalans, ginger, black pepper, and long pepper, in equal parts, powder and mix. Soak the powder in the juice of the leaves of *Cannabis sativa* (*Vijayā*) and *wedelia calendulacea* (*Bhringarāja*) seven times and make into six grain pills. This medicine is administered with honey in obstinate chronic diarrhoea. Dose grains four to twenty-four.

*Rasa parpati.*⁴ This is prepared by melting together a mixture of equal parts of sulphur and mercury in an iron ladle, smeared with *ghee* (clarified butter). The melted fluid is poured on a piece of plantain leaf, placed on a ball of cowdung. It is

1. *चिकुलीश्वरः।* तुल्यांशं मर्दयेत् खले पिपलीचिकुलं विषम् । दिगुञ्जं मधुना दयं वातश्वरविमुक्तये ॥
भैषज्यरत्नावली ।

2. *तद्वणश्वरारिः।* जयपात्र गन्धं विष पारदञ्च तुल्यं कुमारीश्वरसेन पिष्टम् । अस्य विमुक्ता हि सितोदकेन खाती रसोऽयं तद्वणश्वरारिः । दातव्य एषोऽङ्गि पञ्चमे वा यष्टेऽथवा सप्तमे एव वापि । जाले विरेके विजितश्वरः स्वात् पटोलमुद्गामुनिवेषेन ॥

भैषज्यरत्नावली ।

3. *वचकपाटरसः।* पारदं गन्धकं जैवाशिमिनं सह भोजकम् । विषट्टु विषसञ्चैव ससमेक्ष्व चारयेत् । मङ्ग-शङ्ख इवैतद् भाषयेच्च पुनः पुनः । रक्षितयं तन्मयेव मधुना सह भक्षयेत् । अस्याधो यष्टयी इति रसो वचकपाटकः ॥
भैषज्यरत्नावली ।

4. *रसपर्यटी।* पूर्वोक्ती विविधघटी सजातीयै रसगन्धकी । सम्यक् कञ्जकमनु चूर्णं कुर्व्याद्द्वयैः ॥ घटी बद्धरसकिल्ले खीरपात्रे प्रथीकृतम् । गोमयीपरि सञ्जसकदलीपत्रपातनात् । कञ्जक पर्यटनकारं तस्य रक्षितयं कर्मात् । हाटक रक्षिका वायव प्रथीकः प्रक्षरपर्वतः ॥

then pressed by another ball of cowdung, enclosed in plantain leaf. When cool the black sulphide of mercury is obtained in the shape of round disks. It is much used alone, or with the addition of other medicines, in chronic diarrhoea. Other varieties of *Parpati* or mercurial preparations in shape of disks are prepared with the addition of iron, gold, copper etc, and used in this complaint, as for example, *Scarna parpati*, *Panchāmrita parpati* etc. The preparation of the former will be described under the head gold. The latter is thus prepared.

Panchāmrita parpati.¹ Take of sulphur eight tolās, mercury four tolās, prepared iron two tolās, prepared tale one tolā, prepared copper half a tolā. Rub together in an iron mortar, melt in an iron ladle and prepare disks like those of *Rasa parpati*, above described. Dose four grains with honey and *ghee*, to be gradually increased to sixteen or eighteen grains. *Parpatis* of different sorts when given in cases of diarrhoea with anasarca are conjoined with a milk diet, water and salt being prohibited.

Mahāgandhak rasa.² Take of mercury and sulphur each two tolās, and make a *Parpati* as before described. Take of nutmegs, mace, cloves, and *nim* leaves, each two tolās, powder them well, mix together, and inclose the mixture within bi-valve shells. Cover the shells with a layer of clay and roast in fire. When

1. पञ्चामृतपर्यटी । षष्ठी मन्वहतीलका रसदलं लोहं तदर्थं शुभम् । लौहार्थं च वरामकं सुविमलं ताम्रं तदभार्जिकम् ॥ पात्रे लोहसूत्रे च स्रष्टवन्निष्ठी सुकूर्कुरुक्कुरः । दद्यात् वादरवक्रिनातिमृदुना पाकं विदित्वा दले ॥ रश्माया लघु डाक्षयेत् पटुरियं पञ्चाशता पर्यटी । ख्याता चौरघृतामिता प्रतिदिनं गुक्काद्यं व्रतितः ॥ लोहे मर्दनयोगतः सुविमलं भवक्रिया लोहवत् । गुक्काष्टावथवा विकं चिगुणितं सत्राहमेवं भर्जितम् ॥

मैथन्यरवावली ।

2. महागन्धकम् । रसगन्धकयोर्गोष्ठां चर्षमेकं सुमीधितम् । ततः सञ्चलिकां क्लृप्ता मृदुपाकेन शोधयेत् ॥ जालीफलं तथा क्रीचं सवङ्गारिष्ठपत्रके । एतौषां कर्तुमात्रेण चूर्णेन मर्दयेत् ॥ सुक्काष्टै पुनः ख्याक्यं पुटपाकेन साधयेत् । गुक्काष्टयप्रमासिञ्च वटिकां चा द्युषः ॥ एतत् प्रोक्ते कुमारानां रक्तवायु महीषघ्नम् । चर्मोत्रं दीपनश्चैव नलवर्षप्रसादनं दुर्म्भारयहृत्पीठोर्मं अथैषैश्च प्रवाहिकाम् । सुतिक्काक्यं अयेदितदपि वैद्यविश्वामित्रम् ॥

cool, extract the medicine from the shells. It is administered in doses of about four grains in the acute diarrhœa of children.

*Pândusudana rasa.*¹ In jaundice, mercury is used along with other alteratives and purgatives, as in the following, called *Pândusudana rasa*. Take of mercury, sulphur, prepared copper, croton seeds and bdellium, equal parts, rub them together with *ghœe* and make into two-grain pills. They are given with the juice of *nim* bark and honey in jaundice. Acids and cold water for drinking should be avoided.

In affections of the lungs mercury is used in a variety of combinations. The following are a few illustrations.

*Rasendra gudikâ.*² Take of purified mercury two tolâs. Add to it one tolâ of the juice of *jayanti* leaves (*Sesbania Aculeata*) and of fresh ginger, rub together till the mixture thickens, then soak it in the juice of *Jussiaea repens* (*kanchata*) and *Solanum Indicum* (*vrihati*) respectively for twenty-four hours. Take of purified sulphur eight tolâs and soak in the juice of *Wedelia calendulacea* (*bhringarâja*). When dry, mix the sulphur with the mercury, and rub together with sixteen tolâs of goat's milk till the mass is fit for being made into pills. Dose about four grains, to be taken with goat's milk and juice of ginger. This pill is useful in bronchitis and cough generally.

*Râjamrigûnka rasa.*³ Take of *Rasa sindura* three parts, prepared gold and copper one part each, realgar, orpiment and

1. पाण्डुसूदनरसः । रसं गन्धं चतं तावत् जयपालकं गुग्गुलुम् । समोद्यमान्यसंयुक्तौ
गुडिकां कारयेन्नियम् । एकेकां खादयेन्नित्यं पाण्डुशोथप्रान्तये । शीतलञ्च जलं माघं
वर्जयेत् पाण्डुसूदने ॥ रसेन्द्रसारसंयुक्तः ।

2. रसेन्द्रगुडिका । कर्षं चतुरसेन्द्रस्य स्वरसेन जयार्द्रयोः । त्रिधायां खल्वथोपायव्यायु
विरुद्धं घनं ततः ॥ कलकशोकाकाशमाधौरसाभ्यां भावयेत् पुनः । शीतान्निक्षिपत्वं चक्रस्वरसेन
विभाषितम् ॥ चूर्षितं रससंयुक्तमाधौरपल्लव्यै । खल्वितं घनपिष्टन्तु गुडौ सिद्धकञ्जायवम् ॥
कृत्वाशौ त्रिषष्टभन्धौ विजातीन् परिपोष्य च । कौशादी मलयदीर्कां शौरसांस्वरसाद्यम् ॥
अथं कारं रक्तपित्तमरीचकम् । यदि वैद्यशतैस्त्वत्तमखपित्तं नियच्छति ॥ चक्रः ।
रामकशास्त्ररसः । रसभक्ष्यमयो भागा भागैकं द्विसप्तशतकम् । चतुर्दशस्य भागैश्च
सप्तशतकम् ॥ यदिभाष्यवर्षे इत्येवौक्तञ्च विभर्षयेत् । वराटीं पूरयेत्तेन चक्रचौरिच

sulphur two parts each and mix. Introduce the mixture into the cavities of *couries*, close their openings with borax reduced to a paste with goat's milk, roast the shells in closed crucibles and take out the medicine when cold. Dose about four grains, with two grains of long and two of black pepper, honey and clarified butter. It is said to be useful in phthisis, and chronic bronchitis with fever.

In diseases of the nervous system, several combinations of mercury with gold, iron, talc, etc. are used, such as, the *Chaturmukha rasa*, *Chintamani chaturmukha*, *Yogendra rasa* etc. They are all similar in composition, with but slight variation in the proportions of the active ingredients and their adjuncts.

*Chintamani chaturmukha*¹ is thus prepared. Take of the red preparation of mercury called *Rasa sindura* two tolas, prepared tale two tolas, prepared iron one tola, prepared gold half a tola, rub them together with the juice of *Aloe Indica* and make into two-grain pills. This medicine is said to be useful in nervous diseases, insanity, cephalalgia, deafness, noise in the ears, paralysis of the tongue, diseases of the female and urinary organs, phthisis, fever etc. It improves nutrition, increases the appetite and strength, and brightens the complexion.

As an alterative tonic the red preparation of mercury, or *Basasindura* already described, is much used in a variety of

दृग्भ्यम् ॥ पिशा तेन मुखं दृष्टा स्रज्जाले तत् निधापयेत् । शृङ्गं वज्रपुटे पाषाणं चूर्चयेत्
स्नातृश्रीतलम् ॥ रसी राजसमाहोस्यं चतुर्गुणैः क्षयापहः । दशपिप्लिकं चौरैर्मरिचैकीन-
विश्रयम् ॥ सृष्टैर्हार्पयेद्देवैद्यो वातश्लेसमवे चये ॥

मैषज्यरभावस्त्री । •

1. चिन्तामणिचतुर्मुखः । कर्षकं रससिन्दूरं तल्लसं स्रतममकम् । तदर्थं स्रतश्रीपुत्र
स्वर्णशालं विपेदयुषः ॥ कम्बारसेन सन्धिष्य गुञ्जामानां वटीशरैः । अमुपानादिसं दद्यात्
दुग्धा दीपवलाबलम् ॥ हनि पिशात्कं वायुं केवलं पित्तसंयुतम् । इक्ष्वासुमहविं दापं
वानिं सानिं शिरोपहम् ॥ प्रमेहं कर्षनादस्य जडमद्भद्रमुक्तानम् । वापिष्यं गर्भिणीरीम-
नशरीरुविकासकम् ॥ प्रदूरं सोमरीयस्य यक्षाक्षं श्वरहासकम् । बलवर्धनापिदः सन्ध्या-
कान्तिपुष्टिद्वयायकः । चिन्तामणिरसत्रयाय चिन्तामणिरिवापरः ॥

diseases. Two other forms of this medicine in common use are called *Shadyana balijirita rasa sindura* and *Svarna sindura* respectively.

Shadyana balijirita rasa sindura is thus prepared. Take of mercury and sulphur equal parts, and prepare *Rasa sindura* as already described by sublimation in a glass bottle. On the second day, mix this *Rasa sindura* with an equal quantity of sulphur and again sublime the compound. Repeat the process in this way, six times. This preparation is considered superior to the ordinary *Rasa sindura*.

*Svarna sindura*¹ is thus prepared. Take of fine leaf gold one tola, purified mercury eight tolas, mix together by rubbing in a mortar, add twelve tolas of sulphur and again rub together, till the mass is of a dark colour. Sublime in a glass bottle on the sand-bath. The three forms of *Rasa sindura* above mentioned are said to cure all sorts of diseases, but are particularly used in chronic fever, catarrh and cough of children, mental and bodily debility, anæmia etc.

Mercury is used in syphilis both externally and internally, Syphilis and its treatment by mercury are described only in recent compilations, such as the *Bhavaprakāsa*. The following are a few illustrations of its use in this disease.

Saptasāli vati.² Take of mercury and catechu each half a tola pillitory root one tola, honey one and a half tola. Rub together till the globules of mercury disappear, and divide into seven pills or boluses. One pill is administered every morning with

1. रससिन्दूरम् । सूक्ष्मपत्रं सुवर्षणं सुगुहं कौलसन्धितम् । पृष्ठप्लवलेकेन मेलयेद्
 शबरीं भिषक् ॥ शर्वं पलं मन्थकञ्च क्रत्वा कम्बलिकां ततः । निवेश्य काचक्यूञ्च दृढायां
 परिवेष्टयेत् ॥ तां कर्पटैर्दृढा चैव खटिकाभिः समन्ततः । सम्यङ्निरुध्य यथेन संपूज्यायं
 सङ्कीर्णया । बालुकायन्ममध्ये तां सन्निह्य समाहितः । पचेद्वादश यामांस्तु निःसम्याते
 सुनिर्जने ॥ एकाकीं पाकविदवैद्यः स्वाङ्गशीतं समुद्धरेत् । स्वर्णसिन्दूरमिच्छेत् सर्व्वरीय-
 विन्दनम् ॥ संधिप्रसारः ।

2. सुमशालीपटी । पारददृढमानः कात् खटिरदृढसन्धितः । आकारकरभञ्चापि
 पात्रे दृढपट्टीभिस्तः । दृढतयोन्मितं चोद्ग्रे खले सर्व्वेषु निक्षिपेत् । संमथे तस्य सर्व्वेषु
 कथ्यात सङ्घट्टीभिर्वक् । स रीरी भवयेत् शतरेकेकमन्थना वटीम् । वस्यवेदकसर्व्व

water in primary syphilis. Acids and salt should not be taken after the use of this medicine.

*Rasa karpura*¹ or corrosive sublimate as sold in the bazars, is recommended to be given in a single dose of eight grains. The medicine is enclosed in a ball of wheat-flour and covered with powdered cloves. It is swallowed with water so as not to touch the teeth. Salts and acids are forbidden to be taken after the use of this medicine. As the *Rasa karpura* of the bazars is not a pure perchloride of mercury, but is a mixture of calomel and corrosive sublimate in indefinite proportions, the patient sometimes escapes after this dose. When, however, it contains more of corrosive sublimate than of calomel, intense salivation, gastritis and even death may result. When such doses of poisonous remedies are recommended in standard works it is no wonder that we should occasionally come across cases of dreadful salivation, induced by native treatment. The circumstance of wheat-flour being used as a covering to the poison may act as an antidote to some extent. In secondary syphilis *Rasa karpura* is given in small doses in combination with cloves, saffron, sandal wood, and musk.

For external application, about a drachm of mercury is recommended to be rubbed between the palms with the juice of the leaves of *Sida cordifolia* (*bātyāḷaka*) till the globules of mercury are no longer visible. The palms are then to be warmed over the fire till perspiration breaks out from them.²

1. रसकपूर्प्राशने विधिः । किरङ्कसंज्ञकं रोगं रसः कर्पूरसंज्ञकः । श्वश्र्शं नाशयेदितद्रूपः पूर्वचिकित्साकाः ॥ लिख्यते रसकपूर्प्राशने विधिरुक्तम् । जमिन विधिना खादेन्मुले शीथं न विन्दति ॥ गीधूमचूर्णं सन्नैय विदध्यात् सूक्ष्मकृपिकाम् । तन्मूर्ध्नि विधिपित् सूत् चतुर्गुं प्राभितं भिषक् ॥ ततस्तु मुटिकां कुर्याद्यथा न दृश्यते वधिः । सूक्ष्मचूर्णं लवङ्गस्य तां वटीमवधुषयेत् ॥ दन्तस्पर्शो यथा न स्यात् तथा तामम्बसा भिषिन् । तासूक्ष्मं भवयेत् पसाच्छाकास्रलवणान् त्यजेत् । यममातपमज्जानं विधीवात् स्त्रीनिषेवणम् ॥

भावप्रकाशः ।

2. पीतपुष्पवक्षापव्रसेट्कमितं रसम् । इत्याभ्यां मर्दयेत्तावद्यावत् सूची न द्रवतः संसेदयेत्तस्मादेवं वासरसमकम् । त्यजेत्तत्रमन्त्रस्य किरङ्कसस्य नश्यति ॥

For fumigation in primary syphilis, about half a drachm of the black sulphide, mixed with one fourth part of wheat-flour, is employed daily for seven days in succession.¹ In secondary syphilitic eruptions the following composition is used for fumigation. Take of cinnabar one tola, realgar half a tola, powder and mix. About fifteen grains of this is used at a time. Powders for fumigation are heated over a fire of jujube tree wood, and the vapour is applied to the skin under cover in a closed room.

Mercury enters into the composition of several applications for skin diseases, as in the following. Take of cinnabar, sulphur, red oxide of lead, rock salt, seeds of *Cassia tora* (*chakramarda*), *huberung*, *Cleome felina* (*svarnakshiri*), and the root of *Aplotaxis auriculata* (*kushla*) in equal parts. Powder them, and reduce to a thin paste with the juice of *datura*, *nim* or betle leaves. This application is said to cure ringworm, eczema, prurigo, psoriasis etc.²

For lice in the hair, mercury rubbed with *datura* or betle leaf is recommended to be applied to the scalp.³

ARSENIC.

THREE compounds of arsenic are used in Hindu medicine, namely, arsenious anhydride or white arsenic, red sulphide of arsenic or realgar, and the yellow sulphide or orpiment. Of these three, orpiment and realgar have been used in medicine from a very remote period, and are indigenous to India. Native white arsenic is not met with in India. It is brought from Burmah,

1. धूमप्रयोगः । पारदः कर्षमाणः स्यात्तावानिव हि गन्धकः । तन्मुस्ताशाचमावाः
स्युरेषां कुर्वीत कञ्जलीम् ॥ तस्याः सप्तवटीः कुर्व्यात्ताभिर्धूमं प्रथीकयेत् । दिनानि सप्त
तेन स्यात् किरङ्गान्ती न संशयः ॥ भावप्रकाशः ।

2. ईमलीरी विडङ्गानि दरदं गन्धकं तथा । दद्रुजः कुष्ठं सिन्दूरं सर्वाण्येकत्र मर्दयेत् ।
धतूरेनिम्बकशूलोपचाणां स्वरसैः पृथक् । अस्य प्रलेपनावेण यामाद्दुग्धवर्चिकाः ।
कण्टकावलीकयेव प्रशमं यान्ति वेदसः ॥ ब्राह्मणः ।

China and the Persian gulf. It is not mentioned in the more ancient Sanskrit works, in the list of metallic ores, where orpiment, realgar etc. are described, nor in any prescription for the treatment of diseases. In compilations of a later date, however, such as the *Bhāvaprakāsa*, and the *Tantras*, it is recommended as a powerful medicine for fever, and is now much used as such.

In these later works white arsenic is called by several names, such as शङ्खविष *Sankha visha*, साम्बलक्षार *Sāmbala kshāra*, फेनास्मभस्म *Phenāsma bhāsma*, and दारुमुच् *Dārumuch*. None of these terms, however, is to be found in standard lexicons, such as Wilson's Sanskrit-English Dictionary, or Sir Rājā Rādhākanta Deva's *Śabdakalpadruma*. *Phenāsma bhāsma* is mentioned by *Susruta* in his chapter on poisons, where he says, it and *haritālā* (orpiment) are the two mineral poisons,* but it is very doubtful if *Susruta* meant any native white arsenic by it. The derivation of the term implies that it was obtained by roasting some sort of stone or ore. White arsenic was obtained artificially in ancient days by roasting orpiment (see orpiment), and probably this preparation was called *Phenāsma bhāsma*. At a later period imported white arsenic had been used in medicine under the designations of *sāmbalakshāra*, *dārumuch*, and *sankha visha*.

WHITE ARSENIC.

Sans. शङ्खविष *Sankha vish*. दारुमुच् *Darumuch*.
साम्बलक्षार *Sambala kshāra*.

WHITE Arsenic is sold in the bazars under the names of *Sankha vish*, *Suffed sambul* and *Darumuch*. It is purified by being soaked in lemon juice or the juice of the plantain tree. It is chiefly used in fever, for which it is now preferred to the other compounds of arsenic, and is employed alone as also in a great variety of combinations. The following are a few illustrations.

Jvara brāhmāstra.¹ Take of white arsenic two tolas, soak it in a cow's urine for three days, and afterwards in the juice of

* फेनास्मभस्म इतितालस्य द्वे वातुविषे । *Susruta. kalpasthāna*, chapter II.

1. क्वरज्जास्रः । विपरीतस्य समानस्य युग्मस्यै सुश्रीभनम् । चापीय सम्बलं द्वि

Celsia Coromandeliana (*kokasinga*), for one day, and then wash in cold water. Take a small quantity, the weight of a mustard, (about one-ninth of a grain), and administer within a lump of sugar in intermittent fever before the paroxysm comes on. Thus taken for three days, it cures recent and chronic fevers, ague and remittent fever. It is called *Jvara brahmāstra* or the weapon which infallibly destroys fever.

Dárubrahma rasa.¹ Take of white arsenic, cinnabar, *datura* seeds and long pepper, equal parts, and make into four-grain pills with lemon juice. They are given with the juice of *tulsi* (leaves of *Ocimum sanctum*) in remittent fever with shivering, incoherent speech or wandering, profuse perspiration or much heat of body, difficult breathing, etc. The dose of arsenic in this medicine is very large and may induce unpleasant symptoms.

Chandesvara rasa.² Take of mercury, sulphur, aconite, prepared copper and white arsenic, equal parts, rub together with the juice of fresh ginger for six hours, then soak in ginger-juice and dry, successively for seven days. Afterwards soak in the juice of *Vitex negundo* (*nirgundi*) for seven days, make into pills about a grain each, and administer with the juice of fresh ginger. Along with this medicine, inunction with oil, cold bathing and nourishing animal food should be used.

इषसवयमेव च ॥ तत सद्रुष्य देवेभि शुकृशिश्वीरसेषु च । स्थापयेद्दिनमेकानु ततः सच्छजलेन च । संशोध्य स्थापयद्देवि निषेले काचपाचके । एकसर्षपमानं तत् अरागसनपूर्वतः ॥ फिषीमज्यगतं क्लृता भवेत्सुखिरमानसः । अथवा शकंराद्रावैः पीत्वा रोगो सुखो भवेत् । एवं दिनचर्यं मुक्ता मुष्यते अरसकटात् । औषधैश्च तथा कान्ते कम्पश्चरि विशेषतः । निश्चितं अरमुक्तः स्यात् सत्यं सत्यं न संशयः । तन्मीतः ।

1. दाहद्रुष्य वा कर्षिकरसः । रसं शकृविषश्चैव क्लृयाधुलूरुजौकैः । जम्बीराणां द्रवैर्मथै दिवुषं परिमाकृतः । गन्धवानुपानेन कर्षिकायां कुलान्तरात् ॥

संक्षिप्तसारः ।

2. चच्छेचररसः । रसं गन्धं विषं दाहं साम्बलं चारमेव च । चार्द्रकस्य रसेनेव सदेवेद-
शासकाचकम् ॥ रसेनापि च तेनास्य भावयेत् सप्तवारकम् । निनुंच्छीस्वरसेनापि भावयेत्
सप्तमा पुनः ॥ गुच्छार्धनात्वा षटिकां चार्द्रकरसेन वै । मूलादेव च्चरं इति तिलाभ्यं
सप्तवारैः ॥ सुशीतकजली शानं गैश्चमस्यादि भीजनम् । चच्छेचरो रसो गन्ध सत्येरीग-

ORPIMENT.

Sans. वरिषाण, *Haritāla*.

ORPIMENT occurs in two forms, namely, in smooth shining gold-coloured scales called *Vansapatri haritāla*, and in yellow opaque masses called *Pinda haritāla*. *Vansapatri haritāla* is preferred for internal use as an alterative and febrifuge. *Pinda haritāla* is chiefly used as a colouring ingredient in paints, and for sizing country paper. Most of the older Sanskrit MSS. are written* on paper prepared with *haritāla*, to preserve them from the ravages of insects, and this it does most effectually.*

* Babu Rājendralāla Mitra gives the following interesting account of arsenicised paper in his report on Sanskrit manuscripts, published in the Proceedings of the Asiatic Society, for March 1875.

"The manuscripts examined have mostly been written on country paper sized with yellow arsenic and an emulsion of tamarind seeds, and then polished by rubbing with a conch-shell. A few are on white Kāsmiri paper, and some on Palm-leaf. White arsenic is rarely used for the size, but I have seen a few codices sized with it, the mucilage employed in such cases being acacia gum. The surface of ordinary country paper being rough, a thick coating of size is necessary for easy writing; and the tamarind-seed emulsion affords this admirably. The paper used for ordinary writing is sized with rice gruel; but such paper attracts damp and vermin of all kinds, and that great pest of literature, "the silver fish," thrives luxuriantly on it. The object of the arsenic is to keep off this insect, and it serves the purpose most effectually. No insect or worm of any kind will attack arsenicised paper, and so far the MSS. are perfectly secure against its ravages. The superior appearance and cheapness of European paper has of late induced many persons to use it instead of the country arsenicised paper in writing; but this is a great mistake, as the latter is not nearly so durable as the former, and is liable to be rapidly destroyed by insects. I cannot better illustrate this than by referring to some of the MSS. in the Library of the Asiatic Society. There are among them several volumes written on foolscap paper, which dates from 1820 to 1830, and they already look decayed, mouldering, and touched in several places by silver-fish. Others on John-letter paper which is thicker, larger and stouter, are already so far injured that the ink has quite faded, and become in many places illegible, whereas the MSS. which were originally copied on arsenicated paper for the College of Fort William in the first decade of this century, are now quite as fresh as they were when first written. I have seen many MSS. in private collections which are much older, and still quite as fresh. This fact would suggest the propriety of

Haritāla is purified for internal use by being successively boiled in *kānjika*, the juice of the fruit of *Benincasa cerifera* (*kushmānda*), sesamum oil, and a decoction of the three myrobalsans, for three hours in each fluid. Some physicians, probably to save time, mix all these fluids together, and boil the orpiment in the mixture for three hours only. The dose of orpiment thus purified is from two to four grains.

Several methods of roasting orpiment are described. The *Bhāvaprakāsa* recommends that orpiment should be powdered and made into a ball with the juice of *Boerhaavia diffusa* (*pūmaruvara*) and placed in the centre of a pot full of the ashes of that plant. The pot should be now covered with a dish, luted with clay, and heated over a fire for twenty hours. When cool the ball of roasted orpiment is taken out from the pot and reduced to powder. Another process is as follows. Take of purified orpiment and *yavakshāra*, equal parts, rub them together with the juice of *Vitex Negundo* (*nirgundi*), and roast the mixture in a closed crucible. The resulting compound from both these processes is described as white camphor like substance.

A specimen of roasted orpiment supplied to me by an up-country physician was analyzed and found to contain but a small proportion of white arsenic. Bengali physicians do not prepare this drug from a superstitious notion that the man who roasts orpiment dies very soon. They purchase it from *Fakirs* or religious mendicants. It is said that some specimens of roasted orpiment are highly poisonous, and contain a large proportion of white arsenic. The quality of the drug would no doubt vary according to the method in which it is prepared.

Orpiment is said to cure fevers and skin diseases, to increase strength and beauty, and to prolong life. In fever it is used in combination with mercury, aconite, etc. The following is an illustration.

Government records in Mofussil Courts being written on arsenicized paper instead of the ordinary English foolscap, which is so rapidly destroyed both by the climate and also by white-ants. To guard against mistake I should add here that the ordinary yellow paper sold in the bazars is dyed with turmeric, and not at all proof against the attack of insects."

Vetala rasa.¹ Take of purified mercury, sulphur, orpiment, aconite, and black pepper, equal parts. First rub the mercury and sulphur together, then add the other ingredients in fine powder, and make into two-grain pills. They are given with the juice of fresh ginger in remittent fever with affection of the brain.

Vidyadhara rasa.² Take of mercury, sulphur, prepared copper, iron pyrites, realgar and orpiment equal parts, rub them together and soak the mixture in a decoction of long pepper and in the milky juice of *Euphorbia verrucifolia* (*vajri*). Make into pills about six grains each. These pills are given with honey in enlarged spleen and other enlargements of the abdominal viscera.

*Tilakesari rasa*³—Orpiment forms the active ingredient of several pills for skin diseases, of which this is an example. Take of orpiment, realgar, iron pyrites (*avarnamāksika*), mercury, borax, and rock salt, one part each, sulphur and burnt conch-shell two parts each, rub them together for a day with lemon juice, then add to the mass one-thirtieth part of its weight of aconite, and mix. Dose, five to ten grains with butter. After it, powdered seeds of *Vernonia anthelmintica* (*vākuchi*), two drachms should be taken with honey and *ghee*. This medicine is useful in all sorts of chronic skin diseases. The above formula is taken from the *Bhāvaprakāsa*. *Sārangadhara* gives a similar prescription under the name of *Mahātālesvara*.

Orpiment forms an ingredient of several external applications for skin diseases. Thus, take of orpiment, wood of *Berberis lycium* (*dāruharidrā*), seeds of *Raphanus sativus* (*mulaka*), wood of *Pinu*.

1. वेतालरसः । रसं गन्धं विषं तालं गरिषश्च समाशिकम् ॥ शिलायां महैशिकाया
यावत् कञ्चलसमिभम् ॥ गुडामात्रं प्रवीकृत्यं हरेहादशसंशकम् ॥ साध्याहाथं निहन्वता
सप्रिपातं सुदाचषम् ॥ खानेषु लिप्तदंष्टेषु मोहयलेषु देष्टेषु । दातुमर्हसि वेतालं यमदूष
मिषारणम् ॥
शैषव्यरवावली ।

2. नियाधररसः । गन्धकं तालकं ताफ्यं कृतं तावत् ममःशिला । शुद्धस्तस्य तुल्या
मर्दयेत् भावयेद्दिनम् ॥ विषख्याः स्वकायायेषु वकीचौरिष भावयेत् । निष्कार्यं भवयेत् चौरि
शौकनुशादिकं भवेत् ॥
रसिन्द्रसारसंघः ।

3. तालकेदरी । तालताप्यशिला सुतटङ्काः सिन्धुसंयुताः । गन्धकी चिनुचः सुता
शुद्धचूर्णं च तत्समम् ॥ जम्बीरादिदिनं दृष्टा विंशद्वंदं विषं चिपेत् । यस्य भावक
खादेन्नादिबोष्टसत् युवम् ॥ मन्थानौवाङ्गुलीबीजकर्म लिङ्गात् तवः पूरम् । तालकेदरनाला

Deodaru and betle leaves, each two tolás, burnt conch-shell half a tolá, beat them together with water into a thin paste. This paste is an useful application in psoriasis.¹

The use of orpiment as a depilatory was known to the ancient Hindus. It enters into the composition of numerous formulæ for the removal of hair. The following are examples.² Take of conch-shell-lime, soaked in the juice of plantain tree, and of orpiment, equal parts, make them into a paste with the aid of water, and apply it to the part from which the hair is to be removed. Or take of conch-shell-lime two parts, orpiment one part, realgar half a part, *sarjikákhúra* (impure carbonate of soda) one part, rub together with water, and apply.³ Take Ashes of the root of *Achyranthes aspera* Linn. (*Apamarga*) and Orpiment in equal proportion rub with water and apply upon the piles of the male organ.

REALGAR.

Sans. मन्त्रिणा, *Manahsilá*.

REALGAR is purified by being rubbed with the juice of lemons, or of ginger. It is used internally in fever, skin diseases, cough, asthma, etc., and externally in skin diseases. In fever, it is generally used in combination with mercury, orpiment etc. The following is an illustration.

Chandésvara rasa.⁴ Take of realgar, mercury, sulphur, and aconite, equal parts, soak in the juice of *Vitex Negundo* (*nirgundi*),

1. दार्जीभूलकवीजानि तालकं सुरदाह च । ताम्बूलपत्रं सर्वाणि कार्षिकाणि
पृथक् पृथक् ॥ ब्रह्मचूर्णं श्रावमाणं सर्वाण्येकत्र चूर्णयेत् । सिपोऽयं वारिणा पिष्टः सिन्धुना
वीजैः परः ॥ शार्ङ्गधरः ।

2. ब्रह्मचूर्णस्य भाजी ही भागेकं हरितालकम् । मन्त्रिणा कार्षिणा सूर्षिका चैक
भाषिका ॥ सिपोऽयं वारिपिष्टस्तु कैत्रातृपाव्य दीयते । अनया सिपयुक्ता च समवेतं
मयुक्ताया । सिर्षूलकैश्चस्थानं स्नात् चपचस्य छिन्नी यथा ॥ शार्ङ्गधरः ।

3. अपाकावीजवाग्मलात् चारः सह्रितालकः । सिन्धुना सिपवीं हवि चिरञ्जात-
मसंभवम् ॥ जेवन्वरभाषणी ।

4. शार्ङ्गधर रसः । समानं दीजयेत् खले रसं मन्त्रिणा विभम् । निर्वन्दी स्वरसे-
नायं सिन्धुना चार्ङ्गधरैः । सुखेन भक्षयेत् प्रातः खरं हवि महीदमम् ॥

and of fresh ginger, three times respectively, and make into two-grain pills. This medicine is useful in remittent fever.

*Svāsa kuthīra rasu.*¹ Take of realgar, mercury, sulphur, aconite, borax, each one part, black pepper seven parts, ginger, and long pepper, three parts each, rub them together with water, and make into four-grain pills. They are said to be useful in asthma with cough, and in remittent fever with cerebral complications. In coma from remittent fever, these pills are powdered and used as snuff for rousing the patient. They are also used in this manner in cephalalgia, hemicrania, ozæna, etc.

Realgar enters into the composition of numerous applications for skin diseases. Realgar mixed with the ashes of *Achyranthes aspera* (*apāmārga*) is applied to patches of leucoderma or white lepra. In leprous ulcers a liniment composed of realgar, orpiment, black pepper, sesamum oil and the juice of *Calotropis gigantea* is used.²

*Chandraprabhā varti.*³ Realgar enters into the composition of several applications for the eye: the following is an example. Take of realgar, galena, conch-shell-lime, seeds of *Moringa pterygosperma* (*sveta maricha*), long pepper, liquorice and the kernel of belleric myrobalan, equal parts, rub them together with goat's milk, dry the mixture and make into small pastils or pencils. These are rubbed with a little honey and applied to the eyes as a collyrium in affections of the internal tunics, tumors or other growths, night-blindness etc.

1. शालकुठाररसः । सूतं शम्बं विषखैव टङ्गमथ मनःशिला । एतामि टङ्गभावाणि
मरिचं शङ्खतुर्मुचम् ॥ त्रिकटु त्रिगुणश्चैव खल्ले पिप्पलु विषुर्भवेत् । रसः शालकुठारीऽयं
शालसर्व्वज्वरापहः ॥ रसेन्द्रसारसंयहः ।

2. मनःशिलाश्च मरिचाणि तैलमासौ पयः कुण्डलः मर्दिहः ॥ शुक्रः ।

3. चन्द्रप्रदावर्तिः । अक्षतं चैवमरिचं पिप्लीषौ मधुयष्टिका । विभीतकस्य मध्यन्तु
शङ्खमभिर्जनःशिला ॥ एतामि सप्तभावाणि जलाक्षीरेण पेययेत् । ह्यायायुष्कां कृतां वर्तिं
नेत्रेषु च प्रकीलयेत् ॥ अर्जुनं पटलं चाथं त्रिभिरं रज्जुराजिकाम् । अथिमांसं मसुखैव
दश राशौ च पञ्चवि ॥ वर्तिचन्द्रमा नाम जालाश्वमपि प्रीययेत् ॥

An oil for application to fistulous sores is prepared as follows. Take of sulphur, realgar and turmeric, eight tolas each, mustard-oil one seer, juice of *datura* leaves one seer, water four seers; boil together in the usual way.¹

IRON.

Sans. लौह, *Lauha*.

THREE varieties of iron are used in Hindu Medicine, namely, *Kānta lauha* or cast-iron, *Mandura* or iron rust, and *Lauhasāra* or salts of iron produced by iron being kept in contact with vegetable acids. The form of cast iron used in the manufacture of pans for boiling milk is considered superior to all others for medicinal use. The small particles of iron which are scattered around when hot iron is beaten on the anvil, are called *mandura*. They are allowed to remain in contact with the earth till they become very rusty and brittle, when they are considered fit for use. The properties of *mandura* are said to be analogous to those of cast iron. *Lauhasāra* or the granules produced on iron plates, smeared with vegetable acids, are also used in medicine. This variety of iron is said to be especially useful in diarrhœa, chronic bowel-complaints, dyspepsia, and nervous diseases.

Cast iron is purified by beating it into thin plates, heating the plates in fire and sprinkling them with cow's urine, sour conjee, oil, and a decoction of the pulse of *Dolichos uniflorus* (*kulaththa*), seven times in succession. The plates are reduced to powder by pounding them in an iron mortar, rubbing them with cow's urine, and roasting the powder in a covered crucible repeatedly till it is reduced to a fine impalpable powder, that will float on water and will not irritate the eyes when applied to them. It is usual to rub the iron with cow's urine and roast it about a hundred times in succession. In some cases it is recommended that iron should be thus roasted repeatedly for a thousand times. *Mandura* is purified and prepared for use like cast iron.

1. सुतेन कन्यकामिका राजनीमवेन मुसकवेन कटुतेज्यपाटके तु । इतरे पत्रस-
 त्पत्राणि विपके वासो जयेत् विस्ववामपि कर्षमासान् ।
 भावप्रकाशः ।

Prepared iron is a fine impalpable powder of a reddish grey or brickdust colour. On chemical analysis it is found to be a mixture of the proto and peroxide of iron. Dose, grains six to twelve.

Iron, it is said, increases strength, vigour and longevity, cures all sorts of diseases and is the best of tonics. When gold and silver are not available, iron is substituted for them. It is used in painful dyspepsia, chronic fever, phthisis, anasarca, piles, enlarged spleen and liver, anæmia, jaundice, obesity, urinary diseases, diseases of the nervous system, skin diseases etc. When iron is administered the following articles of diet should be avoided, namely, *kushmānda* (fruit of *Benincasa cerifera*), sesamum oil, *kulattha* (pulse of *Dolichos uniflorus*), mustard, wines and acids.

In chronic fever with anæmia, debility, emaciation, enlarged spleen or other complications, several preparations of iron are used, such as the *Vrikat Sarvajvara haru lanha*, *Chundandya lanha*, etc.

Vrikat sarvajvarahara lanha.¹ Take of purified mercury and sulphur, prepared copper, iron pyrites, talc, gold and orpiment,

1. इहसर्वंअरहर लौहम् । पारटं गन्धकं गृह्यं ताम्रं माषिकमथकम् । हिरण्यं हरितालञ्च कर्षमेकं पृथक् पृथक् ॥ सतकान्तं पलं दीयं सर्वमेकौक्ततं गृह्यम् । वल्य-
माषीकधर्माञ्च प्रत्येकं दिनसप्तकम् ॥ कारवेहरसेनापि दशमूलरसेन च । पर्वटस्य कषायैश्च
काशेन चैफलेन च ॥ गुडुच्याः स्वरसेनापि नागवह्नोरसेन च । काकमाषीरसेनैव त्रिगुण्ड्याः
स्वरसेन च । पुनर्नवार्द्रकाभीभिर्मावनां परिकल्प्या च ॥ रक्त्रिक्तादिकमेकैव वटिकां कारये-
द्भिषक् । पिथली गुडसंयुक्ता वटिका वीर्यवर्द्धनी ॥ अरमष्टविधं हन्ति चिरकालसमुद्भवम् ।
विविधं वारिदीपीत्यं नाभादीपीद्भवन्तथा ॥ सततार्द्रं अरं हन्ति साध्यासाध्यमथापि वृष्टु ।
चयोद्भवञ्च घातुञ्च कामश्रीकल्पं तथा ॥ भूदावीर्यअरं हन्ति षट्चदीपभवन्तथा । अग्निघात
अरश्चैव अग्निघात समुद्भवम् ॥ अग्निश्यासं मद्वापीरं विषमञ्च त्रिदीपजम् । श्रौतपूर्व्ये
दाहपूर्व्यं विषमं श्रौतसं अरम् । प्रसेपकअरं पीरं अर्धनारीचरं तथा । व्रीह्यअरं तथा श्वासं
घातुर्थकविपय्यवम् ॥ पाशुदीमान् यवान् सर्वान् अग्निमात्र्यं मद्वागदम् । एतान् सर्वान्
निहन्त्याश्च प्रचार्येन न संशयः ॥ आस्यश्च तल्लसङ्कितं भीकयेद्विकसंयुतम् । ककारपूर्व्यं
शमी मर्वानीयं विज्ञेयवः ॥ शिबुनं मर्वादीनाम् यावत्त वल्लवान् भवेत् । सर्वंअरहरं येन
अनुपानं प्रकल्पयेत् ॥

शेखरनाभकौ ।

each two tolás, prepared iron eight tolás, mix them together, and soak the mixture for seven days, in each of the following fluids, viz, fresh juice of the leaves of *Morordica Charantia* (*káravella*), decoction of *dasamula* or ten roots (see *Desmodium Gangeticum*), decoction of *parpata* (*Hedyotis biflora*), and of the three myrobalans, fresh juice of *guruchi*, (*Tinospora cordifolia*), of betel leaves, of *kákamāchi* (*Solanum nigrum*), of *nirgundi*, (*viter Negundo*), of *punarnavá* (*Boerhaavia diffusa*) and of ginger. Divide the mass into two-grain pills, and administer with long pepper and treacle. The dose of the medicine may be gradually increased. It is used in all sorts of intermittent fevers, in emaciation, wasting, hectic fever, enlarged spleen, anæmia, loss of appetite etc. A light diet consisting of fine rice and poultry meat should be adopted during the use of this medicine, and all undigestible food should be avoided,

Chandanādya lauha.¹ Take of red sandal wood, *Pavonia odorata* (*bálá*), *Stephania hernandifolia* (*píthá*), *Andropogon muricatus* (*usir*), long pepper, chebulic myrobalan, emblic myrobalan, ginger, *Nymphæa stellata* (*nilotpala*), *Chavica officinarum* (*chai*), *Plumbago Zeylanica*, (*chitraka*), and *baberung* seeds, each one part, prepared iron twelve parts, rub them all together. Dose about ten grains to be taken with the fresh juice of *Tinospora cordifolia* (*guruchi*) and *Hedyotis biflora* (*parpati*). This medicine is said to cure all sorts of chronic intermittent fever and fever with enlarged spleen.

Vishomajvarántaka lauha.² This is another compound metallic preparation containing iron and much used in chronic fever. To

1. चन्दनायलौहम् । रक्त चन्दनडीविर पाठीशीरकचात्रिवा । नानरीत्यत्र चाचीमि
स्त्रिमदेन समन्वितः । लीहं निहन्ति विविधान् समसान् विषमज्वरान् ॥

रसेन्दुसारसंयुक्तः ।

2. विषमज्वरान्तकलौहम् । हिमुक्तसकसं वृत्तं गन्धकेच मुक्तज्यसौम् । पर्पटीरस-
प्रत्याथ स्वार्द्रिष्टिमन्त्रकम् ॥ लीहं नावसमकच रसस्य त्रिमुक्तं तथा । नङ्गकं द्वैरिक्तस्यै
प्रवाच्य रसाईकम् ॥ मुक्ता मङ्गं मुक्तिमन्त्र प्रदीयं रसपादिकम् । मुक्तामृष्टं च संख्याय
पुटपाकेन, सामवेत् ॥ सचवेत् प्रातःकालाय हिमुक्ताककनामनः ॥ सवुपानं प्रदीक्य
कचात्रिमुक्तस्यैवम् ॥ ज्वररसविषं क्वनि वाचयित्वाकलीहवम् । उक्तामं प्रदीयं मुक्तं
साध्यासाध्याकचात्रि वा । ससत्तं ज्वरताम्यत्र विषमज्वरनाशनम् ॥ जेहन्वरावली ।

prepare it, take of mercury obtained by sublimation of cinnabar and sulphur, each one tola. Rub them together and melt over the fire in an iron ladle as in the preparation called *Rasaparpati*, described under mercury. Then take of prepared gold, one quarter of a tola, prepared iron, copper, and tale, two tolas each, prepared tin, red ochre, and corals, half a tola each, roasted pearls, conch-shell and bi-valve shell, each a quarter of a tola. Beat all these ingredients together into a mass with the aid of water. Inclose the mass within bi-valve shells, cover the shells with a layer of clay and roast them lightly in cow-dung fire. This medicine is given in doses of four grains with the addition of long pepper, rock salt, and assafotida, each four grains, and a little honey. It is taken once daily in the morning and is said to be useful in chronic fever, spleen and liver diseases etc.

Several preparations of iron are used in piles, such as the *Māna suranādyā lauha*, *Arsiri lauha*, *Agnimukha lauha* etc. The first mentioned compound is prepared as follows.

Māna suranādyā lauha.¹ Take of the root-stocks of *Colocasia Indica* (*māna*) and *Amorphophallus campanulatus* (*surana*), of the roots of *Ipomæa Turpethum* (*trivrit*) and *Baliospermum montanum* (*danti*), marking nuts, the three myrobalans, black pepper, long pepper, ginger, seeds of *Embelia Ribes* (*haberung*), root of *Plumbago Zeylanica* (*chitraka*) and the tubers of *Cyperus rotundus* (*mustaka*), equal parts, prepared iron in quantity equal to all the above ingredients. Powder and mix. Dose about a scruple. This medicine is said to be useful in piles with constipation.

Lauhasava.² Take of powdered iron, of the three myrobalans, ginger, long pepper and black pepper, *ajwain*, *haberung* seeds,

1. मानसूरपायलौहम् । मानसूरचभङ्गातत्रिहृत्कौसमन्वितम् । चिकचयसमायुक्तमवी
दुर्मानामानम् ॥ मेघन्यरदावली ।

2. लौहासवम् । लौहपूर्वं चिकटुसं चिकसाच यमानिकाम् । चिकर्षी चिकसं मुख
चतुःपचमितं द्रवम् । चूर्णीकृत्य ततः चोदं चतुःषट्पिपलं क्षिपेत् । दद्याद् गुरुतुषां तत्र
असद्रीचद्वयं तथा । घृतमाख्ये विनिःक्षिप्य निदध्याग्नासमाचकम् । लौहासवमिदं अर्थः
विवेकिकिरं परम् । पाण्डुद्वयमुष्णानि जठराख्यं वा रुजम् । कुड्डीहामयं चक्रे चास
कार्यं मनस्वरम् । चरीचकच दक्षीं हृद्रीमच विनाशयेत् ॥ भार्गवः ।

plumbago root, and tubers of *Cyperus rotundus* (*mustaka*), each thirty-two tolas, and honey eight seers, treacle twelve and a half-seers, water one hundred and twenty-eight seers. Powder the solid ingredients and steep them in the honey and water in an earthen jar smeared with *ghee*, for a month, or till complete fermentation takes place. This iron-wine is said to be tonic and stomachic, and useful in anæmia, spleen, anasarca, ascites, enlargements of the abdominal viscera, piles etc.

Amalākādya lanha.¹ Iron enters into the composition of several medicines for hæmorrhagic diseases, of such as the *Khamlakādya lanha*, *Sulhānidhi rasa*, *Amalākādya lanha* etc. We will here transcribe the mode of preparing the last which is the simplest and shortest. Take of emblic myrobalan and long pepper, each one part, sugar two parts, prepared iron four parts, powder and mix them together. Dose six to twelve grains in hæmoptysis, hæmaturia etc., with suitable adjuncts.

Guda mandura.² A preparation nearly similar to the above and called *Guda mandara* is used in dyspepsia. It is composed of old treacle, emblic and chebolic myrobalans one part each, and iron rust three parts. These are rubbed together with honey and *chee*, and made into boluses about a drachm each. One of these is taken in divided doses before, along with, and after meals, in dyspepsia with pain after digestion.

Vidyādharaśhira.³ Take of *laberung* seeds, tubers of *Cyperus rotundus* (*mustaka*), the three myrobalans, *gulanha*, root of

1. आमलकायलीहम् । आमलापिप्पलीचूर्णं तुल्यया सितया सह । रक्तपित्तहरं
 तिहृषीयराजमिति कृतम् । इध्याधिदीपनं बल्यं चाक्षयित्तिनाशनम् । पित्तोत्थानपि
 शीत्वान् निहन्ति विविधान् गदान् । रसेन्द्रसारसंघट्टः ।

2. गुडमकरम् । गुडामलकपध्यानां चूर्णं प्रत्येकशः पलम् । त्रिपलं खौहकिट्टस्य
 तस्यै मधुसर्पिषा ॥ समाखीय समदीयादलमात्रप्रमाणातः । आदिमध्यावसानेषु भोजनस्य
 मन्त्रि तत् ॥ अशुद्धं सरणित्तमक्षयितं सुदाहकम् । परिष्ठाजसमुत्पन्नं शूलं संवत्-
 तीत्वितम् ॥ भावप्रकाशः ।

3. विद्याधराशः । विहङ्गमुसलिकला गुड्डी वनी लहडकिट्टचयश्च । प्रत्येकस्यै
 [पुत्रादिचूर्णं] प्रदानि त्वत्वाथैयचौ बल्यस्य । मीमुकशरस्य पुद्गादलस्य सहायसन्नामि त्रिस-

Baliospermum montanum (danti), of *Ipomaea Turpethum* (trivrit), of *Plumbago Zeylanica* (chitraka), ginger, long pepper and black pepper, and each two tolás, prepared iron thirty-two tolás, old iron rust thirty-two tolás, prepared tale eight tolás, purified mercury one tolá and a half, sulphur two tolás. Rub together the sulphur and mercury, then mix them with the other ingredients, add sufficient ghee and honey, and rub them together for twelve hours. Preserve the confection in an earthen pot smeared with ghee. Dose from ten to thirty grains with milk or cold water. This medicine is used in chronic dyspepsia, especially in that form of the disease in which the pain comes on after digestion is completed, and in chronic fever, diarrhoea, phthisis etc.

Narayana lanka.¹ In anæmia iron is much used in a variety of forms. The following compound powder called *Narayana lanka* is a popular and well known medicine. To prepare it take of ginger, long pepper, black pepper, the three myrobalans, habernug seeds, tubers of *Cyperus rotundus* (mustika) and plumbago root, each one part, prepared iron nine parts, powder the ingredients and mix. Dose four grains, gradually increased to eighteen grains, to be taken with honey and ghee. This medicine is used in anæmia, jaundice, piles, heart disease etc. It is given on the first day in four-grain dose. Every second day the dose is increased by two grains till the maximum quantity is reached. The above

टिकायाः । कृष्णाम्बुचूर्णस्य पलं विष्टुडं निवन्दिक्तस्य द्रव्यमतीव सूतात् । पाटीनकषे स्वरसेन खले शिलातले मन्मनौदलस्य । विशोध पश्चादतिष्टुडमन्मपाषाणचूर्णेन पिबन्दिक्तेन । युक्त्वा ततः पूर्वैरजांसि दत्त्वा सुपिर्मधुर्भा परिमर्द्य यद्वात् । निधापयेत् खिम्बविष्टुडभाखे ततः प्रयोज्योऽस्य रसीतमस्य । प्राश्नाषकी हावथ वा तथी वा गवां पयो वा शिशिरं जलं वा । पिबेदयं योगवरः प्रभूतकालप्रष्टानलदीपनेषु । योगेषु ह्यस्यात् परिष्कामशूलं शूलं तर्पीन्द्रवर्षसंज्ञकम् । उन्मत्तपित्तं यद्दृष्टौ प्रवृद्धां और्ध्वरं लीहितपित्तकुष्ठम् । न सन्ति ते यास्मि दिङ्गन्ति रोगात् योगीतमः सम्यगुपासमानः ।

रसेन्दुसारसंज्ञकः ।

1. नवायसं लौहम् । चुराषणनिद्रलामुक्तविषकाचितकाः समाः । नवायीरजसो भागस्य चूर्णं मधुसर्पिणा । भवयेत् पाखु इद्रोवकुष्ठार्शः कामलापहम् ॥

बहः ।

preparation with the addition of one part of the watery extract of *gulancha* is called *Guduchyādi lauha*,¹ and is given in burning of hands and feet and in diseases supposed to be caused by deranged air.

Mahāsvāsari lauha and *Pippulādi lauha*² are the two forms in which iron is used in asthma. They are similar in composition. The former is thus prepared. Take of prepared iron four tolās, prepared tale one tolā, honey and sugar four tolās each, the three myrobalans, liquorice root, raisins, long pepper, kernel of jujube fruits, bamboo-manna, *tālisapatri* (leaves of *Pinus Webbiana*), *babering* seeds, cardamoms, root of *Aplotaxis auriculat* (*kushtha*), and flowers of *Mesua ferrea* (*nāgakesara*), each one tolā, powder and rub them together in an iron mortar. Dose about one scruple, to be taken with honey two or three times a day.

In enlarged spleen *Rohitaka lauha* is the favourite form in which iron is used. It will be described under *Rohitaka* (*Amoor Rohitaka*). In enlarged liver the following called *Yakridari lauha*³ is used. Take of prepared iron, tale and copper, each four tolās, root of variety of *citrus Acida Roxb.* (*limpāka*) eight tolās, burnt

1. गुडूच्यादिलौहम् । गुडूचीसारसंयुक्तं विकवयमयो रजः । वातरक्तं निहन्त्याय
सर्व्वेवातहरं परम् ॥ रसेन्द्रसारसंयुक्तः ।

2. महावासासिलौहम् । कर्षवयं लौहचूर्णं कर्षार्द्धमधमेव च । सिताकर्षवयश्चैव
मधुकर्षवयं तथा । त्रिकषा मधुकं द्राक्षा कषा कीलास्त्रिवंशजा । तालीशपत्रं वैडङ्गमीला
पुष्करकेशरम् ॥ एतानि शृङ्खलचूर्णानि कर्षार्द्धे च समाश्रिकम् । लौहै च लौहदखेन मर्दयेत्
मधुरवयम् । ततो भावां लिङ्गेत् चौद्रेभुंशा दोषबलावलम् । रदं वासासिलौहच महावासां
विनाशयेत् ॥ कासं पक्षविषश्चैव रक्तपित्तं सुदाहकम् । एकजं हृन्मज्जैव तथैव साग्निपातिकम् ।
निहन्ति भाव सन्देहो भास्करसिमिरं तथा ॥ भेषज्यारवावली ।

3. बलहरिलौहम् । द्विकर्षं लौहचूर्णं च कषचापि तथैव च । कर्षवयं सतं हासं
लिम्बाकाङ्गित्वचः पञ्चम् । खगाधिनं पसं भक्ष सर्व्वमेकच कारयेत् । नवगुणा प्रमासिन वटिका
कार्शेविकम् । बलतुङ्गीशोदरं हनि कामलाच हलीमकम् । कासं वासं च्चर हृन्माहव-
र्षाश्रिकम् । बलहरि तिवं लौहं वासयुक्तविनाशनम् ॥

रसेन्द्रसारसंयुक्तः ।

deer-skin eight tolās, rub them together with water and prepare a pill-mass. Dose grains nine to eighteen in enlarged liver, spleen, jaundice etc.

In anasarca, iron is given in combination with carbonate of potash, as in the following called *Tryushanāli lauha*.¹ Take of *yavakshāra* (impure carbonate of potash), ginger, long pepper and black pepper, one part each, iron four parts. Make into six-grain pills with water.

In erysipelas, carbuncles and boils, the following called *Kālāgnirūdra rasa*² is recommended. Take of mercury, sulphur, prepared tale, iron, iron rust, and iron pyrites, each one part, rub them together with water, and roast the mixture within a covered crucible; when cool add to it one-tenth part of its weight of aconite, mix intimately, and divide the mass into twenty-two grain pills.

In urinary diseases the following, called *Meha mudgara rasa*,³ is used. Take of *rusot*, black salt, wood of *Berberis Asiatica* (*dāruharidrā*), root of *Ægle Marmelos* (*bilva*), *Tribulus terrestris* (*gokshura*), pomegranate seed, chiretta, long pepper-root, long pepper, black pepper, ginger, the three myrobalans and root of *Ipomœa Turpethum* (*trivrit*), each one tolā, prepared iron fifteen tolās, bdellium eight tolās, mix them together and beat into a uniform mass with *ghee*. Dose twenty-two grains with water or goat's milk. This medicine is said to be useful in gonorrhœa, strangury, chronic fever, anæmia, jaundice etc.

1. चूषणादिलौहम् । अवीरजस्तूषणं यावत्कं चूर्णञ्च पीतं विफसारसेन । शीघ्रं निहन्वात् सङ्घसा नरस्य यथाशक्तिं चसुटीचवेगम् ॥ रसेन्द्रसारसंघः ।

2. काष्ठापिचद्ररसः । मृतज्ञानामखौद्गानां भक्त सात्त्विकमन्थकम् । भूषणस्ये पुटे पश्चाद्द्विकं तद्विपाचयेत् । दशमांशं विषं योष्यं साधमात्रञ्च सजयेत् । रसः काष्ठापिचद्रोऽथै दशाङ्गम विस्पर्शत् ॥ रसेन्द्रसारसंघः ।

3. मेघमुद्गररसः । रसाङ्गनं विषं दाबभिल्लीगुरदादिमाः । भूमिभ्यं पिप्यसौमूलं विकटुं त्रिकला विहतम् ॥ प्रत्येकं तोलकं दीयं लौहचूर्णम् तत् समम् । वलेकं मुग्गुलुं दन्वा हृतेन वटिकां कुह ॥ सापेकप्रमितां शेषं मेघमुद्गरसंश्रिणी । औसद्गन्नाथिन निर्विषंता मेघनाश्रिणी ॥ चतुर्पानं प्रबोद्धस्यं हानीदुग्धं कण्ठञ्च वा । विषयोऽहं निहन्वात् सूषणञ्च पलौकञ्चम् ॥ रसेन्द्रसारसंघः ।

Vrihat Somanátha rasa.¹ Take of mercury obtained by subliming cinnabar and purified with the juice of *Erythrina Indica* (*páribhadra*), and of sulphur, rubbed with the juice of *Salvinia cucullata* (*Leandá*) each one part, prepared iron four parts, prepared talc, tin, silver, *kharpara* or calamine, iron pyrites, and gold, each half a part. Rub them together with, and soak in the juice of *Aloc Indica* (*ghritakumbúri*) and *Hydrocotyle Asiatica* (*mandukaparni*) and divide into four-grain pills. They are administered with honey in diabetes and other urinary diseases, female complaints etc. A preparation similar to the above in composition, and called *Somesvara rasa* is given in leucorrhœa and other female complaints. Besides the preparations mentioned above numerous other combinations of mercury, iron and talc with the addition of gold, silver, copper etc., in varying proportions and combinations, are described under different names. In fact the three first mentioned drugs constitute the basis of the great majority of the pills used by *Kavirájas*.

Iron forms an ingredient of hair dyes. The following is an illustration. Take of powdered iron two tolás, mangoe stones five tolás, chebulic and emblic myrobalans two tolás each, belleric myrobalan one tolá. rub them together with water in an iron vessel and steep for one night. This paste is applied to grey hairs for turning them into black.²

1. इहृत्कोमनायरसः । इहृत्कुलात् सन्नवं सतं पालिधारसमर्द्धितम् । रखाशीधित
गन्धं तेनैव कञ्चलीकृतम् ॥ तद्वयद्विगुणं लीहं कन्धारसविमर्द्धितम् । अथकं वङ्गकं रोप्यं
खर्परं नाथिकं तथा ॥ सुवर्णं च समं सर्वं प्रत्येकं च रसाईकम् । तस्यै कन्धकाद्वावेर्मर्द्धये
द्वावेत्तथा । मेकपथीरसिनेव वटीं गुञ्जाद्वयां हिताम् । मधुना भक्तयेवापि सीमरीग-
निर्हृत्तये । प्रमेहं विंशतिं इति बहूमूत्रं सीमरम् । मूत्रातिसारकृच्छ्रं मूत्राघातं सुदाहणम् ।
मूत्रदीपं बहुविधं प्रमेहं मधुसंश्रयम् । इतिमेहमित्तुमेहं लाक्षामेहं विनाशयेत् । मूत्र-
यस्य अतं स्त्रीणां विद्यते च ज्यवाधिनः । न तस्य लिङ्गशैथिल्यं शुक्राचयी न कायते ।
अथिच कुहते दीप्तमस्त्रपित्तं नाशयेत् । वातिकं पैतिकं चैव श्लेष्मिकं सीमनामकम् ।
नाशयेत् बहूमूत्रं च प्रमेहमथिकल्पतः ॥ रसेन्द्रसारसंश्रयः ।

2. लीहचूर्णस्य कर्षणं दशाहं नूतमज्यतः । धात्रीफलसद्वयं पथं हं तथैकं विनीतकम् ।
विद्या लीहमेहं भास्वं स्वापयेन्निति वासयेत् । सेपोऽयमथिरादिति पालितं नाम संश्रयः ।

भावनकाशः ।

SULPHATE OF IRON.

Sans. काशीरु क़ासिस.

NATIVE sulphate of iron is indigenous to India, and has been used in medicine from a very ancient age. Two sorts of sulphate of iron are mentioned, namely, *Dhātukāsīs* or green variety and *Plushpa kāsīs* or yellowish variety. The latter is evidently sulphate of iron, covered with the basic sulphate of the sesquioxide from absorption of oxygen. It would seem that the ancient Hindus did not know sulphate of iron, as an iron compound. It is neither described as a tonic nor used in combinations with iron like iron pyrites and iron rust. It is seldom used internally. I have met with only one prescription by Chakradatta, who recommends a linctus composed of sulphate of iron and pulp of wood apple, in hiccup.¹

Externally, it is used in skin diseases along with other medicines. Thus take of sulphate of iron, gall-stone of cows (*gorachanā*) *rusol* and orpiment, equal parts and beat into to a paste with *kānjika*. It is useful in *intertrigo*, *pruritis* etc.²

Kāsīsādyataila.³ Take of sesamum oil four seers, water sixteen seers, sulphate of iron, wood of *Withania somnifera* (*asvagandhā*), bark of *Symplocos racemosa* (*lodhra*), root of *Pothos officinalis* (*gajapippali*) each sixteen tolās. Beat the solid ingredients into a paste and boil it with the oil and water in the usual way. This oil is recommended to be applied to the genitals and the breasts with the view of strengthening these parts.

1. विज्ञानादि अवलोकः । काशीरुं दधिमाम्बु विज्ञाना मधुसंयुताः । चक्रः
2. काशीरुं रीचनानुलं चरितानं रसाक्षरम् । अक्षयितः प्रलेपीत्यं इषकाच्छुद्धि-
पूहवीः ॥ चक्रः ।
3. काशीरुमायदेसम् । काशीरुतुषकन्या शकनमपिप्यक्षीविपकेन । वैशेष्यं यानि
उदिं खनकचंवरुचिह्नानि ॥

IRON PYRITES.

Sans. स्वर्णमाचिक *Svarnamākshika*, तारमाचिक *Tāramākshika*.

IRON pyrites is met with in many parts of India, and has been used in medicine from a very remote period. It occurs in two forms, namely, in dark yellow nodules with a golden lustre, and in silvery, radiated crystals. The former is called *Svarnamākshika* and the latter *Tāramākshika*. The ancients supposed that they contained gold and silver respectively, in combination with other ingredients, and possessed in part the properties of those precious metals.* Chemically iron pyrites consists of bisulphide of iron. It is purified by being boiled in lemon juice with one-third of its weight of rock-salt in an iron vessel, till the pot turns red hot. It is reduced to powder by being rubbed with oil or goat's urine and then roasted in a closed crucible. Iron pyrites thus prepared has a sweetish bitter taste. It is considered as tonic, alterative and useful in anæmia, urinary diseases, ascites, anasarca, prurigo, eye diseases etc. As an alterative tonic it is generally used in combination with other medicines of its class, such as iron, talc, mercury etc. The following is an example. Take of prepared iron, sesamum seeds, long pepper, black pepper and ginger each one part, iron pyrites five parts. Beat into a mass with honey. Dose about half a drachm in advanced anæmia.¹

In diseases of the pregnant state the following called *Garbhavinoda rasa*² is much used, as an alterative tonic. Take of iron pyrites and cinnabar, each four tolās, ginger, long pepper and black pepper, each three tolās, cloves and mace, each six tolās,

• न केवलं स्वर्णद्वयगुणास्वापिजकीर्णता । द्रव्याकारण संसर्गात् सत्यन्वेऽपि गुणास्तयोः ॥

भावप्रकाशः ।

1. स्वर्णमाचिकम् । अयस्मिन्ननुपचयकोलभागेः सर्वैः समं माचिकधातुचूर्णम् ।
तेर्माचिकः सौद्रयुतोऽनुपचयः पाश्चात्तये दूरणस्यैऽपि शक्तः ॥ चक्रः ।

2. गर्भविनीदरसः । विभारं विकटु देयं चतुर्भागश्च द्विकुलम् । मातीकीर्णं लवङ्गश्च
प्रत्येकश्च चिकार्षिकम् । सुवर्णमाचिकश्चैव पलाशं प्रचिपेद्दुःखः । जलेन नर्दयित्वाच
अथवाप्यु पटी कृता । निहन्ति गर्भविनीदीर्घं भास्करस्मिन् यथा ॥

beat them together with water and divide into pills about four grains each. One pill to be taken twice daily.

GOLD.

Sans. सुवर्ण, *Suvarna.*

GOLD enters into the composition of a large number of medicines for various diseases. Pure leaf-gold is used. It should be free from admixture of copper and silver, of a red colour when exposed to heat, and of saffron colour when rubbed on touchstone. It is purified by heating its leaves and cooling them alternately with *kánjika*, oil, cow's urine, butter-milk and a decoction of horse-gram. Gold is reduced to powder by being rubbed with mercury and exposed to heat in a covered crucible with the addition of sulphur. Two parts of mercury and one of leaf-gold are rubbed together into a mass with lemon juice and placed in a crucible with three parts of sulphur. The crucible is then covered and exposed to heat. This process of mixing the gold with mercury and exposing to heat is repeated fourteen times, when the gold completely loses its metallic character. In books it is stated that the gold should be rubbed with mercury only the first time, and that in roasting it afterwards sulphur alone should be placed in the crucible with the gold, but *Kavirāja* Binod Lal Sen tells me that he reduces gold to powder by mixing it with mercury every time it is roasted, and that he repeats the process till the gold is reduced to a dark brown impalpable powder. This powder of gold appears to undergo little change from its metallic state, for on being rubbed on an agate mortar it produces a brilliant yellow stain like that of massive gold, when it is rubbed on touchstone for ascertaining its purity.

Gold thus prepared for medicinal use is considered a valuable tonic and alterative. It is said to increase strength and beauty, to improve the intellect and memory, to clear the voice and to increase the sexual powers. It is used in fever, consumption, insanity, diseases of the nervous system and urinary organs, impotence, etc. Dose, one to two grains.

Jayamangala rasa.¹ Take of mercury obtained by sublimation, of cinnabar, sulphur, borax, prepared copper, tin and iron pyrites, rock-salt, and black pepper, prepared iron and silver, each one part, prepared gold two parts, powder them well, mix and soak the mixture three times respectively in the juice of *datura* leaves, and leaves of *Nyctanthes Arbor-tristis* (*sephalika*), in the decoction of the ten roots, called *dasamula*, and of chiretta. Divide the mass into four-grain pills. They are taken with cumin-seed powder and honey. This medicine is used in old chronic fevers of all sorts and is said to be a powerful tonic and alterative, that may be administered with suitable adjuncts in many diseases.

Mriganka rasa.² Take of mercury one part, prepared gold one part, sulphur and pearls each two parts, borax one-fourth part, rub them together and beat into a ball with *kānjika*. This is dried, enclosed in an earthen crucible and exposed to heat within a pot of rock-salt in the manner of a hot sand-bath for twelve hours. When cool the ball is taken out from the crucible and reduced to powder. It is administered in doses of one to four grains with about a scruple of black pepper in phthisis. Two other preparations used in this disease, and called *Pottali emagarbha rasa*, and *Ratnagarbha pottali rasa*, respectively, are similar in composition to the *Mriganka rasa*. They contain mercury, sulphur, gold, pearls, borax etc., in varying proportions.

1. जयमङ्गलरसः । शिङ्गुलसम्भवं तप्तं मथ्यकं टङ्गणं तथा । तावत् पङ्कं माषिकस्य
 त्रैश्ववं भरिषं तथा । सर्वैः समं समाहृत्य द्विगुणं स्वर्णमण्डकम् । तदर्धं कान्तलीहस्य
 व्यञ्ज्यापि तप्तमन् । एतत्सर्वं विचूर्ण्यैव भावयेत् कनकद्रवैः । शिफालीहलजैश्चापि दश
 मूलरसेन च । किरातदित्तककाशैः विभारं भावयेत् सुधीः । भावयित्वा ततः काय्या युञ्जतश्च-
 भेता षट्ठी । अयुपानं प्रथोक्तव्यं वीरकं मयुसंयुतम् । शौर्ध्वरं महाधीरं चिरकाल-
 इमुहवम् । अवरनटविधं हन्ति साध्यासाध्यमथापि वा । पृथक् दीवीय विविधान् समस्तान्
 वेदमन्त्रान् ॥

रसेन्द्रसारसंभवः ।

2. मृगङ्गरसः । आद्रसेन समं रीमं नीलिकं द्विगुणं भवेत् । मन्थकसु समसेन
 सप्तमसु टङ्गणः । सर्वैः तद्दीकं जला चाक्षिपेत् विधीयते । तावत् सप्तमसु र्णं प
 त्तमन्त्रान् ॥

Suvarna parpati.¹ Take of mercury eight tolas, gold one tola, rub them together, then add sulphur eight tolas and mix. Melt the mixture over the fire in an iron ladle smeared with ghee, and press the melted fluid between cow-dung balls enclosed in plantain-leaves in the manner described under *Rasa parpati*, so as to make thin round disks of it. This medicine is used like *Rasa parpati* in chronic diarrhoea, and anasarca. Milk diet is enjoined, and water and salt are prohibited. Dose grains two, gradually increased to grains ten in the course of twenty-one days, to be again gradually reduced to the original dose of two grains in another three weeks. Another preparation of the sort called *Vijayaparpati* contains diamond, pearls, silver, copper, and talc, in addition to gold, sulphur and mercury. It is used in the same cases as the *Suvarna parpati* above described.

Gold is much used as an alterative tonic. Prepared gold in doses of two grains daily with the addition of honey, ghee and emblic myrobalan, or root of *Acorus Calamus* (*vacha*) is recommended to be taken for a lengthened period.² It is also given to infants under an impression that it will impart strength and beauty to their frames. The following composition is recommended for them. Take of powdered gold, root of *Acorus Calamus* (*vacha*) and *Aplotaxis auriculata* (*kushtha*), chebulic myrobalans, and leaves of *Herpestes Monniera* (*brimhi*) equal parts, powder and mix. Dose two grains with honey and ghee. It is recommended to be given to feeble infants a few days after birth.

The principal alterative tonic of the Hindu Materia Medica is the preparation popularly called *Makaradhvaja*. To prepare it,

1. स्वर्णपर्यटी । रसोपमं पलं दसं वैनसोखकसंयुतम् । त्रिलोमा अर्घ्येत् त्वाप्तं वायदेखकमावतम् ॥ अम्यकस्य पञ्चकोकमवपात्रे तयो ददे । मर्दयेदहदपात्रिणां वायत् चञ्चलतां व्रजेत् ॥ ततः परं त्रिपालः पर्यटी कारयेत्सुवीः । रक्तिकादिक्लमेधैव जीवनेऽनुपागतः । यदधीं विविधां वृत्तिं हन्त्या सर्वज्वरपहा ॥

रसोपमं पलं दसं ।

2. मन्थानुसारेण स्वर्णस्य मर्दयेत्तद्वत्ततः । प्राञ्जलिरुत्पद्यतीति वि शब्दो प्राञ्जल्येव ।

drugs, the resulting preparation being called *Chandrolaya makaradhvaja*. Thus take of *Makaradhvaja*, one part, camphor, nutmegs, black pepper, and cloves, each four parts, musk one-sixteenth part, mix together and make into pills about ten grains each. These pills are enclosed or wrapped in betle leaves and chewed. Along with this medicine a generous diet consisting of meat, *ghee*, milk, pulses, etc., should be taken. It is used in nervous debility, impotence, premature old age etc.* A preparation similar in appearance to *Makaradhvaja* and called *Ashtavakra rasa*, is sublimed from a mixture of mercury, sulphur, gold, silver, lead, copper, zinc and tin in equal parts. It is used as a nerve tonic in general debility.

SILVER.

Sans. रज्ज, *Rupya*. तार, *Tāra*.

PURE silver, according to Sanskrit writers, should be soft, white, brilliant and ductile. It should not be discoloured by fire. Impure silver, that is, silver mixed with other metals, is discoloured by fire, of a reddish or yellowish colour, and not ductile. Silver is purified in the same way as gold. It is converted into a black oxide by thin silver leaves being mixed with twice their weight of cinnabar, and heated in the subliming apparatus, called *Urdhhapātana yantra*. This process is repeated fourteen times. The resulting compound is a fine greyish black powder with minute shining white particles intermixed with it. On chemical analysis it is found to consist of the black oxide of silver. The properties of silver thus prepared are said to be allied to those of gold but somewhat inferior. It is generally used in combination with other metals, such as gold, iron, etc. Dose, grains one to two.

* *Makaradhvaja* is regarded as a preparation of gold, which is supposed to be the active principle of the medicine. The gold used in its preparation however remains below, and the mercury and sulphur only are sublimed in the form of red sulphide, as in the preparation of mercury called *Rasesindura*. Properly speaking, therefore, it is but a preparation of mercury, although the gold may possibly exercise some catalytic influence during the process of

The following is an example of a complex prescription containing silver.

Vrihat vāta gajānkusa.¹ Take of mercury, prepared talc, iron, gold, copper and silver, orpiment, sulphur, ginger, coriander, root of *Sida cordifolia* (*balā*), bark of *Myrica sapida* (*katphala*), *Rhus succedanea* (*ringi*), aconite, long pepper, black pepper, and borax, each one part, chebulic myrobalans, two parts, powder, mix and rub with the juice of *Sphaeranthus mollis* (*mundi*) and *Vitex Negundo* (*nirgundi*) for one day. Divide the mass into four grain-pills. They are said to be useful in various nervous diseases. Silver enters into the composition of several other remedies in common use, such as the *Yogarāja* (see *śildjatu*), *Jayamangala rasa* (see gold) etc.

COPPER.

Sans. ताम्र, *Tāmra*. *Vern.* Tāmā.

Thin plates of copper such as can be pierced by thorns are used in medicine. They are purified by being boiled in cow's urine for three hours. Copper is reduced to powder by smearing its thin leaves with a paste of sulphur and lemon juice, beating them into a mass, and exposing to heat in a covered crucible within a sand-bath for twelve hours. The powder thus produced is rubbed with *kānjika* and made into a ball, which is introduced into a tuber of *Amorphophallus campanulatus* (*ola*), as in a crucible and roasted. This last process is said to render the copper innocuous and prevent it from causing purging and vomiting when taken internally.

Copper thus prepared is a dark coloured powder, somewhat gritty to the feel. On chemical analysis it is found to consist of

1. ताम्रधातुः । ताम्रधातुः ताम्रधातुः ताम्रधातुः । ताम्रं ताम्रं
ताम्रं ताम्रं ताम्रं ताम्रं ताम्रं । ताम्रं ताम्रं ताम्रं ताम्रं ताम्रं । ताम्रं ताम्रं
ताम्रं ताम्रं ताम्रं ताम्रं ताम्रं । ताम्रं ताम्रं ताम्रं ताम्रं ताम्रं । ताम्रं ताम्रं

sulphide of copper. It is described as an alterative, emetic and purgative, and is used in poisoning, dyspepsia, fever, enlarged liver and spleen, anæmia, skin diseases, diarrhœa etc. Dose, as an alterative, grains two to four. In poisoning prepared copper is given in doses of about twenty-four grains with sugar or honey to cause vomiting¹

Copper enters into the composition of several medicines for ague, remittent fever, enlarged spleen etc. The following are a few illustrations.

*Sitabhanji rasa.*² Take of orpiment, mercury, sulphur and realgar, two, one, half and quarter parts, respectively, rub them together into a thin paste with the juice of *Momordica Charantia* (*kāravella*). Apply this paste on copper plates equal in weight to the other ingredients, enclose the plates in a covered crucible, and roast in a sand-bath over a strong fire for twelve hours. When cool extract the copper plates from the crucible and powder them. Dose, four grains with four black peppers enclosed in a betel leaf. This packet should be chewed. It is given in intermittent fever with shivering fits, followed by burning and heat of skin. A preparation very similar to the above in composition is called *Pliha panchānana rasa*, and used in enlarged spleen.

*Svachchhanda bhairava rasa.*³ Take of prepared copper and aconite equal parts, rub together with the juice of *datura* leaves and make into one-grain pills. They are given with ginger juice, sugar and rock salt in fevers complicated with cerebral symptoms.

1. चीदलीदं ताम्रजीवमनं नरदीपयुत् ॥

चक्रः ।

2. शीतमञ्जीरसः । ताम्रबी दरदीहृती पारदी मन्थकः शिखा । क्रमाङ्गानां विहितं कारवेष्वा प्रथमितम् ॥ जनेनास प्रमाथेन ताम्रपत्रं प्रसेपयेत् । जपीमुष्ठी हृदे भाष्ये ताम्रिहृत्तौष पूरयेत् ॥ युष्ठां वायुवायनेष चर्षिं प्रख्यासद्वैहृदम् । शीतं संकुर्यं भाषीत्येव नातक्रीदक्षि स्त्रियः ॥ अधिती धरिषेः हाईं समसाम् विषमञ्जरात् । शीतदाहादिकान् हन्ति पञ्चधासौदनं पयः ॥

रसत्रयीनः ।

3. स्वच्छन्दैरमरसः । ताम्रमथ विषं शेषः प्रतथा भाषितं रसेः । युष्ठां चर्षि-
पयसिभनञ्जरात् पयः । भाषीत्युष्ठां चर्षिमुष्ठाः स्वच्छन्दैरपः । चीदं ताम्रासिदाम्यामि

Mahāmritunjaya lauha.¹ Take of mercury, sulphur, tale, orpiment and realger, each one part, iron two parts, copper four parts, *yavakshāra* and *sarjikāshāra* (impure carbonates of potash and soda), borax, black salt, burnt couries, and conch-shells, plumbago-root, assafœtida, root of *Picrorrhiza Kurroa* (*katuki*) *Amoora*, *rohitaka* (*rohitaka*), and *Ipomœa Turpethum* (*trivrit*) : tamarind pulp, colocynth root, root bark of *Anogeissus latifolius* (*dhava*), root of *Alangium decapetalum* (*ankota*), *Lchyanthes aspera* (*apāmārga*), ashes of the spikes of the palm-tree, turmeric and wood of *Berberis Asiatica* (*dāruharidra*), croton seeds, sulphate of copper *rusot* and *Oxalis corniculata* (*amlalonikā*), all in equal parts, with the exception of *rohitaka* bark, which should be two parts. Powder the ingredients, mix, soak the mixture in the fresh juice of ginger and *gulanča* and add to it thirty-two tolas of honey. Make into six grain pills with honey. One pill is given every morning in enlarged liver, spleen disease, ascites etc.

In enlargements of the abdominal viscera, designated by the term *gulma*, copper is used in a variety of forms. Thus, prepared copper in doses of two grains rubbed with ginger juice and enclosed in betel leaf may be given, or the following composition may be used.²

1. महासल्युच्चयखीडम् । सुवृत्तं समं नव्यं जारितायं समं तथा । रथबाहिगुणं
खीडं सततायं चतुर्विधम् । चिचार् टङ्कविडं वराटीमघ प्रङ्कम् । चिचकं कुनटीं तासं
रामटं कटुकीं तथा । रोहितकं चित्तं चिचा विद्याला चवमडटम् । अपामार्गं तासस्य-
नखिका च निघायुजम् । कामकं तुल्यकस्यैव मङ्गलार्दरसाञ्जनम् । एतामि समभावाणि
सुशुभ्रित्वा विभाषयेत् । चार्डकस्य रसेनेव दुडुचीखरसेन च । मधुनः कुङ्कुमैर्मात्रं नटिकां
नामभाषकम् । मधयेत् प्रायस्त्रयाव सर्वोद्भवकुक्षान्त्रजम् । ग्रीहान् खरसुपच न्भासच
विवमञ्जरम् । चार्डं चासं त्रिरीरोमं कर्चरीयं सश्रीषण्यम् । चिचकं कुङ्कुमस्यैव शीयर्दं
द्वयि दादयम् । रोयानीहमिमात्राया प्रयत्नचित्तम् परा । सञ्जयस्मिन् जीवन्मिहितं
समर्द्धं वृचान् ॥

*Gulma kólánaka rasa.*¹ Take of mercury, sulphur, copper, orpiment, borax, and *yavakshára* (impure carbonate of potash), each two tolás, tubers of *Cyperus rotundus* (*mustaka*), black pepper, ginger, long pepper, fruit of *Pothos officinalis* (*gajapippulá*), chebulic myrobalans, *Acorus Calamus* (*vacha*) and *Aplotaxis auriculata* (*kushtha*), each one tolá. Powder them all, mix and soak the mixture in the juice of *Hedyotis biflora* (*parpartí*), *Heliophyllum Indicum* (*hastisinndi*), *Achyranthes aspera* (*apámarga*) and *Trichosanthes dioica* (*patala*) respectively and dry. This medicine is given in the form of a powder in doses of eight grains with the decoction of chebulic myrobalans.

Several preparations of copper are recommended for use in asthma and heart disease, as for example, *Suryávará rasa*, *Heidáyárnava rasa* etc.

*Suryávará rasa.*² This preparation of copper is recommended for use in asthma by Sárangadhara and other writers of note. It is thus prepared. One part of mercury and one of sulphur are rubbed together with the juice of *Aloe Indica* for six hours. Two parts of copper leaves are pasted with the above mixture, and roasted within a closed crucible in a sand-bath for twelve hours. When cool the copper leaves are taken out from the crucible and powdered. Dose four grains with the addition of honey and the juice of *Adhatoda Vasica* (*vásaka*).

1. गुब्जकालानक्षरसः । तृप्तकं गन्धकं ताघं तालकं टङ्गुणं समम् । तीक्ष्णवर्णितं
मासं यवधारस्य तप्तमम् ॥ मुक्तकं भरिचं शुष्की पिप्लवी मजपिप्ली । इरीतकी
वचाकुडं तीक्ष्णं चूर्णयेत् सुवीः ॥ सर्वमेकीकृतं पात्रे भावना क्रियते ततः । पर्यंटी कारण
शुष्कीमपामार्गं पटोलकेः ॥ तत्पुनश्चूर्णयेत् पश्चात् सर्वं शुष्कविनाशमम् । गुब्जावतुष्टयं स्नायं
इरीतक्युपानतः ॥ वातिकं पैतिकं गुब्जं त्रैशिकं च चिदोषजम् । इन्जनं च निम्बस्नाय
पातगुब्जं विशेषतः ॥ श्रीमद्भ्रमराशेष निग्निती विशसम्पदे । गुब्जकालानकी भावा रशीःयं
सुषि दुर्लभः ॥

रसिन्द्रकारसंघः ।

2. सूर्यावर्णरसः । तृप्तकं गन्धकश्चैव यापिकं कन्धकाद्रवेः । इवीशुक्लं तामस्य
कन्धकाश्चैव लेपयेत् । द्विगुणं कुम्भिकायने पचेत् श्रीतं समुद्धरीत् । सूर्यावर्णो रशी गान-

*Hridayārnava rasa.*¹ Take of purified mercury and sulphur, each one part, prepared copper two parts, rub them together for twelve hours with the decoction of the three myrobalans, and with the fresh juice of *Solanum nigrum* (*kākamāchi*). Make into pills about four grains each. These pills are administered with a decoction of the fruits of *Solanum nigrum* and the three myrobalans, prepared with two tolās, in all of the drugs and thirty-two tolās of water, which is boiled down to one-eighth, or four tolās. They are said to be useful in heart disease.

*Tāmresvara.*² Take of prepared copper, mercury, borax, and iron, sulphur, and long pepper, equal parts, soak in the decoction of the leaves, bark, fruit, root, and flowers of *Azadirachta Indica* (*nimba*), of the pulp of *Cassia fistula* and of the three myrobalans. Dose four grains, in skin diseases of various sorts. During the administration of this medicine a cooling regimen should be observed.

SULPHATE OF COPPER.

Sans. तुल्य, *Tuttha.* *Vern.* Tutia.

SULPHATE of copper was known in India from a very remote period. It is prepared by roasting copper pyrites, dissolving the roasted mass in water and evaporating the solution to obtain crystals of the sulphate. It was known as a salt of copper, for the *Bhāvaprakāsa* says it contains some copper and therefore

1. इदयार्थवत्स्यः । एहपुलं समं गन्धं नृतसामं तथीः समम् । मर्दयेत् चिकित्सा-
कृषे क्वाकमाचौद्वैदिनम् ॥ चण्णमात्रो षटौ खादिद्रसीयं इदयार्थम् । क्वाकमाचौफलं कर्षे
चिकित्साफलसंयुतम् ॥ द्वाविंशतीलकं तीर्थं क्वाकमष्टावशेषिकम् । अद्युपानं पिबेन्नान
इद्रीने चि क्वाकमके ॥ रघुनन्दसारसंघः ।

2. तावेचरः । तासं रसं टङ्गचनन्वलीहं मञ्जीकृतं भागचिका समेवम् । पञ्चाङ्ग-
निम्बेन क्वाकमनीच विभावितं राजतरीकाशेष ॥ निवीद्वैद्वैद्वयनं प्रभाथं कहेच मन्वेकदि

possesses some of the properties of that metal.* It is described in this work as astringent, emetic, caustic, and useful in eye diseases, skin diseases, poisoning etc. It is purified for internal use by being rubbed with honey and *ghee* and exposed to heat in a crucible. It is then soaked for three days in whey and dried. Sulphate of copper thus prepared is said not to produce vomiting when taken internally. Dose, one to two grains.

Sulphate of copper dissolved in hot water is administered in insensibility from poisoning to excite vomiting. It enters into the composition of some medicines for remittent fever, such as the *Jvarānkusa* mentioned in *Bhāvaprākāsa*, but arsenic is the active ingredient in these preparations. In quartan fever the following, called *Chāturthakāri*,¹ is recommended by many writers. Take of orpiment, realgar, sulphate of copper, burnt conch-shell and sulphur, equal parts, rub them together with the juice of *Aloe Indica* and roast in a covered crucible. When cool extract the powder and make into four-grain pills with the juice of *Aloe Indica*. They are administered with powdered black pepper and *ghee*. Butter-milk should be taken before these pills which relieve the fever by inducing vomiting.

Grahanikapāta rasa.² Sulphate of copper is used in chronic bowel complaints along with other medicines, as for example in the following called *Grahanikapāta rasa*. Take of sulphate of

* तुल्यं वितुन्नकच्चापि शिखिरीवं मयूरकम् । तुल्यनाक्षीप चागुहं किञ्चित्ताम्रं च
सहवेत् ॥ किञ्चित्ताम्रगुणलक्ष्यादन्त्यनाक्षगुणश्च सत् ।

माद्यप्रकाशः ।

1. चातुर्थकारिरसः । इरितालं शिलातुल्यं शङ्खचूर्णञ्च सम्यक्म् । समग्रं मर्दयेत्
प्रायः कुमारौरसभाषितम् । शरावसंपुटे कृत्वा सिद्धा मज्जपुटे पचेत् । कुमारिश्कारखेनैव
बह्वमाषा षटी कृत्वा । इत्था शीतज्वरं इन्मि चातुर्थकं विज्ञेयवः । मरिचकप्रयोजनं सक्तं
पीजा चरीषटीम् । एतन्ना बलमे जाते ज्वरः सयी विनश्यति ॥

मेघवतसः ।

2. चण्डीकपाठः । तुल्यं तासं रसं शालं माचिकं टङ्गञ्च तथा । सपादमिच्छं
प्रत्येकं पञ्चविंशत्पराटिका । विनिष्कं सम्यक् सञ्चं पिष्ट्वा जम्बीरजैर्द्रवैः । चण्डीकामसुदीर्घं

copper, orpiment, mercury, iron, iron pyrites and borax, each five *māshās*. Prepared courses two and a half *tolās* and sulphur one *tolā*. Rub them all together with lemon juice and roast the mass lightly. This medicine is given in chronic bowel complaints, consumption etc.

Garbhavilāsa rasa.¹ Sulphate of copper enters into the composition of some medicines for diseases of the pregnant and puerperal state, such as, the *Sutikārinado* or *Garbhavilāsa rasa*. To prepare it take of mercury, sulphur, and sulphate of copper, each one part, rub them together with lemon juice for three days. Then take of cumin seeds, *kālājīrā*, long pepper, black pepper and ginger each one part, mix and make into eight-grain pills. They are used in bowel complaints and indigestion during the puerperal and pregnant state.

Sulphate of copper is applied to sinuses and fistula-in-ano with the object of stimulating and healing them. It is added to ointments for foul ulcers.² A solution of sulphate of copper is poured into the eyes in opacity of the cornea.³ The following compound powder is applied to chancre. Take of mercury, sulphur, sulphate of copper, cinnabar, and sulphate of iron, equal parts, powder and mix. This composition may be used in the form of powder or paste.

TIN.

Sans. वङ्ग, *Vaṅga*. *वपुः*, *Trapu*. *Vern.* *Rāng*.

TIN, though indigenous to India, has been known from a very ancient period and is mentioned by Susruta. Dr. Royle observed "But the Hindoos like the Egyptians have employed tin for various purposes from very ancient times. And though there

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1. गर्भविनाशरसः । रसं दन्त्यकतुल्यं ब्राह्मं जम्बीरप्रदिप्तम् । द्वितीयेकं विकटुभा
द्वयं गुल्फाचतुष्टयम् । गर्भविनाशः दन्त्यविषयं ज्वराजीर्षेषु वैदलम् ॥ रसेन्द्रधारसंघः ।
 2. ब्रह्मविजोदने । कुठं विहगिन्ध्यादन्तीमावध्यः सैन्धवं मधु । रत्ननी विहग्या तुल्यं

is no proof of its being found in the present day in the peninsula of India yet it is abundant on the opposite coast of the Bay of Bengal, as in Burma, Tenasserim, Junkseylon and Malacca. There must in very ancient times have been a trade between India and these places."

Tin is purified by melting it over the fire and pouring the melted fluid into the milky juice of *Calotropis gigantea* (*urka*). It is prepared for medicinal use by melting it in an iron cup, adding to it one-fourth part of its weight of *yacukshara* (impure carbonate of potash) and powdered tamarind shells, and agitating with an iron rod till the mass is reduced to a fine powder. It is then washed in cold water and dried over a gentle fire. The resulting product is a greyish white powder consisting chemically of oxide of tin with some impurities. It is chiefly used in urinary disorders in a variety of forms. Thus the simple powder may be given in four-grain dose every morning with honey, or one of the following preparations may be used.

Trinetra rasa.¹ Take of prepared tin, mercury and sulphur equal parts, rub them together in an iron mortar and soak seven times respectively in the juice of *Cynodon dactylon* (*durva*) and the decoctions of liquorice root, gum of *Bombax Malabaricum* (*Mocharasa*), and *Tribulus terrestris* (*gokshura*). Then roast in a covered crucible, again soak in the above mentioned fluid medicines and make into four-grain pills. This medicine is given with a decoction in milk of the above named vegetable drugs, in painful micturition.

Vangesvara rasa.² Take of the preparation of mercury called *Rasasindura*, and of prepared tin, equal parts and mix. Dose about four grains with honey in urinary diseases and diabetes. .

1. त्रिनेत्ररसः । बद्धं सूतं तन्वकं भावयित्वा लीङ्गे पात्रे मर्दयेदिकचसम् । दूर्वाद्यष्टौ
 श्राकलीनोद्दरेण सुषामध्ये मूषरे पाचयित्वा । तत्तद्भवेर्भाषयित्वास्त्र बद्धं दद्याच्छीतं पावसं
 बल्लमाचम् । दूर्वाद्यष्टौ श्राकलीनस्त्रसुखैर्दूर्वाः । तुर्यान् पावसं तद्द्वीत । प्रातःकाले बीत-
 पात्रीवपानात् मूत्रे जाते स्यात् सुखी च कर्मिणः ॥

रसेन्द्रसारसंघः ।

2. वङ्गेवरः । रसमज्जसमायुक्तं बद्धमज्जं प्रकल्पयेत् । चक्षुःपापघ्नं कृत्वा प्रमेहान्

दमेन्द्रसारसंघः ।

*Vrihat Vangesvara rasa.*¹ Take of prepared tin, mercury, silver and talc, sulphur and camphor each two tolas, prepared gold and pearls, each half a tola, mix them together, soak the mixture in the juice of *Eclipta prostrata* (*kesarajá*), and make into four grain-pills. This medicine is said to cure all sorts of urinary diseases, and to act as an alterative tonic. It is given in diabetes with the juico of the ripe fruit of *Ficus glomerata* (*udumbara*).

*Svarnavanga.*² Take of mercury, sulphur and tin, equal parts, and rub them together, then take sal-ammoniac in quantity equal to all the above ingredients and rub together in a mortar. Introduce the mixture in a glass bottle and expose to heat in a sand-bath. The resulting powder called *Svarna Vanga* or golden preparation of tin has a beautiful golden lustre and flaky texture. It is given in urinary complaints in doses of five to ten grains with honey and the juice of emblic myrobalans. This preparation is the bisulphuret of tin or mosaic gold "used in the arts as a bronze powder especially for the manufacture of paper hangings." It is noticed by Pereira. The Sanscrit text for its preparation quoted below, is taken from a manuscript compilation in the possession of Kaviraja Benod Lal Sen. It is evidently a recent innovation if not an imitation of the European preparation.

1. इहृदकेचरः । वङ्गभस्म रसं गन्धं रौप्यं कर्पूरमद्यकम् । कर्षं कर्षं मानसेषां
सुताहि, षेन मौक्तिकम् । केशराजरसेर्भाव्यं द्विगुणाफल्कमानवः । इहृदकेचरी काम सीकरौघं
निहृन्वत्यलम् । वङ्गमूलं वङ्गविधं स्त्रीषु सम्यक् तृषायते । मलवर्षाचरं रुष्यं सुकसुम्भकं
परम् । ह्यनं वा यदि वा गन्धं पयो वा दक्षिणिर्निर्मितम् । अनुपानं प्रयोक्तव्यं बुध्वा दीवर्गतिं
भिष्टुकम् । दद्यात् काले च प्रीतिश्च सेपयेत्तु रसाद्यनम् ॥

भेषज्यव्यावली ।

2. स्वर्णवङ्गः । सूतेन कर्दिसं वङ्गी मन्थयेत् सुकम्बली । भरस्कारिणं सत् वषात्
धर्मसुख्येन क्लृप्तम् । रसात् तं बालुकाद्यन्ते क्वाचकुम्भा निचापयेत् । पाकं कुम्भान्निष्टकं
प्राप्तं स्वर्णवर्षं वदा भवेत् । तदा सिद्धं चिलानीनात् सर्वमैष्टिषु बीजयेत् । दायिकं
दीपित्वा चैव क्रीडित्वा साग्निपातिकम् । सर्वव्याधिनिनाशाय महादीपेण विनिर्मितः ॥

ZINC.

Sans. *बलद*, *Yasada*. Vern. *Dastá*.

Zinc is not mentioned by the older writers, such as Śaṅkara, nor does it enter into the composition of many prescriptions. The Bhāvaprakāśa mentions it in the chapter on metallic preparations, and directs it to be purified and reduced to powder in the same way as tin. It is said to be useful in eye diseases, urinary disorders, anæmia and asthma.

Kharpara. This mineral is mentioned in most works. It enters into the composition of a number of prescriptions both for internal and external use. The article used under this name by the physicians of Upper India is a sort of calamine or zinc ore. Most of the physicians in Bengal are not acquainted with this ore, and substitute zinc for *kharpara*, that is, they consider *kharpara* as a mere synonym of zinc or *yasada*. They accordingly direct that *kharpara* should be reduced to powder by being melted over a fire and rubbed with rock salt. Zinc thus prepared is a fine yellowish grey powder consisting of carbonate of zinc mixed with chloride of sodium. In the works of the physicians of Upper India, this preparation is not described. There they use the zinc ore, which does not dissolve on the application of heat. It is simply purified by being boiled in cow's urine or soaked in lemon juice and then powdered. The Bengali physicians who substitute zinc for *kharpara* are evidently wrong, for the description of some of the preparations of this drug, as for example of the collyrium mentioned below, can not apply to metallic zinc.

Kharpara, as sold by Hindustani medicine vendors, occurs in greyish or greyish black porous earthy masses composed of agglutinated granules. On chemical analysis it was found to consist of carbonate and silicate of zinc with traces of other metals as iron, baryta, etc. *Kharpara* is described as tonic and alterative and useful in skin diseases, fevers etc. It is also much used as a collyrium in eye diseases. Dose, grains six to twelve.

Vasanta mālati rasa. Take of leaf gold one part, pearls two parts, cinnabar three parts, black pepper four parts, purified *kharpara* eight parts, and rub them together. Then add some

butter and lemon juice and rub together till intimately mixed and no separate particles are visible. Dose two to four grains with honey and long pepper. This medicine is much used by Up-country physicians in chronic fever, secondary syphilis, chronic gonorrhœa, leucorrhœa etc.¹

A collyrium is prepared as follows. Rub some *kharpara* in a stone mortar with water, take the dissolved watery portion, rejecting any solid particles that may have subsided to the bottom. Evaporate this solution, powder the residue and soak it three times in a decoction of the three myrobalans. When dry add one tenth part of powdered camphor and mix intimately. This collyrium is said to be useful in various sorts of eye diseases.²

LEAD.

Sans. सीसक, *Sisaka.* *Vern.* *Sisá.*

Lead is produced abundantly in India in the shape of the sulphide called galena. Galena is sold in the bazars under the name of *surma*, and is much used by the natives as a collyrium. The red oxide of lead, or minium, was manufactured by the ancient Hindoos. It is known by the name of *sindura*, and is used by all married Hindu women as a paint for the forehead. Litharge or massicot, called *murdasang* in Hindustani, has no

1. खर्षं मुक्ता दरदं भरिचं भागद्वया प्रदिष्टं खर्षराष्टी प्रथममखिलं भर्दयेत् सचनेन ।
भाषत् खेदो व्रजति विलयं निम्बुनीरिष तावत् गुञ्जाचनं मधु चपलया भास्वतीप्राग् वसन्ता ॥
शैवितेयं इरेतुर्लं जीर्णञ्च विधमञ्जरम् । व्याधीनम्यांश्च कासादीन् प्रदीप्तं कुक्षतेऽजसम् ।

वेद्यविमीदः ।

2. खर्षरवर्तिः । शिलायां रसकं पिष्ट्वा सव्यनाड्याव्यं शरिष्वा । यद्वीर्यात् सव्यलं
सर्वं त्यजेत्सर्वं चोद्यतम् । श्वेतञ्च तस्यलं सर्वं पर्यटीसन्नितं भवेत् । विषुस्यं भावयेत्
सव्यञ्च विवेकं विफलारसैः । खर्षरस्य रजसव्यं दग्धशशिनं निक्षिपेत् । अक्षयेत् भवने तेन

proper Sanskrit name and was unknown to the ancients. In some recent compilations it is occasionally introduced as a component of some compound preparations. Carbonate of lead, called *saffedí*, now common in the bazars and extensively used as a paint, is not mentioned by the ancient writers. The name *saffedí* is of Persian origin, and the article itself is an imported one.

Lead is purified and reduced to powder in the same way as tin. Lead thus prepared is a gritty powder of a greyish red colour. Chemically it is an impure carbonate of lead. Its properties are said to be similar to those of tin. It is seldom used internally except as a component of compound medicines containing a number of other metals. A probe made of lead is preferred for applying collyria to the eyelids.

The red oxide of lead, called *sindura*, is used externally in eruptive skin diseases in the form of ointment or liniment. Thus *sindura* and powdered black pepper mixed with butter is recommended to be applied in chronic eczema. An oil called *Sindurdya taila*¹ is thus prepared. Take of mustard oil one seer, water four seers, minium four tolás and cumin seeds eight tolás. Boil together in the usual way. This oil is used in eczema and other eruptive skin diseases.

GALENA.

Sans. अञ्जन, *Anjana*. मौवीराञ्जन, *Sauviránjana*.

Galena or sulphide of lead is called *anjana* or *sauviránjana* in Sanskrit, and *krishna surmú* in Vernacular. It is called *anjana*, which literally means collyrium or medicine for the eyes, from the circumstance of its being considered the best application or cosmetic for them. The other varieties of *anjana* mentioned are *srotonjana*, *pushpánjana* and *rasánjana*.

मौवीराञ्जन *Sauviránjana* is said to be obtained from the mountains of Sauvira, a country along the Indus, whence it derives its

1. सिन्दुराद्यं तैलम् । सिन्दुराद्यं च यथा नीरकञ्च कथं तथा । अट्टमेवात्

name. The article supplied under its vernacular name *surmá* is the sulphide of lead ore. *Surmá* is usually translated as sulphide of antimony, but I have not been able to obtain a single specimen of the antimonial ore from the shops of Calcutta and of some other towns. The sulphide of antimony occurs in fine streaky, fibrous, crystalline masses of a radiated texture. The lead ore on the contrary, occurs in cubic masses destitute of rays and is tabular in its crystalline arrangement.

श्वीतीऽश्न *Srotonjana* is described as of white colour, and is said to be produced in the bed of the Jamuná and other rivers. It is called *saffed surmá* in the vernacular, and the article supplied under this name by Hindustani medicine vendors is calcareous or Iceland spar. It is used as a collyrium for the eyes, but is considered inferior to the black *surmá* or galena.

पुष्पाञ्जन *Pushpánjana* is described as an alkaline substance. I have not met with any vernacular translation of this word, nor with any person who could identify or supply the drug. Wilson, in his Sanskrit-English Dictionary, translates the term as calx of brass, but I know not on what authority.¹

रसाञ्जन *Rasánjana* is the extract of the wood of *Berberis Asiatica* called *rasot* in the vernacular. It will be noticed in its place in the Vegetable Materia Medica.

Sauviránjana or galena is chiefly used as a cosmetic for the eyes, and is supposed to strengthen these organs, improve their appearance and preserve them from disease. It enters into the composition of some collyria for eye diseases. Galena, heated over a fire and cooled in a decoction of the three myrobalans for seven times in succession, is rubbed with human milk and used

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1. श्वीतीरसञ्जनं कृष्णं कालनीलं सुश्वीरजम् । श्वीतीऽश्नं तु श्वीतीञ्च नदीञ्च यामुनं
वरम् । श्वीतीरं याद्वि मयुरं चतुस्रं कफघातजित् ॥ विषयवालयुष्णीतं श्वीतीऽश्नमधी-
हयम् ॥ पुष्पाञ्जनं पुष्पकेतु रोतिञ्च कुसुमाञ्जनम् । पुष्पाञ्जनं चारमुञ्चं काचार्नपटलापहम् ॥

in various eye diseases.¹ Another collyrium prepared with lead is as follows. To one part of purified and melted lead, add an equal portion of mercury and two parts of galena, rub them all together and reduce to powder. Now add camphor, equal in weight to one-tenth part of the mass and mix intimately. This preparation is said to be useful in eye diseases.² From the composition and uses of lead and galena above described it would seem that by the term *surma* the Hindus meant sulphide of lead, and not sulphide of antimony as is generally supposed.

BELL METAL AND BRASS.

BELL metal, (कांस्य, *Kānsya*), as used in medicine, is an alloy of copper and tin. Brass, (पित्तल, *Pittala*) is an alloy of copper and zinc. They are sometimes used in combination with other metals, and are regarded as tonic and alterative. They are purified and reduced to powder in the same way as copper. The following is an example of a preparation containing bell metal.

Nityānanda rasa.³ Tako of mercury, prepared copper, iron, bell-metal and tin, purified orpiment, sulphate of copper and

1. अग्रितस्य सोवीरं निषिञ्चेत् त्रिफलारसैः । सप्तवैलन्तशास्त्रैः स्त्रीणां सिक्तं
द्विचूर्णितम् । अज्येयप्रयत्ने तेन प्रत्यङ्गसुषुप्तार्चितम् । सर्वान्धकाराभ्युद्वान्दत्त-
संशयः ॥

शाङ्गधरः ।

2. ग्रहे नागे द्रुते तुल्यं शुद्धं मृतं निनिचिपेत् । कृष्णान्नं तयोस्तुल्यं सर्वमेकत्र
चूर्णयेत् । दशमशित कर्पूरं तस्मिन् चूर्णे प्रदापयेत् । एतत् प्रत्यङ्गं नेत्रमद्विषयनः
सतम् ॥

शाङ्गधरः ।

3. निवानन्दरसः । द्विगुणात् सशवं सूतं गन्धकं सततासकम् । काष्ठीं वक्रं
हरिताखं सुखं शङ्खं वराटकम् । विषट्टं विष्वक्खीरं विषङ्कं पटुपञ्चकम् । चविकापिपुली-
मूलं हनुवा च वशा तथा । शटीषाठादेवदाह एवाच इन्द्रदारकम् । एतानि समभानानि
संचूर्णं बटिकां कुह । इतीतकोरसं दत्त्वा पञ्चगुणानिनां शुभांम् । एतेषां खाद्यैस्त्रियं
शीतलस्य अर्धं पिबेत् । शीपदं कक्षवातीर्यं रक्तमसाधितस्य वत् । वैदीयानं त्रासुवतं

calcined conch-shell and couries, sulphur, ginger, long pepper and black pepper, the three myrobalans, *haberung* seeds, the five salts, namely, rook, sun-dried sea, black, *smchól* and Sambar Lake salts, *Chavica officinarum* (*chavika*), long pepper root, *havusa* (an aromatic substance), *Acorus Calamus* (*vacha*), *Curcuma zedoaria* (*sati*), *Stephania hernandifolia* (*póthá*), *Pinus deodara*, cardamoms, seeds of *Argyrea speciosa* (*vrídhya daraka*) each two tolas, rub together with the juice or decoction of chebulic myrobalans and make into ten-grain pills. They are given in hydrocele and elephantiasis of the scrotum. The remark that, when a disease has a long list of drugs for curing it, one may take it for an incurable one, is well exemplified in this medicine for elephantiasis of the scrotum.

MICA OR TALC.

Sans. **बभ्रु**, *Abhra*.

FOUR varieties of talc are described by Sanskrit writers, namely, white, red, yellow and black. Of these the white variety is used as a substitute for glass in making lanterns etc., and the black variety called *vajrábhra* is used in medicine. It is of a black colour, hard and heavy, and generally known by the name of *krishnábhra* or *sheábhra*.

Talc is purified in the following manner. It is first heated and washed in milk. The plates are then separated and soaked in the juice of *Amaranthus polygamus* (*tundulia*) and *kánjika* for eight days. Talc thus purified is reduced to powder by being rubbed with paddy within a thick piece of cloth, when the powdered talc passes through the pores of the cloth in fine particles and is collected for use. Talc, thus reduced to powder, is called *dhányábhra*. It is prepared for medicinal use by being

बभ्रुवर्णं न संशयः । अर्द्धं गण्डमासाद्य बभ्रुवर्णं चिरमनीम् । वातवर्णं पित्तवर्णं
 त्र्यम्बुवर्णं लिङ्गलि च । अपिबर्णं करीलेपसप्तवर्णकरः परः । यौसङ्गननायेन लिङ्गिनी-
 विषयस्यदे । निव्यामन्द रसो नास यद्योजः शीपदे गद्वै ॥

(सिद्धकारसंघः ।

mixed with cow's urine and exposed to a high degree of heat within a closed crucible, repeatedly for a hundred times. Sometimes the process is said to be repeated a thousand times. When this is the case, the preparation is called *sahasra putita abhra* and sold at high price (eight rupees per tola). It is considered to be of superior efficacy. Prepared talc is a powder of brick-dust colour and a saline, earthy taste. Chemically it consists of silicate of magnesia with iron in excess. It is considered tonic and aphrodisiac and is used in combination with iron in anaemia, jaundice, chronic diarrhoea and dysentery, chronic fever, enlarged spleen, urinary diseases, impotence etc. Its efficacy is said to be increased by combination with iron. Dose, grains six to twelve.

Jvarisani rasa.¹ Take of mercury, sulphur, rock salt, aconite and copper, one part each, prepared iron and talc, five parts each, rub together with the juice of *Vitex Negundo* leaves, then add one part of black pepper and make into two-grain pills. They are administered with the juice of betle leaves in chronic fever and enlarged spleen.

Agnikumdra rasa.² Take of mercury, sulphur, borax, iron, aconite, ginger, long pepper, black pepper, *ajowan* and opium each one part, prepared talc ten parts, rub together for three hours with the decoction of *Plumbago rosea* (*rakta chitraka*); and make into pills of the size of black peppers. This preparation is used in chronic diarrhoea and indigestion.

1. ज्वराग्नि रसः । रसं गन्धं संश्लेषञ्च विधे तासं समं समम् । सर्वं चूर्णकृतं लौहं तन्मसं युक्तमभक्षम् । लौहि च लौहिदण्डेन निगुण्डीखरसेन च । मर्दयेद् द्रवतः पश्चात् भरिचं सूततुल्याकम् । नागवज्रादसेनैव दातव्यं रक्तिसन्धितम् । सर्वज्वरहरः श्रेष्ठः ज्वरान् हन्ति सुदारुणान् । कासं श्वासं मन्दाधीरं विषमार्षणं ज्वरं बन्धम् । धातुस्थं प्रयत्नं दाहं ज्वरं दीर्घं शिरोरुचम् । यक्ष्मदग्नीदरं प्रीहं शययुञ्ज विनाशयेत् ॥

भेषज्यरत्नावली ।

2. अग्निकुम्भार रसः । रसं गन्धं विधे व्योषं टङ्गणं लौहिभक्षकम् । जलनीदासिद्धिषुच सर्वतुल्यां स्रताभक्षम् । विषकृत्वक्षयायेण मर्दयेद्यामनाभक्षम् । भरिषामां बट्टीं खादयेद्वीर्यं शक्यं तथा । नाशयेन्नाम सन्देशी गुणमेतच्चिन्तितम् ॥

भेषज्यरत्नावली ।

*Sulachanimitābhra.*¹ Take of prepared tale eight tolās, rub it with eight tolās each of the fresh juice or decoction of the following drugs, namely, pulp of *Ziziphus Jujuba* (*kola*), *Charica officinarum* (*chavikā*), root of *Andropogon muricatus* (*usira*), pomegranate fruit, lemon juice, emblic myrobalan and *Osluis corniculata* (*amlalonikā*), and make into pills about six grains each. This medicine is used in loss of appetite, disinclination for food, dyspepsia, vomiting, urinary diseases, anasara and debility. It is tonic, alterative and aphrodisiac. The preparation called *Kandarpa kumārābhra* is very similar to the above in composition. In disorders of the urine the following called *Harisankara rasa*² is used. Soak some prepared tale in the juice of emblic myrobalans seven times in the course of a week and make into two-grain pills.

*Arjunābhra.*³ In heart disease tale is used with the juice of the *arjuna* bark which last is considered a specific for this complaint. *Arjunābhra* is prepared by soaking some prepared tale in the juice of the bark of *Terminalia Arjuna*, seven times,

1. सुखोचनामृतमम् । पलं सुशीर्णे गमथानु वज्रकं तेजीवती कोल मुशीरदाडिमम् ।
 भाल्यस्त्रक्षीनीरुषकं पृथक् रसेः पत्नीन्यतैर्मदितमेव सेवितम् । अरिषकं वातकफचिदीपज
 पिप्पीडवं गन्धरुमुद्गवं वृषाम् । कामं सरावातमुरीषदं हृजं श्रांसं बलासं यकृतं भगन्दरम् ।
 श्रोत्राग्निमान्यं ययद्युं समीरणं मेहं भृशं कुठममृन्दरक्ष्मीन् । श्लाघापितं चथरोममुद्गतं
 स रक्तपित्तं वनिदाहमशरीरम् । निहन्ति चार्शांसि सुखोचनामृतं बलप्रदं इत्यमिद
 रसावगम् ॥

रसेन्दुसारसंयुक्तः ।

2. हरिशङ्करसः । अताभमानखकजैः समानं भावयेत् रजः । हरिशङ्करसङ्ग
 साहं शुक्रः सर्वप्रमेहजित् ॥

रसेन्दुसारसंयुक्तः ।

3. अर्जुनामृतम् । सङ्घसपुटितैः सिद्धं वज्राधमर्ज्जुनमलपः । सुखैर्विमदितं सप्तदिव
 खले विशीषितम् । श्लावाशुक्ता मठी कार्थी नामोदमर्ज्जुनामृतम् । इद्रोमं सर्वपुलाशां
 इह्नास्यार्थरीषकान् । अतिसारं मन्दमपि रक्तपित्तं अतश्चयम् । शीथीशराण्यक्षपित्त
 विषमज्वरमेहश्च । इत्यन्यानपि रोगांश्च बल्यं इत्यं रसावगम् । अमुपानं पिबेद्यान् इद्रोमं

and dividing the mass into two-grain pills. In phthisis and chronic bronchitis the following called *Sringarābhra*¹ is used. Take of prepared talc sixteen tolas, camphor, cardamoms, nutmegs, mace, cloves, root of *Paecima odorata* (*hōli*), *Pothos officinalis* (*gajapippali*), leaves called *tejjatca*, *jalamansi* root, leaves of *Pinus Webbiana* (*bilisapatra*), cinnamon, flowers of *Mesua ferrea* (*ndjakosara*), root of *Aplotaxis auriculata* (*koshtha*), flowers of *Woodfordia Floribunda* (*Ahātaki*) and purified sulphur, each one tola, mercury half a tola. Powder the ingredients, mix and make into four-grain pills with water. One pill at a time is to be chewed with betle leaves and ginger, and a little water is to be taken afterwards. The pills may be taken three or four times daily. The diet should consist of *ghee*, milk and broth.

Mohalakahmi Vilāsarasa.² This preparation is used as an alterative tonic and aphrodisiac in general debility, impotence etc. To prepare it, take of talc eight tolas, mercury four tolas, sulphur four tolas, tin two tolas, silver one tola, orpiment one tola, copper

1. गृह्णातमम् । गृह्णं कृष्णभक्षूर्णं द्विपलपरिमितं प्राण्यमानं यदस्यत् । कर्पूरं जातीकीयं सज्जलमिभक्तमतिजपत्रं खड्गम् । सांक्षीतासौमशोचंगककुसुमरदं घातकीचेति तुल्यम् । एखाजातोफलाख्यं चितितलविधिना गृह्यन्त्याग्मकोलम् कोलाईं पारदक्य प्रतिपदद्विहितं पिष्टमिहच मिश्रम् । पानीयेनैव कार्याः परिशतस्यकस्त्रित्तुल्याश्च बन्धः । प्रातः खाद्याशतस्र सदनखलु कियन् गृह्णवेरं सपथम् । पानीयं पीतमनेत्रु बमपहरति द्विप्रमेतान् विहारान् । कोष्ठे दुष्टादिजातान् ज्वरमुदररुजां राजयन्त्य शयश्च । कासं त्रासं सश्रीयं नयनपरिभवं मेहमेदोविहारान् ।

सारकौमुदी ।

2. मङ्गलश्रीविहासः । पलं कृष्णभक्षूर्णस्य तददं गन्धपारदम् । वज्रभक्ष तददं च तददं तारकस्य च । तन् समं हरितामस्य तददं ताम्रभक्षकम् । रसतुल्यं कर्पूरस्य जातीकीयफलं तथा । इन्द्रदारुवैश्वीकस्य वैश्वं स्वर्णफलस्य च । प्रष्टकान् कार्ष्णिकान् भागान् श्वेतसर्षपं प्राण्यकम् । कामवह्नोरसैः पिष्टा त्रिगुञ्जाफलमानतः । वटीकार्यानुधानस्य स्वाधिं चैत्यं प्रथीकयित् । निहन्ति सन्निपातीत्यान् गदान् घोरान् सुखाश्चान् । ग्रीकः प्रथीकराजोऽयं अत्रत्येन मङ्गलमना । मङ्गलश्रीविहासोऽयं नासुदेवी जगदगुहः । अस्य प्रसादाद् भवशान् खलनारीषु वल्लभः ॥

रसैस्त्रसारसंयुतः ।

BORAX.

Sans. टडन, *Taukann*. Vern. *Sakōyō*.

BORAX was known to the ancient Hindus from a very remote period, and is mentioned by Susruta. It is brought from Thibet across the Himalaya, and from Nepal, and is used in medicine as well as in the arts. It is purified for medicinal use by being steeped for a night in *kōujika*, and dried in the sun. Borax is said to be useful in loss of appetite, painful dyspepsia, cough, asthma, skin diseases and diarrhœa. It is also used for procuring abortion and promoting uterine contractions. Borax enters into the composition of numerous formulae for dyspepsia, such as the *Amritakalpa rasa*, *Taukandī rati* etc.

Amritakalpa rasa.¹ Take of mercury, sulphur and aconite, one part each, borax three parts, soak them for three days in the juice of *Hedelia celandulacea* (*bleingardja*) and make into two-grain pills. This medicine is said to be useful in loss of appetite, indigestion and dyspepsia. *Taukandī rati* contains the above ingredients with the addition of ginger and black pepper, all in equal parts.

Chandrarita rasa.² Take of the three myrobalans, ginger, long pepper and black pepper, *Charica offivarna* (*charikā*),

1. अमृतकल्परसः । पारदं गन्धकञ्चैव समानी कज्जलीक्रीती । तथीरवं विषं शङ्खं
तत् भस्मं टडनं भवेत् । भङ्गराजं टवेर्भाव्यं सिद्धिर्न यत्नतः पुनः । मुद्गरप्रमाणा वटिका
कर्पूरव्याभिषजां वरेः । वटीद्वयं इरेच्छुभं अग्रिमाद्यां मनिश्चितम् । अजीर्णं अरयन्त्याय
धानपुष्टिं करोति च । नानाव्याधिहरा चैयं वटी गुरुवची यथा । अमुपानविशीरेण
सम्यग् गुणकारी भवेत् ॥ रसेन्द्रसारसंघः ।

2. चन्द्रारितरसः । त्रिफला विकटु चयं धाम्यं जीरकं सैन्धवम् । प्रत्येकं तोषकं
यात्रं हागीदुग्धेन पेययेत् । रसगन्धकलीङ्गानि प्रत्येकं कार्ष्णिकानि च । टडकण्यस्य पलं दद्यात्
भरिष्यस्य पलायकम् । नवगुण्ठाप्रमाणेन वटिका कारयेद् भिषक् । एकैकां वटिकां खादेत्
रक्षीपलत्रलयुताम् । नीलोत्पल रसेर्वापि कुलत्यस्य रक्षीय वा । हागीचीरेण अस्त्रेण
केशराजरेण वा । निहन्ति विविधं कासं यन्मात्रमपि दास्यम् । वासा गङ्गुषिका
भागो मुक्तकं कष्टकारिका । समभागं कृतं काथं प्रत्येकं भक्षयेद्यु ॥

रसेन्द्रसारसंघः ।

coriander, cumin seeds and rock salt, each one tola, and rub them together with goat's milk. Then add mercury, sulphur and iron, each two tolas, borax eight tolas and black pepper four tolas, all in fine powder, mix and make into pills or boluses about eighteen grains each. They are administered with goat's milk in chronic bronchitis and various sorts of cough with copious expectoration. Along with these pills a decoction made of *glaucha*, *Adhatoda vasica* (*rasaka*), *Clodendron Siphonanthus* (*Chukmayaskti*), *Cyperus rotundus* (*mustaka*), and *Solanum Jacquinii* (*kantakiri*) should be administered.

Borax enters into the composition of several prescriptions for diarrhoea, along with opium, such as the *Grahamikapata rasa* and *Nripavallara rasa*, for which see Opium.

A mixture of equal parts of borax, long pepper and *babering* seeds is given for five days, at the menstrual periods for the purpose of preventing conception.¹ It is also used for procuring abortion and inducing labour pains. Borax rubbed into a paste with the root of *Vallis dichotoma* (*bhadraulli*) is applied to diseased nails.

LIME.

Sans. शङ्खश्च Saakha bhasma. चूर्णं Churna.

SEVERAL SORTS of lime are used in Hindu medicine. Thus we have lime from limestone called *churna*. Then we have lime from calcined cowries, conch-shells, bivalve-shells, and snail-shells, called respectively, *Kapardaka bhasma*, *Sankha bhasma*, *Sukti bhasma* and *Sambuka bhasma*. These shells are purified by being soaked in lemon juice, and are prepared for use by being calcined within covered crucibles. Lime is used internally in dyspepsia, enlarged spleen and other enlargements in the abdomen, and externally as a caustic. Lime enters into the composition of a great many prescriptions for different sorts of dyspepsia. The followings are few examples:—

-
1. पिप्पली विषङ्ग टडुचं समचूर्णं वा पिबेत् पञ्चसा । ऋतुसमये नहि तस्य गर्भः
सञ्जायये कापि ॥ भावप्रकाशः ।

Burnt conch-shell lime is a good medicine for Dyspeptic colic. Take of Burnt conch-shell (without flesh) lime one or two mashes with luke warm water. Before taking this the mouth should be anointed with Ghee.¹

*Shambukadi gudika.*² Burnt conch-shell 1 tolah, ginger officinale (sunthi) long pepper and black pepper each one-third tolah, five salts one tolah in equal parts and rub these with the juice of *Iponoea septanus* and make pills of one masha each. One pill to be taken with luke warm water either in the morning or a little before or after meal. This prevents Dyspeptic colic.

*Amrita vati.*³ Take of calcined cowries five parts, aconite two parts, black pepper nine parts, and make into two-grain pills. They are used in loss of appetite and indigestion.

*Agnikamara rasa.*⁴ Take of borax, mercury and sulphur, each one tola, aconite, calcined cowries and conch-shells, each three tolas, black pepper eight tolas, rub them together for twelve hours with lime juice and make into twelve-grain pills. This medicine is said to increase the appetite and cure indigestion. Calcined conch-shell in half a drachm doses is recommended to be taken with lime juice in enlarged spleen.⁵

1. शलुखनं भक्षणीतं जलमोषणं तत्सन्धानम् । पक्वञ्च विनिश्चयेत् तन् गृह्यं विण्-
शिवसुरान् । निमोक्षीकृतशलुखभक्षणावमेकं तस्य वा । इतान्मुखकुङ्करेण सन्ध्यास्तुना
नीलशिला पियम् ।
भैषज्यरत्नावली ।

2. शलुखादिगुडिका । शलुकं द्वापणञ्च तथैव लवणानि च । समंशो गृह्यका कालो
कलश्वक्षरसेन च । प्रातर्भोजनकाले वा मत्स्येत्तद यथाबलम् । गुणान् विमुच्यते जनुः
सङ्का परिणामजाम् ।
भैषज्यरत्नावली ।

3. चसुतवटी । चसुतवटाक मरिचैर्विपचनवसानिकैः कसश्च । वटिकासमुद्-
माना कफपित्तापिनाद्याङ्कारिणी ।
भैषज्यरत्नावली ।

4. अशिकुमारीरसः । रसेन्द्रगन्धो सङ्ग टङ्गसेन समं विधं योज्यमिह विभागम् । कपहं-
शङ्काविह्वलेतमागौ मरिचमात्राद्युक्तं प्रदेयम् । सुपक्वजम्बीरसेन छटः सिद्धौ भवेदशिकुमार
पयः । विद्विक्काणीकं समीरयानं दद्यात् द्विवर्गं यङ्गचीगर्दं च ।
भैषज्यरत्नावली ।

5. रसेन जम्बीरफलस्य मङ्गनाभिरनः पीतमवश्यमेव । शालग्रमालं शस्येद्विद्वेषं
शुद्धमयं कृष्येसनामयात् ।
भावप्रकाशः ।

Lime is used in various combinations as a caustic for different diseases. Thus a mixture of conch-shell lime, impure carbonate of soda (*sarjikā*) and the ashes of *Raphanus sativus* (*mulaka*), is applied to tumours and enlarged glands.¹ A mixture of lime, carbonate of soda, sulphate of copper and borax is applied as a caustic to tumours and warts. Lime enters into the composition of depilatories. Thus take of conch-shell lime three tolas, orpiment and the ashes of *Betea frondosa* (*pubisa*), one tola each, and rub them together with the juice of plantain stalks or of *Colotropis gigantea* (*varka*). This paste is applied seven times to the part from which the hair is to be removed.²

CHLORIDE OF SODIUM.

Sans. लवण, *Lavana*.

SUSRUTA describes the following varieties of salts, viz., 1 *Saindhava*, 2 *Sāmundra*, 3 *Vit* or *Vid*, 4 *Saurvachala*, 5 *Ronaka*, 6 *Audbhida*, 7 *Gutika*, 8 *Pīnśuja*, also called *Ushasūda*. The first five in the above list generally pass by the name of *pancha lavana* or the five salts, and are often used in combination. The other varieties are rarely used in medicine.

सैन्धव *Saindhava* literally means produced in Sindh, or the country along the Indus. The term is applied to rock salt which is regarded as the best of salts. Three varieties of rock salt are recognized, viz., white, red and crystalline. The pure white crystalline salt is preferred for medicinal use. For alimentary purposes also, rock salt is considered superior to the other varieties. It is regarded as digestive, appetizing, sweet and agreeable, and is much used in dyspepsia and other abdominal diseases.

सामुद्र *Sāmundra* literally means produced from the sea. The term is applied to sun-dried sea-salt, manufactured in the Madras

1. सञ्जिकामूलकचरः शङ्खचूर्णसमन्वितः । प्रक्षेपी विक्षिप्तक्षीक्री चलि शय्यार्षदा-
दिकाम् । चक्रदण्डः ।

2. तालकं प्राचयुष्मं स्यात् षट्प्राणं शङ्खचूर्णकम् । द्विशानिकं पलाशस्य चारं दत्त्वा
ब्रह्मदेयेत् । कदलीदन्धतौयेन रविपत्ररसेन वा । अस्यापि सप्तभिर्क्षेपैर्लोकांशतनमुत्तमम् ।

Presidency. It is called *karkach* in the vernacular. Orthodox natives, who consider common salt as impure from the circumstance of its having undergone the process of boiling, and who take only rock salt, substitute *karkach* for rock salt, if the latter is not available. Sun-dried sea-salt is described as somewhat bitter and laxative. In other respects its properties are said to resemble those of rock salt.

बिडुबन *Vit bitum* occurs in dark red shining granules somewhat resembling coarsely powdered lac in appearance. It has a mild, saline and somewhat nauseous taste. Dr. Fleming says "that the following process for making this salt was communicated by a native druggist to Mr. Turnbull at Mirzapore and was actually performed in his presence. Fifty six pounds of sambar salt are mixed with twenty ounces of dried *amlas* (*emblic myrobalans*). One fourth of these materials is put into a round earthen pot with a narrow mouth, which is put in a fire-place made of clay. The fire-place has a hole at the bottom for introducing the firewood. After the fire has been lighted about an hour, and the materials, in the pot, appear to be heated, the rest of the materials is added by degrees. The whole is then exposed to a strong red heat for about six hours. The fire is then allowed to die away, and the pot to cool; which upon being broken is found to contain about forty-eight pounds of *calanemic* or *bitlaban*."*

Vit lavana, besides possessing the properties of salts in general, is said to be carminative and stomachic, and to be useful in enlarged spleen, dyspepsia, indigestion, bowel complaints, etc.

सोचल *Souchal* called *sonchal* or *kābīnimak* in Hindustani is said to be aromatic, agreeable and digestive, and useful in the same sort of cases as *villavana*. It is described in the Report on Punjab Products as "a dark colored salt said to be made by dissolving common salt in a solution of "*sajimatī*" (crude soda) and evaporating it; this salt contains chloride of sodium, sulphate of soda, caustic soda and a little sulphate of sodium, but no carbonate of soda." *Sonchal* salt is not available in the drug shops of Calcutta. Some Bengali physicians give this name to a

* Asiatic Researches Vol. XI, Page 192.

crystalline form of rock salt, but up-country physicians always translate *sanvarchala* as *sonchal* or *kālānimak*. The latter interpretation appears also to obtain in the Punjab where a specimen of *sonchal* salt from Ram Sing, a noted druggist, is said in the Report on Punjab Products, "to be a salt of the same kind as *kālānimak*."

रोमक *Romaka*, also called शकम्बरी *Sākumbārī*, is the salt produced from the Sambar Lake near Ajmere. The name *romaka* is said to be derived from a river called Ruma. It is obtained by the evaporation of salt water in the shape of clear rhomboidal crystals. It has a pungent taste, and is considered laxative and diuretic, in addition to possessing the other properties of salts. It is said to be the best and purest of evaporated salts.

रीह *Rūhidhī*, that is, produced of itself from the earth, is the name applied to a salt produced as an efflorescence on *reh* lands. The salt is called *reha* or *kalar* in the vernacular. It consists principally of sulphate of soda with a little chloride of sodium, and is described as alkaline, bitter, pungent and nauseating. It is said to be so abundant in some parts of the Punjab as to render the soil quite barren. Some physicians or rather writers substitute this article for *sambar* salt in the composition of *pancha lavana* or the five salts.

गुटिका *Gutikā*. This salt, mentioned by Sūtrata and some later writers, cannot be identified at present. In the treatise called *Dravyaguna* by Chakra Datta, his commentator Siva Dass says that the name *gutikā* is derived from the circumstance of the salt assuming a hard, granular or nodular shape from boiling. So that it is a sort of boiled salt. Susruta describes it as stomachic, digestive and laxative.

पिंग *Pānsuja* or *Ushasuta* literally means, salt manufactured from saline earth. *Pīngā* or common salt, manufactured from earth impregnated with salt water, would come under this head.

Rock salt with warm water is used as an emetic.¹ The different varieties of salt enter into the composition of a great many medicines for dyspepsia, indigestion, enlarged spleen and

1. वसन्त ऋतुस्य पूर्वमेव शकम्बरीसोमवारिणा ।

वसन्तः ।

other tumours in the abdomen. The following are a few illustrations.

*Nārikelakūśhāra.*¹ Take a cocoa-nut fruit full of water, make a hole in it and fill the cocoa-nut with rock salt, that is, dissolve the salt in its water. Then close the opening, cover the nut with a layer of clay and roast it in a pit of fire. The salt thus roasted is esteemed as a valuable medicine in the form of dyspepsia which is attended with pain, two or three hours after meals. It is given with the addition of long pepper. Dose about a quarter tola.

*Bhiskara larana.*² Take of *karkach* salt sixteen tolas, *sonchal* salt ten tolas, black salt, rock salt, coriander, long pepper, long pepper root, leaves called *tejpateu*, seeds of *Nigella ariva* (*krishnajiraka*), leaves of *Pinus Webbiana* (*talisa patra*), flowers of *Mesua ferrea* (*nāgakasava*), fruits of *Calamus fasciculatus* (*ambavasa*), four tolas each, black pepper, cumin seeds and ginger, two tolas each, *pomegranate* seeds eight tolas, cinnamon and cardamoms one tola each, powder, mix and soak seven times in lemon juice. Dose about a drachm with whey or wine, in enlarged spleen and other tumours in the abdomen, dyspepsia, loss of appetite, constipation etc. Rock salt is applied to opacities of the cornea, either singly or in combination with other drugs, as in the following. Take of the seeds of *Acacia Lebbek* (*sirisa*), long pepper, black pepper and rock salt in equal parts, rub them together with water, and make into pellets or pencils. These are rubbed on opacities of the cornea.

1. नारिकेलधारः। नारिकेलं सतीयघ्नं खड्येन प्रपुरितम्। विपकमधिना सम्यक् परिष्ठात्प्रशुल्लमुत्। वातिकं पैतृकश्चेव श्लेष्मिकं साग्निपातिकम्। चक्रदणः।

2. भास्करलवणचूर्णम्। सामुद्रलवणं कार्यमष्टकार्षणिम् बुधेः। पञ्चश्रीचर्मं शकलं विष्टसैख्यधान्यकम्। पियलीपियलीमूलं कृष्णशौरकपत्रकम्। नागशिरः तालीशसख-
वेतककं तथा हिकर्षमाताप्येतानि प्रत्येकं कारयेद्बुधः। सरिचं शौरकं विश्वमेकैकं चूर्णमाचक्रम्। दाडिमं न्यासतुफर्यं त्वगेलेचार्शकार्षिके। वीजपूररुधेनैव भाषितं समवारकम्। एतच्चूर्णोद्धतं सर्वं खवणभास्कराभिधम्। शास्त्रप्रमाणं देवमु मस्तुसक-
सुरासवेः। वातश्लेष्मभवं शुक्लं शीघ्रानमुद्गरचयम्। मन्दाग्निं नाशयेदतहीपकं पाचनं परम्। सर्वलोकहितार्थांश्च भास्करेणैवितं सुरा।

भास्करः।

CARBONATE OF POTASH.

Sans. यवचार, *Yavakshāra*.

THIS article, as well as the next one called *sarjikākshāra*, is mentioned by Susruta, and has been used in medicine from a very remote period. *Yavakshāra* is prepared by reducing to ashes the green spikes of the barley (*Hordeum hexastichum*), dissolving the ashes in water, straining the solution through thick cloth, and evaporating it over the fire. The resulting salt is a clear amorphous powder with a saline and partly acid taste. Chemically it is carbonate of potash with some impurities. *Yavakshāra* is described as stomachic, laxative and diuretic. It is used in urinary diseases, dyspepsia, enlarged spleen and other enlargements of the abdominal viscera. A decoction of chebulic myrobalan and *rohītaka* bark is given with the addition of carbonate of potash and long pepper in enlarged spleen and liver, and in tumours in the abdomen called *guīma*.¹ In strangury or painful micturition, carbonate of potash with sugar is considered a very efficacious remedy.² It enters into the composition of numerous saline medicines.

CARBONATE OF SODA.

Sans. सज्जिकाचार *Sarjikākshāra*. Vern. *Sājji*.

Sājji or harilla is produced from several species of salt-worts growing in brackish soil in the Punjab and North-West Provinces. The process of manufacturing *sājji* is described in full detail in the "Report on Punjab Products." The plants are cut down during the cold months, dried and burnt in a pit of a hemispherical shape, about six feet in circumference and three feet deep. At the bottom of this pit, one or more inverted *gharās* or earthen vessels having small holes pierced in their upper portion

1. पष्पारीहितकं काथं यवचारकषायुतम् । पिबेत् प्रातर्दक्तुर्ग्रीहगुल्मीदरनिहतये ।

वाङ्मनः ।

2. यवचारस्य कृष्णसु संयोज्य सितम् । सचथीत्रियतं तस्य प्रकसेन्दुवनिदहः ।

सामयिकः ।

are buried. The holes are kept closed at the commencement of the operation. Into the pit is thrown a small quantity of the plants and burnt, fresh plants being gradually added to keep up a constant fire, and this is continued till the pit fills up. During this process a liquid matter exudes from the plants. As soon as this is observed the orifices in the *gharás* are opened and the liquid runs down into them below the fire. After all the liquid has run down, the ashes are stirred up with a stick and covered over with earth. The alkali found in the earthen vessels is *sáji* of the first quality, called *sáji lotá* because it is found in the *lotá* or pot. The residuary mass in the pit is crude dirty potash.

Sarjikákshára or *sáji*, as used in medicine, occurs in porous granular masses of a greyish white colour, and with a strong alkaline taste of soda. Chemically, it consists of carbonate of soda with certain impurities, such as organic matter, sulphate of soda, potash etc. The properties of *sarjiká* are said to be like but somewhat inferior to those of *yarakshara*. It is chiefly used in combination with other medicines of its class in the treatment of acidity, dyspepsia and enlargements of the abdominal viscera. Externally it is used as a caustic.

Sáji, or barilla, should not be confounded with *sájináti* or fuller's earth. The latter is earth impregnated with soda and not a barilla. *Sájináti* occurs in great abundance on the surface of the soil in many parts of India, and is chiefly used in washing cloth. The following is an example of a saline medicine containing *sarjiká*.

Sarjikádyá churna.¹ Take of *sarjikákshára* and *yarakshára*, rock, *sonchal*, *vit*, *sámbar* and *karkach* salts in equal parts, powder, soak in lemon juice or the juice of pomegranate fruits and dry in the sun. Dose about twenty grains. This medicine is said to

1. खनिजाद्यचूर्णम् । खनिजा च यवचारः सिन्धुसीमरुतं विडम् । सामुद्रिकं
रीतबन्ध कीडमाषाणि कारयेत् । एकीकृत्याखिलं चूर्णं भाषयेत्प्रातुसुहजेः । रसेर्वा
दाहिनीर्वापि शीघ्रवेदाक्षयेन वा । तच्चूर्णं नाशयेदगुणं यद्विषीणामजां हरम् । अपिच
कुक्षे दीमं क्षयित् कफनाशकम् ।

promote the appetite, to remove local swellings or tumours in the abdomen and to cure dyspepsia with severe pain after meals.

A paste made of equal parts of *yarakshāra* and *sarjikākshāra* with water is applied to abscesses, for the purpose of opening them.

NITRATE OF POTASH.

NITRE was unknown to the ancient Hindus. There is no recognized name for it in Sanskrit. The *Bhāvaprakāśa* mentions *Suvarchikā* as a variety of *sarjikā* or barilla, and gives *sorā* as its vernacular equivalent. But *suvarchikā*, according to standard lexicons, is a synonym of *sarjikā* and not a separate article. Some recent Sanskrit formulae for the preparation of mineral acids containing nitre, mention this salt under the name of *Soraka*. This word however is not met with in any Sanskrit dictionary and is evidently Sanskritized from the vernacular *sorā*, a term of foreign origin. The manufacture of nitre was therefore most probably introduced into India after the adoption of gunpowder as an implement of warfare. It is necessary to observe here that many writers have erroneously translated nitre into the Sanskrit term *yarakshāra*. This last however is not a nitrate but an impure carbonate of potash obtained by reducing to ashes the spikes of the barley.

Chloride of ammonium is not mentioned by *Susruta* and the older writers. In recent Sanskrit works it is called *narasāra*, a term apparently derived from the vernacular *nausadar* of Persian origin. Another salt mentioned in recent Sanskrit compilations is the impure sulphate of soda called *Khārinoo* in the vernacular. It is called *Kshāri lavana* in Sanskrit, and is used in combination with other saline medicines.

ALKALINE ASHES.

Sans. क्षारी, *Kshāra*.

THE ashes of a number of plants containing more or less potash are employed both externally and internally. A list of these plants used in the preparation of caustic pastes, has been already

given in the Introduction (see page 21). It remains now to notice the preparations of alkaline ashes for internal use. A solution of the ashes of these plants or of such of them as are available, is prepared by mixing them with six parts of water and straining the fluid through cloth for twenty-one times, that is, the strained fluid is poured over the ashes twenty-one times in succession, and made to percolate through them. Lastly the fluid is allowed to stand and the clear solution drained off. This alkaline solution is given in doses of one to three drachms in dyspepsia, ascites, enlargements of the abdominal viscera, calculous affections, etc. It is regarded as laxative, diuretic and antacid.

*Vaisvānarakshāra.*¹ Take of the mixed ashes of *Euphorbia neriifolia* (*sunki*), *Calotropis gigantea* (*arka*), *Plumbago Zeylanica* (*chitraka*), *Ricinus communis* (*eranda*), *Cratere Roeburghii* (*vorona*), *Boerhaavia diffusa* (*punarnavā*), *Sesamum Indicum* (*tila*), *Achyranthes aspera* (*apāmārga*), *Musa sapientum* (*kādali*), *Butea frondosa* (*palāsa*), and of the shells of tamarinds, two seers in all, boil in sixteen seers of water till reduced to one-fourth. Allow the solution to stand, and drain the clear liquid. To the clear solution add two seers of rock salt, boil again till the fluid is evaporated, dry and powder. To this powder add the following carminatives, namely, *njowan*, cumin seeds, *kālājirā*, ginger, long pepper, black pepper and assafœtida, each four tolas, and mix. This combination is given in doses of one to two scruples, with cold water in dyspepsia, anasarca etc.

I. वैश्वानरक्षारः । सुष्णकचिवर्करक्षवर्षणं सपुननवम् । तिस्रापामागिकदली पलाशं तिनिकीं तथा । मृहीला ज्वालयेदेतत् प्रस्थं भस्माखिलं यथा । जखाटके विपुत्रयथा वत् पादावशेषितम् । सुप्रसन्नं विनिखाय्य लवणं प्रस्थसंयुतम् । पक्वं निधुमलानिन् स्यात्पूर्वोक्तं पुनः । यवानौ जौरकयोषस्थूलजौरकश्चिद्रुभिः । शीतीदकेन तक्षूर्णे पिबेत् प्रातर्दिं मात्रया । तस्मिन् जीर्णोदप्रमथोयाद् युषेकाङ्कलजं रसेः । ईषदकैः स खवणैः सुखीणैर्बद्धिदीपनैः । एतेनापि विवर्द्धेत वक्षसापीम्यमेव च । तत्रानुपानं शर्करा चित्तं वा मोक्षये द्वितम् । मन्दाम्यशीं विष्कारिषु वासत्रेभामयेषु च । सर्व्याङ्गशीषरेषु शूलशुल्कीदरेषु च । अम्ल्यां शर्करायाश्च विष्णुनामिष्परीणिषु ।

भावप्रकाशः ।

Abhayā-lavana.¹ This is a preparation similar to *Vaisvanara-kshōra* above described. It is much used in enlarged spleen of long standing, and often with success. To prepare this two seers of mixed alkaline ashes are boiled in sixty-four seers of water till it is reduced to one-fourth. One seer of chebulic myrobalans, two seers of rock salt, and sixteen seers of cow's urine are then added, and the mixture boiled till it is reduced to a thick syrupy consistence. Lastly are added cumin seeds, ginger, black pepper, long pepper, assafetida, *ajowan*, root of *Aplousis auriculata*, (*kushtha*), and *Curcuma Zedoaria (sati)*, each four tolās, and the whole intimately mixed. This medicine is given in doses of half to one tolā once daily in enlarged spleen, liver disease, ascites etc. If the bowels are not sufficiently moved it is given in larger doses.

DIAMOND.

Sans. हीरक, *Hiroka*.

Of the precious stones enumerated in page 14, diamond, pearls and coral only are much used in medicine. The rest are rarely used or not used at all. Diamond is purified by being enclosed within a lemon and boiled in the juice of the leaves of *Agati grandiflora (vaka)*. It is reduced to powder in the following manner. A piece of the root of a cotton plant is beaten to a paste with the juice of some betel leaves. Both these vegetables should not be less than three years old. The diamond is enclosed within

1. अभयालवणम् । पारिभद्रपलाशाकसुक्ष्मपामार्गवितकम् । कथाप्रिमत्यवसुकं
 वृद्धाङ्गुलीवयम् । पृथिकास्पीतकुटजकीषातकः पुनर्नवा । समुक्षपत्रशास्त्राय चीदशिला
 लघुक्षली । तिलनालिन हीराग्नि सुदग्धं भक्षणीतकम् । चारं प्रखं गृहीत्वा च त्वसेत्
 पापे नने हृद्दे । कक्षद्रीणे विपक्षयं यावत् पारावशेषिम् । पूर्ववत् चारकस्केन साधयेत्
 विचक्षणः । अस्यमेकत्र संवर्षं तदुर्ध्वं हरीतकीम् । गोमूत्रस्यादकं दत्त्वा चारवत् साधयेत्
 शनेः । किञ्चिद्धारिणि सान्धे च सम्यक् सिद्धेऽवतारिति । अजाकीपुत्रयणं हिङ्गुयमानी
 पुष्करं शटी । एतेरहैपलैर्भगिणैश्चोक्तस्य प्रदापयेत् । खवचसामयानाम् भक्षयेत् यथावत् ।
 व्याधीन् वेत्स्य मतिभावमुपानं यथावत् । दहन्तीहीदरानाङ्गुल्याङ्गीलाग्निमाश्रयित् ।
 यावत् कोष्ठवताम् रोमाङ्गु निहन्त्याय नसंशयः । प्रतिवृत्तिर्हिङ्गुयमर्कुराङ्गुलिनाश्रयम् ॥
 भेषज्यरत्नावली ।

this paste and roasted in a pit of fire. The process is repeated seven times, when the stone is easily reduced to a fine powder. Another process consists in roasting the diamond enclosed in a paste made of horn-shavings, for three times in succession. Diamond thus prepared is said to be a powerful alterative tonic that improves nutrition, increases the strength and firmness of the body and removes all sorts of diseases. Dose about one grain.

Diamond enters into the composition of several alterative and tonic medicines, such as the *Trailakya chintamani rasa*, *Ratnagiri-rasa*, *Sarvanga sundara rasa*, etc. These medicines are similar in composition. They all contain diamond, pearls, gold, iron, talc, mercury, etc. in varying proportions and are used in similar cases.

*Trailokya chintamani rasa*¹ is thus prepared. Take of diamond, gold and pearls, each one part, iron, talc and *Rasa sindura* or red preparation of mercury, four parts each, rub together with the juice of *Aloe Indica* and make into two-grain pills. This medicine is used as an alterative tonic with suitable adjuncts in various diseases.

PEARLS AND CORAL.

Sans. मुक्ता *Muktā*, Pearls. प्रवाल *Pravala*, Coral.

THESE gems have been used in medicine from a very ancient period and are mentioned by Susruta. Pearls are purified by being boiled in the juice of the leaves of *Sesbania aculeata* (*jayanti*), or of the flowers of *Agati grandiflora* (*vaka*). Coral is purified by being boiled in a decoction of the three myrobalans. Both are prepared for medicinal use by being calcined in covered crucibles and then reduced to powder. The properties of both these articles are said to be alike and they are generally used in

1. वेधोक्त्वचिन्तामणिरसः । हीरं सुवर्णं सुव्यतश्च तारं पर्वां चर्म तीक्ष्णरजसूत्रंम् ।
सर्पं चतुर्धं रससिन्दूरश्च नियम्य तीक्ष्णश्च तथा प्रथवारः । खले द्विवर्षेव कुमारिकाया
मुक्ताप्रमाणाद्य बटी प्रकाश्या । अद्यादिभं वीर्यवृत्तीरवाथ्यामदप्रवाभाय मुनिप्रथीतम् ।

रसिन्द्रसारसंयथः ।

combination. They are said to be useful in urinary diseases, consumption etc., and to increase the strength, nutrition, and energy of weak persons. The following are examples of prescriptions containing pearls and coral.

*Pittāntaka rasa.*³ Take of nutmegs, mace, *jatāmānsi* root, root of *Aplotaxis auriculata* (*kushtha*), leaves of *Pinus Webbiana* (*tālisā patra*), aconite, iron pyrites, iron, talc and realgar, one part each, prepared pearls equal in quantity to all the above ingredients. Beat them together into a paste with the aid of water and make into four-grain pills. This medicine is said to be useful in diseases supposed to be caused by deranged bile. such as dyspepsia, jaundice, biliousness, vomiting of bile, etc.

*Vasanta Kusumākara rasa.*² Take of prepared gold and camphor, each two parts. of prepared tin, lead and iron, three parts each, prepared talc, pearls and coral, four parts each. Rub these ingredients together in a mortar and soak the powder seven times successively in each of the following fluids. namely, milk, sugar-cane juice, juice of *Adhatoda Vasira* (*vāsaka*), decoction of lac and of *Paronia odorata* (*bālá*), juice of the flowers and root-stock of the plantain tree, of the root-stock of *Nelumbium*

1. पित्तान्तकरणः । जातीकोषफलं मांसी कुट्टं ताक्षीशपत्रकम् । माचिष्ठासत चौह्वच
चभं दिव्यं समंशकम् । सर्वतुल्यं सप्तं तारं सम्यक्निषेद्य वारिणा । त्रिगुडामा वटी
काथ्या पित्तरोमविनाशिनौ । शोष्णान्त्रिच यत्पित्तं श्लाघान्त्रितमथापि वा । ग्लूबकान्त्र-
पित्तच पाण्डुरीगं हृषीमकम् । दुर्गमभ्रानिं वान्त्रिच चित्रमेव विनाशयेत् । रक्तः
पित्तान्तकी ह्येव काशोराजेन भाषितः । तारश्चन्द्रनाच शुद्धभौतिकं गृह्यते कुचे ।

रसेन्द्रसारसंघः ।

* 2. वसन्तकुसुमाकरः । पृथग् वी हाटकं चन्द्रं तथै वङ्गाधिकानकम् । चत्वारि-
शुद्धसंशुद्ध प्रवालं भौतिकं तथा । भावना गन्धदुग्धेन भावनेश्वरीन च । वासा स्वाहा-
रसोदीश्वरभा कन्दप्रमूकैः । शतपत्ररसेनैव माखत्याः कुसुमीदकैः । पयान्कमलमदैर्भाज्यं
सुगन्धिरससंशुद्धैः । गुडार्द्रयमिदं सैव्यं क्षितामन्वाप्यसंयुतम् । मेहघ्नं क्षान्तिदश्चैव कामदं
पुष्टिदं तथा । वल्लीपलितङ्गशैव कटुतिव्यंश्रविनाशनम् । सुष्टिदं बन्धमानुष्यं पुष्यप्रसव-
कारकम् । प्रमेहान् विंशतिर्घै व जयमेकादशं तथा । तथा सोमद्वजं ह्यन्वात् साध्यासाध्य-
मथापि च । कुसुमाकरनामायं वसन्तपदपूर्वकः ।

मेघधरनाबली ।

speciosum (*padma*) and of the flowers of *Aganosma caryophyllata* (*málatipuspa*). Lastly soak in an infusion of musk prepared by macerating one part of musk in eight parts of warm water for twelve hours. Divide this mass into four-grain pills. They are given with sugar, honey and *ghee* in urinary diseases, impotence, gleet, diabetes, consumption and general debility. This medicine is regarded as a valuable alterative tonic in chronic gonorrhœa and spermatorrhœa and is much prescribed in these complaints in combination with an extract called *Kusáralohá* (see Sugar cane).

SILAJATI.

Silájatu literally means stone and lac. The term is applied to certain bituminous substances said to exude from rocks during the hot weather. It is said to be produced in the Vindhya and other mountains where iron abounds. It is a dark sticky unctuous substance resembling bdellium in appearance. It has a bitter taste and a strong smell resembling stale cow's urine. Over platinum foil it burns with a little inflammable smoke and leaves a large quantity of ashes consisting chiefly of lime, magnesia, silica, and iron in a mixed state of proto and peroxide.*

Silájatu is prepared for medicinal use by being washed with cold water and then rubbed into an emulsion with its bulk of hot water or milk in an iron pot. This emulsion is exposed to the sun, when a black cream-like substance collects on its surface; and this is removed. The process is continued as long as any cream rises. If the mixture becomes too thick, hot water is added from time to time as required, but too much water should not be added at once, for then the cream will not rise to the surface. The *silájatu* thus collected is dried in the sun and preserved for use. The dregs at the bottom are thrown away. The extract of *silájatu* thus obtained is purified by being soaked in a decoction of the following plants, namely, *Shorea robusta*, (*sála*), *Buchanania latifolia* (*piála*), *Ter-*

* The "silajit" or alum earth of Nepal is a different article from the "silájatu" of the Sanskrit Materia Medica. The former is an article of Yunáni not Hinda Medicine.

minalia tomentosa (asana) and *Acaria catechu (khadira)*. *Silājatu* is regarded as a powerful alterative tonic and is considered specially useful in urinary diseases, diabetes, gravel, anæmia, consumption, cough, and skin diseases. The extract of *silājatu* is given in doses of six to twelve grains. In stranguary or painful micturition it is given with honey or with the decoction of *Tribulus terrestris (gokshura)*.¹ In urinary complaints it is given in combination with preparations of lead or tin. As an alterative tonic, it is used in combination with iron, as in the following called *Yogarāja*.

Yogarāja.² Take of *silājatu*, prepared iron, iron pyrites and silver, each five parts, of the three myrobalsans, ginger, black pepper and long pepper, plumbago root and *bāberung* seeds, each one part, sugar eight parts. Powder, mix and make into a confection with honey. Dose about half a tola. This medicine is considered a valuable alterative tonic, and is used in anæmia, jaundice, consumption, chronic fever, skin diseases, urinary diseases, piles, etc.

RED OCHRE.

Sans. वैरिक *Gairika*. Vern. *Geumāti*.

Two sorts of *gairikā* or ochre are mentioned by Sanskrit writers, namely, red and yellow. The red variety, called also *Raktapāshāna* is used in medicine. It is a silicate of alumina

1. शिखां शुक्लवन्दीत्ये शिलाकतु समाधिकम् । चक्रदत्तः ।

2. योगराजः । त्रिकलायास्त्रयोभागास्तयस्त्रिकटुकश्च च । भागत्रियसमूलस्य विहङ्गानां तथैव च । पञ्चाग्नकतुमी भागात्तद्यारुष्यमस्य च । माचिकस्य विग्रहस्य लौहस्य रजसस्यथा । षट्ठी भागाः सितायाम् तत्कर्त्तुं शक्नुवृर्धितम् । माचिकेण प्रुतं स्थाप्यमायुर्दं भागमे शुभे । उदुम्बरसमां मात्रां ततः खादिन् यथाप्रिया । दिने दिने प्रकीर्णनं कौरु भोष्यं यथेक्षितम् । बर्त्थित्वा कुसल्यांश्च चाकमाचीं कपीविकाम् । यीशराज इति ख्यातं बीजाऽयस्यसतोपमः । रसायनमिदं चेहं सर्व्वरोगहरं परम् । पाण्डुरीनं विषं चारु यस्याश्चं विषमन्वरम् । कुष्ठान्मजरकं मीहं चानं हिकामरीचकम् । विशिषाहृत्यपक्ष्माः कानलां गुदभानि च ॥ चक्रदत्तः ।

coloured with oxide of iron. It is purified by being soaked in milk seven times, and is described as sweetish, astringent, cooling, and useful in ulcers, burns, boils etc. It is rarely used internally except as an ingredient of some of the complex prescriptions containing a large number of mineral drugs, such as the preparation called *Jearakunjara pāvindra rasa*, which contains nearly all the mineral medicines.

Besides *gairika* several other varieties of earth are described and occasionally used in medicine. A sweet scented earth brought from Surat and called *Saurāstra mṛttikā* is regarded as astringent and useful in hemorrhages. It enters into the composition of several medicines for relieving bleeding from internal organs.

SANSKRIT MATERIA MEDICA.

PART II

VEGETABLE MATERIA MEDICA.

NAT. ORDER RANUNCULACEÆ.

ACONITUM FEROX.

Sans. विष, *Visha*. वसनाम, *Vatsanābha*.

Vern. Mithābīsh, Sringibīsh, Dagrī.

THE poisonous root called *bish* or *sringibish* is derived chiefly from *Aconitum ferox* and *Aconitum Napellus*, which are indigenous to the temperate and sub-alpine Himalaya. Other equally poisonous species of aconite are met with in these regions, and their roots collected for use. In the Introduction (page 7) it has been stated that of the nine virulent poisons mentioned by Sanskrit writers, the majority probably consist of species of aconite. The characters of these poisons are described in the *Bhābaprakasa*, as follows.

Vatsanābha. This root resembles in appearance the navel of children, hence it is called *Vatsanābha*. Its leaves are like those of *Vitex Negundo*. It is said that no plant can grow near it.

Hāridra. This root resembles turmeric in appearance, hence it is so called.

Saktu. This poisonous tuber, when broken, is found to contain a white starch-like substance.

Pradīpana. This variety is said to be red and shining in appearance, and to cause a severe burning sensation when taken internally.

Saurāshtrika is the variety of poisonous root produced in the country called Surat.

Sringi is a variety of aconite which if tied to the horn of a cow, is said to tinge her milk red.

Kālakuta. This poison is said to be the gum of a plant resembling the *Ficus religiosa* in appearance. It is a native of Malwa and the Concan.

Halāhala. The bunches of fruits of this plant resemble those of grapes. Its leaves are like those of the palm tree. It is found in the Himalaya, in the sea coast to the south, the Concan and in the mountain called *Kishkindhya* to the north of Mysore.

Brahmaputra. This poison is of a tawny colour and causes purging. It grows on the Malayāchala, that is, the Western Ghats on the Malabar Coast.

From the above description it would seem that of these nine poisons, the first six are probably species of aconite. Of these the variety called *Vatsanābha* has been used in medicine from a very remote period.

Aconite is purified by being cut in small slices and steeped in cow's urine for three days, before being used. It is regarded as heating and stimulant, and useful in diseases supposed to be caused by deranged phlegm and air. It is used in a great variety of affections, but is specially recommended in fever, cephalalgia, affections of the throat, dyspepsia and rheumatism. In recent or acute fevers the following is a favourite medicine.

Mrityunjaya rasa.¹ Take of purified aconite, sulphur, black pepper, long pepper and borax, each one part, cinnabar two parts; powder and beat them into a mass with water and make into two-grain pills. These pills are given with suitable adjuncts in fever supposed to be caused by deranged air, as also in those caused by the derangement of all the humours, that is, in ordinary remittent fever and in that of typhoid type. A composition very similar to the above is recommended by Sarangadhara under the name

1. मृत्युञ्जयरसः । विषहृत्कं तथा क्षानं मरिचं पिप्लवी कषा । मन्थं टक् तथा क्षानं विभानं चिकुलं मवेत् । जलेन वटिकां काथ्या युक्तामात्रा प्रमाचयतः । मधुना उक्लवं कथं हृत्स्वरिहृत्तये ।

of *Anānda bhairava rasa*. If there is much constipation along with the fever, croton seeds are added to the above ingredients, as in the preparation called *Jvara murāri rasa*.¹

In fever complicated with cerebral symptoms aconite is used in combination with mercury and *datura*, as in the following called *Panchavaktra rasa*.² Take of purified mercury, sulphur, aconite, black pepper and borax, rub them together with the juice of *datura* leaves for twelve hours, and make into four-grain pills. Along with these pills a decoction of the root of *Calotropis gigantea* (*arka*) with the addition of long pepper, black pepper and ginger is recommended to be taken.

In chronic fever with strong shivering fits, copious perspiration, or much heat of body, aconite is used in combination with salts and aromatics, as in the following called *Saubhūgya vatikā*.³ Take of aconite, borax, cumin seeds, the five salts, *viz.* rock, sea, *souchal rit* and *sambar* salts, the three myrobalans, ginger, long pepper and black pepper, prepared talc, mercury and sulphur, in equal parts. First rub the mercury and sulphur together, then mix them with the other ingredients, soak the mixture seven times successively in the juice of the following leaves, namely, of *Vitex*

1. अरमुनिवारिः । द्विदुल्लस्य विषं व्यीथं टङ्गणं नामराभया । जयपालसमायुक्तं सदीअरनिवारणम् । सर्वचूर्णसमं जयपालचूर्णं सर्वे पिष्टा कलायप्रमाणा वटिका काय्या पाद्रेकस्वरसेन पेया ॥

भेषज्यरत्नावली ।

2. पञ्चवक्त्ररसः । शुद्धसुतस्त्रियं गन्धं मरिचं टङ्गणद्वया । मद्द्विदुल्लस्यैद्रविदिगमेकस्य शोषयेत् । पञ्चवक्त्ररसे नाम द्विगुणः सन्निपातश्च । चर्कमूलकषायान् सचूर्णणं पिबेदनु ॥

शाङ्गधरः ।

3. सौभाग्यवटिका । सौभाग्यामृत जीरपञ्चलवथ व्योषाभयाचामला । विश्वम्भामक शुद्धगन्धकरसासौक्ष्ण्यतान् भाषयेत् । निर्गुण्यैयुम भङ्गराजक हषापामार्गपथीहसत् । प्रथेकस्वरसेन सिद्धवटिका इति विदीयोदयम् । तेषां शौतमसौष दाहमखिलं खिद्रभाद्रौ- हतम् । निद्रां धीरतरां समस्तकरणव्यानीहमूढं मनः । शूलं श्वासवशासकाससहितं भूष्णांश्चिह्नद्वयम् । तेषां वै परिहृयन् जीवितमसौ यद्वाति सत्योर्मुखात् ।

भेषज्यरत्नावली ।

Negundo (*nirgundi*) *Nyctanthes Arbor-tristis* (*sephālikā*), *Eclipta orostrata* (*kesariju*), *Adhatoda Vasica* (*vāsuka*) and *Achyranthes aspera* (*apāmārga*), and make into four-grain pills.

Aconite is much used in dyspepsia with loss of appetite, in a variety of combinations. The following called *Rāmacāna rasa*¹ is an illustration. Take of mercury, aconite, cloves, and sulphur, each one part, black pepper, two parts, nutmeg, half a part, rub them together with tamarind juice and make into two-grain pills. These pills are given with the addition of powdered black pepper. Another preparation called *Hatāsana rasa* is similar in composition to the above, and is recommended by several writers.

In diseases supposed to be caused by deranged phlegm, such as catarrh, sore throat, cough, asthma, discharges from the ears and nose etc., aconite is used in combination with other heating medicines. The following called *Kapha ketu rasa*² is a well known medicine for these diseases. Take of aconite, borax, long pepper, and conch-shell lime, equal parts; powder, mix and soak the mixture three times successively in fresh ginger juice. Dose, two grains, to be given with ginger juice. A preparation similar to the above and called *Bhairava rasa*, is used in hoarseness and loss of voice.

In cephalalgia and hemierania it is recommended to be given in the following form. Take of aconite one part, liquorice root and the pulse of *Phaseolus Roxburghii* (*Unāsha*), each two parts: powder and make into one-grain pills.

In boils and other skin diseases aconite is used in the form of liniment and ointment. The following is an illustration.

1. रामचाणूरसः । पारदास्यत् लवङ्गमन्थकं भाग्युष्म सरिषिण मिश्रितम् । तत्र-
जातिफलमर्द्धभागिकं तिम्बिकीफलरसेन मर्दितम् । वक्रमान्ददशयुक्तमायनी रामचाणू-
रसति विद्युती रसः ।

रसेन्द्रविमानसिः ।

2. कफकेतुरसः । टङ्गुलं भागवती मूत्रं वस्त्रानां समं समम् । चार्द्रकस्य रसेर्भापि
भावेयैद्विसप्तयम् । गुडामाषं प्रदातस्यचार्द्रकसरसेन वै । पीनसं त्रास कासश्च मक्षरीं
मक्षयञ्चम् । कर्पूरीं वैतरिणं दन्तरीणञ्च शाकचम् । एताम् रोगान्निघ्नत्वाच्च कफकेतु-
रसेत्तमः । रसेन्द्रचारसंशुद्धः ।

*Visha taila.*¹ Take of sesamum oil four seers, aconite root eight tolás, seeds of *Pongamia glabra* (*karanja*), turmeric, wood of *Berberis Asiatica* (*dáruharidrā*), root of *Calotropis gigantea* (*arka*), of *Nerium odorum* (*karavira*), flowers of *Tabernaemontana coronaria* (*tagara*), *Acorus calamus* (*vacha*), *Aplotaxis auriculata* (*kushtha*), *Vallis dichotoma* (*ásphotā*), red sandal wood, flowers of *Aganosma caryophyllata* (*málati*), bark of *Alstonia Scholaris*, (*saptaparna*), madder and leaves of *Viter Negundo* (*nirgundi*), each four tolás, cow's urine sixteen seers. The solid ingredients should be beaten into a paste with water, and then boiled with the oil and cow's urine till the watery portion is evaporated. This oil is said to be useful in boils, prurigo, psoriasis, leucoderma and other skin diseases.

ACONITUM HETEROPHYLLUM.

Sans. चातैच, *Ataicha*, अतिविष, *Ativisha*. Vern. *Atis*.

The tuberous roots of this plant are considered tonic, astringent and stomachic, and are used in fever, diarrhœa, irritability of stomach and cough. *Atis* is also regarded as an antidote to poisons.

In fever with diarrhœa the following compound decoction² is much used in practice. Take of *atis*, ginger, *kurchi* bark, tubers of *Cyperus rotundus* (*mustaka*), and root of *Tinospora cordifolia* (*gulaucha*), equal parts, in all two tolás, water thirty-two tolás. Boil till the water is reduced to one-fourth or eight tolás. This

1. विषतैलम् । नक्षत्रमालं हरिद्रे वै चर्कक्षनरमेवच । करवीरं वचा कुष्ठमास्कीता
रक्तचन्दनम् ॥ मालतीं सप्तपर्णं मञ्जिष्ठा सिन्धुवारिका । पथामर्षपलाम् भागान् विषस्यापि
पक्षमाथा । अतुर्गुणे तथा मूत्रे तैलप्रस्यं विपाचयेत् । शिवविष्कोटं चिट्टिच कौटिलूता-
विषार्चिकाः । कच्छूकच्छु विकाराय ये त्रया विपट्टिताः । विषतैलमिदं नाम्ना सर्वत्रय-
विशीघ्रणम् ॥

चक्रदत्तः ।

2. नाभरं कुटकीं मुकामघटातिविषा तथा । एभिः कृतं पिबित् काथं ज्वरादीकार-
नाशनम् ॥

महाधरः ।

quantity is given in two or three divided doses during the course of the day. Chakradatta recommends the following called *Hrīre-radi*¹ in similar cases. Take of *ātis*, dried *bela*, root of *Paromīa odorata* (*būlā*) and *Cyperus rotundus* (*mustaka*), ginger and coriander, equal parts, in all two *tolās* and prepare a decoction in the usual way.

In the fever, diarrhoea, cough, and irritability of stomach of infants *ātis* is used alone or in the following combination. Take of *ātis*, tubers of *Cyperus rotundus* (*mustaka*) and the horny excrescence of *Rhus succedanea* (*karkatasringi*), equal parts, powder and mix. This compound powder is given in suitable doses with the addition of honey. Sometimes long pepper is added to the above ingredients, when the powder is called *Bāla-chāturbhāyaka*.² from its being composed of four ingredients.

NIGELLA SATIVA.

Sans. कृष्ण बीरक, *Krishnaajiraka*, Vern. *Kālājirā*, Beng. *Mugela*, Hind.

THE seeds of *Nigella sativa* are regarded as aromatic, carminative, stomachic and digestive, and are used in indigestion, loss of appetite, fever, diarrhoea, puerperal diseases etc. They are also said to increase the secretion of milk, and are therefore given to recently delivered females in combination with a few other medicines. *Nigella* seeds are scattered between layers of woolen clothes, shawls etc., to preserve them from insects. This use of the seeds appears to be common all over India.

In intermittent fever *nigella* seeds slightly roasted are recommended to be given in two drachm doses with the addition of an equal quantity of treacle.³

1. **ह्रीरेरादिः ।** ह्रीरेरातिविषामुक्तं बिल्वशाम्बकनागरेः । पिबेत्पिच्छाविबन्धनं
शूलदीवानपाचनम् । सरसं हृन्वतीसारं सञ्चरं वाघं विञ्चरम् ।

चक्रदत्तः ।

2. **बाह्यचतुर्भद्रिका ।** वनलश्यादद्यायक्रीचूर्णं शीतैश्च संयुतम् । शिथीञ्जैरानि-
सारं कासनासवनीकरम् ।

चक्रदत्तः ।

3. **कासाभाभी तु सगुहा विमन्चरनाशिनौ ।**

भायकभाहः ।

In loss of appetite and distaste for food a confection made of *Nigella* seeds, cumin seeds, black pepper, raisins, tamarind pulp, pomegranate juice and *sonchal* salt, with treacle and honey is said to be very useful.¹

Chakradatta recommends the administration of *nigella* seeds with the addition of long pepper, *sonchal* salt and wine in the after pains of puerperal women.² In puerperal diseases, such as fever, loss of appetite and disordered secretions, after delivery, the following called *Pancha jiraka pāka*³ is used. Take of *nigella* seeds, cumin seeds, aniseeds, *ajowan*, seeds of *Carum sativum* (*ajamodā*), *Anethum Sowa* (*sulpha*) and *Trigonella Fœnum græcum* (*methi*), coriander, ginger, long pepper, long pepper root, plumbago root, *habushā* (an aromatic substance) dried pulp of the fruit *Ziziphus Jujuba* (*vadari phala*), root of *Aplotaxis auriculata* (*kushtha*) and *kamala* powder, each one tola, treacle one hundred tolas, milk one seer, clarified butter four tolas. Boil them together and prepare a confection. Dose about a drachm every morning.

NAT. ORDER. MENISPERMACEÆ.

STEPHANIA HERNANDIFOLIA.

Syn. Cissampelos hernandra. Rox.

Sans. बम्बहा, Ambashthā. पाठा, Pāthā. Vern. Akanddi, Nemuka.

In the Pharmacopœia of India it is stated that the *Cissampelos hernandifolia*, Wall, is identical with *Pareira Brava*, and is

-
1. कारव्यजाजीमरिचं द्राक्षा हवाक दाडिमम् । सौवर्चलं मुकुं चौद्रं सव्यंरीचक-
राह्वनम् । चक्रदत्तः ।
 2. उपकुक्षिकां पिपलीञ्च मदिरां लाभतः पिवेत् । सौवर्चलेन संयुक्तां योनिशूल-
निवारिणीम् ॥ चक्रदत्तः ।
 3. पञ्चजीरक पाकः । जीरकं मूलजीरकं मृतपुष्पाद्यं तथा । यमामौ चाजमीदा
च धान्यकं मेथिकापि च । गुच्छी कृष्णा कृष्णामूलं चित्रकं हवेषापि च । बहरीकस्य चूर्णं
कुष्ठं कम्पिङ्गकं तथा । एतानि पञ्चमात्राणि मुकुं पञ्चमत्तं मतम् । चौरप्रसूतयं दद्यात्-
सर्पिणः कुडवं तथा । पञ्चजीरकपाकीडयं प्रसूतानां प्रदानयेत् । युज्यते स्तित्कारोनि शोषिरोनि
श्वरी चये । शाम्ने शरबी पाण्डुरीनि कार्ष्णे वातामयेषु च ॥ माधवप्रकाशः ।

STEPHANIA HERNANDIFOLIA.

common throughout India. Other authorities say, that the **trua* Pareira Brava is derived from *Chondrodendron tomentosum*. The plant used by Kavirajas in Bengal under the name of *páthá* is identical with that figured by Roxburgh as *Cissampelos hexandra*. The root of this plant is regarded as light, bitter, astringent and useful in fever, diarrhœa, urinary diseases, dyspepsia etc.

In fever with diarrhœa, the following compound decoction¹ ... recommended by Chakradatta. Take of *páthá* root, *indrajava* seeds, chiretta, tubers of *Cyperus rotundus* (*mustaka*), *Hedyotis biflora* (*parpatí*), *guluncha*, and ginger, equal parts, in all two *tolás*, water thirty-two *tolás*; and boil till reduced to one-fourth. In diarrhœa caused by indigestion and attended with pain and slimy or bilious stools, the following decoction is used. Take of *páthá* root, *indrajava* seeds, chebulic myrobalan and ginger, each half a *tolá*, water thirty-two *tolás*. Boil down to one-fourth.

In internal or deep seated inflammation, Chakradatta recommends the root of this plant to be taken with honey and water in which rice has been macerated.²

In urine depositing salts or a white flocculent substance, a decoction of *páthá* and aloes wood is used.³

In painful micturition the following decoction⁴ is considered useful. Take of *páthá* root, *Hedysarum lagopodioides* (*prismiparní*), root of *Solanum Indicum* (*erikati*), liquorice root and *indrajava* seeds, equal parts, in all two *tolás*. Boil down to one-fourth.

1. पाठेन्द्रवभूमिस्व मुसपपटकास्तः । अयन्वाममतीसारं सञ्जरं समधीवथाः ।

ब्रह्मदत्तः ।

2. श्लेथयति पाठामूलं चैन्द्रयुतं तच्छुलाश्लसा पीतम् । अन्तर्गतं विद्रधिमुसपतमात्रेण मनुजस्य ॥ अपकेत्वे तद्दृष्टं पके तु त्रयवत् क्रिया ॥

ब्रह्मदत्तः ।

3. पारिजातजयानिम्बदक्रियावन्निषां पृथक् । पाठायाः सानुरीः पीतावयश्च द्वारदस्य च । अक्षेपुमयसिकतामनेलंबवपिठकान् । सान्द्रमेढान् क्रमात् त्रिभिः षडौ हाथाः सवाचिथाः ।

ब्रह्मदत्तः ।

4. उद्धतीबावनीपाठाटीमधुकचिक्काः । पान्नीथी त्रयंवादिः कृष्णदीवतथापृक् ।

TINOSPORA CORDIFOLIA. —

Sans. गुडूची, *Guduchi*. अमृता, *Amritā*.

Vern. Gulancha, *Beng.* Gurach, *Hind.*

THE stem, leaves, roots and watery extract of this plant are all used in Hindu Medicine. The entire plant is regarded as a valuable alterative and tonic. It is used in general debility, fever, jaundice, skin diseases, rheumatism, urinary diseases, irritability of stomach, etc.

The fresh juice of the plant is taken with milk as a general tonic. In fevers it is used in a great variety of forms. Thus a cold infusion of *gulancha* is given with honey in bilious fever. A decoction¹ of *gulancha* or its fresh juice is given with the addition of long pepper and honey in chronic fever with cough. A compound decoction is thus prepared. Take of *gulancha*, *Hedyotis biflora* (*parparta*), *Cyperus rotundus* (*mustaka*), chiretta and ginger, each one drachm, water, half a seer. Boil down to one-fourth. It is said to be useful in fevers caused by deranged air and bile. Practically it is found very useful in chronic fevers, which have resisted other antiperiodics, and which are apt to recur after apparent recovery. In chronic fever with loss of appetite, the following confection is recommended by many writers.

Dhātrimodaka.² Take of chebulic and emblic myrobalans, ginger and long pepper, one part each, watery extract of *gulancha*, four parts, water sixteen parts. Boil till reduced to one-fourth, and prepare a confection with eight parts of sugar. When of

1. पिप्पलीमधुसंनिभं गुडूचीस्वरसं पिबेत् । औषे च्चर कफ श्लेष्मासारीचक-
पाशनम् । गुडूचीं पर्यटं मुक्तां किरातं विशभेवजम् । वातपित्तश्चरे द्विं पञ्चमद्रमिदं
सुभम् ।

भाष्यमकारः ।

2. धात्रीमोदकः । धात्रीं पथ्यां कर्वां गुडूचीं तुल्याच्च चूर्णयेद् दृढम् । चतुःसप्त-
शतार्थ्यां शर्करा च पत्रं तथा ॥ मधुना मोदकं कुर्यात् औषेच्यरहरं परम् । मन्थादि-
दीपनं चैव सद्योदाहविवाशनम् ॥ औषेच्यरे दद्यात् क्रांतिं तथा च रक्तपित्तके । दापयेत्
मोदकं वैद्यः धात्रीनाममिदं मद्रम् ॥

proper consistence divide the mass into boluses of about a drachm each. One of these is taken every morning, in chronic fever with enlarged spleen, cough, loss of appetite, etc.

Gulancha enters into the composition of a large number of proscriptions for chronic skin diseases. The juice of the plant or its decoction is given alone, or with the addition of *yuggulu* or *bdellium*.¹ Numerous compound decoctions with the addition of various other drugs such as *nim*, turmeric, catechu, etc. are used in these diseases, as well as in gout and rheumatism.² Several oils, for external application are prepared with *gulancha* and are much used in skin diseases, rheumatic affections and nervous complaints.

Guduchyádi taila.³ Take of fresh *gulancha*, eight seers, water, sixty-four seers, boil till reduced to one-fourth and strain. To the strained decoction, add prepared sesamum oil, four seers and *gulancha* beaten to a paste with water, one seer, boil together till the water is evaporated. This oil is a favourite application in eruptive skin diseases from impure blood. The *Vrihat guduchyádi taila* is prepared by the addition of a number of other medicines in the form of paste, to the decoction of *gulancha* and the oil. Another compound oil called *Vāta guduchyádi taila* is thus prepared. Take of *gulancha*, twelve seers and a half, water sixty-four seers. Boil till reduced to one fourth. Take of the fresh juice of *Adhatoda Vasica* (*vāsaka*), and of *datura* leaves, each four seers, prepared mustard oil, four seers, aromatics in the form of paste one seer. Boil together the decoction of *gulancha* with the vegetable juices, oil and paste, in the usual manner. This oil is recommended by Charaka in eruptive skin diseases with troublesome itching, as also in diseases of nervous origin.

1. बन्धाद्गुह्यः कायः पीयी युग्गुलुचयुतः ॥
2. युग्गुः सारसं बद्धं चूर्णं वा कायसेव वा । प्रभूतकायवासिभ्यः सुच्यते वात-
शोथितान् ॥

बन्धाद्गुह्यः ।

युग्गुः कायकककायां तैलं वा वातरज्जुत् ॥

NAT. ORDER. BERBERIDEÆ.

BERBERIS ASIATICA AND OTHER SPECIES.

Sans. दाबहरिद्रा, *Dāruharidrā*. दार्जी, *Dārvi*.

Vern. *Dārnhaldi*. Hind.

THE wood, root-bark and extract of Indian Barberry have been used in Hindu Medicine from a very remote period. Its properties are said to be analogous to those of turmeric. The extract, called *rasānjana** in Sanskrit and *rasot* in the vernacular, is directed to be prepared by boiling together equal parts of a decoction of Indian barberry and milk, till reduced to the consistence of an extract.† The extract thus prepared, is said to be particularly useful in affections of the eyes. Indian barberry and its extract *rasot* are regarded as alterative and deobstruent, and are used in skin diseases, menorrhagia, diarrhœa, jaundice and above all, in affections of the eyes.

Rasānjana†† *churna*,¹ or compound powder of *rasot*. Take of *rasot*, *dtis*, the bark and seeds of *Holarrhena antidyenterica*, flowers of *Woodfordia floribunda* (*dhitaki*) and ginger, in equal parts. Powder and mix. Dose, about a drachm, with rice water (*andulambu*) and honey. This powder is said to be useful in bilious diarrhœa.

* Galena or the sulphide of lead ore is sometimes called "*rasānjana*" in Sanskrit and some physicians in Bengal use the lead ore or "*rasānjana*," whenever this term occurs in a prescription. In the Upper Provinces however, "*rasānjana*" is invariably translated *rasot* in the vernacular. This, no doubt, is the correct practice. The mistake on the part of the Bengali physicians, probably occurred from their not being acquainted with *rasot*, which is the produce of plants indigenous to the Himalayan range.

† दार्जीकावसमं खीरं पादप्यज्जा यथावयम् । तदा रसाञ्जनाख्यं तन् वैचकीः
रसं विदम् ॥

1. रसाञ्जनादि चूर्णः । रसाञ्जनं सावित्रिणं कुटिलस्य फलं लवणम् । भारङ्गी
कवेरिश्च त्रिविधसङ्घातुना ॥ खीरेण युक्तं त्रयसि रसात्तिसारमुलकम् । कर्द्वं खीरेणै

Dárovyádi kvátha,¹ or compound decoction of Indian barberry. Take of the root bark of Indian barberry, *rasot*, shiretta, *Adhatoda Vasica* (*Vásaka*), *Cyperus rotundus* (*mustaka*), bela fruit and marking nuts, equal parts, and prepare a decoction in the usual way. This is administered with honey in menorrhagia and copious discharges from the womb. Another combination said to be very useful in menorrhagia is as follows. Take of *rasot* and the root of *Amaranthus spinosus* (*tanduliya*) equal parts, beat into a paste with water, and administer with honey and water in which rice has been steeped.

Sarangadhara recommends a simple decoction of Indian barberry to be given with the addition of honey in jaundice. In painful micturition from bilious or acrid urine a decoction of Indian barberry² and emblic myrobalan is given with honey. A decoction³ of the root bark is used as a wash for unhealthy ulcers, and is said to improve their appearance and promote cicatrization. In the intertrigo of infants, *rasot* is recommended to be applied externally and administered internally.⁴ *Rasot* mixed with honey, is said to be an useful application to aphthous sores.

The principal use of *rasot* however is in eye-diseases, in which it is employed in a great variety of forms. The following are a few illustrations. Take of *rasot*, chebulic myrobalan, rock salt and red ochre, equal parts, rub them together into paste with water,

1. दार्व्यादिकाथः । दार्वी रसाञ्जन उपान्द किरात विल्ल भङ्गातकैरविक्रतो मधुना-
कषायः । पीतो जयन्तिवर्णं प्रदरं सशूलं पीतासिताद्य विषोद्धित नील यकृद् ॥

चक्रदत्तः ।

2. दार्वी तथैवालकैरसेन समाधिर्का पैत्तिक मूत्रकृच्छे ।

चक्रदत्तः ।

3. त्रिफला खदिरौ दार्वी तथैवादिषवा कुमाः । निल्ल कीचकपनाधि कषायः
श्रीरामे द्विदः ।

चक्रदत्तः ।

4. वसाञ्जनं विशेषेण पानाधिपनयोद्धितम् । रुद्धं मे मुदं खैरिभक्त्याय प्रवेक्षयेत् ॥

and apply round the orbit in inflammatory affections of the eyes.¹ *Rasol* mixed with honey may also be used in the same way. An emulsion of *rasol* made with milk is recommended to be poured into the eyes, or used as a collyrium for relieving pain, burning and lachrymation.²

NAT. ORDER. NYMPHÆACEÆ.

NELUMBIUM SPECIOSUM.

NYMPHÆA LOTUS ETC.

THESE beautiful aquatic plants had attracted the attention of the ancient Hindus from a very remote period, and obtained a place in their religious ceremonies and mythological fables; hence they are described in great detail by Sanskrit writers. The flowers of *Nelumbium speciosum*, called *Padma* or *Kamala*, are sacred to Lakshmi, the goddess of wealth and prosperity. The white variety of this plant is called *Pandarika*, the red, *Kokanada* and the blue, *Indicava*. The entire plant including root, stem and flower is called *Padmini*. The torus or receptacle for the seed is, called *Karnikira*, and the honey formed in the flowers, *Makarandu*. The filaments round the base of the receptacle, pass by the name of *Kinjalku* and the leaf stalk by that of *Mrindala*. The species of *Nymphæa* described, are as follows:—

Nymphæa Lotus. *Kumuda*, Sans. *Sáluka*. Beng. *Koi*. Hind.

Nymphæa stellata. *Nilotpala*, Sans. *Nilsaphlá*, Beng.

Nymphæa rubra. *Raktotpala*. Sans. *Raktakambal*, Beng.

The root-stocks of these water plants contain a sort of starch, and are eaten by the poorer classes. During the famine of 1866 in Orissa, they were much sought after by the starving people.

1. इरीरुनी सैखवसु गेरिखसु रसाञ्जनम् । विहासुनी जलौ विष्टः सुखनिवा-
नभावहः ॥ माकंवरः ।

2. दाखी रसाञ्जनं वापि लम्बुत्तं प्रपूरकम् । विहासि शीतं दाहासुखिदनाः सुन्द-
सुखवाः ॥

खञ्जवसः ।

The seeds of *Nelumbium speciosum* are eaten raw. The small seeds of *Nymphaea Lotus*, called *bheta*, are fried in heated sand and used as a light easily digestible food. The seeds of *Euryale ferox* called *makhāna* in Sanskrit, are also used in the same manner, and are regarded as light, invigorating food suited for sick people.

The filaments of these plants are used medicinally. They are considered astringent and cooling, and useful in burning of the body, bleeding piles and menorrhagia. In bleeding piles the filaments of the lotus are given with honey and fresh butter or with sugar.¹ In menorrhagia the filaments of *Nymphaea stellata* are given with the addition of *souchal* salt, nigella seeds, liquorice powder, curdled milk and honey.² A compound decoction is thus prepared.

*Utpalādi sritam.*³ Take of the filaments of *Nymphaea Lotus*, *N. stellata* and *N. rubra*, of the white variety of *Nelumbium speciosum* and liquorice root, equal parts, in all, two tolas, and prepare a decoction in the usual way. This decoction is said to be useful in thirst, burning of the body, fainting, vomiting, hemorrhage from the internal organs, and bleeding from the womb during gestation.

A cooling application⁴ for external use is prepared as follows. Take of the filaments and leaf-stalks of *Nelumbium speciosum*, *Nymphaea stellata*, and *Nymphaea Lotus* and of red sandal wood, equal parts, and rub them together into a thin paste with cold water. This is applied to the forehead in cephalalgia. A paste

1. लपयकेहरं चौद्रं नवनौतं नवं लिङ्गम् । सिताकेहरचयुक्तं रत्नाग्निं सुखीभवेत् ॥

भावप्रकाशः ।

2. रक्षा हीमन्त्रलाजाजी मधुकं नीलमुत्पलम् । पिबेत् चौद्रयुतं गारी वातासृग्दः पीडिता ॥

चक्रदत्तः ।

3. गुग्गिष्ठा गर्भती रक्तं कवेद्रयदि सुहमुद्गः । तत्रिरीषाय सा दुग्धमुत्पलादि सृष्टं पिबेत् ॥

भावप्रकाशः ।

4. सखालविसमालुङ्कचन्दनीत्पलकेहरैः । सिन्धुजीतैः त्रिरीदिद्यातपदासखीन्धुसैः ॥

चक्रदत्तः ।

made of emblic myrobalans and the filaments of the lotus is also used for the same purpose. Similar compositions are recommended for external inflammations, erysipelas etc.

The large leaves of *Nelumbium speciosum* are used as cool bed-sheets, in high fever with much heat and burning of the skin.¹

NAT. ORDER. PAPAVERACEÆ.

PAPAVER SOMNIFERUM.

Sans. अहिफेन, *Ahiplena*. Vern. *Aphim*.

Opium appears to have been brought into India by the Mussulmans, as its Sanskrit name is evidently derived from the Arabic *Afyun*, and as it is not mentioned by the older Sanskrit writers.

The capsules of the poppy are called *Khikhas* and the seeds, *Khasatila*, in Sanskrit. The seeds yield a bland oil, which is used for culinary purposes and in lamps. The seeds themselves are innocuous and used as food. They are boiled, mixed with a little oil and salt, and taken as curry with rice, or they are made into balls and formed with tamarind, into an acid curry. Poppy seeds are sprinkled over some sorts of native sweetmeats.

Sanskrit writers describe poppy seeds as demulcent and nutritive, and useful in cough and asthma. The capsules of the poppy are regarded as light, astringent, and narcotic. They promote talkativeness and destroy or diminish the sexual power. The properties of opium are said to be analogous to those of the capsules. Opium is used as an astringent and narcotic in bowel complaints, cough, external inflammations, urinary diseases, fractures, skin diseases etc.

In diarrhoea and cholera the following, called *Amarákhasi*,² is used. Take of opium, nutmeg, cloves, cinnabar and camphor,

-
1. चन्द्रमासु कषायान्द्रितासहन्तोपरीकृतः । सुप्याहाहादितीक्ष्णोत्तमदीदस-
सन्धये ॥ चक्रदत्तः ।
 2. आमराचसी । जातीफलं लवङ्गं स्यादहिफेनं सश्रीषितम् । क्षुपूरं समभागं च
बटीं कुल्यात् शिरसिकाम् । अन्नसीदकमुञ्चन्तु चतुर्षुपानं प्रशस्यते । असाध्यं त्वामरीचं तु
एष एव सहीषधम् । आमराचसीनामायं रसः परमदुर्लभः ॥ रसेन्द्रसारसंघः ।

equal parts. Beat them into a mass with water, and make, into four grain pills.

In chronic diarrhœa and dysentery, the following called *Grahani kapāta rasa*,¹ is recommended. Take of nutmeg, borax, prepared talc and *datura* seeds, each one part, opium two parts, and make into two-grain pills with the juice of *Pœderia fœtida* (*prāsārani*). In diarrhœa with anasarca the following, called *Dugdhavati*, is much used by the Kavirajas.

Dugdhavati.² Take of opium and aconite, twenty-four grains each, prepared iron ten grains, prepared talc twelve grains. Beat them into a mass with milk and make into four grain pills. One pill is to be given every morning with milk. The diet is restricted to milk alone, water and salt being prohibited. In fever with diarrhœa, opium is used in combination with arsenic, as for example in the following preparation.

Sambhunātha rasa.³ Take of orpiment, realgar, cinnabar, white arsenic, borax, aconite and alum each, one part, mercury,

1. यङ्घौषपाटसः । जातीफलं टङ्गचमककच पक्षुर्वीकं समभागचूर्णम् ।
मानवयं स्यादङ्घ्रिफेचकस्य संस्त्राखिकापत्ररसेन मद्यम् ॥ चक्षुप्रमाणा वटिकां प्रहाय्या ।
यवादिदध्यात् यङ्घौषदीपु । सामिषु श्लेषु सरक्तक्षिपु पक्वेष्वकंषु गुदानयेषु । पथ्यं
सङ्घोदननव दीयं रसोत्तमीडयं यङ्घौषपाटः ।

रसेन्द्रसारसंघः ।

2. दुग्धवटी । अष्टतं सूर्यगुचं स्यात् अङ्घ्रिफेचं तथैव च । पञ्चरक्तिषु क्षीरसु
स्तुररक्तिषुममसम् ॥ दुग्धैर्गुं झाययमिता वटी कार्या भिन्नविदा । दुग्धापानं दुग्धैश्च
भीजनं सर्वथा हितम् ॥ श्लेथं नानाविधं हनि यङ्घौषं विषमञ्जरम् । मन्दाग्निं पाक्षुरीहसु
नाम्ना दुग्धवटी परा । वर्जयेत् सवथं वारि व्याधिनिःशेषतावधि ॥

मेघव्यरजामली ।

3. शङ्खुनाथरसः । दाहकं टङ्गचं रक्तं फटिकारी मनःश्लेष्मा । गीहलं
वक्षनामसु सर्वतुल्यसु भागिकम् ॥ सर्वतुल्यं रसं शम्भं तत्समं फसिफेचकम् । शक्राश्ल-
रसेर्मास्यं निर्गुं स्त्रास रसेन च ॥ कनकस्य पत्ररसेर्निम्बपत्ररसेः पुनः । पृथगेवां रसेः सम
भावेयत् कुम्भक्षी भिन्नम् । वटीं रक्तिवयं कुर्यात् शङ्खुवेरानुपानसः । सर्वरूपं साग्निपा-
नसिसारसु भाजयेत् । यङ्घौषामदीषु च अरं सर्वं विनाशयेत् । सवेने मसके तैलं पथ्यसु

sulphur and opium, each seven parts. Soak them for seven days in each of the following fluids, namely, juice of the leaves of *Cannabis sativa*, *Vitex Negundo*, *datura* and *nim*. Make into two-grain pills. These are given with ginger juice in diarrhoea with high fever.

Akarādi churna.¹ Take of pellitory root, ginger, seeds called (*kakkola*), saffron, long pepper, nutmeg, cloves and red sandal wood, each two tolās, opium eight tolās. Rub them together and pass the powder through a cloth. Then add saffron, equal in quantity to all the above ingredients. Dose grains six to twelve, with honey. This medicine is used as an aphrodisiac.

Opium enters into the composition of some external applications in the form of paste, along with other medicines. A poultice made of poppy seeds with milk is prescribed by Śāraṅgadhara in porrigo of the scalp.²

The Amritasāgar recommends the following preparation of opium in diabetes. Take of camphor and musk, each one part, opium and mace, each four parts. Make into two-grain pills. They are administered with the juice of betel leaves.

दधिभक्षकम् । शीतोपचानं कर्तव्यं क्रमेण गुणवृद्धये । शम्भुनाथ इति ख्याती नद्यादेवेन भाषितः ॥

भेषज्यतन्त्रः ।

1. अकरादिचूर्णः । अकराकरभः शृङ्गी ककौलं कुडुमं कषा । जातीफलं लवङ्गञ्च चन्दनञ्चेतिशार्बिकान् । चूयानिमांस्ततः कुर्यादधिफेणं पलीन्धितम् । सर्वसैकीकृतं चूर्णं सूक्ष्मं तद्वस्त्रगालितम् । क्षिता सर्वसमा दीयामाषैकं मधुनालिङ्गित् । शक्रकलभकं चूर्णं पुंशामानन्दकारकम् । नारीणां प्रीतिजननं सेवेत निधि कामुकः ॥

शाङ्गधरः ।

2. दुग्धेन स्थास्त्रसं बीजं प्रलीपादाद्यथं जयेत् ॥

शाङ्गधरः ।

NAT. ORDER. CRUCIFERÆ.

SINAPIS.

Sans. सिद्धार्थ, Siddhārtha राजिका, Rājikā.

Vern. Sarishá, Rái Sarishá, Beng.

Two varieties of mustard are mentioned by Sanskrit writers, namely, *siddhārtha* or white mustard, (*Sinapis glauca* of Roxburgh, *Brassica campestris*, L.) and *rājikā* or dark brown variety, (*Sinapis rumosa* of Roxburgh, *Brassica juncea*, Hooker, fil, et Thomson). The latter is more pungent and preferred for external application as a rubefacient. Mustard oil is largely used by the natives for culinary purposes as well as for anointing the body before bathing. Mustard oil anointment is said to keep the body cool, and the skin soft, to promote the growth of hair and to remove prurigo, lice and scurf. The leaves of the mustard plant are used as a pot-herb, and considered pungent and stomachic.

Mustard enters into the composition of emetic mixtures, of which the following is an example. Take of mustard seeds, *Acorus Calamus* root (*vachū*), bark of *Symplocos racemosa* (*lodhra*), and rock salt, equal parts. Powder and mix.¹

Mustard forms an ingredient of several prescriptions for loss of appetite, indigestion, etc. Thus take of mustard seeds, cumin seeds, fried assafoetida, ginger and rock salt, equal parts. Powder and mix. Dose, grains twenty-two with butter-milk.

Mustard is used externally, alone, or in combination with other medicines in a great variety of diseases, and notably in parotitis, sciatica, paraplegia, gout, inflammatory swellings, urticaria etc. Śārangadhara recommends the following application² in urticaria. Take of mustard seed, turmeric, *pāčhuk* root, sesamum and the seeds of *Cassia Tora* (*chakramardaka*), equal

1. सिद्धार्थक तथा खीम सैन्धवंश्च प्रलेपयन् । वनमन्त्र निष्कन्थाय पिक्वका यौवनो-
द्भवाम् ॥ चक्रदत्तः ।

2. सिद्धार्थरजनीकुटुप्रपुत्राटपिसेः सप्त । कटुतैलेन संमिश्रमुदरं च प्रलेपयन्म् ।

parts, and rub them together into a paste with mustard oil. In gout, sciatica, etc, simple mustard plasters are used.¹ In inflammatory affections, the following poultice is prescribed by Sāraṅgadhara. Take of the root of *Boerhaavia diffusa* (*punarnavā*), wood of *Berberis Asiatica* (*dāruharidrā*), root of *Moringa pterygosperma* (*sobhānjana*), ginger and mustard seeds, equal parts, and rub them into a paste with fermented rice water.²

LEPIDIUM SATIVUM. The seeds of *Lepidium Sativum*, called *Chandra sura* in Sanskrit, and *Hālim* in Hindi, are described as tonic and alterative, and useful in hiccup, diarrhoea, and skin diseases from disordered blood. It is said to be a very efficacious remedy in hiccup, for which the *Bhāvaprakāsa* gives the following formula. *Hālim* seeds are macerated in eight times their weight of water; when the seeds are softened they are rubbed in the water, and the emulsion strained through cloth. This emulsion is recommended to be given frequently in doses of about an ounce for the relief of obstinate hiccup.³

NAT. ORDER. CAPPARIDACEÆ.

CRATĒVA RELIGIOSA.

Syn. Capparis trifoliata. Rox.

Sans. वदव, Varuna. अस्मरिन्न, Asmarighna.

Vern. Barun, Beng. Hind.

THE bark of the stem and root of this plant constitutes the principal medicine of the Hindu Pharmacopœia, for calculous affections. It is said to promote the appetite, increase the secretion of the bile, act as a laxative and remove disorders of the urinary

1. वीरसर्पपक्वैश्च प्रदेहो वा दशापहः ॥

भावप्रकाशः ।

2. पुनर्नवां दाह शफ्लो सिद्धार्थं त्रिभुजैश्च च । पिशा चंचारनासेन प्रक्षेपः सत्त्वमीशका ॥

शास्त्रचरः ।

3. चन्द्रशूरसः । चन्द्रशूरस बीजानि क्षिपेददृगुषे जले । यथा सद्भूमि सद्दीपान्तासी
वासन्धि शालयेत् ॥ शिकारिबिगविकससज्जलं पलमात्रया । पिबेत् क्षिपेत् पुनश्चापि
शिकारिबिगविकससज्जलं ॥

भावप्रकाशः ।

organs. In calculous affections it is used in a great variety of forms. Thus a simple decoction of the bark may be given with the addition of treacle.¹ A compound decoction is prepared along with equal parts, of *Tribulus terrestris* (*gokshura*) and ginger and is administered with the addition of *yavakshāra* and honey.² A compound powder called *Varunādya churna*³ is prepared as follows. A solution of the ashes of *varuna* is made as directed under the head of alkaline water (*Kshārodaka*). This solution is boiled with the addition of *varuna* bark in powder and *yavukshāra* (impure carbonate of potash), till the water is entirely evaporated. The resulting powder is given in ascites, calculus, enlargements of the abdominal viscera, and affections of the bladder and uterus. A confection called *Varunādya guda* is prepared by adding to the fluid extract of the bark, treacle and a number of diuretic and aromatic substances.

Varunādya ghrita.⁴ Take of coarsely powdered *varuna* bark twelve seers and a half, water sixty-four seers, boil together till reduced to one-fourth and strain. To the strained decoction, add four seers of clarified butter, and two tolas each of the following substances in the form of a paste, namely, *varuna* bark, unripe

1. वरुणत्वक्कषायानु पीतञ्च गुडसंयुतम् । अश्रुणो पातयत्याशु कलिगुलनिवारणम् ॥

चक्रदत्तः ।

2. वरुणस्य त्वचं श्रेष्ठां गुच्छीमीशुरसंयुताम् । यवचारं गुडं दत्त्वा काष्ठयित्वा
पिबेद्धि ताम् ॥

चक्रदत्तः ।

3. वरुणकामपरिद्रुतसलिलं तन्मूर्धे यावत्संयुतम् । कथनीयं तत्रावद्यावत्सूर्योत्प-
न्नायाति ॥ तदगुडगुणं हन्वात् तदुदारामश्रुणो वीराम् । शीघ्रानं गुणवरं श्रेष्ठान्
कुञ्ची रक्षा तीक्ष्णाम् ॥

भाष्यशास्त्रः ।

4. वरुणाद्यं हृद्यम् । वरुणस्य तुलां चूर्णां जलद्रोषं विपाचयेत् । पादशेषं परिखाय्य
हृत्प्रसन्नं विपाचयेत् । वरुणं कश्चीं विलं दण्डं पञ्चमूलकम् । अमृतां चाश्रुणं द्वयं
पीतञ्च न्युपीरम् । अतपर्वतिलचारं पञ्चाश्रुणमेव च । युधिष्ठावाच मूत्रानि कारिकाणि
समानयेत् । अस्य माथां पिबेज्जनुर्देशकालाद्यपिचया । जीर्णं तस्मिन् पिबेत् पूर्वं गुणं
कीर्णञ्च मत्सुना । अश्रुणो शर्कराखेप मूत्रकण्ठञ्च गात्रयेत् ॥

• भाष्यशास्त्रः ।

plantains *bela* fruit, the five roots called *trinaja pancha mulaka* (see Sugar cane), *gulancha*, leaves of *Coleus aromaticus* (*asmbheda*), cucumber seeds, *Acorus calamus* root, bamboo-manna, the ashes of *Sesamum Indicum* (*tila*), and of *Butea frondosa* (*palasa*) and the root of *Jasminum auriculatum* (*juthiká*). Boil them together and prepare a *ghrita* in the usual way. It may be given in doses of one to two tolas, according to the constitution of the patient. After this medicine is digested, butter-milk and treacle should be taken.

Varunádya taila.¹ This is an oil prepared with *varuna* bark, for injection into the bladder. Take of *varuna* bark and of the entire plant of *Tribulus terrestris* (*gokshura*), two seers each, water sixty-four seers, boil together till reduced to one-fourth and strain. Boil this strained decoction with four seers of prepared sesamum oil and half a seer each, of the above mentioned drugs in the form of paste. This oil is recommended to be injected into the bladder, for the relief of painful micturition, calculus and gravel.

In scrofulous enlargement of the glands under the lower jaw, a decoction² of *varuna* bark is prescribed by several writers. It is said to cure even old standing cases. In internal or deep seated suppurative inflammation, a decoction of *varuna* and *Boerhaavia diffusa* (*punarnavá*) is given internally.³

NAT. ORDER. MORINGACEÆ.

MORINGA PTERYGOSPERMA.

Sans. श्रीमान्न, *Sobhánjana*. सिद्ध, *Sigru*.

THIS plant is cultivated all over the country for the sake of its leaves, flowers, and seed vessels which are used by the natives

1. बद्धबायं तैलम् । तक्षपत्रमूलप्रयत्नस्य बद्धबायस्यविकस्यत्वात् । कषायेषु पक्षेपेषु
वक्षिणास्त्रापथेन च । शर्कराश्लरीश्लघ्नं मूत्ररक्तक्रान्तिवारणम् ॥ अक्रमत्तः ।

2. काञ्चनारलेनः कायः शुद्धीकर्षेण नाशयित् । गन्धमासां तथा कायः चौरिष
वद्धचलनः ॥ बाह्वंघटः ।

बाह्वंघटः ।

in their curries. The root is described as acrid, pungent, stimulant and diuretic. Applied externally it acts as a rubefacient. The seeds are described as acrid and pungent and are used externally as a stimulant. They are called *Sveta maricha* that is white pepper. The Bhāvaprakāsa describes two varieties of *sobhānjana*, namely, white and red. The root of the white variety is said to be a stronger rubefacient, while that of the red, is preferred for internal use, for promoting the appetite and acting on the excretions.

In ascites and enlarged spleen, a decoction¹ of the root-bark of *Moringa pterygosperma* and the leaves of *Rumex vesicarius* (*amlalonikā*) is given with the addition of long pepper, black pepper and rock salt in powder. In enlarged spleen and liver, a decoction of the root-bark is recommended to be given with the addition of plumbago root, rock salt and long pepper, or of the ashes of *Butea frondosa* (*palāsa*), or of *zarakshāra* (impure carbonate of potash).²

In internal and deep seated inflammation and abscess (*vidradhi*) a decoction of the root-bark is recommended to be given with the addition of assafoetida and rock salt.³ The expressed juice of the root-bark is also given in these cases, with the addition of honey or rock salt.⁴ The root-bark is used externally in the shape of plaster, and the inflamed part is fomented with its decoction.⁵

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1. पीतः श्लेष्मीदरं हृन्वापिप्लौमरिचान्वितः । अश्वत्थससंयुक्तः शिशुंकाशः समैश्वरः ॥
चक्रदत्तः ।
 2. श्लोमाञ्जनकनिर्गृहं सैन्धवाग्निक्कान्वितम् । पलाशसारयुक्तं वा यवघारं प्रयोजयेत् ।
चक्रदत्तः ।
 3. श्लोमाञ्जनकं निर्व्यूही हिङ्गुसैन्धवसंयुतः । अक्षिरं विद्रधिं हन्ति प्रातःप्रतिनिविधितः ॥
चक्रदत्तः ।
 4. शिशुमूलं कले शीतं दरपिष्टं प्रमाखयेत् । तद्रसं मधुना पीत्वा हृन्वापिप्लौमरिचान्वितम् ॥
चक्रदत्तः ।
 5. खेदीयनाडाः कर्तव्याः शिशुमूलसकन्विताः ॥
चक्रदत्तः ।

In calculous affections the decoction of the root-bark is given internally.¹

The seeds of *Moringa pterygosperma* enter into the composition of some stimulant applications. The following is an illustration. Take of the seeds of *Moringa pterygosperma*, rock salt, mustard seeds and *putchuk* root, equal parts, and reduce them to a paste with goat's urine. When dried this is used as a snuff for rousing comatose or drowsy persons.² The fresh juice of the root bark is recommended to be poured into the ears, for the relief of otalgia. The gum of the tree mixed with sesamum oil, is also used for the same purpose.³

NAT. ORDER. GUTTIFERÆ.

MESUA FERREA.

Sans. नागकेसर, *Nágakesara.* *Vern.* *Nágkesar.* *Beng. Hind.*

THE dried flowers of *Mesua ferrea* are much used as a fragrant adjunct to decoctions and oils. They are regarded as astringent and stomachic and useful in thirst, irritability of the stomach, excessive perspiration etc. A paste of the flowers with the addition of butter and sugar is recommended by most of the later writers, to be taken in bleeding piles.⁴ The powdered flowers mixed with old clarified butter, that has been washed a hundred times in water, are said to be an effectual application in burning of the feet.⁵

1. काष्ठत्र शिशुमुखाद्यः कटूष्णोऽस्मरीघातनः ॥ चक्रदत्तः ।
2. सैश्ववं त्रैतमरिचं सर्षपाः कुष्ठमेव च । वसामूत्रेण संपिष्टं तद्द्राक्षस्यनिवारणम् ॥
भावप्रकाशः ।
3. श्रीभास्करश्चनिर्वाणशिलातेजोसंयुतः । व्यक्तोष्णः पूरुषः कर्षो कर्षण्युत्पीपमानये ॥
चक्रदत्तः ।
4. नवनीततिलैः शक्की जैता रक्षाग्रंसां कृतः । नवनीतसितानागकेसरचापि सदिधः ॥
भास्करः ।
5. नागकेसरचूर्णे वा शतपीतैश्च कर्षिणा । पिशा खेपी विघातञ्जी हाष्टे चर्षेण पादयोः ॥
चक्रदत्तः ।

NAT. ORDER. DIPTEROCARPEÆ.

SHOREA ROBUSTA.

Sans. शाल, *Sála*, अशकृष, *Ashakarna*.

THE resin of *Shorea robusta*, called *Rála* in Sanskrit and *Dhund* or *rál*, in the vernacular, is regarded as astringent and detergent and is used in dysentery, and for fumigations, plasters, etc. The resin thrown over the fire gives out thick volumes of fragrant smoke, and is much used for fumigating rooms occupied by the sick. It is also a common practice with natives to burn some *rál* in their rooms every evening, about the time that *chirags* or lamps are lighted, as also during the worship of idols.

In the dysentery of children *rál* is recommended to be given in doses of about twenty grains, with an equal quantity of sugar or treacle.¹

Rál enters into the composition of some plasters and ointments. The following is an illustration. Take of *rál*, rock salt, treacle, wax, honey, bdellium, red ochre and clarified butter, in equal parts, boil them together and prepare an ointment.²

NAT. ORDER. MALVACEÆ.

SIDA CORDIFOLIA.

Sans. बला, *Balá*. बाह्यालक, *Bátyálaka*.

Vern. Berela, Beng. Khareti, Hind.

FOUR varieties of *balá* are mentioned by Sanskrit writers, namely, *Bátyálaka*, (*Sida cordifolia*), *Mahábala*, (*Sida rhomboidea*),^{*} *Atibalá*, (*Sida rhombifolia*), *Nágabalá*, (*Sida alba*). The roots of all these species, are regarded as cooling, astringent, tonic and useful

1. श्वेतौ वा यदि वा रक्तः सुरकी यद्वर्षीयदः । गुडेनाधिकसकंन भक्षितेनाद्य मश्नति ॥
भावप्रकाशः ।
2. सिन्धुसुखसुखमधुमद्विषाचयेरिकं सद्यतम् । सिक्खकमेतन् पक्कं पादच्छुटमापद्यं
सिद्धम् ॥
अकदमः ।

* This is only a variety of *Sida rhombifolia*, L.

in nervous diseases, urinary diseases and disorders of the blood and bile. In intermittent fever, a decoction of the root of *Sida cordifolia* and ginger is given.¹ It is said to be useful in fevers with cold shivering fits, followed by strong heat of body. The powder of the root-bark is given with milk and sugar, for the relief of frequent micturition and leucorrhœa.²

In diseases of the nervous system, such as insanity, paralysis, facial palsy, etc., the root of *Sida cordifolia* is used alone or in combination with other medicines, as in the following, called *Māsha baldī kvātha*.³ Take of the pulse of *Phaseolus Roxburghii* (*māsha*), root-bark of *Sida cordifolia* (*balī*), root of castor oil plant and of *Mucuna pruriens* (*ātmaguṭā*), *Hygrophila polysperma* (*katrina*), *Vanda Roxburghii* (*rāsni*), and *Withania somnifera* (*asvagandhū*), equal parts, in all two tolas, and prepare a decoction in the usual way. It is administered with the addition of assafoetida and rock salt, in hemiplegia, stiff neck, facial paralysis, and noise in the ears with headache. An oil for external application in these diseases, called *Balātāila*⁴ is thus prepared. Take of the root of *Sida cordifolia*, four seers, water, thirty-two seers and boil down to eight seers. To this decoction, add eight seers of milk, four seers of prepared sesamum oil, and one seer of the root of *Sida cordifolia* in the form of paste, and prepare an oil in the usual way.

1. महावलामूल मञ्जीषधाम्नां काथी निहन्त्यादिषमञ्जरं हि । शीतं सकम्पं परिदाह-
युक्तं विनाशयेत् हिमं हिमप्रयोगात् ॥

भावप्रकाशः ।

2. प्रदरं हन्ति वलाधा मूलं दुग्धेन मधुयुतं पीतम् ॥

चक्रवर्तः ।

3. माषवलादिः । माषवलाय कश्मिबीकटव्यारान्नाश्रगन्धोद्वृकाशाम् । काथी
मस्यनिपीतो रामठलवणान्वितः कौचः ॥ अपहरति पचवातं मन्थालम् सङ्घर्षनादरुजम् ।
दुग्धं मर्दितात् सप्तद्वान्मथति चावश्यम् ॥

चक्रवर्तः ।

4. वलातेषुम् । वला निःकायकस्काभ्यां तैस्त्रयं पक्वं पथीऽन्वितम् । सर्व्वगतविद्याप्रसेवं
शैरीयपाचिवम् ॥

चक्रवर्तः ।

BOMBAX MALABARICUM.

Sans. शाल्जी, *Sālmali*, नीपा, *Mochā*.

Vern. *Simul*, *Rakta Simul*. Beng.

"THIS is one of the largest of our Indian trees, often about one hundred feet high and the trunk thick and ramous in proportion. Flowering time the end of winter, when the tree is totally destitute of leaves. The great numbers of very large bright red flowers with which it is then covered make it remarkably conspicuous at a very great distance." The thick stems are used for making large boats called *kondas*, from their being made by hollowing out the trunks. Some of these boats are large enough to carry a freight of a thousand maunds. The smaller floats are in very common use in Eastern Bengal, for crossing over rice fields during the rainy season. In fact during the rains these little floats, constitute the only mode of conveyance from village to village in low alluvial tracts. The thick beds and pillows of the natives are stuffed with the Cotton attached to the interior of the seed vessels of this plant, while the thin quilts and stuffed clothing for winter, are made with *kārpāsa* (cotton of *Glossypium herbaceum*.)

The gum of this tree, called *mocharasa* is used in medicine.* It is considered astringent, tonic and alterative, and is used in diarrhœa, dysentery and menorrhagia. *Mocharasa* with sugar in equal parts, is given in doses of twenty to forty grains, in the diarrhœa of children. In the dysentery of children, the following is used. Take of *mocharasa*, flowers of *Woodfordia floribunda*

* In the Pharmacopœia of India it is stated. "To this tree (*Bombax Malabaricum*), which is common in some parts of India, two drugs which hold a prominent place in the Native Materia Medica, have been usually but erroneously referred. 1. An astringent gummy exudation, *Mucherus* (Hind) Its botanical source is unknown. 2. Dried roots well known as *Safed Musli* (Hind)." The Sanskrit term *Mocharasa* of which the Hind *Mucherus* is a corruption, means the juice or exudation of the *Mocha* tree, and *Mocha* is one of the Sanskrit names of *Bombax Malabaricum*. Hence there can be no error in attributing the origin of *Mucherus* to *Bombax Malabaricum*. *Safed Musli* is the *Talamuli* of Sanskrit Materia Medica, the *Hypochoeris* of Botanists.

(*dhātāli*), root of *Mimosa pudica* (*lujjālu*), and the filaments of the lotus, equal parts, in all one toḷā, powdered rice one toḷā, water eleven toḷās, and boil together to the consistence of a gruel (*yavāgu*).¹ In the dysentery of adults a decoction of *bela* fruit in goat's milk, is given with the addition of powdered *mocharasa* and *indrajava* seeds.²

HIBISCUS MOSCHATUS. *Sans.* लताकस्तुरिका *Latikasturikā*, *Vern.* *Latikasturi* *Beng.* The scented seeds of this plant are much used in perfuming medicinal oils. They also enter into the composition of some compound prescriptions, being regarded as cooling, tonic and carminative.

PAVONIA ODORATA. *Sans.* बाला *Bālā*, लीबेर *Hrivera*. *Vern.* *Sugandha bālā*, *Hind.* The fragrant roots of this plant are considered aromatic, cooling and stomachic and are much used in combination with other medicines of the sort in fever, inflammation, hemorrhage from internal organs etc. *Bālā* enters into the composition of a well-known fever drink called *shadanga pāniya*, (see *Andropogon muricatum*).

NAT. ORDER. STERCULIACEÆ.

PTEROSPERMUM SUBERIFOLIUM. *Sans.* मुचुकुन्द, *Muchukunda*. The flower of this tree, rubbed into a paste with *kānjika* is an ancient and well known application for hemicrania. It is mentioned by many writers and is used even at the present day, as a domestic remedy.³

1. नीचरसः समकः च घातकी पत्रकेशरम् । पिष्टैरेतेयभागुः स्याद्रक्तातीसारनाशिनौ ।

भावप्रकाशः ।

2. विल्वं हागपयः सिद्धं सिता नीचरसान्वितम् । कलिज्जचूर्णसंयुक्तं रक्तातिसारनाशनम् ॥

चक्रदत्तः ।

3. शिरोऽर्पितं वातजां हृन्त्यात्युत्थं वा मुचुकुन्दजम् ॥

शार्ङ्गधरः ।

OXALIS CORNICULATA.

NAT. ORDER. GERANIACEÆ.

OXALIS CORNICULATA.

Sans. अम्ललोणिका, *Amlalonikā*. चाङ्गेरी, *Chāngeri*.

Vern. Amrulsāk, Beng.

THE leaves of *Oxalis corniculata* are used as a pot-herb. They are considered cooling, refrigerant, appetizing and stomachic. The fresh juice of the leaves is given to relieve intoxication from *datura*, and is said to be useful in dysentery and prolapsus of the rectum, for which it is recommended by most writers. Chakra-datta gives the following formula for preparing a *ghrita* with this medicine.

Chāngeri ghrita.¹ Take of clarified butter, four seers, the fresh juice of *Oxalis corniculata*, four seers, curdled milk called *dahi*, sixteen seers and the leaves of *Oxalis corniculata* reduced to a paste, one seer. Boil them together in the usual way and prepare a *ghrita*. This preparation is said to be useful in diarrhoea, dysentery, prolapsus of the rectum, tympanites, piles and difficult micturition. The Bhāvaprakāsa gives the following process for preparing a compound *ghrita*.² Take of the fresh juice of *Oxalis corniculata*, decoction of jujube fruits and ginger, alkaline water (see Alkalies), and curdled milk, each four seers, clarified butter four seers, and prepare a *ghrita* in the usual way. It is recommended for use in prolapse of the rectum.

AVERRHOA CARAMBOLA. Sans. कर्मारङ्ग, *Karmaranga*. Vern. Kāmraṅgā, Beng. and Hind. The five-angled fruits of this plant contain an acid watery pulp, and are eaten raw as well as in curries. They enter into the composition of some cooling medicines for fever and other diseases.

1. चाङ्गेरीघृतम् । चाङ्गेरीखरसे सर्पिः कर्करैतैर्विपाचितम् । अतुर्गुणं च दधा च
नददृष्टं कफघातशुत् ॥ अशंसि यद्वयोदीपं मूलकञ्च प्रवाडिक्वाम् । गुदभ्रंशान्तिमानाहं
घृतमेतद्यपोहति ॥

चक्रदत्तः ।

2. चाङ्गेरी कौल दध्यञ्ज खार नागरसंयुतम् । घृतं विरक्तं पातन्व्यं गुदभ्रंशनापहम् ॥

भाषवकाव्यः ।

NAT. ORDER. ZYGOPHYLLACEÆ.

TRIBULUS TERRESTRIS.

Sans. गोकुली, *Gokshuri*. इक्षुमन्था, *Iksuyamthā*.

Vern. Gokshura, Beng. Hind.

This plant is also called *Sthala srīngītaka* and *Trikantaka*, from the resemblance of its fruits to those of *Trapa bispinosa* and from their being armed with three spines. The entire plant but more particularly the fruits are used in medicine. They are regarded as cooling, diuretic, tonic and aphrodisiac and are used in painful micturition, calculous affections, urinary disorders and impotence. The fruits constitute an ingredient of *Dasamula* (see *Desmodium gangeticum*.)

A decoction of the fruits is given with the addition of *yava-kshāra* (impure carbonate of potash), in painful micturition.¹ A decoction of the entire plant is given with *sibījalu* (a bituminous substance) and honey, in the same affection. Equal parts of *gokshura* and sesamum seeds, taken with goat's milk and honey, is said to cure impotence arising from bad practices.²

*Gokshurādyavalehu*³ or electuary of *gokshuri* is prepared as follows. Take of the entire plant of *Tribulus terrestris*, twelve

1. काष्ठं गोकुलीमूलं यववारयुतं पिबेत् । मूत्रकृच्छ्रं सक्तञ्च पीतं शीघ्रं निवारयेत् ॥

चक्रदत्तः ।

2. समतिलगोकुलचूर्णे ङागीचीरेण साधितं समधु । भुक्तं क्षपयति वाष्पं यज्जमितं कुप्रयीनेष ॥

भावप्रकाशः ।

3. गोकुलाद्यवलेहः । गोकुलकं सदलमूलफलं गृहीत्वा, संकुश्रितं पलशतं कथितं तु तीर्थे । पादस्थितेन सखिलेन पत्नानि दत्त्वा पञ्चाशन्तु विपथेदथ शर्करायाः । तस्मिन् घनत्वमुपगच्छति चूर्षितानि दद्यात् यत्तद्व्यमितानि सुभाजनानि । शुद्धी कथ्या अरिष मातदल त्रेनेलाजातीयबीजककुम्भपुषीफलानि । वाग्नेयपलाटकमिह प्रलिघाघ निष्कं श्लेष्मं तु शुद्धमलतं पलसन्धितम् । इत्याद्य मूत्रपरिदाह विवन्ध शुकक्रान्तामरी हृषिरमिहमधु-प्रमेहान् ॥

भावप्रकाशः ।

seers and a half, water, sixty-four seers and boil till reduced ⁷ to one-fourth. To the strained decoction, add six seers and a quart of sugar and again boil till reduced to the proper consistence for an electuary; then add the following substances in fine powder namely, ginger, long pepper, black pepper, cinnamon, cardamom; flowers of *Mesua ferrea* (*utgakesara*), leaves called *tejapatra*, nutmeg, bark of *Terminalia Arjuna*, and cucumber seeds, each sixteen tolas, bamboo-manna half a seer, and prepare an electuary. It is given in doses of two tolas, in painful micturition, suppression of urine, bloody urine, calculous affections etc.

NAT. ORDER. RUTACEÆ.

CITRUS.

The different species of *Citrus* described by Sanskrit writers are as follows.

जम्बीर, <i>Jambira</i> . Vern. <i>Gordanebu</i> , Beng. <i>Citrus acida</i> , Roxb. Var. 3	
लिम्पका, <i>Limpaka</i> . Vern. <i>Pátinebu</i> , Beng. do. do. 1	
निम्बुक, <i>Nimbuka</i> . Vern. <i>Kágujinebu</i> , Beng. do. do. 2	
वीजपुर, <i>Vijapura</i> . Vern. <i>Tabanebu</i> , Beng. do. do. 7	
मधुकर्कटिका, <i>Madhukarkatiká</i> . Vern. <i>Mithanebu</i> , Beng. do. 9	
मातुलुङ्ग, <i>Matulunga</i> . Vern. <i>Chholonga nebu</i> , Beng. <i>Citrus medica</i> .	
करुणा, <i>Karuná</i> , Sans. and Beng. <i>Citrus medica</i> , variety of.	
नागरङ्ग, <i>Nágaranga</i> . Vern. <i>Kamlanebu</i> , Beng. <i>C. Aurantium</i> .	

The variety of *Citrus acida*,* called *Jambira*, yields the lemon juice used in medicine. *Limpaka* or *páti nebu* is much used as a sauce by the natives. The fruits are cut vertically into two pieces, and the fresh juice, squeezed out with the fingers, is sprinkled on soup, *dál*, curry etc. to which it imparts a pleasant acid taste and agreeable flavour. A pickle of *páti nebu*, in its own juice, and salt is a popular and effectual medicine for indigestion

* *Citrus acida* is itself a variety of the *Citrus medica* of Linnæus to which species *C. Limonum*, *C. Limetta* and *C. Lancia* are also reduced.

brought on by excess in eating; or by undigestible articles of diet. The fruits are first rubbed over a stone, or their rind scraped a little so as to thin it. They are then steeped in juice obtained from other fruits of the sort, and exposed to the sun for a few days with the addition of common salt. When crisp and of a brown colour, they are preserved in porcelain vessels or glass jars. This preparation is called *Jarak nebu* (that is digestive lemon) in the vernacular.

The variety of *Citrus acida* called *kāguji nebu* has larger fruits than that of *pāti nebu*, and is also used as sauce like the latter, but its flavour and the fragrance of the essential oil in its rind is not so delicious.

Citrus Aurantium, or the sweet orange, comes from the valleys of the Khasia Hills and of the eastern Himalaya. It is called *kamlā nebu* in Bengali. The variety grown in the plains has an acid taste and is called *nārengā* in the vernacular.

The Sanskrit term *karunā nimbu* is variously translated by different authorities. Wilson in his Sanskrit dictionary calls it *Citrus decumana*. In the Hortus Bengalensis it is translated into *Citrus medica*, while Drury and other Madras authorities make the variety *Citrus Limonum*. The Sabdakalpadruma does not give any synonym or vernacular term for it, so that it is difficult to say, what form it really meant. In the vernacular the term *karunā* is applied to a variety of *Citrus medica*.

Citrus decumana has I believe no Sanskrit name. In the vernacular it is called *Bātāvi nebu*, from its having been originally brought from Batavia. It is now much cultivated in gardens and is one of the common edible fruits of the country. Some varieties of the fruit have a pleasant taste and aroma, with little or no acidity.

Madhukarkatikā. This variety of *Citrus medica* is probably the one described by Roxburgh as *Mithā nebu*, that is sweet lemon. The variety of *Citrus* which has very large oblong fruits, almost equal in size to the shaddock, and the thick spongy rind of which constitutes the largest portion of the fruit, was shewn to me by a gardener in Malda, under the name of *madhukarkati*. The pulp

of this variety is very limited in quantity, of a bland sweetish taste and without any aroma or acidity.

Lemon juice is considered cooling, refrigerant, stomachic and useful in indigestion, dyspepsia, vomiting of meals, thirst, burning of the body, intoxication from spirituous drinks or narcotics etc. Fresh lemon juice is recommended to be taken in the evening, for the relief of dyspepsia with vomiting of meals.¹ It enters into the composition of several carminative medicines for dyspepsia, such as the *Hingvishtaka* (see *Assafetida*), *Krayāḍī churna* etc.

In rheumatic affections such as pleurodynia, sciatica, lumbago, pain in the hip joints etc., Sirangadhara recommends the administration of lemon juice with the addition of *yarakshāra* (impure carbonate of potash) and honey.²

Rasdyanāmrīta lanka.³ Take of long pepper, black pepper, ginger, the three myrobalans, *libernag* seeds, cumin and nigella seeds, *ajawan* and the seeds of *Cardium diffusum* (*ranjanāni*), *chirella*, *tribrit*, root of *Baliospermum montanum* (*clausi*), *nim* bark, and rock salt, each two tolas, prepared iron sixteen tolas, sugar two seers, decoction of the three myrobalans four seers, and lemon juice two seers. Boil all these ingredients together till the watery portion is evaporated, lastly add clarified butter, half a

1. जम्बीरस्वरसः पीतः द्रुतं हृन्त्यस्त्रपित्तकम् ।

चक्रदत्तः ।

2. बीजपूररसः पानान्मधुचरयुतो जयेत् । पार्श्वं हृद्वक्षिणलानि कीष्टवायुच दाहयन् ॥

शाङ्गधरः ।

3. रसायनास्रतलौहः—बिकटु विफला मुक्तं विडङ्गं जीरकहयम् । यमानीष्यं
भूनिम्बं चित्तदन्तीच निम्बुकम् ॥ सर्वेषां कार्षिकं भागं कैशवं स्वर्णमङ्गलम् ॥ खण्डस्य दोहशपलं
प्रस्यञ्च विफलाजलम् ॥ जम्बीराणां रसं दद्यात् पलषोडशकं तथा । पाच्यं सर्व्वे प्रयत्नेन
लौहं दत्त्वा पक्वहयम् ॥ सिद्धे पाके पुनर्दद्याद् द्रुतं पञ्चचतुष्टयम् । सर्व्वरोगेषु संशोध्यं
सङ्घास्रतरसायनम् ॥ युज्यं पञ्चविधं हन्ति यद्भक्तुञ्जीहीदराणि च । कामलां पाण्डुरीमञ्च
शोधं शीघ्रञ्चरं तथा । रोगान् सर्व्वान् निहन्त्याश्च आम्बरकश्मिरं तथा ॥

भैरव्यरदावली ।

seer and prepare a confection. Dose one to two tolás, in enlargements of the abdominal viscera, anæmia, jaundice, anasarca and chronic fever.

In fever complicated with pain in the head, throat and chest, the following mixture is directed to be used as a snuff for promoting discharge of phlegm. Take of lemon juice, ginger juice, rock salt, black salt, and *souchal* salt, equal parts, and mix. The mixture should be warmed a little before use.

The root of the variety of *Citrus acida*, called *limpáka* constitutes one of the principal ingredients in the composition of a medicine called *Yakridari lauha*, described under Iron.

— श्रीमद्भगवद्गीता

ÆGLE MARMELOS.

Sans. बिल्व *vilva*. Vern. *Bela*, Beng. *Hind*.

THE *Ægle Marmelos* is held in great veneration by the Hindus. It is sacred to Siva whose worship cannot be accomplished without its leaves. Hence this tree is always met with near temples dedicated to Siva. It is incumbent on all Hindus to cultivate and cherish this tree, and it is sacrilegious to up-root or cut it down. The Hindu who expires under a *bela* tree, expects to obtain immediate salvation, notwithstanding that he may have committed innumerable sins.

The *Ægle Marmelos* is used in medicine in a variety of ways. The unripe or half ripe fruit is regarded as astringent, digestive and stomachic and as useful in restraining discharges from the alimentary canal. The ripe fruit is described as sweet, aromatic, cooling and laxative. It is not easily digested and has a tendency to cause flatulence. The dried pulp of the fruit, called *Vilva peshiká* in Sanskrit, is regarded as astringent, and specific for dysentery. The root-bark is considered useful in diseases supposed to be caused by deranged air. It constitutes an ingredient of *dasamul* or the ten roots, (see *Desmodium gangeticum*). The fresh juice of the leaves is given with honey as a domestic laxative and febrifuge.

The dried pulp of the fruit is given with treacle, in recent dysentery with griping, pain in the loins and costiveness.¹ A compound powder² is prepared with equal parts of dried *bela*, tubers of *Cyperus rotundus* (*mustaka*), flowers of *Woodfordia floribunda* (*dhātaki*), root of *Stephania hornudifolia* (*pāthā*), ginger and *mocharasa*. It is given in doses of twenty-two to forty-four grains with butter-milk and treacle. In the dysentery of children a decoction and an electuary of the following drugs is used, namely dried *bela*, fruits of *Pothos officinalis* (*gajapippali*), root of *Pavonia odorata* (*bālā*), flowers of *Woodfordia floribunda* (*dhātaki*), and bark of *Symplocos racemosa* (*lodhra*), in equal parts.³

A decoction of the root of *Egle Marmelos*,⁴ is given with sugar and fried rice, for checking diarrhoea and gastric irritability in infants.

The fresh juice of the leaves is given, with the addition of black pepper, in anasarca with costiveness and jaundice. In external inflammations, the juice of the leaves is given internally, to remove the supposed derangement of the humours.

1. गुडेन खादयेद्विलं रक्तातिसारनाशनम् । आमश्लविनश्लघ्नं कुक्षिरीतविनाशनम् ॥
चक्रदत्तः ।
2. बिल्वद् घातकौ पाठा दृण्ठी मोचरसाः समाः । पीता कञ्चन्यतौसारं गुडतक्रैश्च
दुग्धैश्च ॥
चक्रदत्तः ।
3. बिल्वश्च पुष्पाण्ये च घातकौर्णा जलं सलीघ्नं गजपिप्पली च । काषायश्लेष्मैः मधुना
विमिश्री वास्त्रिषु वीन्यावतिसारितेषु ॥
चक्रदत्तः ।
4. बिल्वमूत्रकषाये च लाजाशैव सन्नर्कराः । पालीय पाययेवालं हृद्यतौसार-
नाशनम् ॥
चक्रदत्तः ।
5. बिल्वपत्रसं पूतं सीधश्च त्रयथी त्रिजे । विट्सङ्गे चैव दुर्नाभि विदध्यात् कामला
मपि ॥
चक्रदत्तः ।

Kapitthāshlaka churna.¹ Take of the pulp of unripe wood apples eight parts, sugar six parts, pomegranate juice, tamarind pulp, *beta* fruit, flowers of *Woolfbaridia floribunda* (*ābhāṅgī*), *ājmod*, and long pepper, each three parts, black pepper, cumin seeds, coriander, long pepper root, root of *Parosela odorata* (*bāltī*), *sonchal* salt, *ājowan*, cardamoms, cinnamon, *ujaputra*, flowers of *Mesua ferrea* (*udāgakesara*), ginger and plumbago root, each one part, powder the ingredients finely and mix. Dose, about one drachm. This preparation is used in chronic diarrhoea and dysentery with loss of appetite and in affections of the throat.

XANTHOXYLUM HOSTILE. Sans. तुम्बूक, *Tumburu*. Vern. *Nepāli dhanū*, *Tamari*, *Hind*. The aromatic and pungent fruits of this plant, resemble coriander in appearance and are used as aromatic adjuncts, in compound prescriptions and in perfuming medicinal oils.

NAT. ORDER. BURSERACEÆ.

BALSAMODENDRON MUKUL.

Syn. *Balsamodendron Ajallocha*.

Sans. गुग्गुलु, *Guggulu*. Vern. *Guggulu*, *Beug*, *Hind*.

Guggulu or Indian bdellium is obtained by making incisions in the tree, through which the gum resin exudes. According to Sanskrit writers, new or recently exuded *guggulu* is moist, viscid, fragrant and of a golden colour. It burns in the fire, melts in the sun and forms a milky emulsion with hot water. Old *guggulu* is dry and without flavour or colour; it should not be used in medicine.

1. कपित्थाटकचूर्णम् । अष्टौ भागा कपिलस्य षड्भागाः शक्रेरा मताः । दादिसं
तिन्निडीकञ्च यीफलं धातकी तथा ॥ अजमोदाच पिपप्लः प्रत्ये कं सुस्त्रिभानिष्ठाः । सरिच
जीरकं धान्यं यन्त्रिकं बालकलदा ॥ सौवर्चलं यमानीच चातुर्जाते सचिचकम् । नागरचेक-
भागाः स्युः प्रत्ये कं सुष्वाचूर्षिताः ॥ कपित्थाटकस्य स्यात् चूर्णेमेतद्द्वैलानयान् । अतोसारं
अयञ्चैव यद्वचोच व्यपीरति ॥

शाङ्गपरः ।

Guggulu is said to be demulcent, aperient, alterative and a purifier of the blood. It is used in rheumatism, nervous diseases, scrofulous affections, urinary disorders, and skin diseases. In rheumatism it is used in a great variety of forms. The following called *Yogarāja guggulu* is a favourite preparation.

Yogarāja guggulu.³ Take of plumbago root, long pepper root, *ājowan*, seeds of *Nipella sativa* (*kālājirā*), *bāberang* seeds, seeds of *Carum Rosburghianum* (*ajanodā*), cumin seeds, *Pinus Deodara* (*devadāru*), *Chavica officinarum* (*chavya*), cardamoms, rock salt, root of *Aplotaxis auriculata* (*kushtha*), root of *Vanda Rosburghii* (*rāsnā*), fruits of *Tribulus terrestris* (*golshura*), coriander, the three myrobalans, tubers of *Cyperus rotundus* (*mustaka*), long pepper, black pepper, ginger, cinnamon, root of *Andropogon muricatus* (*usira*), *yavukshāra* (impure carbonate of potash), leaves of *Pinus Webbiana* (*tālisajatra*) and the leaves called *tejapatra*, one part each, in fine powder, bdellium in quantity, equal to all the above ingredients. Rub them together with clarified butter and preserve the preparation in an earthen pot smeared with clarified butter. Dose from a half to one tola. It is given in rheumatic affections and other diseases supposed to be caused by deranged air, in unhealthy ulcerations, affections of the joints etc. Another preparation called *Trayodasānga guggulu* is similar in composition to the above. It is made with thirteen aromatic adjuncts, hence its name, and is recommended for use in rheumatism affecting the

1. योगराजगुग्गुलुः । चिचकं पियलीमूलं यमानौ कारवीन्धा । विष्वक्काम्य
जनीदाच जीरकं सुरदाक्षच ॥ चय्येला सेन्धवं कुठं राक्षमीक्षरधान्यकम् । विष्वक्काम्य
व्योषं त्वगुशीरं यवायजम् ॥ ताक्षीशपत्रं पञ्चञ्च सूक्ष्मचूर्णानि कारयेत् । यावन्त्येतादि
चूर्णानि तावन्मात्रानु गुग्गुलुम् ॥ संसर्षे सपिषा गाढं चिन्धे भास्त्रे मिधापद्वेत् । ततोमात्र
प्रयुञ्जीत यथेष्टाहारवानपि ॥ योगराज इति ख्याती बीगीऽवसस्रतीपमः । आमवाताद्य
वातादीन् क्लमिदुष्टप्रचानपि ॥ श्लेष्मागुच्छीदरानाङ्गदुर्नासानि विनाशयेत् । अग्निच कुर्वते ह्येष
तेजोवर्धितं वक्षस्यथा । वातरोगान् जयत्यथ सर्वात्मज्जनवानपि ॥

loins and the sacrum. In rheumatism affecting the joints and bones the following preparation called *Adityapāka guggulu*¹ is used. Take of the three myrobalans and long pepper each eight tolās, cinnamon and cardamoms four tolās each ; powder the ingredients finely and soak for seven days in a decoction of the ten drugs, called *dasamula* (see *Desmodium gangeticum*). Then add forty tolās of *guggulu* and beat together into a uniform mass. Dose, half to one tolā.

Vatāri rasa.² This preparation is used in paralysis and nervous diseases. To prepare it, take of mercury one part, sulphur two parts, the three myrobalans, three parts in all, plumbago root four parts and pure *guggulu* five parts. Rub them together with castor oil for twelve hours, then add to the mass the compound powder, called *Hingrastuka* (see *Assafoetida*), in weight equal to all the above ingredients, and again rub together for twelve hours. Dose, about half a drachm.

Kaisora guggulu.³ Take of pure bdellium, *gulaucha* and the three myrobalans, each two seers, water ninety-six seers. First

1. चादिद्व्यपाक गुग्गुलु बटकः । पृथक् पलांशा त्रिफला पिप्पलीर्चति चूर्णितम् ।
दशमूलांशुना भाव्यं त्र्येलाञ्छे पञ्चान्वितम् ॥ दत्त्वा पलांशानि पञ्चैव गुग्गुलुर्वटकौकृतः ।
एव मांशरसाभ्यासादातरोगान् विशेषतः ॥ इति सन्ध्यस्थिरस्यस्यान् हृद्यमिन्द्राश्रित्यथा ।
भाव्यद्रव्यसमं काव्यं काशीऽष्टांशस्तुतेन च । चाद्रे यावद्दिनं भाव्यं सप्तार्धं भावनाविधिः ॥
चक्रदत्तः ।

2. वातारिरहः । रसो गन्धो वरा वरि गुग्गुलुः क्रमवर्द्धितः । त्रिभागा त्रिफला
योग्या चतुर्भागास्तु त्रिवक्तः ॥ गुग्गुलुः पञ्च भागः श्याद्रवृत्तैलेन मर्द्धितः । त्रिधा तप्तोदितं
चूर्णं तेन तैलेन मर्देयेत् ॥ गुटिकां कर्षमात्रान् मन्थयेत् प्रातरैव हि । वातारिसंज्ञकोऽथ
रसो नियतसंघितः । मासेन मन्थनी रोगान् हरति सुरतवर्जिनः ॥

भावप्रकाशः ।

3. कैशोरगुग्गुलुः । त्रिफलायास्त्रयः प्रस्थाः प्रस्थे काचाम्बता भवेत् । सकुण्डलीपात्रेषु
साईद्रीष्यांशुना पचेत् ॥ जलमर्द्दयत्तं ज्वाला श्लक्ष्णीयाश्चगालितम् । ततः काथे चिपेच्छुद्धं
गुग्गुलुं प्रस्थासन्धितम् ॥ पुनर्दयमयःपात्रे द्रव्यां संघर्षयेन्मुहुः । सान्दीभूतं तप्तोशाल्यायुष्पाक-
समाकृतम् । चूर्णिक्रमं ततस्तत्रद्रव्याणामानिप्रचिपेत् । त्रिफलादिपलांशो गृह्यते गुग्गुलीपलि-
भता । गृह्यते चतुस्रं श्लक्ष्णं विडङ्गानां पलांडकम् ॥ दन्तौकर्मिताकार्या चिडङ्गार्थमिता
तथा । ततः पिन्डीकृतं सर्वं हृतपात्रेविनिचिपेत् ॥ गुटिकां शायमात्रेण युष्पादीपत्वंपेक्षया ।
अनुपानं मिवग्दद्यात्कौण्डं गौरं पयोऽथवा । कञ्जिहादिशतं वापि युष्पुष्पं ततः परम् ॥
ज्येष्ठस्योच्चिकुष्ठानि वातरक्तं चिदीश्वरम् । सर्वप्रथानिगुणार्थं प्रमेहपङ्कान्कथा ॥

भाक्कंधरः ।

boil the *gulancha* and the myrobalans in the water till the latter is reduced to one-half, and strain the decoction; to the strained fluid add the bdellium and boil in an iron vessel till the whole is reduced to the consistence of treacle. Now add to it the following substances in fine powder, namely, the three myrobalans, each sixteen tolas, *gulancha* eight tolas, ginger, long pepper and black pepper, each six tolas, *báherang* seeds four tolas, root of *Baliospermum montanum* (*dandi*) and *Ipanosa Turpethum* (*trivrit*), each two tolas, and beat them together into a uniform mass. Dose from a quarter to one tola, to be taken with a decoction of madder, tepid milk or water. This medicine is said to be useful in various skin diseases from deranged or vitiated blood. It is said to act as an alterative tonic and to improve the nutrition of the body.

Sudanga guggulu.¹ In affections of the eyes with pain, swelling and inflammation, (rheumatic ophthalmia?) bdellium is recommended to be given with a decoction of the three myrobalans, root of *Momordica dioica* (*patala*), *nim* bark, and the leaves of *Adhatoda vasica* (*rasaka*). A similar preparation is recommended for secondary syphilitic ulcerations. In unhealthy ulcerations, the following, called *Aurita guggulu*² is recommended. Take of *gulancha*, root of *Momordica dioica* (*patala*), the three myrobalans, long pepper, black pepper, ginger, and *báherang* seeds in equal parts, *guggulu*, in quantity equal to all the above ingredients and beat them together into a mass. Dose about a drachm every morning.

1. षडङ्गगुग्गुलुः । विभीतकं शिवा धात्री पटील्लारिष्ट वासकैः । काशी गुग्गुलुमा
देयः शीघ्रश्लक्ष्मिकदा ॥ पिलुच सत्रणं यत्र रागादींश्चापि नाशयति । एतैश्चापि धृतं
पक्वं रोगांस्तत्र व्यपोहति ॥

चक्रदानः ।

2. षष्ठ्याङ्गगुग्गुलुः । षष्ठ्या पटील्लमूल विफला विकट्टु कृमिघ्नानाम् । समभागानां
चूर्णं सर्व्वसमगुग्गुलीभांगः ॥ प्रतिवासरमेकैकां स्वादिदक्षप्रमाशाम् । जितुं व्रथान्वाता-
द्युग्गुकोदरश्चयसुरोगादीन् ॥

OLIBANUM. The gum of the *Salai tree* of India (*Boswellia thurifera*), is called *Kundurū* in Sanskrit. It is used as an incense and as a local application to buboes.¹

MYRRH is called *Vola* in Sanskrit and is described as an article to be had in the *beniah's* shop, thereby implying it to be an imported drug. It is said to be useful in fever, epilepsy and uterine affections, but is not much used in practice.

NAT. ORDER. MELIACEÆ.

AZADIRACHTA INDICA.

कन्दूर

Sans. निम्ब, *Nimba.* *Vern.* Nim, *Beng.* Hind.

THIS useful tree is indigenous to India and is cultivated all over the country for the sake of its bark, leaves and fruits. These have been used in Hindu medicine from a very remote period. The bark is regarded as bitter, tonic, astringent and useful in fever, thirst, nausea, vomiting and skin diseases. The bitter leaves are used as a pot-herb being made into soup or curry with other vegetables. The slightly aromatic and bitter taste which they impart to the curries thus prepared, is much relished by some. The leaves are moreover an old and popular remedy for skin diseases. The fruits are described as purgative and emollient and useful in intestinal worms, urinary diseases, piles etc. The oil obtained from the seeds is used in skin diseases, and ulcers.

The bark is used in fever in combination with other medicines for this diseases as for example, in the following compound decoction called *Amritāshtaka*.² Take of *nim* bark, *gulancha*, root of *Picrorrhiza Kurroa* (*katuki*), tubers of *Cyperus rotundus* (*mustaka*), seeds of *Holarrhena antidysenterica* (*indroyava*), leaves of

1. अदीवीरिच गोधूमकम्बु कुन्दूरकका वा । प्रसेपनं सुखीषं स्वाधप्रसङ्गरः परः ॥

अश्वत्थः ।

2. अश्वत्थकः । अश्वत्थरिच कटुञ्जा सुखेन्द्रियव नागरः । पटीकचन्द्रमायाश्च
पिप्पलीचूर्णवृक्षभद्रम् ॥ अश्वत्थकमेदश्च पिप्पलीगुण्णरादहम् । कर्पूरीचक्रहासं वाह
दन्वा निवारकम् ॥

वाह'परः ।

Momordica dioica (*patala*), ginger and red sandal wood, each quarter of a tola, water half a seer, boil till reduced to one-fourth. This decoction is given with the addition of honey and long pepper in fever supposed to be caused by deranged phlegm and bile and attended with vomiting, nausea, thirst and lassitude.

The fresh juice of the leaves is given with salt in intestinal worms, and with honey in jaundice and skin diseases. The juice of *nim* leaves and of emblic myrobalans, quarter of a tola each, are recommended to be given with the addition of clarified butter in prurigo, boils and urticaria.¹ *Nim* enters into the composition of several compound preparations used in skin diseases, such as the *Pancha tikta ghrita*, *Pancha nimba gudika*, *Pancha kashaya*, etc.

Pancha tikta ghrita.² Take of *nim* bark, leaves of *Momordica dioica* (*patala*), *Solanum Jacquini* (*kantakari*), *gulanha*, and bark of *Adhatoda vasica* (*rasaka*), each eighty tolas, and boil them in sixty-four seers of water till it is reduced to one-fourth. To the strained decoction, add four seers of clarified butter and a seer of the three myrobalans in the form of a paste and prepare a *ghrita* in the usual way. This preparation is given in doses of three to six drachms in chronic skin diseases.

As an external application to ulcers and skin diseases, *nim* leaves are used in a variety of forms such as poultice, wash, ointment and liniment.³ A poultice made of equal parts of *nim* leaves

1. निम्बस्य पत्राणि सदा घृतेन घात्रोविनिश्राण्य वधो मयुञ्जान् । विम्बोटकौट चर श्रोतवित्तं कण्डुसवित्तं सङ्घसा च कञ्जान् ॥

चक्रदत्तः ।

2. पञ्चतिक्तकं घृतम् । निम्बं पटोलं च्याप्रीचं गुग्गुलीं वासुकं तथा । कुट्याद्दशपञ्चान् भागान्नेकेभ्यः सुकुट्टितान् ॥ अट्टोमे विपक्रयं शालत्यादावशेषितम् । घृतप्रस्थं पथीतेन विरुक्त्वावर्भसंयुतम् । पञ्चतिक्तमिदं ख्यातं सर्पिः कुष्ठविनाशनम् ॥

चक्रदत्तः ।

3. निम्बार्शुनाश्रुत्वकदम्बं शालं जम्बूवटोक्षुब्धं र वैतथैव । प्रवालनालिपं घृत्वापि कुट्याक्षुर्षाणि पित्ताक्षभवापदंशे ॥

चक्रदत्तः ।

and sesamum seeds is recommended by Chakradatta for unhealthy ulcerations.¹

The following preparation of *nim* oil is prescribed by several writers for application to suppurating serofulous glands with numerous openings. Take of the oil of *nim* seeds, four seers; orpiment, realgar, marking nut, cardamoms, aloes wood, sandal wood, leaves of *Jasminum grandiflorum* (*jilipatra*), and of *Limnantheum cristatum* (*tugrayādulā*), each eight tolas, in the form of a paste, and water sixteen seers. Boil them together and prepare an oil in the usual way.²

NAT. ORDER AMPELIDEÆ.

VITIS VINIFERA, Linn.

Sans. द्राक्षा, *Drākṣā*. वटिका, *Maṇḍikā*.

Vern. *Angurphal*, *Kismis*, *Maukkā*. Beng. *Hind*.

GRAPES have been known in India from a very remote period and are mentioned by Susrūta and Charaka. The dried fruits called raisins, are used in medicine. They are described as demulcent, laxative, sweet, cooling, agreeable and useful in thirst, heat of body, cough, hoarseness and consumption.

Raisins enter into the composition of numerous demulcent and expectorant medicines. The following is an illustration. Take of raisins, emblic myrobalans, dates, long pepper and black pepper, equal parts, rub them together with honey and clarified butter and administer as a linctus.³

Drākṣā arishtā. This is a medicinal wine prepared as follows. Take of raisins six seers and a quarter, water one hundred and

- | | |
|--|--------------|
| 1. दिग्बयत्र तिलैः कल्को मधुना चतुशोधनः । | चक्रदत्तः । |
| 2. ममःशिक्षाल भद्रात मुद्गलागुरु चन्दनैः । जातीपल्लव कल्के च दिग्बयत्रेण विपापयेत् ॥ कल्कोक्तं नामयेत्तद्वि वटुद्धिदं वटुसवनम् ॥ | भावप्रकाशः । |
| 3. द्राक्षांमल्लक्ष्मणं विपलीमरिचान्वितम् । पित्तकासापहं छित्तं लिङ्गान्मार्जितं कर्पिषा ॥ | भारुचरः । |

twenty-eight seers, boil them together till reduced to one-fourth, and strain. To the strained decoction add twenty-five seers of treacle and eight tolás each of the following substances in fine powder, namely, cinnamon, cardamoms, *tejpatra* flowers of *Mesua ferrea* (*nágakesara*), fruit of *Aglaia Rosburghiana* (*priyangu*), black pepper, long pepper and *biberang* seeds, and set aside for fermentation. This liquor is considered invigorating and nourishing and is used in consumption, cough, difficult breathing and hoarseness.¹

NAT. ORDER SAPINDACEÆ.

CARDIOSPERMUM HALICACABUM, *Lim.*

Sans. ज्योतिषमती, *Jyotishmati*.

Vern. Latāphatkīri, Nayāphatki, Beng.

THE root of this climbing plant is described as emetic, laxative, stomachic and rubefacient, and is used in combination with other remedies in rheumatism, nervous diseases, piles etc. The fried leaves of *Cardiospermum Halicacabum* are said to bring on the secretion of the menses.² Another prescription for amenorrhœa is as follows. Take of *Jyotishmati* leaves, *sarjikā*, (impure carbonate of potash) *Acorus Calamus* root (*vachā*) and the root-bark of *Terminalia tomentosa* (*asana*) in equal parts and reduce to a paste with milk. This medicine, should be taken in doses of about a drachm for three days.²

1. द्राघारिः । द्राघा तुलार्द्धं विद्रोचे जलस्य विपचेकुधीः । पादशेषे कषाये च पूषे शीते विनिःक्षिपेत् ॥ गुडस्य त्रिसुखान्नाय त्वगीषा पत्र केसरम् । प्रियकुर्मरिचं कृष्णा विषकं चेतिसु चूर्णयेत् ॥ इषक् पक्षीभित्तैर्भागेस्ततो भाग्ये विधापयेत् । समन्वतो चङ्गिला विपेव्यःसरसनातः ॥ सरसतं चयं इति कासप्रास गलामघान् । द्राघारिटापत्रवः शीतो मन्त्रकामाद्यधीचनः ॥ शङ्खैःपरः ।

2. सकाञ्चिकं कषापुपं चटं ज्योतीषमतीद्वयम् । दुग्धादिष्टसंश्लक्ष्णं रजिषा स्वातंत्रं क्षमेत् ॥ चक्रः ।

3. शीतं ज्योतीषमतीपत्रं सञ्चिकोपासनं तद्वम् । शीतेन पक्वता पिष्टं कुसुमं कषयीदु चूर्णम् ॥ कषायकामः ।

MANGIFERA INDICA.

NAT. ORDER ANACARDIACEÆ.

RHUS SUCCEDANEA, Linn.

Sans. कर्कटमूली Karkatasringi.

Vern. Kākṛāsrīngī, Beng. Kākarsīngī, Hind.

THE horn-like excrescences caused by insects on the branches of *Rhus Succedanea* are called *karkatasringi*. They "are large, hollow, thin-walled, generally cylindrical, tapering to either extremity." They are considered tonic, expectorant and useful in cough, phthisis, asthma, fever, want of appetite and irritability of stomach. Dose, about twenty grains. This medicine is much used in cough, in combination with other drugs for the disease. The following is an example.¹ Take of *karkatasringi*, root of *Clerodendron Siphonanthus* (*brahmayashti*), raisins, ginger, long pepper and *Curcuma Zedoaria* (*sati*), equal parts, powder and mix. Dose, about thirty grains with treacle or honey, in dry cough. In catarrhal fever with difficult breathing a powder composed of equal parts of *karkatasringi*, bark of *Myrica sapida* (*katphala*), and long pepper is recommended to be given in doses of about a drachm, with honey.² The following called *Sringyādi churna* is much esteemed as a cough linctus for children. Take of *karkatasringi*, *ālī*, and long pepper, equal parts; powder and make into a linctus with honey.³

MANGIFERA INDICA, Linn.

Sans. आम, *Amra*. Vern. *Am*, *Beng*, *Hind*.

THE Mango is well known as the most delicious of Indian fruits. The ripe fruit is somewhat laxative and useful to persons,

1. मर्नीं द्राक्षा मटौ यज्ञी विपक्षीविप्रभेयजेः । गुडतैश्चतुयी क्षीरी चिती वासत-
वासिधाम् ॥ चक्रदत्तः ।

2. मधुना कृष्ण कट्फल कर्कटमूलीभवं चूर्णम् । चासामय महीये क्षीदा क्षीवः
दुष्ठी मयति ॥ मायमधामः ।

3. मृत्तारिचूर्णम् । मर्नीं प्रतिदिनां कृष्णं चूर्णित्वा मधुना चिड्ढिम् । मिठः वास-
त्वरक्षद्विब्रान्थे वा क्षीवर्षा विधाम् ॥ माह्वंवरः ।

of constipated habits. The bark and kernel are regarded as astringent and useful in hæmorrhages, diarrhœa and other discharges.

In diarrhœa, a decoction of the kernel is given alone or in combination with *bela*.¹ In bleeding from the nose the juice of the kernel is recommended to be snuffed. In bleeding from internal organs, a cold infusion of the barks of *Mangifera Indica*, *Eugenia Jambolana*, and *Terminalia Arjuna* is prescribed.² This infusion is also used in diarrhœa. The *Bhāvaprakāsa* recommends a confection made of the juice of the ripe mango, sugar and aromatics, for use as a restorative tonic.

SEMECARPUS ANACARDIUM, *Lim.*

Stems. भद्रातक, *Bhadrātaka*. अशकर, *Arushkara*.

Vern. *Bheli*. *Beng.* *Hind*.

The acrid juice of marking nuts is a powerful vesicant and is often employed by the natives for producing fictitious marks of bruises. These can be distinguished from actual bruises caused by blows with a stick or other weapon, by their deep bluish-black colour and from their presenting small vesicles or minute blisters on their surface.

The practice of causing blisters by the application of the juice of marking nuts among the Hindus appears to have been at one time very common, for in our ancient medical works a section or paragraph is generally devoted to the treatment of ulcerations thus produced.

• The ripe fruits are regarded as acrid, heating, stimulant, digestive, nervine and escharotic, and are used in dyspepsia, piles,

1. योश्चकृष्टति सारिषु विलामास्थिमवकाशा ।

शार्ङ्गं चरः ।

2. वायव्यम् च वायुमं पृथोक्त्य जले क्षिपेत् । इमं तस्य पिबेत्पानः सचौह

रक्षति सजितः ॥

शार्ङ्गं चरः ।

skin diseases, nervous debility, etc. They are prepared for internal use by being boiled with cow-dung and afterwards washed with cold water. Equal parts of marking nuts, chebulic myrobalans and sesamum seeds, are made into a confection with treacle and administered in doses of forty to sixty grains.¹

Amrita Bhallátaki. Take of ripe marking nuts divided into halves, eight seers, boil them in thirty-two seers of water till the latter is reduced to one-fourth and strain. Again boil the nuts in sixteen seers of milk with the addition of four seers of clarified butter, till reduced to a thick consistence. Then add sugar two seers and set aside for seven days, when the preparation will be ready for use. It is described as a powerful restorative tonic, which increases the appetite, promotes nutrition and strength, prolongs life and so forth. It is used in hæmorrhoids and other diseases of the rectum. Dose, about one to two scruples. Another confection of marking nuts, made with the addition of a number of aromatic substances, is recommended for use in skin diseases and leprosy.

Marking nuts enter into the composition of some caustic applications for warts and piles. They form an ingredient of a liniment for rheumatic affections called *Saindhavadyatula*, for which see Ginger.

1. तिलमज्जातकं पथ्या गुह्येति सर्वाग्निश्चम् । दर्नामकासश्यासध्नं प्रीहपाण्डुध्वरा-
पचम् ॥

चक्रदत्तः ।

2. अमृतमज्जातकी । सुप्रकमज्जातकानि सस्यक् दिधाविदाय्याद्रकसम्भितानि ।
विपाच्य तीर्थेन चतुर्गुणेन चतुर्थशेषं व्यपनीय तानि । पुनः पचेत् चोरचतुर्गुणेन हृताण्युज्जेन
घनं यथा स्यात् । सितापलाधोद्गर्भमः पलेस्तु विमिश्र्य संस्थाप्य दिनाग्निं सप्त ॥ १ ॥ ततः
प्रयोष्यग्निवर्धनेन भावां ज्ञेयदग्नुदीत्यानखिलात् विकारान् । कश्चान् सुनीलान् घन-
कुम्बिषायान् सुपर्णद्विप्तं सुकुमारवाच ॥ जवं इयानाञ्च मतस्त्रजं षण्णं खरं मयूरस्य इत्याय-
दीमित् ॥ क्रोमज्जातकं खमते प्रजः च नीरीशमन्दिशतानि आयुः ॥

चक्रदत्तः ।

NAT. ORDER. LEGUMINOSÆ.

SARACA INDICA, *Linn.**Syn. Jonesia Asoca, Rosb.**Sans. अशोक, Asoka. Vern. Asok, Hind. Beng.*

DR. ROXBURGH says, "when this tree is in full blossom I do not think, the whole vegetable kingdom affords a more beautiful object." It is famed in Hindu mythology from the circumstance of Sita the wife of Rámachandra, having been confined by Rávana in a grove of *asoka* trees. The bark is much used by native physicians in uterine affections and especially in menorrhagia. A decoction¹ of the bark in milk, is prepared by boiling eight tolas of the bark in eight tolas of milk and thirty-two tolas of water till the latter is evaporated. This quantity is given in two or three divided doses during the course of the day, in menorrhagia. A *ghrita* called *Asoka ghrita* is prepared with a decoction of the bark and clarified butter with the addition of a number of aromatic substances in the form of a paste.

GLYCYRRHIZA GLABRA, *Linn.**Sans. यष्टिमधु Yashti madhu, मधुक, Madhuka.**Vern. Yashti madhu, Beng. Mullhatti. Hind.*

LIQUORICE root, though not indigenous to India, has been used in Hindu Medicine from a very remote period, and is mentioned by Susruta. It is described as sweet, demulcent, cooling and useful in inflammatory affections, cough, hoarseness, thirst etc. It is much used for flavouring medicinal decoctions, oils and *ghritas*. It enters into the composition of numerous external cooling applications along with red sandal wood, madder, *Andropogon muricatus*

1. अशोकचूषणस्य दूधं सुशोषयन् । यथावत् विवेचितौत्राद्युद्धरमात्मन् ॥

etc. I have not met with any notice in Sanskrit works, of the watery extract of liquorice, sold in the bazars in the shape of black pencils, and called *Robus sus* in Hindustani.

मथी

TRIGONELLA FENUM-GRÆCUM, *Linn.*

Sans. मथि, *Methi.* Fern. *Methi,* Hind. *Benq.*

The *Trigonella Fenum-græcum* is extensively cultivated in many parts of India. Its seeds are used as a condiment and its aromatic leaves, as a pot-herb. Fenugreek seeds are considered carminative, tonic and aphrodisiac. Several confections made with this article are described under the names of *Methi modaka*, *Sralpa methi modaka* etc., and are recommended for use in dyspepsia with loss of appetite, in the diarrhœa of puerperal women and in rheumatism. All these preparations consist of a number of aromatic substances, one part each, and fenugreek seed equal in quantity to all the other ingredients. The following is an illustration.

Methi modaka.¹ Take of the three myrobalans, ginger, long pepper and black pepper, tubers of *Cyperus rotundus* (*mustaka*), nigella and cumin seeds, coriander, bark of *Myrica sapida* (*kalphala*), *pâtchak* root, *Rhus succedanea* (*karkatasringi*), *ajowan*, rock salt, black salt, leaves of *Pinus Webbiana* (*tîlisa*), flowers of *Mesua ferrea* (*nîgakasara*), *tejjatra*, cinnamon, cardamom, nutmegs, mace, cloves, sandal wood and camphor one part each; fenugreek seeds, in quantity equal to all the above ingredients; powder them all and prepare a confection with old treacle. Dose, one to two drachms to be taken in the morning with clarified butter and honey.

1. मेथिबीजः । त्रिकटु विषला मुसलीरुहय धान्यकम् । कटुफलं शीतं यद्गी
 यशोबी सैन्धवं विडम् ॥ तालीत्रं केजूरं यत्र त्वयेषा च फलं तथा । जातीशोषं खण्डय
 सुरा खर्चूर चन्दनम् ॥ वावन्वेतानि चूर्त्तानि तावद्दिव तु मेथिसा । संशुष्कं बीजस्यः क्षाय्यः
 पुरातनपुष्पेन च । हृदयेन मधुना क्षिप्त्वा खादेदधिकतमं प्रति । अथिच कुट्टये दीप्तं सामे
 मेदे चक्षीमथम् ॥

मेवप्रारवायकी ।

ALHAGI MAURORUM, Tournef.

Sans. दुरालभा, *Duralabhā*, यवसा, *Yavāsa*. Vern. *Yavāsa Hind.*

This plant is described as laxative, diuretic and expectorant. The thorny flower-stalks or branches are supplied by druggists as the parts used in medicine. An extract obtained by evaporating a decoction of the plant is called *yāsarkarā* or the sugar obtained from *yavāsa*. It has a sweetish bitter taste, and is used as a demulcent in the cough of children. There is no mention in Sanskrit of any saccharine exudation or manna obtained from this plant.

The fresh juice of the plant is used as a diuretic in suppression of urine. The following compound decoction¹ is recommended by Śārangadhara in constipation with suppression of urine. Take of *Alhagi Maurorum*, chebulic myrobalans, pulp of *Cassia Fistula* (*āragbadha*), fruits of *Tribulus terrestris* (*gokshura*), and root of *Coleus aromaticus* (*pāshandhid*), prepare a decoction in the usual way, and administer in with honey. The following electuary is recommended by several writers for the cough of children. Take of the extract of *yavāsa*, raisins, chebulic myrobalans and long pepper in equal parts, powder and mix with honey and clarified butter.²

DESMODIUM GANGETICUM, DC.

Syn. *Hedysarum Gangeticum*. (Roxb.)

Sans. शालपर्णी, *Śālaparnī*. Vern. *Śālpānī*, Beng. *Sarivan*, Hind.

This little shrub is regarded as febrifuge and anti-catarthal. It forms an ingredient of the compound decoction called *dasamula katha*, a combination much used in a great variety of diseases. *Dasamula* is made up of *Desmodium Gangeticum* (*śālaparnī*), *Urtica lagopodioides* (*prishāparū*), *Solanum Jacquini* (*kantakāri*), *Solanum Indicum* (*vrihati*), *Tribulus terrestris* (*gokshura*), *Egle Marmelos*

1. इरीदबी दुरालभा कृतभाषण बोधुरैः । पादाशमेदसहितैः क्वाथो वाशिस
संगुतः । विदम्बुचक्रके च सदापि सवति द्वितः ॥ शार्ङ्गपरः ।

2. द्राक्षा यासाभया क्वाथा चर्षे सचीद्र सर्पिषा । लीट् शसं निहन्त्याह कासच
समर्षे तथा ॥ चक्रदत्तः ।

(*vilva*) *Calosanthos Indica* (*syonāka*), *Gmelina arborea* (*gambhāri*), *Stereospermum suaveolens* (*pītala*) and *Premna spinosa* (*gunikārikā*). The first five in the above list, are collectively called *hrasvapancha mula* or the five minor plants, and the last five are called *virhat pancha mula* or the five major plants. A decoction of the *hrasva panchamula* is used in catarrhal fever, cough and other diseases supposed to be caused by deranged phlegm. The *virhat panchamula* is used in fever and other diseases supposed to be caused by deranged air. The ten drugs together are used in remittent fever, puerperal fever, inflammatory affections within the chest, affections of the brain and many other diseases supposed to be caused by derangement of all the humours.¹ Another combination called *Ashtrīdasānga pāchanu* consists of the ten drugs above mentioned, with the addition of the eight following, namely, *chāretā*, *devaddru*, ginger, tubers of *Cyperus rotundus* (*mustuka*), root of *Picrorrhiza Kurroa* (*katuki*), *indrajuru* seeds, corriander, and fruits of *Pothos officinalis*. A decoction of these eighteen drugs is used in fevers of a severe type with drowsiness, delirium, picking of bed clothes, insensibility, and difficult breathing. A preparation of aconite and arsenic is generally given along with it.²

Dasamula taila. This is an oil prepared with a decoction of the ten drugs above mentioned, and is much used as a cooling application in headache and other diseases. To prepare it take of the ten drugs, in all twelve seers and a half, water sixty four seers. Boil down to sixteen seers and strain. To the strained decoction add four seers of lemon juice, four seers of prepared sesamum oil and a seer of the usual aromatics and colouring agents in the form of a paste and boil them together.

1. दशमूलम् । बिल खीनाक माभारी पाटला गणिकारिकाः । दीर्घं कफ-
 वायुघ्नं पलमूलनिर्दं मङ्गम् ॥ ब्राह्मपर्णी वृत्रिपर्णी उच्चतीक्ष्ण गीचुरम् । घातपिपपुत्रं उच्च-
 कर्णोद्यः पलमूलकम् ॥ उभयं दशमूलं सन्निपातश्चरापहम् । कासे श्वाशे च मन्दायां
 पात्रं श्लेष्मिणं च ॥ पिपलीचूर्णसंयुक्तं कण्ठहृदयहृन्नाशनम् ॥ चक्रदत्तः ।

2. विकल्पं मङ्गरोऽष्टादशाङ्गः । मूलानि दाह दशमूलं महीपदाहं तिक्तेन्द्रकीचं
 पत्रिकेसकाश्वाशवायः । तन्नीमलाप कसनाक्षि दाहकीचं श्वाशविशुक्तमक्षिणं चक्रदत्त
 इति ॥ चक्रदत्तः ।

URARIA LAGOPODIODES, Dc. Edgew. Syn. *Doodia lagopodioides* Roeb. Sans. पृथ्वर्णी *Prisni-parvi*. Vern. *Chákubá*, Beng. *Pitvan*, Hind. This plant is an ingredient of the *dasamula* above described, and is thus much used in native medicine. It is considered alterative, tonic and anti-catarrrhal, but is seldom used alone.

CLITOREA TERNATEA, Linn.

Sans. अपराजिता, *Aparájitá*, विष्णुकान्ता, *Vishnukrántá*.

Vern. *Aparájitá*, Beng. *Aprájit*, Hind.

The root of *Clitorea ternatea* is regarded as laxative and diuretic, and is generally used in combination with other medicines of the sort in ascites, fever, etc. The following is an example of a prescription containing *aparájitá* root. Take of the roots of *aparájitá*, *Pladara decussata* (*sankhini*), *Baliispernum montanum* (*danti*) and *Indigofera tinctoria* (*nílini*), in equal parts, rub them together into an emulsion with water and administer with cow's urine. This preparation is given in ascites and enlargements of the abdominal viscera.¹

MUCUNA PRURIENS, DC.

Sans. चान्दमूना, *Átmagnptá*, कपिकच्छु, *Kapikachchhu*. वानरी, *Vánari*.

Vern. *Alkasi*, Beng. *Kiwach*, Hind.

The English names Cowage or Cowitch are derived from the Hindi *Kiwach*. The plant is indigenous to India and has been used in Hindu medicine from a very ancient period. Susruta describes the seeds as a powerful aphrodisiac, and gives the following formula for their use. Take of the seeds of *Mucuna pruriens* and the fruits *Tribulus terrestris* (*gokshura*) equal parts and administer in doses of about a drachm with sugar and tepid milk.² The

1. ववाची मूढिनी दन्ती नीलिनीकच्छसंयुतम् । सखींदरविनाशाय बीजम्
पातुमारदित् ॥ अक्षः ।

2. अयंमुसेकुरकवीर्षीकच्छुं ससकरम् । धारीखेन नरः पीत्वा मयसा न क्षयं

BUTEA FRONDOSA.

Blühvaprakāsa recommends the following preparation called *Vānari vati*. Take of the seeds of *Mucuna pruriens* thirty-two tolas, boil them in four seers of cow's milk till the latter becomes thick. The seeds should now be decorticated and pounded, then fried in clarified butter and made into a confection with double their weight of sugar. The mass should then be divided into balls which should be steeped in honey. Dose, about a tola. This preparation is said to be the best of aphrodisiaes.¹

The root of *Mucuna pruriens* is considered tonic and useful in diseases of the nervous system, such as facial paralysis, hemiplegia etc. It is generally used in combination with other medicines of its class, as for example in the compound decoction called *Māshbalīdi*, for which see *Assafetida*.

BUTEA FRONDOSA, Roxb.

Sans. पलाश, *Palāsa*. क्रियक, *Kriyaka*. Veru. Dhāk. Hind.

DR. HOOKER states "that when in full flower the *Dhāk* tree is a gorgeous sight; the masses of flowers resembling sheets of flame, their bright orange red petals contrasting brilliantly against the jet black velvety calyx." These beautiful flowers were used as ear-ornaments by the ancient Hindu women and much admired by the poets. The seeds of *Butea frondosa* are said to be laxative and anthelmintic and are used, both alone and in combination with other medicines, for expelling intestinal worms. Thus the fresh juice of the seeds, or the seeds beaten to a paste are given with honey.² *Sārangadhara* gives the following recipe for worms.

1. वानरीवटिका । वीणादि कपिकच्छा कुडुवमितानि स्वेदयेत्तानि । प्रथमे बीमवदुग्धे तावत् यावद्भवेत् गादम् ॥ त्वयदितानि च कृत्वा सूत्रं सन्धेप्रयेत्तानि । पिट्टिका वा क्षुद्रवटिकाः कृत्वा गन्धे पवेदाजी ॥ द्विगुणितं शर्करापाता वटिकाः सम्यक्कया खेत्वाः । वटिका माचिह्न मध्ये मञ्जनकीये विरलाः स्थाप्याः ॥ पचटङ्क जिताकाम्ना प्रातः सादकं मचयेत् । अनेन श्रीप्रदातौ यो ह्यस्य स्यात् पतितवध्नः ॥ सोऽपि प्राप्नोति सुरते सामर्थ्यंमतिं याचिषत् । मानेन सटङ्कं किञ्चिद्द्वयं राजिश्चरं परम् ॥ वाचप्रकाशः ।

2. पलाशबीजस्वरसं विवेदा श्रीद्रसंयुतम् । विवेचनीयकं वापि तत्रैव कृत्वाप्राप्तम् ॥

वाचप्रकाशः ।

Take of the seeds of *Butea frondosa*, root of *Ipomoea Turpethum* (*trivrit*), seeds of *Hyoscyamus niger* (*pirasika yamāni*), kamali powder, *būberang* seeds and treacle. equal parts, beat them together into a paste with water and administer with butter-milk.¹

The gum of *Butea frondosa*, now used as a substitute for kino, was employed by the ancient Hindus, externally only, as for example in the following. Take of red sandal wood one part, rock salt two parts, chebulic myrobalans three parts, and the gum of *Butea frondosa* four parts, powder and mix. This powder is recommended to be applied to pterygium and opacities on the cornea.²

The alkaline ashes of this plant are used in the preparation of caustic pastes, and diuretic medicines, along with others of their class.

PHASEOLUS ROXBURGHII, W. & A. ETC.

The following varieties of leguminous pulses are mentioned by Sanskrit writers.

- मुद्ग, *Mudga*. *Phaseolus Mungo*, Linn. Vern. *Mug*, B.
 माष, *Māsha*. *Phaseolus Roxburghii*, W. & A. Vern. *Urid*, H.
 मुद्गरुषी, *Mudgaruṣī*. *P. trilobus*, Ait. Vern. *Mugāni*, B.
 मकुश, *Makushtha*. *P. acutifolius*, Jacq. Vern. *Mot*, H.
 कुशत्व, *Kulatthu*. *Dolichos uniflorus*, Lamark. Vern. *Kulthi*, H.B.
 राजमाष, *Rājamāsha*. *Vigna Sinensis*, Linn. Vern. *Barbati*, B.
 सिम्बि, *Simbi*. A common name for several species of *Dolichos*.
 चणक, *Chanaka*. *Cicer arietinum*, Linn. Vern. *Bul*, Beng. *Chená*, H.
 मसर, *Masura*. *Vicia Lens*, Benth. Vern. *Masur*, H. B.
 सतिवा, *Satila*. *Pisum sativum*, Linn. Vern. *Matar*, H. B.
 चाड़की, *Aḍhaki*. *Cajanus Indicus*, Sprengel. *Arar*, B. *Tor*, H.

1. विद्वत्पलाशबीजानि पारसीकवनामिका । कम्पिङ्गकं विद्वङ्गं मुद्गं सन-
 मःशिकः ॥ तन्ने च कल्क एतेषां पीतः क्षिण्णवापदः ॥ शाङ्गधरः ।

2. चन्दनं सैन्धवं पथ्या पलाशतद्वशीक्षितम् । कनकमिदं चूर्णं शक्राग्निदि-
 विक्षिप्तम् ॥

चक्रदत्तः ।

त्रिपुटी *Triputi*. *Lathyrus sativus*, Linn. *Khesári*, H. B.

माषपर्णी *Máshaparni*. *Glycine labialis*, Linn. Vern. *Máshóni*, H. B.

Some of these pulses have several varieties. For example seven sorts of *mudga* are mentioned, namely, *krishna* or black, *mahá* or large, *gaura* or pale red, *harita* or green, *pita* or yellow, *sveta* or white and *rakta* or red.

Mudga, ordinarily known as *moong ká dál*, and especially its green variety, is considered most wholesome and suited to sick persons. A soup made of this pulse is often the first article of diet prescribed after recovery from acute illness. The following varieties are also considered wholesome and suited for use by convalescent persons, namely, *masura*, *chanaka*, *kulaththa* and *makushtha*. *Vicia Lens* or lentils, which take rank first among the pulses as containing the largest proportion of flesh-forming matter, are regarded by the Hindus as highly nutritive, and useful in bowel complaints. A poultice made of this pulse is an effectual domestic medicine for checking secretion of milk and reducing distension of the mammary glands. *Cicer arietinum* is perhaps the most favourite pulse with the natives, and is used as an article of diet in a great variety of ways. It is taken raw, or cooked in its green as well as ripe state. Gram is made into *dál*, is roasted and ground into meal and is prepared in many other ways.

The acid liquid exuded from the hairs of the stem and leaves of *Cicer arietinum* is called *chanukámula* in Sanskrit. It is collected by spreading a cloth over the plants during the night and rinsing the fluid absorbed by it. *Chanukámula* is described as acid, refrigerent, saltish, and useful in dyspepsia, indigestion, and costiveness. It enters into the composition of some medicines for dyspepsia along with other vegetable acids.

Dolichos uniflorus is used medicinally chiefly as an external application in the shape of poultices and pastes. Its soup is said to be useful in gravel and urinary disorders.

The *Phaseolus Roxburghii* or *másha* is much used in medicine both internally and externally in paralysis, rheumatism and affections of the nervous system. It enters into the composition of several decoctions used in these diseases. The following is an

illustration. Take of the pulse of *Phaseolus Roxburghii*, root of castor oil plant, of *Mucuna pruriens* (*Atmaguptii*) and *Sida cordifolia* (*balá*), half a tola each, and prepare a decoction in the usual way. This decoction is given with the addition of rock salt and assafoetida.¹ Several oils for external application in the above mentioned diseases have the pulse of *Phaseolus Roxburghii* for their basis or principal ingredient, as for example the following.

Svalpa másha taila ² Take of the pulse of *Phaseolus Roxburghii* eight seers, water sixty-four seers, boil down to sixteen seer and strain. Boil the strained decoction with four seers of sesamum oil, and one of rock salt till the water is evaporated. This oil is said to be useful in rheumatism, contracted knee joint, stiff shoulder joint, etc.

ABRUS PRECATORIUS, Linn.

Sans. गुह्य, Gunjá.

Vern. Kuch, Beng. Chirmiti, Hind.

"THIS plant is remarkable for its small egg shaped seeds, which are of a brilliant scarlet colour with a black scar indicating the place where they were attached to the pods." Sanskrit writers mention two varieties, namely, white and red seeded. The properties of both are said to be identical. The seeds are described as poisonous, and are used internally in affections of the nervous system and externally in skin diseases, ulcers, affections of the hair, etc. The root of the plant is described as emetic and useful in poisoning. The seeds constitute the *ratti* weight used by Hindu jewellers and druggists. Ninety-six *rattis* make one tola or rupee.

1. साधाअगुह्यकैरुह्यं वाच्यलकं प्रतं दिवेत् । हिकुसेस्ववंगुक्कं पचाधात निवारणम् ॥

चन्द्रकः ।

2. खल्लमाचतैलम् । तैलं सङ्घृष्टितैल्यङ्गी माससेस्ववहाचिदम् । वाङ्गशीर्षवती

*Amūji bhūta rasa.*¹ Take of the seeds of *Abrus precatorius* six parts, mercury three parts, sulphur twelve parts, *am* seeds, *Chambis sativa* leaves and croton seeds, each one part. Rub them together and soak for one day in each of the following fluids, namely, lemon juice, juice of the leaves of *Chambis sativa*, of datura leaves and of the leaves of *Solanum nigrum* (*kākumachi*). This medicine is given in doses of about eight grains, with rock salt and assafetida, in paraplegia. The seeds of *Abrus precatorius* reduced to a paste are recommended to be applied locally in sciatica, stiffness of the shoulder joint, paralysis and other nervous diseases.²

In white leprosy, a paste composed of *amūji* seed and plumbago root is applied as a stimulant dressing. In alopecia a paste of *amūji* seed is recommended to be rubbed on the bare scalp.³

*Amūjāya tailam.*⁴ Take of prepared sesamum oil four seers, juice of the leaves of *Wedelia calandulacea* (*bhiringarāja*) sixteen seers, seeds of *Abrus precatorius* reduced to a paste, one seer, and boil them together in the usual way. This oil is used as a local application in scurf of the scalp, prurigo and other skin diseases.

1. गुग्गुलुद्रव्यं गुग्गुलुतं निष्कृष्टादमं गन्धकम् । गुग्गुलीजश्च घण्टिकं
निम्बशैलं त्रया तथा ॥ १ ॥ च निष्कमानन्तु निष्कं लैपालशैलकम् । जयाजम्बीरधुत-
काकमाची द्रवैर्दिनम् ॥ भाषयित्वा कटीं कृत्वा दद्याद्गुग्गुलुतुष्टयम् । गुग्गुलुद्रव्यो नाम
दिग्गुमेव संयुतः । शमयतुरल्लर्णं दुःखमुत्सृज्यं सुदारुणम् ॥

रुद्रसारसंघः ।

2. तत्र प्रदेशं दद्याच्च मिष्टं गुग्गुलुतुष्टयम् । तत्रावकाशना पीडा विवची यथशी तथा ।
कस्यापि शतत्रा पीडा प्रथमं याति वेगतः ॥

शाङ्गधरः ।

3. गुग्गुलुताम्रिचूर्णश्च लिपितं च तक्रुष्टतुतम् ॥

शाङ्गधरः ।

गुग्गुलुतुष्टयं लिप्तेत् वैश्वामिं समन्ततः । हलिदन्तमसौ कृत्वा सुष्यञ्चैव रसाक्षयम् ॥
लोमाश्वनेन जायन्ते नृणां पादित्तुष्टयपि ॥

चक्रदत्तः ।

4. गुग्गुलुतुष्टयम् । गुग्गुलुतुष्टयं तैलं भद्रराजसिन च । कच्छुदाकण्डूत् कृष्टं
कपालस्याधिनाम्यम् ॥

भारवकाशः ।

PONGAMIA GLABRA, Vent.

Sans. कर्ज, Karanja नरुनाल, Naumāla.

Vern. Barkaranja, Booy Kicanāl, Hind.

This tree appears to be common in, and well known all over India. The seeds are much used as an external application in skin diseases. The expressed oil of the seeds is used in these diseases as well as in rheumatism. A poultice of the leaves is applied to ulcers infested with worms. The seeds of *Pongamia glabra*, *Cassia Tora* (*chakramarda*), and the root of *Aplataris uriculata* (*kushtha*), are rubbed into a paste with cow's urine, and applied to eruptive skin diseases.¹

Prithivī-taila.² Take of the expressed oil of the seeds of *Pongamia glabra* one seer, *kānjika* eight tolas, roots of *Plumbago zeylanica* (*chitraka*), *Nerium odorum* (*karavira*), *Vitex Negundo argundi*, aconite, and the seeds of *Corchorus olitorius* (*adāika*), eight tolas each, in the form of a paste made with *kānjika*. Mix them together and warm in the sun. This oil is said to be useful in various sorts of skin diseases, ulcers etc.

Tiktānya ghrita.³ Take of the leaves and fruits of *Pongamia glabra*, root of *Picrorrhiza Kurcoa*, (*katuki*), wax, turmeric, liquorice root, leaves of *Trichosanthes dioica* (*patala*), *Agaveosma caryophyllata* (*māloti*) and *Azadirachta Indica* (*nim*), equal parts, in all one seer. Beat them into a paste and boil with four seers of clarified butter and sixteen seers of water in the usual manner. This preparation is used as an ointment in unhealthy ulcerations and wounds.

GUILANDINA BONDUCELLA, Linn. The properties of *Bondue* nuts called वृतीकरज, *Putikaranja* in Sanskrit, and *Nātāka-*

1. कर्जबीजद्वयः सकुठी बीजवृष्टिश्च वरः प्रदेहः ॥ चक्रदत्तः ।
2. वृज्जीवारतेलम् । शिवकस्याथ निर्गुण्डा । इयमारस्य सूक्ष्मः । नाङ्गोचनीभादिषतः काञ्जिपिटं पर्व-बलम् ॥ कर्जतेजादपलं काञ्जिकस्य पर्वं पुनः । मिश्रितं सूक्ष्ममर्तं तैलं कुष्ठप्रवासजित् ॥ चक्रदत्तः ।
3. दिग्भावं हसत् । तिष्ठा विक्ष्व शिशा यटी नन्नाहकक्षपञ्चवैः । पटील नावती विम्बपत्रैश्चैर्घृतं पथित् ॥ चक्रदत्तः ।

ranja in Bengali, are said to resemble those of the seeds of *Pongamia glabra*. Their antiperiodic virtues were not known to Sanskrit writers.

PTEROCARPUS SANTALINUS, Linn.

Sans. रक्तचन्दन, *Raktachandana*.

Vern. *Raktachandan*, Beng. *Litchandān*, Hind.

THE *Pterocarpus Santalinus* is indigenous to the Indian Peninsula and is chiefly of importance from its yielding the red dye-wood known as red sanders, large quantities of which are annually exported from India. Sanskrit writers describe several varieties of sandal or *chandana*. Of these *sikhanda* or white, *pitachandana* or yellow, and *raktachandana* or red, sandal wood are best known. The first two varieties are founded on the difference in the shades of the colour of the wood of *Santalum album*. It has been a question however how the wood of *Pterocarpus santalinus*, which is nearly inodorous, came to be called by the name of *raktachandana* in Sanskrit and the vernaculars of India. I am inclined to think that the name is owing to the similarity in the uses to which the Hindus put both these articles. Both sandal wood and red sandal wood are rubbed on a piece of stone with water, and the emulsions are used for painting the body after bathing and in religious services.

Red sandal wood is described as an astringent tonic. It enters into the composition of numerous prescriptions of an astringent character and of cooling external applications for inflammation, headache, etc.,¹ but is seldom used alone. It is also much used as a coloring agent in the preparation of medicated oils.

The *Pterocarpus marsupium* or Indian kino tree is translated into "pect sal," Beng. by Roxburgh. The Sanskrit term *Pitasila* is however a synonym of *Asana* (*Terminalia tomentosa*). I have not found any notice of the Indian kino tree in Sanskrit works. It was probably unknown to the ancients.

1. तिक्ताः पयः सिक्ता चीत्रं तैलं मधुक चन्दनम् । शैपेय शीघ्रकम् दाड रक्त
निर्व्यापरीहवान् ॥ चन्दनम् ।

CASSIA FISTULA, *Linn.*Saus. चारम्व, *Araghalia*. सुवर्णक, *Sucrañket*.Vern. *Amultis*, Hind. *Soodhāli*, *Beng.*

Cassia fistula is indigenous to India and is an old medicine of the Hindu Materia Medica. "The tree is uncommonly beautiful when in flower, few surpassing it in the elegance of its numerous long pendulous racemes of large bright yellow flowers, intermixed with the young lively green foliage." Hence I believe its Sanskrit name of *Rājataru* or the king of trees. The pulp of the fruit is used as a mild cathartic. The root is also described as laxative, and useful in fever, heart diseases, retained excretions, biliousness, etc.

Aragboudhāli.¹ The compound decoction which passes by this name is a very commonly used purgative in native practice. To prepare it, take of the pulp of *Cassia fistula*, *Piperorhiza Kacca* (*katuki*), chebulic myrobalans, long pepper root and the tubers of *Cyperus rotundus* (*mustaku*), about sixty-four grains each, water thirty-two tolas, and boil down to eight tolas. Half of this quantity, or in strong constitutions the whole of it, is given for a dose. The root of *Cassia fistula* enters into the composition of numerous compound prescriptions.

CASSIA SOPHORA, *Linn.* Saus. कासमर्द, *Kāsamarda*. Vern. *Kākhāswādā*, *Beng.* *Kāsundā*, *Hind.*

CASSIA TORA, *Linn.* Saus. चक्रमर्द *Chakamarda*. Vern. *Chākundā*, *Beng.* *Chakand*, *Hind.*

CASSIA ALATA, *Linn.* Saus. दद्रुम, *Dadrughm*. Vern. *Yādumardan*, *Beng.* and *Hind.*

THE leaves and seeds of these three plants are used in skin diseases, and enter into the composition of numerous prescriptions for them. *Kāsamarda* signifies destroyer of cough. It is described as expectorant and useful in cough and hoarseness, but it does not appear to be much used in these diseases.

1. चारम्वचदि । चारम्व कषामूल मुख तिकाभवाकृतः । काशः प्रमथति चिमं
स्वरं वातकषीणरम् ॥ मातृ चरः ।

The seeds of *Cassia Sophera*, *Haplans satrens* (*malaka*) and sulphur, in equal parts, are rubbed into a paste with water and applied to patches of pityriasis and psoriasis.¹ The seeds of *Cassia Tora* are steeped in the milky juice of *Euphorbia acrifolia*, and afterwards rubbed into a paste with cow's urine for application to keloid tumours.² Equal parts of the seeds of *Cassia Tora* and *Pongamia glabra* (*karanja*) with a fourth part of the root of *Tinospora cordifolia* (*gulbarcha*) are rubbed together into a paste and applied in ringworm.³ *Dalrymplea* or *Widamardana* signifies curer of ringworm. Its leaves are used in this disease.

BAUHINIA VARIEGATA, Linn.

Sans. काञ्चनार, *Kāñchanāra*. कौबिदार, *Kovidāra*.

Vern. *Kāñchār*, Hind. *Bakhi Kāñchan Beng.*

Two species of *Bauhinia*, namely purple and white flowered (*Bauhinia variegata* and *acuminata*), are noticed in the *Bhāvaprakāsa* under the names of *Kovidāra* and *Kāñchanāra* and the properties of both are said to be identical. The bark of *Bauhinia variegata* is described as alterative, tonic, astringent and useful in scrofula, skin diseases and ulcers.

Chakradatta recommends the bark of the red variety to be rubbed into an emulsion with rice water and administered, with the addition of ginger, in scrofulous enlargement of the glands of the neck.¹ *Sārangadhara* gives the following preparation for the same affection.

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1. कासमहकषीजानि मूलकानां तथैवच । गन्धपाषाणमिश्राणि सिध्दानां
परमौषधम् ॥ चक्रदत्तः ।
 2. चक्राद्यं कृद्दीवीरमावितं मृवसंयुतम् । रवितप्तं हि विशिष्टं क्षेपणान्
क्वटिमापहम् ॥ चक्रदत्तः ।
 3. चक्रमहकषीजानि करञ्जसमाश्लक्षम् । शीतं सुदग्धनामूलं दद्रुकुट्टविनाशनम् ॥
चक्रदत्तः ।
 4. पिष्टा जैत्रहास्त्या देवाः काञ्चनारत्वचः मुमाः । विशमेवजसंयुक्ता मच्छमासापवाः
पराः ॥ चक्रदत्तः ।

'*Kāchanāra guggulu.*' Take of the bark of *Bauhinia variegata*, eighty tolas, the three myrobalans sixty tolas, ginger, black pepper, long pepper and the bark of *Cratæva religiosa* (*varina*), eight tolas each, cardamoms, cinnamon, and *tejpatra* leaves, each two tolas, powder them all and rub together with *guggulu*, equal in weight to all the other ingredients. Dose, half a tola to be taken every morning with a decoction of *Sphæranthus mollis* (*mundi*) or of catechu. This medicine is said to be useful in scrofulous enlargements of glands, tumours, ulcers, skin diseases, etc.

TAMARINDUS INDICA, *Lin.*

Sans. तमिङ्गी, *Tintidi*, अम्लिका, *Amlikā*.

Vern. *Tentul*, Beng. *Amli*, Hind.

THE tamarind tree is met with throughout India, and has been known from a very remote period. "From the Hindus it would seem that the fruit became known to the Arabians who called it *Tamare-Hindi*:" form which last the word tamarind is derived. Tamarinds form an important ingredient in native cookery. The unripe fruit is very acid and possesses a peculiar aroma for which it is much relished when cooked with curry. The ripe fruit is regarded as refrigerant, digestive, carminative and laxative, and useful in diseases supposed to be caused by deranged bile, such as burning of the body, costiveness, intoxication from spirituous liquors or *datura*, etc. The shells of the ripe fruit are burnt, and their ashes used in medicine as an alkaline substance, along with other medicines of the sort, as for example in the preparation called *Abhayālavana*, (see Alkaline ashes). The pulp of the ripe

1. काञ्चनारगुग्गुलुः । काञ्चनारत्वचीयाद्यं पलानां दशकं बुधैः । त्रिफला षट्-
पला याञ्चा विकटु स्यात्पलवयम् ॥ पलेको बहवः कार्यं पलात्वक्प्रकलाया । एकेकं वर्ष-
मासं स्यात् सञ्चोष्णैकत्र चूर्णयेत् ॥ यावच्चूर्णमिदं सर्वं तावन्मासानु गुग्गुलुः । षड्गुलु
सर्वमिहैव पिष्टं कृत्वा च धारयेत् । गुटिकाः प्राणिकाः कृत्वा प्राशयाञ्चा यथोचितम् ।
बन्धनात्तां जघन्यायामपचौमर्द्धानि च ॥ यन्नि त्रयाणि गुल्फाय कुठानि च भवन्दायम् । प्रदीय-
न्नाहुपानार्थं काथो मुञ्चतिश्चाभवः ॥ काथः खदिरखारस्य पय्याकाषोऽथ चोष्णः ॥

भास्करः ।

fruit, as well as a poultice of the leaves, is recommended to be applied to inflammatory swellings.

*Amlikā pānam.*¹ Macerate some tamarind pulp in water; strain, and add black pepper, sugar, cloves, camphor and cardamoms to taste. This preparation is prescribed as an agreeable cooling draught in loss of appetite and disinclination for food. In intoxication from spirituous liquors the following mixture is recommended by Chakradatta. Take of dates, raisins, tamarind pulp, pomegranate seeds, fruits of *Grewia Asiatica* (*parushaka*) and ripe emblic myrobalans, each one tola, pound them together, and make an emulsion with thirty-two tolas of water. Dose, about two ounces.²

ACACIA CATECHU, Linn.

Sans. खदिर, *Khadira.* *Vern. Kat, Hind. Khaer, Beng.*

Khadira or catechu is obtained by boiling the wood of *Acacia catechu* in water and inspissating the decoction. The Bhāvaprakāsa mentions two varieties of catechu, namely, *khadira* or the ordinary dark brown catechu and *kadira* or pale catechu. This last is known as *pāpi khær*, or catechu having a laminated structure. Flückiger and Hanbury thus describe the preparation of pale catechu in Northern India. "Instead of evaporating the decoction to the condition of an extract, the inspissation is stopped at a certain point and the liquor allowed to cool, "coagulate," and crystallize over twigs and leaves thrown into the pots for the purpose."³ Pale catechu is a porous, opaque, earthy looking substance with a laminated texture, light and easily broken.

The chief use of catechu in India, is as an ingredient of the packet of betle leaf chewed by the natives. For this purpose it is sometimes aromatized in various ways. The packets of betle

1. खदिराशासनम् । खदिराया खलं पकं मर्दितं वारिषा इदम् । शर्करा मुरिषो-
न्मिश्रं खवज्जेन्दु सुवासितम् ॥ खदिराफलसम्भृतं पानकं वातनाशनम् । विपत्रेपञ्चरं
किञ्चित् सुख्यं वज्जिदीपकम् ॥ भावप्रकाशः ।

2. मयः खजूरखदीबा इत्याद्याद्योक्तदाहिभिः । परुषकेः सामलकेर्युक्ती सद्य-
विशारण्यत् ॥ चकदपः ।

3. Pharmacographia, page 250.

leaf sold in all the Indian bazars under the name of *golabi khali* are prepared with catechu dissolved in rose water. Again, catechu is softened with the addition of water, and mixed with powdered spices, such as cardamoms, nutmeg, cloves, etc., the mixture is enclosed within the fragrant floral leaves of *Pandanus odoratissimus* (*ketaki*), and dried. The leaves adhere to the catechu, which is cut into small pieces suitable for use with the betle leaf.

Catechu is described as astringent, cooling, digestive, and useful in hoarseness, diseases of the mouth and gums, cough and skin diseases. In diarrhoea it is sometimes used in combination with other medicines of its class, as for example in a prescription in the *Bhaisajya Ratnavali*, called *Grahani kapota rasa*, which contains catechu along with a large number of other drugs, but it is not regarded as an important medicine for this diseases.

In hoarseness, catechu rubbed with oil, is recommended to be kept in the mouth.¹ In diseases of the mouth and gums the following called *Scalpakhadia ratiki* is a favourite medicine. To prepare it, take of catechu twelve seers and a half, water sixty four seers, boil down to eight seers, then add nutmeg, camphor betel-nuts and *kukkola*, each half a seer in fine powder, and prepare a mass fit for being made into balls or boluses. They are directed to be kept in the mouth, in affections of the teeth, gums palate and tongue.²

In skin diseases, catechu is much used in a variety of forms both externally and internally. A decoction of catechu is used as a wash for inflamed parts and ulcers.³ Water in which catechu is dissolved is recommended to be used as a drink, wash and bath. The following decoction called *khadirāshtaka* is prescribed by several writers for internal use in boils, prurigo, measles and other

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1. तेषाम् खरभेदे वा खदिरं धारयेन्मुखे ॥ चक्रदत्तः ।
 2. स्वल्पखदिरचटिका । खदिरस्य तुलां सम्यग् जलद्वीपे विपाचयेत् । श्लेष्मट् भागं सचैव प्रविषाद्यं प्रसारयेत् ॥ जातीकर्यैर्युग्मानि चक्रीलक फलानि च । इत्येवा मुक्ति कर्त्या सुखसौभाग्यवर्द्धिनो ॥ दन्तीकमुखरीगिणु जिह्वादात्त्रासयेषु च ॥ चक्रदत्तः ।
 3. खदिरकषायी त्रयशोचचे द्विवः ॥ चक्रदत्तः ।

skin diseases.¹ Take of catechu, the three myrobalans, *nim* bark, leaves of *Trichosanthes dioica* (*patala*), *gulancha* and *Justicia Adhatoda* (*vásaka*), equal parts, and prepare a decoction in the usual way. Sárangadhara describes a fermented liquor called *khadirárishta* for use in skin diseases. It is prepared with catechu and the wood of *Pinus Doodara*, and some other ingredients in smaller proportions.²

ACACIA ARABICA. *Willd. Sans.* ऋबुल, *Vahlula*. *Vern.* *Bábul*, *Beng. Hind.* The tender leaves beaten into a pulp, are given in diarrhœa as an astringent. A decoction of the bark is used as an astringent gargle and wash. I have not met with any notice of gum acacia in Sanskrit works.

NAT. ORDER COMBRETACEÆ.

TERMINALIA CHEBULA, *Retz.*

Sans. हरीतकी, *Haritaki*. अभया, *Abhayá*. पथ्या, *Pathyá*.

Vern. Har. Hind. *Haritaki*, *Beng.*

The chebulic myrobalan was highly extolled by the ancient Hindus as a powerful alterative and tonic. It has received the names of *Pránadá*, or life-giver, *Sudhá* or nectar, *Bhishakpriya* or physician's favourite and so forth. So highly esteemed was this plant by the ancient Hindus, that a mythological origin has been attributed to it. It is said that when Indra was drinking nectar in heaven, a drop of the fluid fell on the earth and produced the *haritaki* plant. Seven varieties of *haritaki* are described by Sanskrit writers, the distinctions being founded upon the shape, colour and marks on the outer covering of the fruits. At the present day, however, two varieties only are recognised, namely, the large ripe fruit called *haritaki*, and the unripe dried fruit called *jangi*.

1. पक्षीपोषणं खान पान मांजनकर्मणि । शीतितं खादिरं वारि सध्वंत्वग्दीन-
नाशनम् ॥ चक्रदत्तः ।

2. खदिराद्यः । खदिर विकखादिष्ट पटोऽवायत नासकेः । काशीऽटकाङ्गी ज्वलि
रीमासिकमसुरिकाः । कुठविमर्ष विस्कीट कञ्जुऽदीनपि पानतः ॥ चक्रदत्तः ।

haritaki in the vernacular. A good *haritaki* fit for medicinal use should be fresh, smooth, dense, heavy and rounded in shape. Thrown into water it should sink in it. *Haritaki* fruits weighing four tolas and upwards, are also considered fit for use, although they may not possess some of the above-mentioned properties. The seeds are rejected and their coats only are used in medicine. Those fruits which have small seeds and abundant cortex are preferred.

Chebulic myrobalans are described as laxative, stomachic, tonic and alterative. They are used in fevers, cough, asthma, urinary diseases, piles, intestinal worms, chronic diarrhoea, constiveness, flatulence, vomiting, hiccup, heart diseases, enlarged spleen and liver, ascites, skin diseases, etc. In combination with emblic and belleric myrobalans, and under the name of *triphalā* or the three myrobalans, they are extensively used as adjuncts to other medicines in almost all diseases.

Two or three chebulic myrobalans, rubbed into a paste and taken with a little rock salt, act as a mild laxative. The following compound decoction called *Pathyidi kvātha* is also much used as a purgative. Take of chebulic myrobalans, pulp of *Cassia fistula* (*dragbadha*), root of *Plicorrhiza Kurroa* (*katuki*), root of *Ipomeea Turpethum* (*trivrit*) and emblic myrobalans, equal parts, in all two tolas, and prepare a decoction in the usual way. Dose, two to four ounces. Bengali practitioners now a days often add senna and rhubarb to the above preparation, but these last were not known to the ancient writers, and are not mentioned in their works.¹

As an alterative tonic for promoting strength, preventing the effects of age and prolonging life, chebulic myrobalan is used in a peculiar way. One fruit is taken every morning with salt in the rainy season, with sugar in autumn, with ginger in the first half of the cold season, with long pepper in the second half, with honey in spring, and with treacle in the two hot months. These adjuncts are supposed to agree best with the humours that are

1. पञ्चादिकाद्यः । पञ्चारन्ध्रं तिला विद्रवामसकैः श्लशपेयम् । पाचनकारकं पुत्रं
नवजीर्णञ्चैव हि ।

liable to be deranged in the different seasons. This old device for prolonging life is still believed in, and acted upon, by some superstitious elderly native gentlemen.¹

Numerous preparations of *haritaki* for special diseases are described in books, such as the *Amrita haritaki* for dyspepsia, *Danti haritaki* for enlargements in the abdomen called *gulma*, *Bhrigu haritaki* in cough, *Agasti haritaki* in consumption, *Dasa muli haritaki* in anasarca, etc.

*Amrita haritaki*² is thus prepared. One hundred large sized chebule myrobalans are boiled in butter-milk, and their seeds are taken out. Four tolas each of long pepper, black pepper, ginger, cinnamon, plumbago root, root of *Piper Chaba* (*chariká*), the five salts, *ájonoun*, and the seeds of *Seseli Indicum*, (*sonayaméni*), *yavakshára*, *sarjikáksúra*, borax, assafetida and cloves, are reduced to powder, and soaked for three days respectively in a decoction of tamarind and in lemon juice. This mixture is introduced within the seedless myrobalans, which are then exposed to the sun and dried. One of these prepared myrobalans is directed to be taken every morning for the relief of various sorts of dyspepsia and indigestion. *Danti haritaki* will be described under *Buliospermum montanum*. The other preparations of chebule myrobalans are not much in vogue at present.

TERMINALIA BELLERICA, Roxb.

Sans. विभीतकी, *Vibhitaki*. Vern. Baherá, Hind. Bery.

BELLERIC myrobalans are described as astringent and laxative and useful in cough, hoarseness, eye diseases, etc. As a constituent

1. गुणैः सधुना शुष्क्या कृणुया खवणेन वा । वेदं खादन् सदा पथे जीवैवप्यंशतं सुखी । सिन्धूल्यशर्करा शुष्कीकृणामधुगुहैः क्रमात् । वर्षादिष्वभया सेव्या रसायनगुणैश्चिथा ।

चक्रादतः* ।

2. अक्षतहरीतकी । हरीतकीः शतं याञ्चं तक्रैः सिन्धुं समुज्जतम् । यद्गुणं पश्यतु यमानोदयमेव च । त्रिवारं द्विद्गु दिव्यं च सर्वव्यमितं पृथक् । द्रव्याचूर्णैश्चतं सर्वं तुक्राञ्चैनापि भावयेत् । सिन्ध्याकसरसेनापि भावयेच्च दिनत्रयम् । खादयेदभयासेवा सर्वजाजीर्णविनाशिनोम् । भेषज्यरत्रावकी । *

of *triphalā* or the three myrobalans, they are used in almost all diseases. The kernel of the fruits is said to be narcotic and astringent, and is used as an external application to inflamed parts.¹

In hoarseness, belleric myrobalans, rock salt and long pepper, rubbed into a paste with butter-milk, are recommended to be used as a linctus.² Another prescription for sore throat and hoarseness is as follows. Belleric myrobalans are fried in clarified butter; they are then covered with a paste of wheat-flour and slightly roasted on a fire. The cortical portion of the fruits thus prepared is recommended to be kept in the mouth for the relief of sore throat, cough and catarrh.³

TERMINALIA ARJUNA, Bedd.

Sans. कर्जुन, *Arjuna*. कुकुभ, *Kukubhu*.

Vern. *Arjuna*, Beng. *Kahu*, Hind.

THE bark of this timber tree is considered tonic, astringent and cooling, and is used in heart diseases, contusions, fractures, ulcers, etc. In diseases of the heart it is used in a variety of ways. Thus a decoction of the bark with milk is given as a nourishment. The powdered bark is given with milk, treacle or water.⁴ A *ghrita* is prepared with the decoction and paste of the bark for internal use.⁵

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1. विभीतफलसञ्चयस्य लेपो दाहार्तिनाशनः । शार्ङ्गधरः ।
 2. कलितफल सित्नु कषाचूर्णं तत्रेण लौहसपहरति । स्वरसेदं गोपयसा पीतं वामशकचूर्णञ्च ॥ शकदहनः ।
 3. विभीतकफलं किञ्चिदृतेनाभ्यज्य संपद्येत् । गोधूमपिष्टे रज्जारे विदधेत् पुटपाकवत् ।
तेतः पक्वं समुद्रज्य त्वचस्तस्य मुखे क्षिपेत् । कासश्वास प्रतिश्याय स्वरभङ्गाश्चयेत्ततः ।
शार्ङ्गधरः ।
 4. कर्जुनस्य लवा सिद्धं चीरं योज्यं हृदामये । सितया पचन्मुखाया वलया मधुकेन वा ।
हृतेन दुग्धेन गुडाशसावा पिबन्ति चूर्णं ककुभत्वचो ये । हृद्रीवजीवञ्चर रक्तपित्तं हला ममेयुश्चिरजीविभस्ते ॥ शकदहनः ।
 5. कर्जुनघृतम् । पार्थस्य कल्क स्वरसेन सिद्धं शस्तं हंसं सर्व्वं हृदामयेषु । शकदहनः ।

In fractures and contusions with extensive ecchymosis, powdered *arjuna* bark is recommended to be taken internally with milk.¹ A decoction of the bark is used as a wash in ulcers and chancres.

NAT. ORDER. MYRTACEÆ.

EUGENIA JAMBOLANA, Lam.

Syn. Syzygium Jambolanum, W. & A.

Sans. जम्बू, Jambu. Vern. Kārajām, Beng. Jāmun, Hind.

This tree, which yields an abundant crop of sub-acid edible fruits during the months of July and August, is common all over the country. In some places the fruits attain the size of a pigeon's egg and are of superior quality. A vinegar prepared from the juice of the ripe fruit, is an agreeable stomachic and carminative. It is also used as a diuretic in scanty or suppressed urine. A sort of spirituous liquor called *Jimbava* is described in recent Sanskrit works as prepared by distillation from the juice of the ripe fruits. The bark is astringent, and is used, alone or in combination with other medicines of its class, in the preparation of astringent decoctions, gargles and washes. The fresh juice of the bark is given with goat's milk in the diarrhoea of children.² The expressed juice of the leaves is used alone or in combination with other astringents in dysentery with bloody discharge, as for example in the following prescription. Take of the fresh juice of the leaves of *jambu*, mango and emblic myrobalan about a drachm each, and administer with goat's milk and honey.³

CARYOPHYLLUS AROMATICUS, Linn. *Sans. लवङ्ग, Lavanga.* Cloves, as might be expected, are much used in Hindu

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| 1. भद्रः विवेककूपयसार्जुनस्य गोघृणचूर्णं सहतेन वाप । | चक्रदत्तः । |
| 2. बिल्वशकाम्बुमीषाब्दं सिद्धं कर्तुं पयःश्रियोः । समांसरत्तां यद्यथो पीतं हृत्वात् | |
| मिरावतः । तद्वदकाचीरसको जम्बूलशुद्धो रसः ॥ | चक्रदत्तः । |
| 3. कम्बाम्बुमखकोनाम्बु पद्मबानस कुट्टयेत् । मंगच्छ सरसं तेषामकाचीरस | |
| योजयेत् । सं पीयेन्मधुना युक्तं रक्तातिहारनाशनम् ॥ | भाषप्रकाशः । |

Medicine, as an aromatic adjunct. They are regarded as light, cooling, stomachic, digestive and useful in thirst, vomiting, flatulence, colic, etc. An infusion of cloves is given to appease thirst.¹ The following pill, called *Chatuksama vati*, is commonly used in indigestion. Take of cloves, ginger, *ájowan* and rock salt, equal parts, and make into eight-grain pills.

NAT. ORDER. LYTHRACEÆ.

WOODFORDIA FLORIBUNDA, *Salisb.*

Syn. Cristea tomentosa, Roeb.

Sans. धातकी, Dhātaki. अपिञ्जा, Agñjāla.

Vern. Dhāiphul, *Beng.* Dhāi, *Hind.*

THE Sanskrit synonyms of this beautiful flowering shrub well describe some of its prominent characters. It is called *Támrapushpi* or red flowered, on account of its bright red permanent calyx, and *Guchehhapushpi* or having clusters of blossoms, on account of its numerous small flowers, which give it a gaudy appearance. From the circumstance of its being common in mountainous tracts, it has got the name of *Párvati* or hill-born.

The dried flowers of *Woodfordia floribunda* are regarded as stimulant and astringent and are much used, in combination with other astringent medicines, in bowel complaints and hæmorrhages. Two drachms of the dried flowers are given with curdled milk in dysentery, and with honey in menorrhagia.² In the dysentery of children, the following combination is recommended to be given in the form of powder or decoction with the addition of honey. Take of the flowers of *Woodfordia floribunda*, bel fruits, bark of *Symplocos racemosa* (*lolhra*), root of *Pavonia odorata* (*bála*), and the fruits of *Pothos officinalis* (*gajapipul*), in equal parts, two tolas in all, and prepare a decoction in the usual way.³

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| 1. " विवासायामयुक्तेषु लवङ्गफलान् प्रकरोति ॥ | चक्रः । |
| 2. धातकायाश्चमात्रं वा चामलक्यामधुद्रवम् । पाण्डुप्रदरश्चाप्यर्थः पित्तकण्डु-
वारिष्ठा ॥ | चक्रदत्तः । |
| 3. धातकीविल्वकीघ्राणि चालकां मन्मथियन्ती । एभिः कृतं प्रसृतं शीतं त्रिप्रभः
शौद्रस्युतम् । प्रदद्याद्वहेर्षं वा सर्वातीक्ष्णरश्मानये ॥ | शाङ्गधरः । |

The powdered flower is sprinkled over ulcers for diminishing their discharge and promoting granulation.¹

NAT. ORDER HAMAMELIDEÆ.

LIQUIDAMBAR ORIENTALE, *Miller. Sans. लिङ्गक, Silhaka. Vern. Silāras, Hind.* Liquid storax is described in Sanskrit works as a product of Turkey. It is considered useful in affections of the throat, copious perspiration and skin diseases, but is chiefly used in perfuming medicinal oils.

NAT. ORDER GRANATEÆ.

PUNICA GRANATUM, *Lin.*

Sans. दाङ्गि, Dādima. Vern. Anār, Hind.

The pomegranate is indigenous to North Western India. The best fruits, having sweet juice and very small seeds come from Cabul. The fresh juice of the fruits is much used as an ingredient of cooling and refrigerent mixtures and of some medicines for dyspepsia. The rind of the fruit is used as an astringent in diarrhœa. In the Pharmacographia it is stated that the use of the root-bark as an anthelmintic by the Hindus attracted the notice of Buchanan at Calcutta about the year 1805. This physician pointed out the efficacy of the root-bark which was further shown by Fleming and others. I have not been able to find any notices of pomegranate root-bark in Sanskrit works.

Dādīmāshtaka.² Take of pomegranate rind one seer, bambu-manna two tolās, cardamom, cinnamon, *tejapātra*, and flowers of *Mesua ferrea* (*nāgakēsara*), each four tolās, *ājowan*, coriander, cumin seeds, long pepper root, long pepper, black pepper and ginger, each eight tolās, sugar one seer. Powder the ingredients and mix. Dose, about one drachm in chronic bowel complaints.

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| 1. पाचकोशूयबोधैर्षो तथा रोहनि ते नषाः । | चक्रद्वयः । |
| 2. दाङ्गिमादकः । कर्षोन्मिता तुषावीरी चाशुजातं द्विद्वार्धकम् । यमानो | |
| पाककाञ्चानी मन्वि शोधं पलाङ्गिकम् ॥ पलाङ्गि दाङ्गिमादटी सितावाशकतः कृतः । गुणैः | |
| कफिज्वातकण्ठशूलौघं दाङ्गिमादकः ॥ | चक्रद्वयः । |

NAT ORDER CUCURBITACEÆ.

BENINCASA CERIFERA, *Savi.*

Syn. Cucurbita Pepo, Roxb.

Sans. कुमाण्ड, *Kushmānda.* *Vern.* Kumrá, *Beng.* Peithá, *Hind.*

THE large fruit or gourd of *Benincasa cerifera* is eaten by the natives in their curries, and is extensively cultivated all over India. It is considered tonic, nutritive and diuretic, and a specific for hæmoptysis and other hæmorrhages from internal organs. It would appear that the older Sanskrit writers were not acquainted with its peculiar action on the circulatory system by which it rapidly puts a check to hæmorrhage from the lungs. The Rája Nirghantu, the oldest work on therapeutics, gives a long account of its virtues, but does not allude to its use in phthisis or hæmoptysis. Neither does Susruta mention it in his chapters on the treatment of hæmorrhage and phthisis, though the plant is alluded to by him elsewhere. The more recent compilations, such as Chakradatta Sangraha, Sárangadhara etc. give numerous preparations of the article and detail its uses.

Khanda kushmānlaka,¹ or confection of squash. In preparing this medicine, old ripe gourds are selected. Those not at least a year old, are not approved. They are longitudinally divided into two halves and the pulp scraped out in thin flakes by an iron comb or scratcher. The watery juice that oozes out abundantly during this process is preserved, the seeds being rejected. The pulp is

1. खण्डकुमाण्डकः । कुमाण्डकाव्यखण्डतं सस्त्रिं निरक्षुचीकृतम् । पचेत्तत एतवस्थे
 धनैस्त्रासमथै हृदे ॥ यदा सधुग्निभः पाकसदाखण्डकतं व्यस्यत् । पिप्पली यद्वदेरास्तां ह
 पले कौरकस्य च ॥ त्वमेलापवमरिच धावकात् पसारिकम् । व्यस्येषुचीकृतं तत्र हव्या-
 संघट्टयेन्मुहुः ॥ तत् पक्वं ख्यापयेद्वाखे दत्ता चौद्रं एताडं चम् । तच्छयाधिबलं खादित्त-
 पित्ती चतस्रथी ॥ कासत्रास तत्र खण्डित्वाख्यरिप्योद्धितः । हव्यं पुनर्मथकरं यद्वयर्थ-
 प्रसाधनम् ॥ उरः सव्यानकरथं हृदयं स्वरवीचनम् । चत्रिस्तां निश्चितं सिद्धं कुमाण्डक
 रस्राधनम् ॥ खण्डानखकमानुसारात् कुमाण्डकद्रवात् । पाचं पाकाय दातव्यं यावान्
 जात इती मरिस । अत्रापि यदत्रा पाकी निरक्षुचीकृतम् ॥ खण्डकम् ।

boiled in the above mentioned juice, till softened. It is then tied up tightly in a cloth, and the fluid portion allowed to strain through it. The softened and drained pulp is dried in the sun and the watery portion preserved for future use. Fifty tolas of the prepared pulp are fried in sixteen tolas of clarified butter, and again boiled in the juice of the fruit, till reduced to the consistence of honey. To this are added fifty tolas of refined sugar, and the whole is heated over a gentle fire, till the mass assumes such a consistence as to adhere to the ladle. The pot is now removed from the fire, and the following substances, namely, long pepper and ginger, each two tolas, cumiu seeds, cardamoms, cinnamon, leaves called *tejapara*, black pepper and coriander, each half a tola in fine powder, are added to the syrup and stirred briskly with a ladle, till the mass is cool. Eight tolas of honey are now added to the confection which is preserved in a new earthen pot. The dose of this medicine is from one to two tolas, according to the age and strength of the patient. It is useful in hæmoptysis, phthisis, marasmus, cough, asthma, ulceration of the lungs, hoarseness, etc

Vásá kushmānda khandā. Take of the root of *Justicia Adhatoda* (*vásaka*), one seer, water eight seers; boil together till reduced to one-fourth and strain. Then take of the pulp of *Benincasa cerifera*, prepared as above described, fifty tolas: fry it in thirty-two tolas of clarified butter, and boil in the decoction of *vásaku* till the whole is reduced to the consistence of honey. Add to it sugar, one hundred tolas, and apply heat till the mass thickens to the proper consistence. Remove from the fire, add the following substances in fine powder, namely, tubers of *Cyperus rotundus*, (*mustaka*), dried emblic myrobalan, bamboo manna, root of *Clerodendron Siphonanthus* (*brahmayasti*), a fragrant substance called *elabdhuka*, cinnamon, cardamom, *tejapara*, each quarter of a tola,

1. वासाखण्डकषाण्डकः । पञ्चाशच्च पर्णं म्बित्रं कृष्णान्धात् प्रस्थमाज्यतः । वास्यं पलशतं खण्डं वासाकायादकै पचेत् ॥ मुष्ता धात्री शशा भार्वा विमृगन्धिय कार्षिकैः । उल्लेथ विश-
धन्वाक मरिचैश्च पलाशिकैः ॥ पिप्पलीकुडवच्चैश्च मधुमार्गी प्रदापयेत् । कासं शसं कथं चिह्नां
रक्तपित्तं हलीमकम् । हृदीमसश्चपित्तश्च पीनसश्च व्यपीहति ॥

पञ्चदशः ।

ginger, coriander, and black pepper each one tola, long pepper, four tolas, stir well till the confection cools and lastly add eight tolas of honey. This preparation is used in cough, asthma, phthisis, hæmoptysis, heart disease, and catarrh.

In insanity, epilepsy and other nervous diseases, the fresh juice of the squash is given either with sugar or as an adjunct to other medicines for these diseases. A *ghrita* for use in these diseases is also prepared as follows.

Kushmāndaka ghrita.¹ Take of the juice of *Benincasa cerifera* eighteen seers, clarified butter, one seer, liquorice root beaten into a paste with water, quarter of a seer. Boil them together and prepare a *ghrita* in the usual way. Dose, one to two tolas.

Combr ^{युग्} **TRICHOSANTHES DIOICA, Roxb.**

Sans. पटोल, Patola. Vern. Palwal, Hind.

The *Trichosanthes dioica* is extensively cultivated as an article of food in Bengal. The unripe fruits are much used by the natives as a culinary vegetable and are considered very wholesome and especially suited for the convalescent. In fact, they constitute one of the most palatable vegetables grown in this country. The tender tops are also used as a pot-herb and are regarded as tonic and vermifuge.

The leaves, fresh juice of the fruits and the root are all used medicinally. The leaves are described as a good, light and agreeable bitter tonic. The fresh juice of the unripe fruit is often used as a cooling and laxative adjunct to some alterative medicines such as the preparation called *Rasa sindura*, etc. The bulbous root is called *Ramyaka* in Sanskrit and is classified amongst purgatives by Susruta.

In bilious fever, a decoction of *patola* leaves and coriander, in equal parts, is given as a febrifuge and laxative.² The leaves

1. कुभाण्डकघृतम् । कुभाण्डकरसि सर्पिरटादम्रगुणै पञ्चेत् । यथाहककम् तथान-
मपकारविनाशनम् ॥ चन्द्रदत्तः ।

2. दीपनं कफविच्छेदि वातपित्तानुलीमनम् । ज्वरं पाचनं मेदि प्रतं धान्यपटस्योः ॥

enter into the composition of several compound decoctions for fever. The following called *Patolādi kvātha* is an illustration. Take of *patola* leaves, red sandal wood, root of *Saussetia Zeylanica* (*muroá*), *Picrorrhiza Kurrou* (*katuki*), *Stephania bernandifolia* (*pāthā*) and *gulancha*, each one drachm, water half a seer, boil together till reduced to one-fourth.¹

Patola enters into the composition of several compound decoctions for boils and other skin diseases for which it is considered a very efficacious remedy. The following is an illustration. Take of *patola* leaves, *gulancha*, *mustaku*, *chiretā*, *nim* bark, catechu, root-bark of *Justicia Adhatoda* (*vāsaka*), and *Oldenlandia herbacea* (*parpala*), equal parts, in all two tolas, and prepare a decoction in the usual way. This decoction is regarded as a valuable alterative, tonic and febrifuge.²

The root is used in combination with *Ipomea Turpethum* and other adjuncts as a drastic purgative in jaundice, anasarca and ascites. The following called *Patolādyā churna* is an illustration. Take of the root of *Trichosanthes dioica* (*patola*), turmeric, *bibharang* seeds, *kamulā* powder, and the three myrobalaus, two tolas each, cinnamon, and the root of the indigo plant, three tolas each, *Ipomea Turpethum* (*trivrit*) four tolas; powder the ingredients finely and mix. Dose, about one drachm with cow's urine. After the use of this medicine, light food only (such as gruel) should be taken.³

1. पटोलं चन्दनं मूत्रां तिका पाठाश्चताराणः । पिचशंफारुचिहृदि ज्वरकम्पूविधापयः ॥
चक्रदत्तः ।

2. पटीलाश्चतसृनिम्ब वामकारिष्टपपट्टैः । खदिरान्द्रवृतैः काथो विस्फोटार्निज्वरापयः ॥
चक्रदत्तः ।

3. पटीलाद्यं चूर्णम् । पटोलमूलं रजनी विहङ्गं त्रिफलात्वचम् । कम्पिषकं नीलिनीश
विहताश्चेति चूर्णयेत् ॥ पञ्चाद्यान् कार्ष्णि कानन्याम्बीश द्विविचतसृणान् । कृत्वा चूर्णं ततो मुष्टि
गवां सूत्रेण ना पिबेत् ॥ किरिकी जाङ्गलरसैर्भुञ्जीत मृदु मीटनम् । मस्य पेयाच्च पीत्वा च सखीषं
वचश्च पयः ॥ मयं पिबेत्तु तच्चूर्णं पिबेदेवं पुनः पुनः । इत्थि मूर्धोदराश्चेतच्चूर्णं जातोदकात्पि
कामकां पाण्डुरीनश्च श्रयद्युच्चापकषति ॥
चक्रदत्तः ।

The fresh juice of the leaves of *Trichosanthes dioica* is recommended by several writers. to be applied to the bald patches of opecia.¹

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CUCUMIS MELO, *Linnaeus*.

Syn. Cucumis utilissimus, Roeb.

Sans. ककरी, *Karkati*. *Vern.* Kinkur, *Beng.* Kákri, *Hind.*

THE seeds of this useful species of *Cucumis* are described as cooling, edible, nutritive and diuretic, and are used in painful micturition and suppression of urine. Two drachms of the seeds rubbed into a pulp with water, are given alone or in combination with salt and *kánjika*.²

The seeds of *Cucumis sativus*, (*Sans.* तपुष, *Trayusha*. *Vern.* *Khira*, *Hind.*) and of *Benincasa cerifera* (*Sans.* *Kushmānda*.) are also used as diuretics like those of *Cucumis utilissimus*.³

COCCINIA INDICA, *W. & A. Syn. Momordica monodelpha, Roeb. Sans.* विम्ब, *Vimba*, *Vern.* Telákuchá, *Beng.* The expressed juice of the thick tap-root of this plant is used by the leading native Kavirájes of Calcutta, as an adjunct to the metallic preparations prescribed by them in diabetes. I have not found this use of the plant noticed in any written work, but I know several patients who have taken the juice of the root along with *Fangesvara* or *Somanátha Rasa* and who were benefitted by the use of these remedies. I am inclined to think that the juice of the root of this plant probably acts beneficially in some way. It is very desirable that its therapeutic action should be tested. The expressed juice is directed to be taken in doses of one tola along with a pill, every morning.

1. रसनिक्तपटीलस्य पत्राणां तद्विलेपनात् । इन्द्रजित्पत्रो लोपो मधुना ब्रह्मतीरसः ॥
भावप्रकाशः ।
2. कल्कमेवार्कवीजानामचसात्रं ससैन्धवम् । धान्याख्युक्तं पीत्वैव मूत्राघातादिमुच्यते ॥
चक्रदत्तः ।
3. कुम्भाख्यस्य तु बीजानि बीजानि तपुषस्य च । वसौ सन्धारयेत् तेल प्रशास्येन्मूत्र-
मिद्वहः ॥
भावप्रकाशः ।

CITRULLUS COLOCYNTHIS, *Schrad.**Syn. Cucumis Colocynthis, Linn.**Sans. इन्द्रवारुणी, Indrarāruṇī. Vern. Indriyan, Hind.*

INDIAN colocynth is common on the lower slopes of the Western Himalaya and also on the plains of the drier parts of India. It is procurable in the bazars of the North-West Provinces under the name of *indriyan*. The pulp of the fruit is described as bitter, acrid, cathartic, and useful in biliousness, constipation, fever and worms. The root of the plant is considered cathartic and useful in jaundice, ascites, enlargements of the abdominal viscera, urinary diseases, rheumatism, etc.

Jwarāghni gutikā ¹ Take of mercury one part; sulphur, colocynth pulp, cardamoms, long pepper, chebulic myrobalan, and pellitory root, each four parts. Rub these ingredients with the juice of *indrarāruṇī* root and make into pills weighing about twenty grains each. These pills are administered with the fresh juice of *gulanča* in recent fever. They move the bowels and reduce the fever.

An oil prepared from the seeds of Indian colocynth, is used for blackening grey hairs. A poultice of the root is said to be useful in inflammation of the breasts. ²

NAT. ORDER UMBELLIFERÆ.

The following aromatic fruits belonging to this natural order, are noticed by Sanskrit writers and are used in medicine or as condiments by the natives.

यसान्नी, *Yasānī. Ptychotis Ajowan*, ⁴ DC. Vern. *Ajowan Hind.*

वनयसान्नी, *Vanayasānī. Seseli Indicum, W. S. A. Vern. Banjoán, B.*

1. ज्वरघ्नी गुटिका । भागिकः स्याद्रसाक्कुहादन्वयः पिप्ली शिवा । आकारकरभी गन्धः कटुतैलिन शोधितः ॥ फलानि चन्द्रवारुणायतुभांगमिता अमी । एकत्र मर्दयेद्गुणसिन्द्रवारुणिका-
रसैः ॥ मासोन्मिता वटी कृत्वा दद्यात् सद्यज्वरे भिषक् । क्लिप्तारसानुपानेन ज्वरघ्नी गुटिका मता ।

शाङ्गधरः ।

2. इन्द्रवारुणिका वीजतेलनाश्वकमाचरत् । प्रत्यहनेन कालाग्रिसन्निभा कुमलां फलम् ॥

शाङ्गधरः ।

* Now included in the genus *Carum* by Hooker and Bentham.

अजमोदा, *Ajamodá. Carum Roxburghianum, Benth. Vern. Ajmad, Hind. Rándhuni, Beng.*

जीरक, *Jiraka. Cuminum Cyminum, Linn. Vern. Jirá, Beng.*

सुशवी, *Sushavi. Carum Carui, Linn. Vern. Shíá jirá, Hind.*

मधुरिका, *Madhuriká. Foeniculum vulgare, Gartn. Mauri, Beng. Souf, Hind.*

मिथेया, *Misreyá. Anethum Sowa,* Roxb. Vern. Sulphá, B. Sowá, H.*

धन्याक, *Dhanyáka. Coriandrum sativum, Linn. Vern. Dhaníá H.*

PTYCHOTIS AJOWAN. The seeds of *Ptychotis Ajowan* have an aromatic smell and warm pungent taste. They are used for culinary purposes, as spices along with betel nuts and pan leaves, and as a carminative medicine. A teaspoonful of *ájowan* with a little rock salt, is a common domestic remedy for indigestion from irregular diet. The following compound powder is used in cases of colic or pain in the bowels. Take of *ájowan*, rock salt, *souchal* salt, *yavakshára*, *assafœdita*, and *chebulic myrobalan*, equal parts; powder the ingredients and mix. Dose, grains ten to twenty, to be taken with wine.¹ *Ajowan*, taken daily with treacle, is said to cure urticaria within a week.² *Ajowan*, as well as the seeds of *Seseli Indicum (vanajamáni)*, are much used as aromatic adjuncts in compound prescriptions.

CARUM ROXBURGHIANUM. The seeds of *Carum Roxburghianum (ajamodá)* रंघुनी are an essential ingredient of native cookery. They are said to be useful in hiccup, vomiting and pain in the region of the bladder. They enter into the composition of several carminative and stimulant preparations, such as the *Ajamodádi churna* (see *Argyrea speciosa*), etc.

CUMINUM CYMINUM. (जीरक) Cumin seeds form an ingredient of some curry powders and pickles used by the natives. They are regarded as stomachic, carminative, astringent and useful

1. यमानी हिङ्गु सिन्धुल चार सौवर्ष लाभवा । सुरामखेन पातव्या गुणयुलनिवारवा ।

चक्रदत्तः ।

2. समुद्रं दीप्यकं यस्तु खार्दत् पथ्यान्नभुङ्गनः । तस्य गच्छति सप्ताहाद्दृष्टः सर्वदेहजः ।

चक्रदत्तः ।

* *Anethum* is reduced by Drs. Hooker and Bentham to *Psuedonum*.

in dyspepsia, diarrhoea, etc. A confection of cumin seeds is prepared as follows :

Jirakādi modaka. Take of the three myrobalans, tubers of *Cyperus rotundus* (*mustaka*), watery extract of *gulanča*, prepared talc, flowers of *Mesua ferrea* (*nāgakesara*), leaves called *teja Putra*, cinamom, cardamoms, cloves, coriander, ginger, long pepper, *Oldenlandia herbacea* (*parpati*), root of *Andropogon muricatum* (*usira*), *Pavonia odorata* (*bāli*), and *Plumbago Zeylanica* (*chitraka*), each one part, cumin seed, nineteen parts or equal in weight to all the other ingredients ; powder them all and mix. Add two parts of sugar to one of the powder and make into a confection with honey and clarified butter. Dose, one drachm. This medicine is prescribed in chronic diarrhoea and dyspepsia with loss of appetite.

*Jirakādyā taila.*¹ Take of powdered cumin seeds, eight tolas, minium or red lead, four tolas, prepared mustard oil three seers, water twelve seers, boil them together in the usual way for the preparation of medicinal oils. This oil is used in eczema.

A poultice made of cumin seeds, with the addition of honey, salt and clarified butter, is recommended to be applied to scorpion bites.²

FENICULUM VULGARE. Fennel seeds are largely used as a condiment. In medicine they are chiefly used as an aromatic adjunct to other articles. Distilled fennel water is prepared and sold in India, under the name of *Arak hādīm*, and is used as a domestic carminative.

CARUM CARUI. The fruits called *shū jāī* in the vernacular, do not appear to differ from European caraway. The plant grows wild largely in the "high alpine region of Lahul in the Western Himalaya," but is rare in the plains. The fruits contain a volatile oil and are used as a carminative like cumin seeds.

1. जीरकाद्यं तैलम् । जीरकस्य पलं पिष्टं सिन्दूरार्द्रपलं तथा । कटुर्तमं पर्वताभां सर्वपाप्माहरं परम् ॥ भावप्रकाशः ।

2. जीरकस्य ऋतः कल्की वृत्तसौम्यवस्युतः । सुखीष्णी मधुना श्लेपी त्रयिकस्य विधं हरिम् ॥ भावप्रकाशः ।

CORIANDRUM SATIVUM. Coriander is largely used by the natives as a condiment and along with betel nuts and *pán* leaves. It is described as carminative, refrigerent, diuretic, tonic and aphrodisiac. A cold infusion of coriander is given with sugar for the relief of internal heat and thirst.¹ A decoction of coriander and ginger is given in dyspepsia and indigestion. Coriander enters into the composition of numerous cooling and carminative medicines. The fresh leaves of the plant are pungent and aromatic. They are used for preparing a sauce or *chútná*, in the same way as the leaves of spearmint (*puḍíná*).²

FERULA ASSAFŒTIDA, Linn.

Sans. हिङ्गु. Hingu. Vern. Hing, Beng. Hind.

SANSKRIT writers describe assafœtida as an exudation from the root of the assafœtida plant which is indigenous to Persia, Khorasan and Multan.* Assafœtida is regarded as a stimulant and carminative and is much used in dyspepsia, flatulencæ, colic, and diseases of the nervous system. It is fried before being used internally. Raw or unfried assafœtida is said to cause vomiting.

*Hingrashtaka Ohurna.*³ Take of fried assafœtida, ginger, long pepper, black pepper, *ájowan*, cumin seeds, nigella seeds and rock salt, equal parts; reduce them to powder and mix. Dose, ten to twenty grains, to be taken with the first morsel of rice and clarified butter taken at breakfast. Thus administered, it is said to increase the appetite and digestive powers and to cure flatulence. Some writers recommend the above powder to be made into pills with lemon juice.

1. प्रातः सङ्कर्षः पेयो हिमो धन्याकसम्भवः । अन्तर्दोहं तथा तर्णां जरीक्रीतीविभ्रीधनः ॥
भावप्रकाशः ।
2. धान्य नागर मिदन्तु तीर्थं दद्याद्विचक्षणः । आमाजीर्णप्रशमनं दीपनं वसिष्ठीधनम् ॥
चक्रदत्तः ।
3. हिङ्गुष्टकं चूर्णम् । विषट्कं मज्जीदा सैम्बवं जीरके द्वे समधरणं घृतानामष्टमी
हिङ्गुभागः । प्रथमं कवडमुक्तं सर्पिंषा चूर्णमेतन्व्यनयति अठरात्रिं वातरोगांश्च हन्तान् ॥
भैषज्यरत्नावली ।

* Not now found at Multan G. K.

on the banks of water courses. The entire plant is used in medicine, and is regarded as a valuable bitter tonic and febrifuge. It enters into the composition of numerous prescriptions for fever, diarrhoea, skin diseases, etc. A simple decoction of the plant is used in bilious fever, with irritability of the stomach or delirium.¹ *Parpata* enters into the composition of numerous febrifuge and tonic decoctions. The following is an example.

Panchabhadra.² Take of *parpata*, tubers of *Cyperus rotundus* (*mustaka*), *gulancha*, *chireta* and ginger, equal parts, in all two tolas, and prepare a decoction in the usual way. This preparation is much used in fever supposed to be caused by deranged air and bile, that is, remittent fever with gastric irritability, nervousness, etc.

RANDIA DUMETORUM, Linn.

Sans. सदन, Madana. *Vern.* Mayin, Hind.

THE *Randia dumetorum* is a small thorny tree common in waste places. The fruit when ripe, looks like a small apple, and has a peculiar sweetish, sickly smell. It is described by Sanskrit writers, as the best or safest of emetics. In fact the ancient Hindus depended chiefly upon this drug for causing emesis. One ripe fruit is generally administered for this purpose. It is also used in combination with other medicines, as for example in the following prescription.

Pancha kashaya.³ Take of *Justicia Adhatoda* (*vāsaka*), *Acorus Calamus* (*vachā*), *nim* bark, leaves of *Trichosanthes dioica* (*patola*), and bark of *Aglaiā Roxburghiana* (*priyangu*), equal parts, half

1. एकः पर्यटकः श्रेष्ठः पित्तञ्चरविनाशनः । किं पुनर्वेदि युज्येत चन्दनीशीरवाकैः ॥

दर्पणः ।

2. पर्यटाब्दाष्टाविन्नकिरातेः साधितं जलम् । पञ्चभद्रमिदं श्रेयं वातपित्तञ्चरापहम् ॥

शास्त्रचरः ।

3. पञ्चकषायः । चाटुश्च वक्त्रा निम्बं पटीलं फलिनीलकम् । ज्ञापयित्वा पिपिरीयं
वापिशुक्लं च वान्धितम् ॥ ज्ञापयित्वा सुकृतं शपयित्वा अष्टाटकं । चतुर्भागावशिशुक्लं वसुधैवकु

a seer in all, water eight seers; boil them together till reduced to one-fourth. This decoction is given with the addition of the pulp of *Randia dumetorum* for causing emesis.

RUBIA CORDIFOLIA, Linn.

Syn. *Rubia Manjistá, Roxb.*

Sans. मञ्जिष्ठा, *Manjishthá*, Vern. Munjit, Beng. Hind.

INDIAN madder, well known as a red dye, is used in medicine chiefly as a colouring agent. All medicated oils are first prepared for use by being boiled with madder. It is regarded as astringent and useful in external inflammations, ulcers and skin diseases. Madder and liquorice root, rubbed into a paste with *Kánjika*, is applied over fractures, to reduce inflammation and swelling. Madder rubbed with honey, is recommended by several writers to be applied to brown spots on the face (*pityriasis versicolor*).¹

Manjishthádyá ghríta,² is prepared with clarified butter and a paste composed of equal parts of madder, red sandal wood, and the root of *Sansevieria Zeylanica* (*murvá*), and applied to ulcers from burns.

PÆDERIA FÆTIDA, Linn.

Sans. प्रसारणी, *Prasárani*.

Vern. *Gandhabháduli, Beng. Gandháli, Hind.*

The *Pæderia fætida* is a long climbing plant, twining up and over trees. All parts of the plant give off a most offensive odour when bruised. The leaves, boiled and made into soup, are considered wholesome and suitable for the sick and convalescent. The entire plant including stem, leaves and root, is much used both internally and externally in rheumatic affections for which it is regarded as a specific.

Prasárani leha, or electuary of *Pæderia fætida*. Take of the leaves, root and stem of *Pæderia fætida*, two seers, water thirty-

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- | | |
|--|-------------|
| 1. खालेपनाथे मञ्जिष्ठा मधुकं चाक्षपितम् ॥ | चक्रदत्तः । |
| 2. मञ्जिष्ठा च दृढम् । मञ्जिष्ठा चन्दनं कूर्पा पिप्पला सर्पिर्विपाचयेत् । सर्वेषामभिदग्धानां सेतद्रीपुचस्मिचते ॥ | चक्रदत्तः । |

two seers, boil till reduced to one-fourth. To the strained decoction add, two seers of treacle, and again boil till reduced to the consistence of a thick syrup. Lastly add powdered ginger, long pepper, black pepper, plumbago root and the root of *Piper Ohaba* (*chaviká*), equal parts, in all half a seer. Dose, about one tolá in acute rheumatism.¹

Several oils or liniments for external application are prepared with this plant. The following, called *Kubja Prasúrani taila*,² is largely used by native physicians. Take of the entire plant of *Pæderia foetida* eight hundred tolás, boil in sixty-four seers of water till reduced to sixteen seers, and strain. To the strained decoction, add sesamum oil, sixteen seers, milk, thirty-two seers, whey and fermented paddy water (*kánjika*), each sixteen seers, and the following substances, namely, root of *Pæderia foetida*, plumbago root, long pepper root, liquorice, rock salt, *Acorus Calamus* root, dill seeds, bark of *Cedrus Deodara*, root of *Vanda Roxburghii* (*rásná*), *Scindapsus officinalis* (*gajapippali*), *jatámánsi* root and marking nuts, each two tolás in the form of a paste. First boil the oil with the decoction of *Pæderia foetida* till the water is nearly evaporated, then boil the oil successively with the addition of milk, whey and *kánjika*, adding the aromatic paste during the last process of boiling. This oil is used externally in rheumatism with contraction and stiffness of the joints. After the application of the oil, the affected parts should be fomented with dry heat.

1. प्रसारशीलिङ्गः । प्रसारख्यादके कथे प्रस्थी गुडरसो मतः । पक्वः पक्षीप्रक्षरजी यद्य ख्यादात्मनातदा ॥ भावप्रकाशः ।

2. कुम्भप्रसारशीलेतलम् । प्रसारशीलतं चुम्बं पक्षीतोयाकंशे घृते । पादशिष्टे घृते तैले दधि दद्यात् सकाञ्जिकम् ॥ विमुञ्चय पयो दत्त्वा कल्कान् विपत्तिकोशधा । चित्तकं पिप्यलीमूलं नम्रकं सैन्धवं चचाम् ॥ शतपुष्पां देवदारु राज्ञां वारक्षपिप्यलीम् । प्रसारख्याञ्च मूल्यानि मांसी भङ्गातकामि च ॥ पक्षीन्क्षुद्रपिना तैले वातश्लेष्माभयान् जयेत् । शशीति नरनारीख्यानं वात- रोगानयोद्धति ॥ कुम्भं क्षामितपङ्कजं गृह्णीतुश्चकार्दितम् । इनुपुष्पशिरीषीनाकंशं जपि विमुञ्चति ॥

NAT. ORDER VALERIANACEÆ.

NARDOSTACHYS JATAMANSI, D. C.

Syn. Valeriana Jatamansi, Jones.

Sans. जटामांसि, *Jatámánsi*. *Vern.* Jatámánsi, *Beng.* Báluchar, *Hind.*

THE *Nardostachys Jatamansi* is a native of the mountains of Northern India and has been used in Hindu medicine from a very ancient period. The fragrant root is considered a nervine tonic, and is much used as an aromatic adjunct in the preparation of medicinal oils and *ghritas*. It does not appear however to have been used internally except as an ingredient of complex prescriptions. In the Pharmacopœia of India it is stated that *Jatámánsi* enters into the composition of a nostrum highly recommended in the treatment of epilepsy by Susruta. I do not find in Susruta's work any prescription for epilepsy, containing *jatámánsi*, except the following, in which however it can hardly be said to be an active ingredient. Take of the pulse of *Phaseolus Roxburghii* (*kulaththa*), barley, jujube fruit, seeds of *Crotolaria juncea* (*sana*), bdellium, *jatámánsi* root, the ten drugs collectively called *dasamula* (see *Desmodium gangeticum*), and chebulic myrobalan, equal parts; and prepare a decoction in the usual way. This decoction is recommended to be administered with the addition of clarified butter and goat's urine.¹

NAT. ORDER COMPOSITÆ.

SAUSSUREA AURICULATA, Bth. et Hf.

Syn. Aplotaxis auriculata, DC.

Sans. कुष्ठ, *Kushtha*. *Vern.* Kur, Páchak. *Hind. Beng.*

THE *Aplotaxis auriculata* is a native of the mountains around Cashmere, and has been used in Hindu medicine from an early age. Its root is described as aromatic, stimulant and useful in cough, asthma, fever, dyspepsia and skin diseases. It enters also into the composition of some pastiles for fumigation.

1. कुष्ठस्य मूलेन कृत्वा पञ्चमूली च पञ्च बीजानि

' *Agnimukha churna*.¹ Take of assafœtida, one part *Acorus Calamus* (*vachā*) two parts, long pepper, three parts, ginger, four parts, *ajowan* five parts, chebulic myrobalan, six parts, plumbago root, seven parts, and the root of *Aplotaxis auriculata*, eight parts. Powder the ingredients, mix and pass the powder through a cloth. Dose, twenty to forty grains with whey or wine in dyspepsia with loss of appetite.

A liniment composed of the root of *Aplotaxis auriculata*, *kānjika* and castor oil is recommended by several writers to be applied to the forehead in cephalalgia.² The fried root, mixed with mustard oil, is applied to the scalp in porrigo. Equal parts of the powdered root and of rock salt, mixed with mustard oil and fermented paddy water (*kānjika*), are rubbed on joints affected with chronic disease.³

WEDELIA CALENDULACEA, Less.

Syn. *Verbesina calendulacea*, Roxb.

Sans. भङ्गराज, *Bhringarāja*. केशराज, *Kesarāja*.

Vern. *Kesarāja*, Beng *Bhāngrā*, Hind.

THERE is some confusion between the Sanskrit and vernacular names of *Wedelia calendulacea*, and *Eclipta prostrata*. Both these plants are called *kesarāj* or *kesuriā* in Bengali, and the two Sanskrit names of *bhringarāja* and *kesarāja* are used as synonyms. The Hindustani term *bhāngrā*, derived from the Sanskrit *bhringarāja* is however generally applied to *Wedelia calendulacea*, and this is the plant used in medicine at present. The leaves, which have a slight camphoraceous taste, are considered tonic, alterative,

1. अग्निमुखं चूर्णम् । हृद्भुजाग्रे भवेद्वेदी वचा च विगुणा भवेत् । पित्तली विगुणा चैव शङ्खवेरं चतुर्गुणम् ॥ यसानिका पञ्चगुणा षड्गुणा च हरीतकी । चित्तकं सप्तगुणितं कुष्ठञ्चाष्टगुणं भवेत् ॥ एतद्वातहरं चूर्णं पीतमात्रं प्रसन्नया । चूर्णमग्निमुखं नाम न क्वचित् प्रतिहन्ते ॥ चक्रदत्तः ।

2. कुष्ठमेरुदन्तेन लेपात् काञ्जिकपेषितम् । शरीरिणं वातजां हन्तात् पुष्यं वा मुषुकुन्दजम् ॥ शार्ङ्गधरः ।

3. कुष्ठसैन्धवीः कल्कशुक्रतैलसमन्वितः । सुखीषी मर्द्दने यीज्यः खल्वीयलनिवारणः ॥ भाष्यप्रकाशः ।

and useful in cough, cephalalgia, skin diseases and alopecia. The juice of the leaves is much used as a snuff in cephalalgia, and in soaking various sorts of powders for the preparation of pills.¹ "In tattooing the natives after puncturing the skin, rub the juicy green leaves of *Eclipta prostrata* over the part; which gives the desired indelible colour, namely a deep bluish black." The leaves of both these plants are used in various ways for the purpose of dyeing grey hair and for promoting the growth of hair.

*Játiphaláya churna.*² Take of nutmeg, *babering* seeds, plum-bago root, flowers of *Tabernamontana coronaria* (*tagara*), sesamum seeds, leaves of *Pinus Webbiana* (*tálsa*), red sandal wood, ginger, cloves, cumin seeds, camphor, chebulic and emblic myrobalans, black pepper, long pepper, bamboo manna, cinnamon, cardamom, *tejapatra*, and the flowers of *Mesua ferrea* (*nágakesara*), each two tolás, powdered leaves of *Wedelia calendulacea*, fifty-six tolás, sugar, in quantity equal to all the above ingredients. Powder and mix. Dose, about a drachm. This preparation is said to be neseul in phtthisis, cough and catarrh.

*Shadbindu taila.*³ Take of sesamum oil, four seers, goat's milk four seers, juice of *bhringarájo* leaves, sixteen seers and prepare an oil with a paste composed of the following substances, namely, root of castor oil plant, and of *Tabernamontana coronaria*

1. भङ्गराजरसः ऋगीचीरतुल्योऽर्कतापितः । मृत्वावर्षं निहन्त्याथ नक्षत्रैव प्रयोगराट् ॥

भावप्रकाशः ।

2. जातीफलाय चूर्णम् । जातीफलं विडङ्गानि चिवकं तगरं तिलाः । तालीशं चन्दनं गुण्डी लवङ्गमुपकुञ्चिका ॥ कर्पूरशाम्भया धात्री मरिचं पिपली तुगा । एषा लक्षसमा भागाश्चातुर्जातकसंयुताः ॥ पलानि सप्त भङ्गायाः सिता सर्वसमा सता । चूर्णमेतत् क्षयं काशं श्वासश्च यद्दृषीगदम् ॥ अरीचकं प्रतिश्लायं तथाचानलमन्दताम् । एतान् रोगान् निहन्त्येव हृत्विन्द्राशनिर्यथा ॥

भावप्रकाशः ।

3. षड्विन्दुतैलम् । परस्त्रमूलं तगरं शताह्वा जीवन्ति रासा सप्त सैन्धवश्च । भङ्गं विडङ्गं मधुयष्टिका च विषीषधं कृष्णतिलस्य तैलम् ॥ आजं पयसैलविमिश्रितश्च चतुर्गुणे भङ्गरसे विपक्वम् । षड् विन्दवी मासिकया विधेयाः शीघ्रं निहन्तुः शिरसी विकारान् ॥ अतुलाश्च केशोक्षितांश्च दन्तान् दुर्बलमूलांश्च दृढीकरोति । संपुण्ड्रप्रतिमश्च चक्षुर्वाङ्गीर्बलशाम्भधिकं दहति ॥

भावप्रकाशः ।

(*tagara*), dill seeds, *Cœlogyne ovalis* (*jivanti*), *Vanda Roxburghii* (*rás ná*), rock salt, *Wedelia calendulacea* (*bhringarāja*), *baberang* seeds liquorice root, and ginger, in all one seer. Six drops of this oil, drawn in through the nostrils, are said to relieve headache and other affections of the head.

Bhringarāja taila.¹ Take of sesamum oil four seers, juice of *bhringarāja* leaves, sixteen seers, iron rust, the three myrobalans and the root of *Ichnocarpus frutescens* (*syámatalú*), reduced to a paste, in all one seer, and prepare an oil in the usual way. This oil is said to remove scurf from the head, turn grey hairs black, and cure alopecia.

The fresh juice of the leaves of *Eclipta prostrata*, is rubbed on the shaven scalp for the purpose of promoting the growth of hair.

VERNONIA ANTHELMINTICA, Willd.

Syn Serratula anthelmintica, Roeb.

Sans. सोमराजी, *Somarāji*. अमलगुज, *Avalguja*. वाकुची, *Vākuchi*.

Vern. Hákuch, *Somrāj*, *Beng.* Bákchi, *Hind.*

The seeds of *Vernonia anthelmintica* are of great repute in Sanskrit Materia Medica as a medicine for white leprosy (*leucoderma*), and other skin diseases. It is mentioned also as an anthelmintic, but is not much used as such, except in combination with a number of other medicines.

In chronic skin diseases the seeds are taken alone or in combination with other medicines. In the severer forms of skin diseases, such as psoriasis and lepra, the medicine is recommended to be continued daily for one year, when a complete cure is said to be effected. The following combination is used in these cases. Take of *vākuchi* seeds, and black sesamum, equal parts; powder and mix. Dose, about a drachm to be taken in the morning, with

1. अमलगुजतैलम् । अमलगुजरसेनैव लीहकिङ्कणनिकम् । सारिवा च पथेक्कल्लैसैलं
 दाहपथेक्कल्लैसैलम् । अमलगुजपरितं कसं मिन्दलप्रच ताहमेन ॥

tepid water. The medicine should be taken after perspiration has been induced by exercise or exposure to the sun. The diet should consist of milk and rice. In leucoderma a decoction of emblic myrobalan and eateshu is given with the addition of powdered *vákuchi* seeds.¹

Externally it is used in skin diseases in a variety of forms such as paste, oil, etc. The following combination is said to be very useful in eruptions attended with itching. Take of *vákuchi* seeds, seeds of *Cassia Sophora* (*kásamarda*) and *Cassia Tora* (*chakramarda*), turmeric and common sea salt, equal parts; rub them together into a paste with whey and fermented paddy water (*kánjika*), and apply over the eruptions.² *Vákuchi* seeds four parts and orpiment one part are rubbed into an emulsion with cow's urine, and applied to the patches of white leprosy or leucoderma.³

Somaráji taila. Take of *vákuchi* seeds, twelve seers and a half, water sixty-four seers, and boil down to sixteen seers. Take of the seeds of *Cassia Tora* (*chakramarda*) twelve seers and a half, water sixty-four seers, and boil down to sixteen seers. Boil these two decoctions with sixteen seers of cow's urine, sixteen seers of mustard oil and the following substances in the form of a paste, namely root of *Plumbago rosea* (*raktachitráka*), of *Gloriosa superba* (*lánguli*), ginger, turmeric, *pátchak* root, seeds of *Pongamia glabra* (*karanja*), root *Clitoria ternatea* (*aparájítá*), of *Nerium odorum* (*karavira*) and of *Calotropis gigantea* (*arka*), bark of *Alstonia scholaris* (*saptaparni*), wood of *Acacia catechu* (*khadira*), of *symplocos Racemasa* (*ladhra*), black pepper, *nim* leaves, leaves of *Cassia*

1. अत्रलुगुजाबीजकर्मः पीत्वा क्रीष्णेन वारिषा । भोजनं सर्पिषः कार्यं सर्वकुष्ठ-
प्रथाग्रतम् ॥ तत्रैष कुष्ठेन परीतद्वि यः सीमराजीं नियमेन खादित् ॥ संवत्सरं कृष्यति कु-
ष्ठितौषां स सीमराजीं वपुषातिरिक्तं । घर्मसिद्धौ कदुष्णेन वारिषा वागुजीं पिबेत् ॥

चक्रदत्तः ।

2. अत्रलुगुजं कासमर्दं चक्रमर्दं निशायुतम् । माषिमन्थेन तुल्याद्यं मसुकाश्रिक-
पेषितम् ॥ कर्कं कर्कूं जयत्युषां सिद्ध एष प्रयोगराट् ॥

चक्रदत्तः ।

3. कुष्ठबीजलुगुजबीजाक्षरितालचतुर्थभाससंमिश्रः । मूत्रेषु गवां पित्तः सर्ववर्षकरषः
परः चित्रे ॥

चक्रदत्तः ।

Soptora (*kásamarda*), juice of cow-dung, orpiment and realgar, each eight *tolás*. This oil is said to cure all sorts of skin diseases from vitiated blood, ringworm, prurigo, etc.¹

ANACYCLUS PYRETHRUM, D. C. Pellitory root was unknown to the ancient Hindus. In later compilations as *Sáragadhara* and the *Bhávaprakása* it is occasionally mentioned under the name of *Akarákarava*, and is used as an ingredient of compound prescriptions, as for example in the *Akaródi churna* described under opium.

ENHYDRA HELONCHA, D. C. *Syn. Hingtsha repens, Roxb. Sans. हिलमीचिका, Hílamochiká. Vern. Hínchá, Beng. Harhach, Hind.* The leaves of this water plant are eaten by the natives as a vegetable. Being somewhat bitter they are regarded as wholesome and invigorating. Medicinally they are described as laxative and useful in diseases of the skin and nervous system. The fresh juice of the leaves, in doses of about a *tolá* is prescribed by some Kavirajas in Calcutta, as an adjunct to tonic metallic medicines given in neuralgia and other nervous diseases.

NAT. ORDER PLUMBAGINACEÆ.

PLUMBAGO ZEYLANICA, Linn.

Sans. चिवक, Chitraku. Vern. Chita, Beng. Hind.

THE root of *Plumbago Zeylanica* is said to increase the digestive power, to promote the appetite and to be useful in dyspepsia, piles, anasarca, diarrhœa, skin diseases, etc. It is much used as a stimulant adjunct to other preparations, in the form of a

1. इङ्गुलीमराजी तैलम् । सीमराजीतुलाकाषि दद्रुन्नस्य तथैव च । विपचेत्यलिकैर्भावेः कटुसैदादके भिषक् ॥ चिवकं लाङ्गली लोध्रं नागरं कुष्ठमेव च । हरिद्रा मत्तमाशुष हरितालं ममःशिला ॥ आस्कोता कर्पूरश्च सप्तपर्षाकं गीमयम् । खट्विरं निम्बपत्रश्च मरिचं काशमर्दकम् ॥ गीमूवस्यादकं दत्त्वा शनैश्च हृदिना पचेत् । इति सर्वाणि कुठाणि आख्यदद्रुन्नस्यनपि ॥ कटिर्न दद्रुजातश्च गावधैवस्थानाग्रमम् ॥ रादीयसारसंश्लः ।

combination called *trimada* consisting of plumbago root, *báberang* seeds and the tubers of *Cyperus rotundus* (*mustaka*.)

It enters into the composition of numerous medicines for dyspepsia. The following is an illustration. Take of plumbago root, rock salt, chebulic myrobalan and long pepper, equal parts; powder and mix. Dose, about forty grains.¹ A favourite medicine for flatulence is an old prescription of Susruta called *Shaddharana yoga*. It is a powder composed of equal parts of the following substances, namely, plumbago root, *indrayava* seeds, root of *Stephania hernandifolia* (*páthá*), of *Picrorrhiza Kurroa* (*katuki*), *átis*, and chebulic myrobalan. Dose, about a drachm.²

The root of *Plumbago Zeylanica* is said to exercise a beneficial effect on piles, in which disease it is given in various combinations. One mode of administering it, is as follows. An earthen jar or pot is lined in its interior with a paste of the root, and curdled milk (*dadhí*) or *kánjika* is prepared in this pot, and taken by persons affected with hæmorrhoids and prnigo.

Plumbago root reduced to a paste is applied to abscesses with the object of opening them. It enters also into the composition of several preparations used as caustics. The following is an illustration. Take of plumbago root, root of *Baliospermum montanum* (*danti*), the milky juice of *Euphorbia neriiifolia* (*snuhi*), and of *Calotropis procera* or *Hamiltonii* (*arka*), marking nut, sulphate of iron, treacle and rock salt, equal parts; mix them together and make into a paste.³

PLUMBAGO ROSEA, *Linn. Sans.* रक्तचित्तक, *Raktachitraka*. *Vern.* *Lál chitá*, *Beng.* The properties of the root of *Plumbago rosea* are said to be like those of *P. Zeylanica*. It has besides a specific

1. सिन्धुत्सपयमगदीद्ववज्जिचूर्णमुष्णान्मुना पिबति यः खलु नष्टवज्जिः । तस्मान्निषेण
सृष्टेन वरे नवात्रं भञ्जीभवत्यशितमात्रमिह चणन ॥ चक्रदलः ।

2. चित्तकेन्द्रयवाः पाठा कट्टुकातिविषाभयाः । महाव्याधिप्रशमनी योगः षडधरणः
घृतः ॥ चक्रदलः ।

3. दन्ती चित्तकमूलवक् सपाकं पयसी गुडः । भस्मातकय काशीसं सैत्थवं दारणं
घृतः ॥ शक्रधरः ।

action on the uterus.* The root of *Plumbago rosea* taken internally will expel the fœtus from the womb, whether dead or alive.¹ This root is a more powerful vesicant than that of *P. Zolanica*, and enters into the composition of caustic pastes and stimulant and rubefacient applications.

NAT. ORDER MYRSINACEÆ.

EMBELIA RIBES, *Burm.*

Sans. विडङ्ग, *Vidanga.* *Vern.* Báberang, *Hind.*

SUSRUTA describes the seeds of *Embelia Ribes* as anthelmintic, alterative and tonic and recommends their use along with liquorice root for the purpose of strengthening the body and preventing the effects of age. Later writers regard báberang as carminative stomachic, anthelmintic and useful in intestinal worms, dyspepsia, and skin diseases.

For expelling intestinal worms, the powder of the seeds is given in drashm doses with honey, or with an infusion of the seeds. A compound powder and a *ghrita* are also prepared by the addition of various other drugs.²

* It is generally known that the scraped root of *Plumbago rosea* is introduced into the mouth of the womb, for the purpose of procuring abortion. The root is sometimes put to another use, a knowledge of which is likely to be of importance in a medico-legal point of view. Many years ago I had under my treatment a married female, who had accidental abortion and copious hæmorrhage after it. On the third day after the accident, she was brought to hospital, suffering from severe pain in the pelvic region, purulent discharge and high fever. On examination I found a piece of the *Lachitra* root, with a little rag wrapped round it, projecting into the vagina from the cervix uteri. I was told that a midwife had introduced it into the womb with the object of checking hæmorrhage after the abortion. If this woman had been a widow and had died from the effects of the abortion, and if on examination of the dead body, the root of the *Lachitra* had been found in the position mentioned above, the inevitable conclusion would have been, that it was introduced for the purpose of procuring abortion.

1. गरीमदनदहममूलं चिरजमपि गर्भं हतमद्यतं वा निपातयति ॥

(चक्रदत्तः ।)

2. विडङ्गं शतपाण्ड्यं विडङ्गेनावधतिलम् । पीतं कृमिहरं हृष्टं कृमिनांश्च गदाकरोत् ॥

(Susruta Samhita, Chikitsa Sthana, 1/100)

(Susruta Samhita, Chikitsa Sthana, 1/100)

Báberang enters into the composition of several applications for ringworm and other skin diseases. The following is an example. Take of *báberang*, rock salt, chebulic myrobalan, *bakuchi*, mustard, turmeric and the seeds of *Pongamia glabra* (*karanja*), equal parts and make them into a thin paste with cow's urine.¹

NAT. ORDER SAPOTACEÆ.

BASSIA LATIFOLIA, *Rorb.*

Sans. मधूक, *Madhuka.* *Vern. Mauá, Beng. Hind.*

THE flowers of *Bassia latifolia* yield a distilled spirit which is described by Susruta as heating, astringent, tonic and appetizing. The flowers are regarded as cooling, tonic and nutritive. They enter into the composition of several mixtures of a cooling and demulcent character. The following is an example. Take of the flowers of *Bassia latifolia*, bark of *Gmelina arborea* (*gambhári*), red sandal wood, root of *Andropogon muricatum* (*ushira*), coriander and raisins, equal parts, and prepare an infusion in the usual way. This infusion is given with the addition of sugar for the relief of thirst, burning of the body and giddiness.²

The seeds of *Bassia latifolia* yield by expression a thick concrete oil which is used in lamps, and by the poorer classes, for culinary purposes. This oil called *madhuka sira* in Sanskrit, is recommended to be applied to the head in cephalalgia.³

MIMUSOPS ELengi, *Linn.*

Sans. वकुल, *Vakula.* *Vern. Maulsarau, Hind.*

THIS ornamental tree is generally reared in gardens for the sake of its fragrant flowers from which a distilled water is prepared. The ripe fruits are sweetish and edible. The unripe

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|---|--------------|
| 1. त्रिकुल सैन्धव शिवा शशिरैखा सर्षप करञ्ज रजनीभिः । मीनसपिष्टी क्षेपः कुष्ठद्वये | |
| दिवसनायसमः ॥ | चक्रदत्तः । |
| 2. मधूकपुष्पगाम्भारी चन्दनीशीरधान्यकैः । द्राक्षायाश्च कृत फाष्टः श्रौतः शर्करया | |
| युतः ॥ दृषापित्तहरः प्रीती दहृ मूर्च्छां धमान् जयेत् ॥ | शार्ङ्गधरः । |
| 3. मधकसाक्षेण शिरः खिन्नसास्य विरंचयेत् ॥ | चक्रदत्तः । |

fruits are astringent and are recommended to be chewed for the purpose of fixing loose teeth.¹ The bark is described as astringent. A decoction of the bark is used as a gargle in diseases of the gums and teeth.²

NAT. ORDER STYRACEÆ.

SYMPLOCOS RACEMOSA, Roxb.

Sans. लोध्र, *Lodhra* तिह्रक, *Tillaka*. *Vern.* *Loth*, *Beng.* *Hind.*

THE bark of this tree, used in dyeing red, is considered cooling, astringent and useful in bowel complaints, eye diseases, ulcers, etc. It enters into the composition of numerous prescriptions for bowel complaints, along with *bela*, and *kurchi* bark. A decoction of the wood is used as a gargle for giving firmness to spongy and bleeding gums.³ In bleeding from the gums, a paste composed of *lodhra* bark, *rasot*, tubers of *Cyperus rotundus* (*mustaka*) and honey, is applied to the gums.⁴ The *Amritasagara* recommends the following application for ophthalmia. Take of *lodhra* bark, liquorice root, burnt alum and *rasot*, equal parts, and rub into a paste with water. This is applied round the eyes.

NAT. ORDER JASMINACEÆ.

NYCTANTHES ARBOR TRISTIS, Linn.

Sans. शफालिका, *Sephālikā*. रजनीहासा, *Rajanihāsā*.

Vern. *Siuli*, *Beng.* *Harsingār*, *Hind.*

THIS plant is cultivated in gardens for the sake of its flowers. These open at sunset, and before morning strew the ground

- | | |
|---|-------------|
| 1. चलदन्तस्त्रिकरं कार्यं वकुलचञ्चलम् ॥ | चक्रदत्तः । |
| 2. दन्तचालं तु गच्छूषी वकुलवक्त्रतो दितः ॥ | चक्रदत्तः । |
| 3. भिन्नीदककषायिणं तथैवामलकस्य वा । प्रञ्चालयेत् मुखं नेत्रे स्वस्थश्रीतीदकेन वा । | |
| मौलिकां मुखशोषघ्नीं पीडकां व्यङ्गमेव च । रक्तपित्तकृतान् रोगान् सद्यएव विनाशयेत् ॥ | सुश्रुतः । |
| 4. श्लेष्मिन् हृत्तरले च लोध्रमुत्तरस्यङ्गनेः । सखीटैः शस्यते लेपो गच्छूषे श्रीरिषी | |
| द्विताः ॥ | चक्रदत्तः । |

thickly with their fallen corollas. Native women and children collect them and separating the orange coloured tubes from the white petals, dry them in the sun and preserve them for dyeing their clothes a beautiful buff or orange colour.

The leaves are used in medicine. They are regarded as useful in fever and rheumatism. The fresh juice of the leaves is given with honey in chronic fever.¹ Some preparation of iron is also generally given along with it. A decoction of the leaves prepared over a gentle fire is recommended by several writers as a specific for obstinate sciatica.²

JASMINUM GRANDIFLORUM, *Linn.*

Sans. जाती, *Jāti.* *Vern.* Cháimeli, *Hind.*

The fragrant flowers of *Jasminum grandiflorum* are used for preparing a scented oil, which is considered cooling, and is much used by the richer natives for anointing their bodies before bathing. The leaves of this plant are used medicinally in skin diseases, ulcers in the mouth, otorrhœa, etc. and enter into the composition of numerous prescriptions for these diseases.

The fresh juice of the leaves is applied to soft corns between the toes.³ In ulcerations or eruptions in the mucous membrane of the month, the leaves are recommended to be chewed.⁴ An oil prepared with the juice of the leaves is poured into the ear in otorrhœa.⁵

JASMINUM SAMBAC, Willd. *Sans.* वार्षिकी, *Vārshikī.* *Vern.* Bel, *Beng.* *Hind.* The properties of this plant are said to resemble those of *Jasminum grandiflorum*.

- | | |
|---|-------------|
| 1. मधुना सर्वज्वरनुष्केफालीदलजी रसः ॥ | चक्रदत्तः । |
| 2. शैफालिकादलैः काथी मृद्वग्निपरिसाधितः । दुर्वारं मृद्वग्नीरीयं पीतमात्रं समुद्धरीत् ॥ | चक्रदत्तः । |
| 3. जातीपत्रञ्च संमर्द्य दद्यादलसके भिषक् ॥ | चक्रदत्तः । |
| 4. सुखपाके सिरावेधः शिरः कायविरचनम् । कार्यञ्च बहुधा नित्यं जातीपत्रस्य चर्वनम् ॥ | भाष्यकाशः । |
| 5. जातीपत्ररसे तैले विपके पूतिकर्णजित् ॥ | चक्रदत्तः । |

NAT. ORDER APOCYNÆ.

NERIUM ODORUM, *Solander.*

Sans. करवीर, *Karavira.* चवमारक, *Asvamāraka.*

Vern. Karabi, Beng. Kaner, Hind.

Two varieties of *Karavira* are described in the *Bhāvaprakāsa*, namely white and red flowered. The properties of both are identical, their roots being regarded as poisonous when taken internally and useful in skin diseases and inflammatory affections. The *Nerium odorum* has several synonyms in Sanskrit signifying horse-killer. It would seem from this, that the poisonous roots were used for destroying horses.

*Karavirādyā taila.*¹ Take of sesamum oil four seers, decoction of the root of *Nerium odorum*, eight seers, cow's urine, eight seers, *Plumbago rosea* root and *báberang* seeds, each half a seer, in the form of a paste; boil them together and prepare an oil in the usual way. This oil is used in eczema, impetigo and other skin diseases.

The root of *Nerium odorum* beaten into a paste with water is recommended to be applied to chancres and ulcers on the penis.² The fresh juice of the young leaves is poured into the eyes in ophthalmia with copious lachrymation.³

ALSTONIA SCHOLARIS, *R. Br.*

Sans. सप्तपर्ण, *Saptaparna.* विशालवृक्ष, *Viśálatvak.*

Vern. Ohhátim, Beng. Ohhátán, Hind.

The bark of *Alstonia scholaris* is very thick and spongy, hence the tree has received the names of *Viśálatvak*, *Vrihattvak*, etc.

1. करवीराय तैलम् । त्रैतकरवीररसी गीमूर्चं चित्रकं विडङ्गश्च । कुष्ठेषु तैलयोगः
सिद्धोऽयं सन्ध्यायी भिषजाम् ॥ चक्रदत्तः ।
2. करवीरस्य मूलेन परिपिष्टेन वारिष्या । असाध्यापि प्रजल्पसं
प्रसिष्यन्तात् ॥ शार्ङ्गधरः ।
3. करवीरतण्डुलसिद्धस्य च्छेदीहवण्डुलसिद्धसंपूर्णम् । नयनयुग्मं भवति दृढं सङ्घर्षेण
तद्वर्षणात् कुपितम् ॥ चक्रदत्तः ।

It is described as tonic, alterative and useful in fever and skin diseases. Susruta gives the following formula for use in catarrhal fever. Take of the bark of *Alstonia scholaris*, *gulancha*, *nim* bark and the bark of *Betula Bhojpattra*, equal parts, in all two tolás and prepare a decoction in the usual way.¹ It enters into the composition of several formulæ for skin diseases. The following is an illustration.

Amritáshtaka páchana. Take of the bark of *Alstonia scholaris*, *gulancha*, leaves of *Justicia Adhatoda* (*vásaka*) and *Trichosanthes dioica* (*patola*), tubers of *Cyperus rotundus* (*mustaka*), *Calamus Rotang* (*vetra*), catechu and *nim* leaves, and prepare a decoction in the usual way.

HOLARRHENA ANTIDYSENTERICA, *R. Br.*

Sans. कुटज, *Kutaja*, कालिङ्ग, *Kilinga*.

Vern. Kurchi, *Beng.* Kureyá, *Kaureyá*, *Hind.*

THE bark of *Holarrhena antidysenterica* constitutes the principal medicine for dysentery in the Hindu Pharmacopœia. Before the discovery of the efficacy of ipecacuana in this disease, many chronic cases which did not get well under European medical treatment, used to be cured by the Kavirajes, by their preparations of this bark. The seeds called *Indrayava* in Sanskrit and *Indrajav* in the vernacular, are also used in medicine, they being regarded as astringent, febrifuge and useful in fever, dysentery, diarrhœa, and intestinal worms.

The bark of *Holarrhena antidysenterica* is administered in a variety of ways. The expressed juice of the bark is given with honey.² A fluid extract of the bark is given with the addition of ginger and *atis*.³ A compound decoction called *Kutajáshtaka* is

1. समच्छदं गुडूचीच निम्बं सूयंकमेव च । काययिला पिबेत् कायं सचौट्टं कफजे ज्वरे ॥
सुपुतः ।
2. सूखवन्मूलिकापत्ररसः पानाद्यपीडति । सर्व्वतिसारान् श्नीनाककुटजलवयसीशयना ॥
शाङ्गधरः ।
3. कुटजलकञ्जतः काथी चनीमूलः सुशीतलः । क्षिप्तिशितिविषायुकः सर्व्व्वादी-
षत्रदपः ।

thus prepared. Take of *kutaja* bark, *átis*, root of *Stephania hernandifolia* (*pathá*), flowers of *Woodfordia floribunda* (*dhátaki*), bark of *Symplocos racemosa* (*lodhra*), root of *Pavonia odorata* (*bálá*), rind of pomegranate fruit, and the tubers of *Cyperus rotundus* (*mustaka*), quarter *tolá* each, water thirty-two *tolás*, boil together till reduced to one-fourth.¹

*Kutajaleha*² or confection of *kutaja* bark. Take of *kutaja* bark twelve seers and a half, water sixty-four seers; boil down to sixteen seers and strain. Boil the strained decoction till reduced to a thick consistence, then add *sachal* salt, *yavakshára*, *vit* salt, rock salt, long pepper, flowers of *Woodfordia floribunda* (*dhátaki*), *indrayava* seeds and *oumin* seeds, each sixteen *tolás*, in fine powder, and prepare a confection. Dose, about a drachm with honey in chronic and acute dysentery.

Pathádyá churna.³ Take of the root of *Stephania hernandifolia*, fruit of *Aegle Marmelos* (*vilva*), plumbago root, long pepper, black pepper, ginger, bark of *Eugenia Jambolana*, rind of pomegranate fruit, flowers of *Woodfordia floribunda* (*dhátaki*), root of *Picrorrhiza Kurroa* (*katuki*), *átis*, tubers of *Cyperus rotundus* (*mustaka*), wood of *Berberis Asiatica* (*dárvi*), *chiretdá*, seeds of *Holarrhena antidysenterica* (*indrayava*), one part each, *kutaja* bark, equal in weight to all the above ingredients; powder them finely and mix. Dose, about one to two scruples to be taken with

1. कुटजातिविषा पाठा घातकी लोध्र सुसकैः । त्रीवैर दाडिमयुतैः कृतः काषः
समाक्षिकः ॥ पथी मोचरसेनेव कुटजाटकसञ्चकः । अतिसारान् जयेद्वाह रक्तशूलामदुसारान् ॥

शाङ्गधरः ।

2. कुटजलेहः । शतं कुटजमूलञ्च त्रयं तीयार्धेण पचेत् । काषे पादावशेषेऽग्निं
लेहं पुत्रे पुनः पचेत् ॥ सौवर्चलं यवचारं विडं सैन्धवं पिपलीं । घातकीन्द्रयवाजाजीचूर्णं
हृत्वा पलवयम् ॥ लिङ्गाहदरमात्रं तत् शीतं चौद्रेण संयुतम् । पक्वापक्वमतीसारं नामावर्धं
सवेदनम् ॥ दुर्बलं यद्वर्षीरीगं जयेच्चैव प्रवाहिकाम् ॥

चक्रदत्तः ।

3. पाठाद्यं चूर्णम् । पाठा विल्वानल व्यीष जम्बू दाडिम घातकी । कटुकातिविषा
मुस्त दावी भूमिश्च वसकैः ॥ सर्वैरेतैः समं चूर्णं कौटजं तद्बहुलाब्जना । सचौद्रेण
पिबेच्छिञ्जरातिसारशूलवान् ॥ बह्वाहयद्व्यधीदीपारीचकालवसादजित् ॥

चक्रदत्तः ।

rice-water and honey. Another compound powder called *Gangādhara churna*, is of similar composition to the above, with a few additional substances.

Kutajārishta,¹ or fermented liquor of *kutaja*. Take of *kutaja* root-bark, twelve seers and a half, raisins, six seers and a quarter, flowers of *Bassia latifolia* (*madhuka*), and bark of *Gmelina arborea* (*gambhāri*), eighty tolās each; boil them together in two hundred and fifty-six seers of water, till reduced to sixty-four seers, and strain. Then add flowers of *Woodfordia floribunda* (*dhātaki*), two seers and a half, treacle twelve seers and a half, and let the mixture ferment for a month, after which it will be ready for use. Dose, one to three ounces.

An oil for external application called *Grahanimihira taila* is prepared with sesamum oil, decoction of *kutaja* bark and a number of astringent and aromatic substances in small quantities.

Pradarāri lavaḥa.² Take of *kutaja* bark, twelve seers and a half and prepare a fluid extract as in the preparation called *kutajaleha*, above described. Then add the following substances in fine powder, namely, gum of *Bombax Malabaricum* (*mocharasa*), Indian madder, root of *Stephania hernandifolia*, (*pāthā*), *bela* fruit, tubers of *Cyperus rotundus* (*mustaka*), flowers of *Woodfordia floribunda* (*dhātaki*), *ātis*, prepared talc and iron, each eight tolās, mix them intimately and prepare a confection. Dose, about a drachm. This preparation is given in menorrhagia and other discharges from the uterus.

1. कुटजारिष्टः । तुला कुटजमूलस्य सद्दीकार्दतुला तथा । मधुकपुष्प काशमथो-
भांगान् दश पलोन्मिसान् ॥ चतुर्दशिभसः पक्वा काथयेद्दीपशेषिते । धातका विंशतिपलं
गुह्यं च तुला क्षिपेत् ॥ मासमात्रं स्थितौ भाण्डे कुटजारिष्टसंज्ञकः । ज्वरान् प्रशमयेत्
सर्वान् कुप्यात् तीक्ष्णं धनञ्जयम् ॥ शङ्खचरः ।

2. प्रदरारिलौहः । वत्सकस्य तुलां सम्यक् जलद्वीये विपाचयेत् । अष्टभागावशिष्टं
कषायमवसारयेत् ॥ बस्त्रपूते घनीभूते द्रव्याणीमानि दापयेत् । समन्ना श्यामलं पीठा बिलं
सुखाच्च धातकी । अरुणातिविषा व्योम लौहं सर्वं पलं पलम् । कीलमात्रं प्रयुञ्जीत कुशमूलं
भयो ह्यम् ॥ शैतं रक्तं तथा नीलं पीतं प्रदरदुस्तरम् । कुचिशूलं कटीशूलं देहशूलञ्च
सर्व्वेभ्यम् ॥ प्रदरारिरयं लौहो हन्ति रोगान् सुदुस्तरान् । आयुःपुष्टिकरश्चैव बलवर्ध्याधि-
र्बन्धः ॥ भेषज्यरत्नावली ।

The seeds of *Holarrhena antidysenterica* enter into the composition of a good many prescriptions for fever, bowel complaints, piles, intestinal worms, etc. The following are a few illustrations. Take of *indrayava* seeds and the tubers of *Cyperus rotundus* (*mustaka*), each four tolás, rub them into a paste with water and boil in one seer of water, till the latter is reduced to one-fourth. This boiled emulsion is given in doses of about a half to one ounce with honey.¹ A decoction of *Indrayava* seeds in usual proportions is used for checking bleeding from Piles. It is given with the addition of ginger.²

Laghu gangádhara churna.³ Take of *indrayava* seeds, tuber of *Cyperus rotundus*, (*mustaka*), *bela* fruit, bark of *Symplococ racemosa* (*lodhra*), gum of *Bombax Malabaricum* (*mocharasa*) and flowers of *Woodfordia floribunda* (*dhátaki*) equal parts powder and mix. Dose, about a drachm with butter-milk and treacle, in various sorts of bowel complaints.

ICHNOCARPUS FRUTESCENS. Sans. शरिवा, *Sárivá*. Vern. *Shyámatalá*. The properties of the roots of this plant are said to be identical with those of *Hemidesmus Indicus*. These two drugs are often used in combination under the designation of *Sárivádavya*, (see next article).

NAT. ORDER ASCLEPIADEÆ.

HEMIDESMUS INDICUS R. Br.

Sans. अनन्तमूल, *Anantamula* शरिवा, *Sárivá*.

Vern. *Anantamul*, Beng. Hind.

In Sanskrit Medicine, *Hemidesmus Indicus* and *Ichnocarpus frutescens* are both called *sárivá* and are described under the name

1. मुस्तकेन्द्रयवैः सिद्धा प्रमथ्या विपलीन्द्रिया। सुशीता मधुसंयुक्ता रक्तातीसारनाशिनौ
शार्ङ्गचरः।
2. शकृत्कायः सविद्यो वा किंवा विल्लशलाटवः। वीथ्या रक्ताग्नेश्वरत् ज्योतिषिण
मूलसिपतः ॥
3. लघुनरुणधरचूर्णम्। मुस्तकेन्द्रयवै विल्ल' जीर्णं मोक्षरसं तथा। घालनीं चूर्णयित्वा
सुशीलां पावयेत् सुधीः ॥ सर्व्यातीसारश्मनं निरुच्यति प्रवाहिकाम्। लघुनरुणधरं नाम तु
सिदाहर्षं परम् ॥ शार्ङ्गचरः।

of *sárivádva* or the two *sárivás*. They are often used together. When however *sárivá* is used in the singular number it is the usual practice to interpret it as *syámalatá* (*Ichnocarpus frutescens*). The roots of these plants are said to be sweet, demulcent, alterative and useful in loss of appetite, disinclination for food, fever, skin diseases, syphilis and leucorrhœa. They are generally used in combination with a number of other medicines. The following are a few illustrations. Take of *anantamula*, root of *Pavonia odorata* (*bílá*), tubers of *Cyperus rotundus* (*mustaka*), ginger, and the root of *Picrorrhiza kurroa* (*katuki*), equal parts, in all two *tolás*, and reduce them to a paste with water. This dose administered with warm water in the morning, is said to clear the bowels and relieve fever.¹

A decoction of the roots of colocynth, *anantamula*, *sárivá* and *Hedyotis biflora* (*parpáta*), prepared in the usual way, is administered with the addition of powdered long pepper and bdellium in chronic skin diseases, syphilis, elephantiasis, loss of sensation and hemiplegia.²

CALOTROPIS GIGANTEA AND PROCERA, R. Br.

Syn. Asclepias gigantea, Roxb.

Suns. अर्क, Arka, अलर्क, Alarka.

Vern. Akanda, Beng. Máddár, Hind.

procera and *C. gigantea*, both pass by the native *lár*. "*C. procera* the smaller of the two, prefers ate of the Deccan, the Upper Provinces of Bengal, the Punjab and Seinde; *C. gigantea*, lower Bengal, the Madras

1. अमन्ता बालकं मुक्तं नागरं कटुरोहिणी। पिशा सुखाम्बुना कर्कं पायशेख
सम्भितम् ॥ कर्कः खल्येन कालेन हन्यात् सर्कञ्ज्वरामयम्। विदध्यात् कौष्ठसंघनि
दीपशेख इतामनम् ॥ भेषज्यरवावली।

2. इन्द्रबाह्यिकामन्ता शारिषा पर्यटेः समैः। एभिः कृतं पियत् कार्यं कषायगुणु
संयुतम् ॥ अष्टादशसु कुष्ठेषु वातरक्तदिते तथा। उपदंशे द्वीपदे च प्रसूते पक्षघातके
शाङ्खरः।

and Malayan Peninsula, and Ceylon." Sanskrit writers mention two varieties founded upon the colour of the flowers, namely, white, called *alarka*, and red, called *arka*. The milky juice, flowers, root-bark and leaves are all used in medicine. The root-bark is said to promote the secretions and to be useful in skin diseases, enlargements of the abdominal viscera, intestinal worms, cough, ascites, atasarca, etc. The milky juice is regarded as a drastic purgative and caustic and is generally used as such in combination with the milky juice of *Euphorbia neriifolia*. The flowers are considered digestive, stomachic, tonic and useful in cough, asthma, catarrh and loss of appetite.

The leaves mixed with rock salt are roasted within closed vessels, so that the fumes may not escape. The ashes thus produced are given with whey in ascites and enlargements of the abdominal viscera.¹

The following inhalation is prescribed for cough. Soak the powdered root-bark of *arka* in its own milky juice and dry. Bongies are prepared with this powder and their fumes inhaled.² The root-bark, reduced to a paste with sour congee, is applied to elephantiasis of the legs and scrotum.³ The milky juices of *Calotropis gigantea* and *Euphorbia neriifolia* are made into tents with the powdered wood of *Berberis Asiatica*, for introduction into sinuses and fistula in ano.⁴ The milky juice is applied to carious teeth for relief of pain.⁵

1. अर्कपत्रं सलवणमन्तर्धूमं दहत्ततः । मस्तुना तत् पिवेत् चारं गुल्माप्लीहोदरापहम् ॥

चक्रदत्तः ।

2. मरिच शीलाकं चैरैर्वाकौ त्वचमाद्य भावितां शुक्लाम् । कृत्वा विधिना धूमं पिबतः
कासाः समं यान्ति ॥

चक्रदत्तः ।

3. मिथिष्टमारणालेन रुपिकामूलवल्कलम् । प्रलेपात् श्लीपदं हन्ति बह्वमूलमपि कृष्णात् ॥

चक्रदत्तः ।

4. खुल्लकंदुग्ध दास्योभिर्वृत्ति कृत्वा विचक्षणः । भगन्दरगतिं ज्ञात्वा पूरयेत्ता प्रयत्नतः ॥

चक्रदत्तः ।

5. समच्छदा र्शदुग्धाक्ष्वा मुरणं क्षिमिदन्तुत् ॥

चक्रदत्तः ।

Arka taila.¹ Take of prepared sesamum oil, four seers, juice *irka* leaves, sixteen seers, and turmeric reduced to a paste, one r; boil them together in the usual way. This oil is said to be useful in eczema, and other eruptive skin diseases. Sometimes ointment is substituted for turmeric in this preparation.

NAT. ORDER LOGANIACEÆ.

STRYCHNOS NUX VOMICA, Linn.

Sans. कुपीलु, *Kupilu*, कुलक, *Kulaka*, विषमुष्टी, *Vishamushti*.

Vern. *Kuchilá*, *Beng. Hind.*

NUX VOMICA has been introduced into Hindu Medicine at a recent period. There is no generally recognized Sanskrit name for it. In some recent Sanskrit compilations, it is mentioned under its vernacular name *kuchilá*, a term which is not to be found in standard Sanskrit dictionaries. Sárangadhara and other writers give some prescriptions containing a drug named *vishamushti*, which is generally interpreted to mean in these places, *nux vomica* seeds; but *vishamushti* according to the *Bhāvapīkāśa* has an edible fruit and is called *Kareruá* in Hindi. In this work the Sanskrit term *kupilu* with its synonyms, *kulaka*, *vishatinduka*, *markatatinduka*, etc., is said to be the Sanskrit synonyms for *kuchilá* and this translation is followed in some Hindi medical books, as for example in the treatise on the properties of drugs, compiled by Pundit Keshava Prasáda Dvivedi of the Agra College. This interpretation however is not accepted in Bengal, for neither Wilson nor Sir Rájá Rádhákanta Deva has given *kuchilá* as the Vernacular for *kupilu*, nor does this term or any of its synonyms above mentioned, occur in any Sanskrit medical prescription. In our account of this drug we will according to the practice of our Kavirájas in Bengal interpret *Vishamushti* as *kuchilá*.

The *Strychnos nux vomica* is indigenous to most parts of India. I found it to be common in the jungles about Manbhoom. The

1. अकतेलम् । अकपत्रसे पक्वं कटुतेलं निशायुतम् । मनःशिलायुतं वापि पामा-
ककटिमाद्यनम् ॥

ripe fruits of the size of apples, have a beautiful orange colour and contain a bitter gelatinous pulp, within which the flat and curiously umbilicated seeds are found imbedded.

Nux vomica seeds produce a sort of intoxication, for which they are habitually taken by some natives as an aphrodisiac. Those who do so gradually become so far accustomed to this poison that they often come to take one seed daily, which is cut into small pieces and chewed with a packet of betel leaf. Medicinally the seeds are used in dyspepsia and diseases of the nervous system.

Samiragaja kesari. Take of *nux vomica*, opium and black pepper equal parts, and make into two-grain pills. These are given with the juice of betel leaves in diseases of the nervous system.

*Sulharanayoga.*¹ Take of chebulic myrobalan, long pepper, black pepper, ginger, *nux vomica*, assafœtida, sulphur and rock salt, equal parts and make into four-grain pills. These are given with warm water in dyspepsia with pain after meals, and in diarrhœa. Sârangadhara gives the following prescription in which the term *vishamushti* is usually understood to mean *nux vomica*. Take of mercury, sulphur, aconite, ajowan, the three myrobalans, *sarjikâkshara* (impure carbonate of soda), *yavakshâr* (impure carbonate of potash), rock salt, plumbago root, cumi seeds, *sachal* salt, seasalt, *bâberang*, black pepper, long pepper and ginger, equal parts, *vishamushti* (*nux vomica* seeds) equal weight to all the above ingredients and make into pills of the size of black pepper corns with lemon juice. These pills are given to promote the appetite and increase the digestive power.²

1. शूलहरणयोगः । हरीतकी विकटुकं कुचिला द्विद्व गन्धकम् । सैन्धवश्च रसर्वं वटीः । कुर्यात् सुखावहाः ॥ लघुकीलप्रभाषास्ता शस्यन्ते प्रातरैव च । एकैका वटि दास्या गुल्मशूलनिवारिणी ॥ यद्दृष्ट्यामतिसारे च साजीर्णं मन्दपावकी । योजयेदुष्णपय सुखमाप्नोति तत्त्वयात् ॥ रसेन्द्रसारसंयहः ।

2. शुद्धसूतं विषं गन्धमजमीदा फलतयम् । खर्जिचारं यवचारं वक्रि सैन्धव जीरका सीवर्जलं विडङ्गानि सामुद्रं मूषणं समम् । विषमुटि सर्वत्रुष्यं जम्बीराक्षीनं मर्दये भरिचामां वटीं शरदिबक्रिमिथप्रशान्तये ॥ शार्ङ्गपर्कः ।

OPHELIA CHIRATA.

STRYCHNOS POTATORUM,

Sans. कतक, *Kataka*, चम्बुसदा, *Ambuprasāda*. *Vern.* Nirmali, *B.*

THE use of these seeds for the purpose of clearing muddy water is as old as Susruta, who mentions it in his chapter on water. Medicinally it is chiefly used as a local application in eye-diseases. The seeds are rubbed with honey and a little camphor, and the mixture applied to the eyes in lachrymation or copious watery discharge from them. Rubbed with water and rock salt they are applied to chemosis in the conjunctiva. They enter also into the composition of several complex preparations for ulcer of the cornea, etc.¹

NAT. ORDER GENTIANACEÆ.

OPHELIA CHIRATA, *Grisebach*.

Syn. *Gentiana Chirayita*, *Roxb.*

Sans. किराततिका, *Kirātatikta*, भुमिन्च, *Bhumimba*.

Vern. *Chiretā*, *Beng. Hind.*

THE *Ophelia Chirata* is indigenous to the "mountainous regions of Northern India from Simla through Kumaon to the Morung district in South Eastern Nepal." Its Sanskrit name *kirātatikta*, means "the bitter plant of the Kirātas, an outcast race of mountaineers in the north of India." It is also called *Andryatikta* or the bitter plant of the Non-Aryans. The Bhavaprakāsa mentions a variety of *chiretā*, under the name of *Naipāla*, that is, produced in Nepāl, and describes it as a febrifuge.

Chiretā is regarded as tonic, febrifuge and laxative, and is used in fever, burning of the body, intestinal worms, skin diseases, etc. It is much used in fevers of all sorts in a variety of forms and in combination with other medicines of its class. The following are a few illustrations. Take of *chiretā*, *gulancha*, raisins, emblic myrobalan and zedoary root, equal parts and prepare a

1. कतक: श्रीहेम संयुक्त: कतक: किरातिका वा । किरातिकाकीनी वा किरातिकाकीनी ।

decoction in the usual way.¹ A compound powder called *Sudarsana churna*, is prepared by taking equal parts of fifty-four different substances and of *chireta*, equal to one-half the weight of all the other ingredients, and mixing them together. It is largely prescribed by native physicians in chronic febrile diseases.

Kirútádi taila, or oil of *chiretá*.² Take of *chiretá* one seer, water sixteen seers, boil together till reduced to four seers and strain. Boil this decoction of *chiretá*, with four seers each of prepared mustard oil, *kánjika* and whey, and two tolás each of the following substances in the form of a paste, namely, root of *Sansevieria Zeylanica* (*murvá*) lac, turmeric, wood of *Berberis Asiatica* (*dúruharidrá*), madder, root of *Citrullus Colocynthis* (*indraváruni*), *páchak* root, root of *Pavonia odorata* (*búlá*), of *Vanda Roxburghii* (*rásná*), *Scindapsus officinalis* (*gajapippali*), long pepper, black pepper, ginger, root of *Stephania hernandifolia*, (*páthá*), *indrajava* seeds, *sochal*, *vit*, and rock salts, root of *Justicia Adhátoda* (*rásaka*), *Calotropis gigantea* (*arka*), *Ichnocarpus frutescens* (*shyámalatá*), *Cedrus Deodara* (*devadáru*) and the fruit of *Trichosanthes palmata* (*mahákála*). The oil thus prepared is rubbed on the body in chronic fever with emaciation and anæmia.

CANSCORA DECUSSATA, R. et. Sch.

Syn. Pladera decussata, Roxb.

Sans. गङ्गुषी, Sankhapushpi.

Vern. Dinkuni, Beng. Sankháhuli, Hind.

THIS little plant is regarded as laxative, alterative and tonic and is much praised as a nervine. It is used in insanity, epilepsy

1. किरातविक्रमश्रुतां द्राक्षां आमलकीं शटीम् । निषीद्य सततं क्राथं वासपित्तञ्चरं पिबेत् ॥
भेषज्यारवौषधी ।

2. किरातादि तेषाम् । मूर्ध्ना छाया हरिद्रे दे मन्त्रिणा सेन्द्रवार्षणी । त्रीविरं पुष्करं राक्षा कपिवह्नी कटुवदम् ॥ पाठा सेन्द्रयवश्चैव खलसद्वयसंयुतम् । श्यामा दास वासकाकं महाकाशपाकं तथा ॥ दक्षिणशारंगालेन केरातेन च सम्पद्येत् । प्रथं प्रथं समादाय तेषामक्षे विपाचयेत् ॥ शिथं धुक्तं श्वरश्लेष्मं सततं तथा । पाण्डुरं चस्त्रिमज्जकं सन्धेःश्वरमपीहृदि ॥

and nervous debility. The fresh juice of the plant, in doses of about an ounce, is given, with the addition of honey and *páchak* root, in all sorts of insanity.¹ A paste made of the entire plant, including roots and flowers, is recommended to be taken with milk as a nervous and alterative tonic.² The following compound powder is used in similar cases. Take of *gulancha*, *Achyranthes aspera* (*apámarga*), *báberang*, *páchak* root, root of *Asparagus racemosus* (*satamuli*), *Acorus Calamus* (*vachá*), chebulic myrobalan, and *Causcora decussata*, in equal parts; powder and mix. It is said that the use of this powder for three days will enable a student to learn by rote a thousand couplets of poetry.³

NAT. ORDER BIGNONIACEÆ.

CALOSANTHES INDICA, Bl.

Syn. Bignonia Indica, Linn.

Sans. श्लोमाक, Syonáka. भरतु, Aralu.

Vern. Násoná, Beng. Arlu, Hind.

THIS is a small tree, growing over a large part of India. The root-bark is used in medicine. It is considered astringent, tonic, and useful in diarrhoea and dysentery. It is also an ingredient of *dasamula* (see *Desmodium gangeticum*), and is thus largely used in a great variety of disease. The tender fruits are described as grateful, carminative and stomachic.

कामलां यद्दृशीषेव अतिसारं हलीमकम् । श्लोमानं पाण्डुं त्रययुं नाशयेत् नाव संशयः ॥
नास्ति तैलवरोक्षेव ज्वरदर्पकुलानाकम् ॥ भेषज्यरत्नावली ।

1. ब्राह्मी कुभाण्ड घड्यया शङ्खिनीस्वरसः पृथक् । मधु कुष्ठ युतः पीतः सर्वान्मादा-
पहारकः ॥ चक्रदत्तः ।

2. रसी गुडूच्यास्तु समूलपुण्याः कल्कः प्रयोज्यः खलु शङ्खपुण्याः । आयुःप्रदाना-
मयनाशनानि वक्ष्वापिबर्षस्वरवर्धनानि ॥ मेथ्यानि चैतानि रसायनानि मेथ्या विशेषतः तु
शङ्खपुष्पी ॥ चक्रदत्तः ।

3. गुडूच्याधानामं विद्वन्न शङ्खिनी वचाभया कुष्ठशतावरी सभा । हृतेन खौदा प्रकरीति
मानवं त्रिभिर्दिनेः श्लोकसङ्घसधारिणम् ॥ चक्रदत्तः ।

The root-bark is enclosed within some leaves and a layer of clay and roasted. The juice expressed from this roasted bark is given in diarrhoea and dysentery with the addition of 'mocharasa (gum of *Bombax Malabarium*).¹

In otorrhoea, Sárangadhara recommends the use of an oil prepared by boiling, over a gentle fire, sesamum oil with a paste made of the root-bark of *Calosanthes Indica*.²

STEREOSPERMUM SUAVEOLENS, D. C.

Syn. Bignonia suaveolens, Roxb.

s. पाटला, *Pátalá*. Vern. *Páruł*, Beng. *Pád*, Hind.

THIS is a middle sized flowering tree, a native of Bengal. The flowers are large, of a dark crimson colour and exquisitely fragrant. Steeped in water they impart their fragrance to it. Rubbed up with honey they are given to check hiccup. The root-bark is an ingredient of *dasamula* (see *Desmodium gangeticum*), and is thus largely used in native medicine. It is regarded as cooling, diuretic and tonic, and is generally used in combination with other medicines. The ashes of this plant are used in the preparation of alkaline water and caustic pastes.

NAT. ORDER CONVULVULACEÆ.

IPOMCEA TURPETHUM, R. Br.

Syn. Convolvulus, Turpethum, Roxb.

Sans. चिहत्, Trivrit. चिपुटा, Tripudá.

Vern. Teori, Beng. Nisoth, Tarbud, Hind.

Two varieties of *trivrit* are described by most writers, namely, *sveta*, or white and *krishna* or black. The white variety is preferred

1. अरशुत्वमूलतयेव पुटपाकीऽग्निदीपनः । मधु नीचरसांश्याच्च युक्तः शर्वादि-
धारकित् ॥ शार्ङ्गपरः ।

2. तैलं शीतानकमूलैश्च मन्दापौ परिपाचितम् । इरीहाश्च त्रिदोषोत्थं कर्षणं

for medicinal use as a moderate or mild cathartic. The black variety is said to be a powerful drastic and to cause vomiting, faintness and giddiness. *Trivrit* has been used as a purgative from time immemorial and is still used as such by native practitioners, alone, as well as in various combinations. In fact this medicine is the ordinary cathartic in use amongst natives, just as jalap is among Europeans. The usual mode of administering it is as follows. About two scruples of the root are rubbed into a pulp with water and taken with the addition of rock salt and ginger or sugar and black pepper.

A compound powder called *Nārācha churna*,¹ is thus prepared. Take of *Trivrit* root eight tolās, long pepper two tolās, sugar eight tolās; powder and mix. About a scruple of the powder is recommended to be taken before meals in constipation with hard fæces.

Tumburbīdya churna.² Take of the fruits of *Xanthoxylum hostile* (*tumburu*), rock, *vīl* and *sochal* salts, *ajowan*, *pāchak* root, *yavakshāra*, chebulic myrobalan, assafœtida and *babering* seeds, one part each, *trivrit* three parts; powder the ingredients and mix. Dose, about a drachm with warm water, in painful dyspepsia with costiveness and flatulence.

In anasarca supposed to be caused by deranged bile, a decoction of *trivrit*, *gulanča*, and the three myrobalans is recommended to be taken. Milk diet should be prescribed along with this medicine.³

1. नाराचचूर्णम् । खड्गपलं त्रिवृतासमसुपकुल्या कर्षचूर्णितं श्लक्ष्णम् । प्राप्तीजने च समधु विडालपदकं लिङ्गेत् प्राज्ञः ॥ एतद्भाद्रपुरीषे पिप्पे कफे च विनियोज्यम् । सुखादूर्णपयोन्वीड्यं चूर्णं नाराचकी नाम्ना ॥ भावप्रकाशः ।

2. तुम्बूर्वाद्यं चूर्णम् । तुम्बुरुणि चिलवणं यमानी पुष्कराह्वयम् । यवशाराभया विडु विडुकाणि समानि च ॥ त्रिवृत् विभागिका ज्ञेया सूक्ष्मचूर्णानि कारयेत् । पिप्पेदुष्णेन सीयेन यवक्रायेन वा पिबेत् ॥ जयेत् श्लेष्मिणि शूलानि गुक्काभानीदराणि च ॥

शार्ङ्गधरः ।

3. श्रीराचलः पित्तजलेऽथ शीषे निरहुडूचौ त्रिफलाकषायम् ॥

चक्रवर्तनः ।

BATATAS PANICULATUS, Choisy.

Syn. Convolvulus paniculatus, Roeb.

Sans. विदारी, Viddri, भूमिकुशाख, Bhumikushamānda.

Vern. Bhui kumrá, Beng. Bilai kand, Hind.

THE large tuberous root of this handsome climber is considered tonic, alterative, aphrodisiac, demulcent and lactagogue. The powdered root-stock is given with wine, for the purpose of increasing the secretion of milk.¹ In the emaciation of children with debility and want of digestive power, the following diet is recommended. Take of *vidári*, wheat-flour and barley equal parts, and make into a confection with milk, clarified butter, sugar and honey.² *Susruta* gives several prescriptions for its use as an aphrodisiac. The simplest is as follows. Macerate the powder of the root in its own juice and administer with honey and clarified butter.³ *Vidári* enters into the composition of several diuretic and demulcent mixtures. The following is an illustration.

*Mutrakrichchhántaka rasa.*⁴ Take of *vidári*, fruits of *Tribulus terrestris*, (*gokshura*), liquorice root, and flowers of *Mesua ferrea* (*nágakesara*), equal parts and prepare a decoction with water. This decoction is given with the preparation of mercury called *rasasindura*, in scanty or acrid urine, to promote this secretion.

PHARBITIS NIL, Choisy. The seeds of this plant, called *káládána* in the vernacular and now commonly used as a purgative

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1. विदारीकन्दं सुरया पिवेहा सान्यवर्धनम् ॥ चक्रदत्तः ।
 2. यदा तु दुग्धली बालः खादन्नपि च यस्मिन् । विदारीकन्दं गोधूमं यवचूर्णं
शुतशुतम् ॥ खादयेत्तदगु चीरं शतं समधुमकर्मम् ॥ भावप्रकाशः ।
 3. चूर्णं विदार्याः सुकृतं खरसेनैव भावितम् । सर्पिः चीरयुतं खीट्वा शतं गच्छे-
दराजनाः ॥ सनुतः ।
 4. मूलकृन्नावाकरसः । विदारीं गीजुरं यटीं केशरञ्च समं पचेत् । तत्कषायं
पिवेत् चीरे रसमभयुतं पुनः ॥ मूलकृच्छरं स्वातं ससाहात् पित्तसञ्चयम् ॥

रसेन्द्रसापञ्चमः ।

all over India, were unknown to the ancient Hindus. There is no name for them in Sanskrit.

ARGYREIA SPECIOSA, Sweet.

Syn. *Lettsomia nervosa*, Roxb.

Sans. इहदारक, Vriddhādaraka. Vern. Bijtarakā, Beng.

THE root of this plant is regarded as alterative, tonic and useful in rheumatic affections, and diseases of the nervous system. As an alterative and nervine tonic it is prescribed in the following manner. The powdered root is soaked, seven times during seven days, in the juice of the tubers of *Asparagus racemosus* (*salamuli*) and dried. The resulting powder is given in doses of a quarter to half a tolá, with clarified butter, for about a month. It is said to improve the intellect, strengthen the body and prevent the effects of age.¹ In synovitis the powdered root is given with milk.²

Ajamodādi churna.³ Take of *ajowan*, *bāberang*, rock salt, plus bago root, *Cedrus deodara*, long pepper root, long pepper, black pepper and dill seeds each two tolás, chebulic myrobalan two tolás, root of *Argyreia speciosa* twenty tolás, ginger twenty tolá powder and mix. Dose, about two drachms with treacle. The preparation is said to be useful in rheumatic affections and hemiplegia.

1. इहदारकमूलानि प्रक्षाल्यूर्ध्वानि कारयेत् । शतावर्ष्या रसेनैव सप्तरात्राणि भावयेत्
अक्षमावन्तु तद्गूर्णं सर्पिषा सह सेवनात् । मासमात्रोपयोगिन मतिमान् जायते मर
नेषावी श्रुतिमात्रैव बलिपलितवर्जितः ॥ चक्रदत्तः ।

2. गुग्गुलुं क्रीष्टुर्ध्वं तु गुड्डीविफलाभसा । शीरेषेरण्डतैलं वा पिवेश इहदारक
भावप्रकाशः ।

3. अजमोदायां चूर्णम् । अजमोदा विडङ्गानि सैम्बवं दिवदाह च । शिवकं पिपली
शतपुष्पा च पिपली ॥ मरिचखेलि कर्षीर्षं प्रत्येकं कारयेद् बुधः । कर्षास्तु पञ्चपथ
दश क्षुर्मुहदारकात् ॥ नागराच इमेव क्षुः सर्वाण्येकत्र चूर्णयेत् । पिवेत् क्रीष्णजले
चूर्णं गुडसन्धितम् ॥ भक्षयेद्दशवा सम्यक् परं त्रयशुनाशनम् । आमवातरुजं च
सार्धपीषां च गृह्णसीम् ॥ कटिप्रह्वगुदस्त्राच्च जहयोश्च रुजा जयेत् । तूनीं प्रतुलं विह
कफवातान्नाशन् जयेत् ॥ शार्ङ्गधरः ।

NAT. ORDER SOLANACEÆ.

DATURA ALBA, *Rumph. and* FASTUOSA, *Linn.**Sans.* धतूरा, *Dhustura*, उन्मत्त, *Unmatta*.*Vern.* Dhaturá, *Hind. and Beng.*

SANSKRIT writers do not make any distinction in the properties of the two varieties of *Datura*, and in practice both are indiscriminately used. Sometimes the white flowered variety is specified, as for example in a prescription for insanity, quoted below. *Dhaturá* leaves are used in smoking by debauched devotees and others accustomed to the use of *gánja*. The seeds are added to the preparations of *bháng* (leaves of *Cannabis sativa*) used by natives, for increasing their intoxicating powers. The use of the powdered seeds in sweet-meats, curry powder, etc., for the purpose of stupifying travellers and then robbing them, is well known.

The seeds, leaves and roots are all used in medicine. They are considered useful in insanity, fever with catarrhal and cerebral complications, diarrhœa, skin diseases, lice, etc.

Svalpajvaránkusa.¹ Take of mercury, sulphur, aconite, ginger, long pepper and black pepper, each one part, *dhaturá* seeds two parts; rub them together with lemon juice and make into four-grain pills. These pills are used in fever attended with catarrh or cough. Several other preparations of composition similar to the above, are in use under the names of *Nava jvaránkusa*, *Kálári*, *Jvaránkusa*, etc.

The root of *Datura alba* (*svetonmatta*) is boiled in milk and this milk is administered with the addition of clarified butter and treacle in insanity.² A metallic preparation called *Unmádankura rasa* and composed of the sulphides of mercury and copper together with a number of other substances and *dhaturá* seeds, is

1. रसं गन्धं विषञ्चैव प्रत्येकं समभागिकम् । विभागं धूर्तवीजञ्च त्रिकटु लवंगभागिकम् ॥
जम्बीराणां रसेर्मथं षटी गुग्गाद्यप्रभा । कषाचूर्णं पिबेदाद्यु वातश्लेष्मज्वरं जयेत् ॥

रसेन्द्रसारसंयुतः ।

2. वेसीकनीतारदिशूलसिद्धञ्च पायसः । युवान्यसंयुतो ज्वनि सर्वाभ्यादास्तु

चक्रदण्डः ।

also used in this disease. The fresh juice of the leaves alone, or mixed with opium, is a common domestic application in inflamed parts.

In inflammation of the breasts, a paste composed of turmeric and *dhaturá* fruits is recommended to be applied.¹ An oil prepared in the usual manner with the paste and juice of *dhaturá* leaves, is applied to the head for destroying lice.² An oil prepared by boiling *dhaturá* seeds, and sesamum oil, with an alkaline water made from the ashes of *Colocasia Indica* (*mánaka*), is used in psoriasis.³

In the Bengal Dispensatory (page 469) it is stated that "we are indebted to the native practitioners of India for a method of using stramonium in spasmodic asthma, which is certainly found of great benefit in numerous cases. We allude to the practice of smoking the leaves or dried stems." The smoking of *dhaturá* leaves is prescribed at present both by English and native practitioners in spasmodic asthma, but I have not met with any written prescription for it in Sanskrit or vernacular medical works, nor does the Taleef Shereef allude to the practice as known to the Mussulman hakims. It would seem therefore that this use of the drug is of recent origin.

SOLANUM XANTHOCARPUM, VAR.

JACQUINII, Schrad.

Syn. Solanum Jacquinii, Linn.

कटकारी, *Kantakári*, निदिग्धिका, *Nidigdikhá*.

Vern. Kantakári, Beng. Kateli, Katai, Hind.

THE root of *Solanum Jacquinii* is much esteemed as an expectorant and is used in cough, asthma, catarrhal fever and pain in the chest. It is an ingredient of *dasamula* (see *Desmodium gangeticum*), and is thus largely used in a great variety of diseases. The fruits are said to possess properties similar to those of the roots and are eaten as a vegetable.

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1. निशाकनकफलाभ्यां श्लेषयापि स्नानार्थिना ॥ चक्रदत्तः ।
 2. पुष्करपत्रकस्त्रेण तद्रसेनैव पाचितम् । तेलमथश्चभावेण यूकां नाशयति क्षणात् ॥ भावप्रकाशः ।
 3. उन्मत्तकस्य वीजेन नाशकसारवारिण्या । कटुतेलं विपत्तयं शीघ्रं हन्त्यापिपाटिकात् ॥ चक्रदत्तः ।

Dr. W. C. Mookerjee, says "Kantakari is an invaluable medicine for Dropsy as a sequela of the advanced stage of Fever when all other modes of treatment fail. It is said by him to be a powerful diuretic and useful in chronic, violent and low fever, dropsy or general anasarca, low vitality of the general system, enlargement of liver and spleen. It is combined with kurchi in anasarca with Dysentery." *Report of Dispensing, 1878.*

Kantakári is used in medicine in various forms, such as decoction, electuary, *ghrita*, etc. A decoction of the root is given with the addition of long pepper and honey, in cough and catarrh, and with rock salt and assafœtida in spasmodic cough.¹ Several compound decoctions made along with other expectorant and demulcent drugs are in use. The following is an example. Take of *kantakári*, root of *Justicia Adhatoda* (*vásuka*), pulse of *Dolichos uniflorus* (*kulattiha*) and ginger, equal parts, in all two tolás; prepare a decoction in the usual way and administer, with the addition of *páchak* root, in cough with difficult breathing.²

*Kantakáryavalehu*³ or electuary of *Solanum Jacquinii*. Take of *kantakári* root twelve seers and a half, water sixty-four seers, boil till reduced to one fourth and strain. Boil the strained decoction till reduced to the consistence of a fluid extract, and add to it the following substances in fine powder, namely, *gulancha*, *Piper Chaba* (*chavya*), plumbago root, tubers of *Cyperus rotundus* (*mustaka*), *Rhus succedanea*, (*karkata sringi*), long pepper, black pepper, ginger, *Alhagi Maurorum* (*yása*), *Clerodendron Siphonanthus* (*várgi*), *Vanda Roxburghii*, (*rásná*) and zedoary root, each eight tolás, sugar two seers and a half, sesamum oil and clarified butter each one seer, and boil together till reduced to the proper

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1. कण्टकारीकृतः काथः सकृणः सर्वकासहा ॥ चन्द्रदत्तः ।
 2. चूडा कुलत्थ वासाभिर्नागरेष च साधितः । काथः पौकरचूर्णांकः शसकासी भिवारयेत् ॥ मारुंधरः ।
 3. कण्टकायवलेहः । कण्टकारीतुला नीरद्रीषि पक्का कषायकम् । पादशेषं गृहीत्वा च तत्र चूर्णाणि दापयेत् ॥ शुक्लपलाशान्येतानि गुडुषी चव्यञ्चितकौ । मुसु ककंठमूली च चूर्णेषु चन्वयासकः ॥ भार्गीरुक्षा शटी चेष शर्करापलविभ्रतिः । प्रत्येकं च पलाशटी प्रदद्याद् द्रवतेलयोः ॥ पक्का लोड्डलमानीय शीते मधु पलाटकम् । चतुर्भागं दुशाचीर्याः सिपली च चतुःपलम् ॥ चिन्ना निदध्यात् सुष्टे सखये भाकनि मुने । सेहोऽयं इषि द्विकारिकासहासावमेवतः ॥ भावप्रकाशः ।

consistence. Lastly add honey one seer, bamboo-manna and long pepper in fine powder, each half a seer. This electuary is given in various sorts of cough.

Kantakāri ghṛita.¹ This is prepared in the usual proportions with the fresh juice of *kantakāri*, clarified butter and the following substances in the form of a paste, namely, *Vanda Roxburghii* (*vāsnā*), *Sida cordifolia*, (*bālā*) ginger, long pepper, black pepper and the fruits of *Tribulus terrestris*, (*gokshura*). It is used in the same cases as the electuary.

SOLANUM NIGRUM, *Linn.* Sans. ककमाची, *Kākamāchi*, Vern. *Kākmāchi*, Beng. *Makoy*. Hind. The berries of this plant are considered tonic, diuretic and useful in anasarca and heart disease. For the mode of administering them in heart disease, see *Hridayārnava rasa*, (page 66).

SOLANUM INDICUM, *Linn.*

Sans. बहती, *Vrihati*. भण्टाकी, *Bhantāki*.

Vern. *Byākura*, Beng. *Barhantā*, Hind.

THE root of *Solanum Indicum* is an ingredient of *dasamula* (see *Desmodium gangeticum*) and is thus used in a great variety of diseases. It is regarded as expectorant and useful in cough and catarrhal affections. The following is an example of a compound decoction containing this drug. Take of *Solanum indicum* (*vrihati*), *Solanum Jacquini* (*kantakāri*), *Sida cordifolia* (*bālā*), *Justicia Adhatoda* (*vāsaka*) and raisins, equal parts and prepare a decoction in the usual way. This decoction given in bronchitis with fever.²

WITHANIA SOMNIFERA, *Don.*

Syn. *Physalis flexuosa*, *Roxb.*

Sans. अश्वगन्धा, *Asvagandhā*. Vern. *Asvagandhā*, Beng. *Asgand*, Hind.

THE root of this plant is long, smooth, rounded, whitish brown externally and of a fine white colour internally. It is said

1. कष्टकारीष्टतम् । हतं राज्ञा नला व्योष शर्दंश कक्षपाचितम् । कष्टकारीरसे
 क्षपिः पञ्चकाशनिन्दनम् ॥ चक्रदत्तः ।
2. नला चिह्नहती वासा श्रावामिः कश्चित् जलम् । पिपुकासापई पियं शर्करा मधु
 दीहितम् ॥ चक्रदत्तः ।

that the root smells like a horse whence the Sanskrit name *asvāgandhā*. The specimen in my possession however has scarcely any odour or taste. It is regarded as tonic, alterative and aphrodisiac and is used in consumption, emaciation of children, debility from old age, rheumatism, etc.

In consumption a decoction of *asvāgandhā* root and long pepper is given with the addition of clarified butter and honey. For improving the nutrition of weakly children, the root reduced to a paste, is recommended to be taken with milk and clarified butter for a fortnight.²

Asvāgandhā ghrīta.³ Take of the decoction of *asvāgandhā* root one part, milk ten parts, clarified butter one part; boil them together and prepare a *ghrīta*. It is said to promote the nutrition and strength of children.

In rheumatism, a *ghrīta* prepared with a decoction and paste of the root, is used internally and an oil prepared with a decoction of the root and a number of aromatic substances in the form of a paste, is used externally.

About half a drachm of *asvāgandhā* root, taken with milk or clarified butter is said to act as an aphrodisiac and restorative to old men. *Asvāgandhā* enters into the composition of several medicines intended for use as aphrodisiacs.⁴

HYOSCYAMUS NIGER, Linn. The seeds of *Hyoscyamus niger* are used in Hindu medicine under the name of *khoraśāni amāni*. They are considered stimulant or heating, narcotic, stringent and digestive, and are used in combination with other

1. कृष्णाद्राक्षसितालेष्टः चयद्वा चौद्रतैलधान् । मधुसर्पिर्युती वाश्रगन्धाकृष्णासितोद्भवः ।
चक्रदत्तः ।
2. पीताश्रगन्धापयसाईमासं हृतेन तैलेन सुखाम्बुना वा । कृष्णस्य पुष्टिं बयसो विधरे
बालस्य शस्यस्य यथास्तु इष्टिः ॥
चक्रदत्तः ।
3. अश्रगन्धाहृतम् । पादकल्केऽश्रगन्धायाः खीरे दशमुणे पचेत् । हृतं पीतं कुमारराघ
पुष्टिकृद्भवईनम् ॥
चक्रदत्तः ।
4. अश्रगन्धाद्विचूर्णम् । अश्रगन्धा दशपला तन्मात्रो हृद्ददारकः । चूर्णोऽज्योभ
विधान् हृतमास्त्रे विधापयेत् ॥ कर्षकं पयसा पीत्वा मारीभिर्भेषं लप्सति । अमला प्रमद
प्रमदलीपिचिन्तकविंशतः ॥
शाक्यः १

medicines of their class. The seeds of *Hyoscyamus Niger* are used as anthelmintics.¹

NICOTIANA TABACUM, *Lin.* According to Royle, the tobacco plant was introduced into India (A. D. 1605) towards the end of the reign of Jelaludeen Akbar. It is not described even in the latest Sanskrit medical works such as the Bhāvarakāsa or Rāja Vallava. The Sabdakalpadruma mentions it under the name of ताम्रकूट, *Tāmrakūta*, and quotes as authority for the use of the word, a passage from the Kulārṇava Tantra where it is stated to be one of eight intoxicating agents.

CAPSICUM FRUTESCENS, *Lin.* and **MINIMUM**, *Roxb.* have no Sanskrit name. Although they are now cultivated all over India and form an essential ingredient of all curry powders, they are not mentioned in any Sanskrit medical work and are evidently of recent introduction into this country.

NAT. ORDER SCROPHULARIACEÆ.

PICORRHIZA KURROA, *Royle.*

Sans. कटुका, *Katuki*, कटुरोहिणी, *Katurohini*. *Vern.* Katki, *H. B.*

THE root of *Picrorrhiza Kurroa* is described as bitter, acrid and stomachic and in larger doses a moderate cathartic. It is used in fever and dyspepsia and as an ingredient of various purgative medicines. The katki has been found in Madras a useful medicine and proposed for use in Fever and Dyspepsia. About two drachms of the powdered root given with sugar and warm water, is said to act as a mild purgative.² In bilious fever the following decoction is highly recommended. Take of *katuki* root, liquorice, raisins, and *nim* bark, half a tola each, water thirty-two tolas; boil till reduced to one-fourth.³ The following is an example of

1. पारसीया यमानी पीता पर्युषित वारिषा घातः । गुड़पूर्वा क्रिमिजातं कीडगतं पातयत्याद्यः । गुड़पूर्वा प्रयमती गुड़ं भग्नाक् भक्षयित्वा विलम्बं कृत्वा पातय्या ॥

भेषज्यरत्नावली ।

2. सशकंरामक्षमादां कटुकामुष्णवारिषा । पीत्वा ज्वरं जयेत्कतुः कफपित्तसमुद्भवम् ॥

चक्रदत्तः ।

3. कटुका मधुकं निम्बं कटुका रोहिणी समा । अषम्यायस्थितं पाकमेतत् पित्त-
श्वरपद्मम् ॥

चक्रदत्तः ।

a powder containing *katuki* root, used in dyspepsia. Take of *katuki*, *Acorus Calamus* (*vachá*), chebulis myrobalans and plumbago root, equal parts; powder and mix. Dose, about a drachm with cow's urine in dyspepsia with severe pain.

HERPESTIS MONNIERIA, H. B. K.

Syn. Gratiola Monnieria, Roxb.

Sans. ब्राह्मी, *Brahmi*, मण्डूकी, *Manduki*, Vern. *Brahmi*, Beng. *Hind.*

THE herb used by the native physicians of Calcutta under the name of *brahmi* is the *Herpestis Monnieria*. Roxburgh however gives *brahmi* and one of its synonyms *somalatá* as the Sanskrit for *Ruta graveolens*. This discrepancy induced me to get specimens of the plant from different parties, but everywhere I got the *Herpestis Monnieria* under the name of *brahmi*. This plant is considered a nervine tonic, useful in insanity, epilepsy and hoarseness. Half a tola of the fresh juice of the leaves, with two scruples of *páchak* root and honey, is recommended to be given in insanity. The leaves fried in clarified butter are taken to relieve hoarseness.¹

A powder composed of equal parts of *brahmi*, *Acorus Calamus* (*vachá*), chebulic myrobalan, root of *Justiciu Adhatoda* (*vásaka*) and long pepper, is given with honey in the hoarseness of phthisis.² Several *ghritas* are prepared with the juice of *brahmi* leaves and various other substances in the form of paste. They are used in insanity, epilepsy and hoarseness. The following is an example.

*Brahmi ghritu.*³ Take of old clarified butter four seers, fresh juice of *brahmi* four seers, *Acorus Calamus* (*vachá*), *páchak* root, and the root of *Canscora decussata* (*sankhapushpi*), equal parts, in all thirty-two tolas, in the form of a paste and boil them together till the watery portion is evaporated.

1. See note I page 208.

2. ब्राह्मी वचामया वासा पिप्पली मधु संयुता । अस्य प्रयोगात् सामाहिकिकरैः सह नीयते ॥ भावप्रकाशः ।

3. ब्राह्मीघृतम् । ब्राह्मीरसे वचा कुष्ठ मण्डुकीमिरीच च । पुराणं निरुक्तुकादकम् । पञ्जारसुद्ध-सुप्तम् ॥ चक्रवर्तः ।

NAT. ORDER ACANTHACEÆ.

JUSTICIA ADHATODA, Roeb.

Syn. *Adhatoda Vasica*, Nees.Sans. वासक, *Vāsaka*. चटुक्व. *Atarusha*. Vern. *Bākas*, B. *Arushā*, H.

This is a bushy shrub common in most parts of India and used in making fences. The leaves and roots of this plant are considered expectorant and antispasmodic and are much used in a variety of forms in cough, consumption, catarrhal fever and asthma. This medicine was considered so serviceable in phthisis that it was said no man suffering from this disease need despair as long as the *vāsaka* plant exists.

The fresh juice or decoction of the leaves in doses of one tola, is given with the addition of honey and long pepper in cough. A decoction of *vāsaka* root, chebulic myrobalan and raisins is used in the same cases. Another compound decoction much used in fever with cough, is as follows. Take of *vāsaka* root, *gulancha*, and the root of *Solanum Jacquini* (*kantakāri*) in equal parts, two tolas in all and prepare a decoction in the usual way. This is given with the addition of honey.¹ A *ghrita* is prepared with clarified butter, a decoction of the plant and a paste of the root taken in the usual proportions and is used in phthisis.

*Vāsāvaleha*² or electuary of *vāsaka*. Take of the juice of *vāsaka* leaves four seers, white sugar one seer, long pepper sixteen tolas, clarified butter sixteen tolas, boil them together till reduced to the consistence of an extract. When cool add honey one seer,

1. केवलो वासककायः पीतः चौद्रेण नाशयेत् । वासकस्वरसः पियो मधुना रक्तपित्तजित् ॥ वासा द्राक्षाभया कायः पीतः सचौद्रेणकरं । गिहन्ति रक्तपित्तापि श्वासकासश्च दारुणम् ॥ वासा चद्रास्यता कायः चौद्रेण ज्वरकासहा ॥

ग्राह्यं परं ।

2. वासावलेहः । वासकस्य रसप्रस्थं माषिका सितशर्करा । पिपल्या द्विपलं तावत् सर्पिलयं शनेः पचेत् ॥ तस्मिन् लेहलसायाते शीते चौद्रेणलाटकम् । दत्त्वावतारयेद्यो चौद्रेण लेहोऽवमुत्तमः ॥ इत्येव राजयक्षाद्यं कासं श्वासश्च दारुणम् । पार्श्वशूलं च हृच्छूलं रक्तपित्तं च्चरं तथा ॥

माषप्रकाशः ।

and stir with a ladle till intimately mixed. Dose, one to two tolás in phthisis, cough with pain in the sides, hæmoptysis and asthma.

*Vásáchandanádi taila.*¹ Take of *vásaka* plant, twelve seers and a half, water sixty-four seers; boil till reduced to one-fourth. Take of lac eight seers, water sixty-four seers; boil down to sixteen seers. Take of red sandal wood, *gulancha*, root of *Clerodendron Siphonanthus* (*brahmayashti*), the ten drugs called *dasamula* and *Solanum Jacquinii* (*nidigdhiká*), each two seers and a half, water sixty-four seers; boil down to sixteen seers. To these decoctions, add of whey and prepared sesamum oil sixteen seers each and the following substances in the form of a paste, namely, red sandal wood, liquorice, wood of *Berberis Asiatica*, long pepper, black pepper, ginger, turmeric, *páchak* root, emblic myrobalans, *tejapatra* leaves, wood of *Cedrus Deodara*, cinnamon, and cardamom, seeds called *renuka*, pouch of civet cat, root of *Withania somnifera* (*asragandhá*), *Pæderia foetida* (*prasáraní*), *Vanda Roxburghii* (*rásná*), *saileya* (a sort of lichen), zedoary root, and the fruit of *Aglaia Roxburghiana* (*priangu*), each eight tolás; and boil them together in the usual way. This oil is rubbed on the body in affections of the chest and especially in phthisis.

HYGROPHILA SPINOSA, T. Anders. Syn. *Asteracantha longifolia*, Nees. *Ruellia longifolia*, Roxb. Sans. कीकिलाच, *Kokiláksha*, इक्षुगन्धा, *Ikshugandhá*. Vern. *Kulikkhard*, Beng. *Tálmakhána Hind*. This little annual is met with in low places all over the country.

1. इहत् वासाचन्दनादि तैलम् । चन्दनं रीणका पूतिर्ह्यगन्धा प्रसारणी । विसुगन्धि-
कषामूलं नागकेसरमेव च ॥ मेदे हे च विकटुकं राक्षा मधुकशेलजम् । शटौ कुष्ठं दीवदाह
वमिता च विकीतकम् ॥ एतेषां पलिकेभागेः पचेत्तेलादकं भिषक् । वासकस्य तुलात्राधं
जलद्रीणे विपाचयेत् ॥ लाक्षारसादकश्चैव तथैव दधिमस्तुकम् । चन्दनञ्चासता भार्गी दश-
मूलं निदिग्धिका ॥ एतेषां विंशतिपलं जलद्रीणे विपाचयेत् । पादशेषे स्थिते क्राधं तैलं
तेनैव साधयेत् ॥ कामान् ज्वरान् रक्तपित्तं पाण्डुरीर्यं हृत्सीमकम् । कामलाद्य चतस्रीणं
राज्यकाशमेव च ॥ आसान् पञ्चविधं हन्ति क्लृप्तवर्णापिमुट्टकान् । तैलं वासाचन्दनादि

The leaves are described as cooling and useful in jaundice and anasarca. They are used as a pot herb. The root is considered cooling, bitter, tonic and diuretic, and is used in rheumatism, urinary affections and anasarca. The ashes of the plant are also used as a diuretic in dropsy.¹

নগর ৬৭
 ANDROGRAPHIS PANICULATA, Nees. This bitter shrub is well-known in Bengal under the name of *kalmey* and is the principal ingredient of a domestic medicine for infants called *Alui*. There is some doubt regarding its Sanskrit name. A plant called *yavatiktá* with synonyms of *mohátiktá*, *sankhini*, etc., is said by some to mean this shrub but the term *mohátiktá* when occurring in Sanskrit prescriptions is usually interpreted as *Melia sempervirens*, Sw. and *yavatiktá* has not been noted by me as having occurred in any prescription, so that I am inclined to think *Andrographis paniculata* was not used in Sanskrit medicine. The *alui* above referred to is made of the expressed juice of the leaves with the addition of powdered cardamoms, cloves, cinnamon etc., and is given to infants for the relief of griping, irregular stools and loss of appetite.

NAT. ORDER. SESAMEÆ.

SESAMUM INDICUM, Linn.

গোম ৬৩
 Sans. तिल, *Tila*, सेहफल, *Snehaphala*. Vern. *Til*, Beng. and Hind.

This plant is extensively cultivated in India for the sake of the seeds and their expressed oil, both of which articles are in great demand for various economic, religious and medicinal purposes. The word *taila*, the Sanskrit for oil, is derived from *tila*; it would therefore seem, that sesamum oil, was one of the first, if not the first oil manufactured from oil-seeds by the ancient Hindus. The *Bhāvaprakāsa* describes three varieties of *til* seeds, namely, black, white and red. Of these the black is regarded as the best suited for medicinal use. It yields also

1. श्रीधरत कोकिलाचल्य भक्त मुनेष वाचसा ॥

चक्रदत्तः ।

the largest quantity of oil. White *til* is of intermediate quality. *Til* of red or other colours is said to be inferior and unfit for medicinal use.

Sesamum seeds are used as an article of diet, being made into confectionary with sugar, or ground into meal. They form an essential article of certain religious ceremonies of the Hindus, and have therefore received the names of *homadhānya* or the sacrificial grain, *pitritarpana* or the grain that is offered as an oblation to deceased ancestors, etc. Sesamum oil forms the basis of most of the fragrant or scented oils used by the natives for inunction before bathing and of medicated oils prepared with various vegetable drugs. It is preferred for these purposes from the circumstance of its being little liable to turn rancid or thick, and from its possessing no strong taste or odour of its own.

Sesamum seeds are considered emollient, nourishing, tonic, diuretic, and lactagogue. They are said to be especially serviceable in piles, by regulating the bowels and removing constipation. Sesamum seeds ground to a paste with water are given with butter in bleeding piles.¹ Sweetmeats made of the seeds (*Til* seeds 4 tolas and sugar 1 tola) are also beneficial in this disease. A poultice made of the seeds is applied to ulcers.² Both the seeds and the oil are used as demulcents in dysentery and urinary diseases in combination with other medicines of their class.

NAT. ORDER. VERBENACEÆ.

VITEX NEGUNDO, *Lim.*

Sans. निर्गुन्डी, *Nirgundi*, सिन्धुवारा, *Sindhuvāra*.

Vern. Nisinda, *Beng.* Nisindā, *Sāmbhalu*, *Hind.*

SANSKRIT writers mention two varieties of *nirgundi*. That with pale blue flowers is called *sindhuvāra* (*Vitex trifolia*) and that with blue flowers is called *nirgundi*. The properties of both are said to be identical, but the latter is generally used in medicine. The root of *Vitex Negundo* is considered tonic, febrifuge and

1. नपनीदतिलैः कस्की जैता रत्नार्थसां शृतः ॥

शाक्यधरः ।

2. कस्सः संरीपयः कायसिलानां मधुक्कन्तिलः ॥

शक्यधरः ।

expectorant. The leaves are aromatic and regarded as tonic and vermifuge. Their juice is much used for soaking various metallic powders, before making the latter into pills.

A decoction of *nirgundi* leaves is given with the addition of long pepper in catarrhal fever with heaviness of head and dullness of hearing.¹ A pillow stuffed with the leaves of *nirgundi* is placed under the head for relief of headache. The juice of the leaves is said to remove foetid discharges and worms from ulcers. An oil prepared with the juice of the leaves is applied to sinuses and scrofulous sores.²

GMELINA ARBOREA, Linn.

. गाम्भारी, *Gambhāri*, श्रीदूर्वा, *Sripurā*, कामरी, *Kāsmāri*.

Vern. *Gāmāri*, Beng. *Gāmbhār*, Hind.

THE root of this plant is described as bitter, tonic, stomaehic, laxative, and useful in fever, indigestion, anasarca etc. It is an ingredient of *dasamula* (see *Desmodium gangeticum*), and is thus much used in a variety of diseases. Bangasena says that *gambhāri* root taken with liquorice, honey and sugar increases the secretion of milk. The fruits of *Gmelina arborea* are sweetish bitter and cooling; they enter into the composition of several cooling or refrigerent decoctions for fever and burning of the body. The following is an example. Take of the fruits of *Gmelina arborea*, *Grewia Asiatica* (*parashuka*), liquorice root, red sandal wood, and the root of *Andropogon muricatum* (*ushira*), equal parts, in all two tolās, water thirty-two tolās, and boil till reduced to one half. This decoction is used as a drink in bilious fever.³

1. सिन्धुवारदलकाथं कषायां कफजे ज्वरे। जहथीय बले चीथे कथे च पिष्टिते पिवित् ॥ भावप्रकाशः।

2. निर्गुण्डीतेजम्। समूलपत्रां निर्गुण्डीं पीडयित्वा रसेन तु। तेन सिद्धं समं तैलं गाङ्गीदुष्टप्रक्षापदम् ॥ हितं पानापचीनानु पानाभ्यञ्जन मादनैः। विविधेषु च स्फोटिषु तथा सर्वात्रयेषु च ॥ चक्रदत्तः।

3. काम्पथ्ये शर्करायुक्तं पिवित् टक्कादिनी नरः। श्रीपथीचन्दनीश्रीरसमधूक पक्षयकम् ॥ पानं पित्तज्वरं हृत्वात् शारिवाथं समकारम् ॥ चक्रदत्तः।

CLERODENDRON SIPHONANTHUS, R. Br. Syn. *Siphonanthus Indica, Lam. Sans.* ब्रह्मयष्टिका, *Brahmayashtikā*, भार्गी, *Bhārgī. Vern. Bāmanhāli, Beng. Bhārangī, Hind.* The root of *Clerodendron Siphonanthus* is considered useful in asthma, cough and scrofulous affections. The root beaten to a pulp is given with ginger and warm water in asthma.¹ It enters into the composition of several compound decoctions for diseases of the lungs. A confection called *Bhārgigūla* is prepared with a decoction of this root and the ten drugs called *dasamula*, chebulic myrobalan, treacle and the usual aromatic substances. It is used in asthma. An oil, prepared with a decoction and paste of the root of *Clerodendron Siphonanthus* in the usual proportions, is recommended for external application in the marasmus of children.

PREMNA SERRATIFOLIA, Linn. Syn. *Premna spinosa, Roeb. Sans.* गणिकारिका, *Ganikārikā*, अग्निमन्थ, *Agnimantha. Vern. Ganidri, Beng. Arni, Hind.* The root of *Premna spinosa* is described as bitter, stomachic and useful in fever, anasarca, urticaria, etc. The leaves are bitter and carminative. A soup made of the leaves is occasionally used as a stomachic and carminative. The root forms an ingredient of *dasamula* (see *Desmodium gangeticum*), and is thus largely used in a variety of affections.

The root rubbed into a paste with water is recommended to be taken with clarified butter in urticaria and roseola, for a week.²

NAT. ORDER LABIATÆ.

OCIMUM SANCTUM, Linn.

Sans. तुलसी, *Tulasi*, पर्णस, *Parnāsa. Vern. Tulsi, Beng. Hind.*

SANSKRIT writers make two varieties of this plant (founded upon some-difference in the colour of their leaves) namely, white

1. द्विजादासी पिवेदानीं सविश्वामुष्णवारिषा । नागरं वा सिता भार्गी शीतार्द्र-
समन्वितम् ॥ चक्रदत्तः ।

2. अग्निमन्थमथ मूलं पिष्ट् पीतञ्च सर्पिषा । शीतपित्तीर्द्वैकौठान् समाहाद्वैव नाशयेत् ॥
चक्रदत्तः ।

and black. The *Ocimum sanctum* is held sacred to Vishnu of the Hindu trinity, and is reared in every Hindu house where it is daily watered and worshipped by all the members of the family. The beads or rosaries used by orthodox natives for counting the number of recitations of their deity's name, are made of the stems of this plant.

The leaves are regarded as anti-catarrhal or expectorant and are used in catarrh, cough and pain in the sides. The juice of the leaves is given with the addition of black pepper in catarrhal fever.¹ It is often used as an adjunct to metallic preparations, which are rubbed with it into a thin paste and then licked up. The leaves enter into the composition of some compound decoctions for cough and affections of the chest. The following is an example. Take of the leaves of *Ocimum sanctum*, *gulancha*, ginger, root of *Clerodendron Siphonanthus*, (*bhārgi*) and *Solanum Jacquini* (*kantakāri*), equal parts and prepare a decoction in the usual way.² The dried leaves are used as snuff in *ozæna*. They also enter into the composition of some compound medicines used in this disease, as for example of an oil which is prepared with a paste of the leaves of *Ocimum sanctum*, roots of *Solanum Jacquini* (*kantakāri*), *Bali-spermum montanum* (*danti*), *Acorus Calamus* (*vachī*), *Moringa pterygosperma* (*sigru*), long pepper, black pepper, and ginger.³

gūndān
OCIMUM BASILICUM, *Linn. Syn. Ocimum pilosum, Willd. Sans. वंदर, Varvara. Vern. Bābūi tulsi. Beng.* The seeds of this plant, called *rehān* in the vernacular, are demulcent and nourishing. Steeped in water they swell into a mucilaginous jelly which is taken with the addition of sugar in dysentery, gonorrhœa and cough.

1. पीती भरिचूर्णेन तुलसीपत्रजी रसः । द्रोणपुष्परसीऽप्येवं निहन्ति विषमज्वरान् ॥
शाङ्गधरः ।
2. अथवा वागरं कञ्जी पयोश्च साधितः काथः । पीतः सकृष्णचूर्णः कासश्चासी
जयन्त्याय ॥ चक्रदत्तः ।
3. व्याघ्रीदन्तीवचाशिशुमुदरसञ्जोषद्वैश्ववेः । पाचितं भावनं तैश्च पूतिनासागदं जयेत् ॥
चक्रदत्तः ।

NAT. ORDER AMARANTACEÆ.

✓ **AMARANTHUS SPINOSUS.** *Linn. Sans.* तण्डुलीय, *Tanduliya.*
Vern. Kantánatiá, Beng. Cholái, Hind. This thorny weed is considered light, cooling and a promoter of the alvine and urinary discharges. Its root is said to be an efficacious medicine for menorrhagia, in which disease it is given with *rasot* and honey.¹ It enters also into the composition of other medicines for this disease, as for example in the preparation called *Asoka ghrita*.

ACHYRANTHES ASPERA, Linn.*

Sans. अपामार्ग, *Apámúrga.* खरमञ्जरी, *Kharamanjari.*

Vern. Apáng, Beng. Latjirá, chírchirá, Hind.

✓ THIS troublesome weed is chiefly valued on account of its ashes which contain a large quantity of potash. These are used in the preparation of alkaline medicines and caustic pastes, (see Alkaline ashes). The ashes mixed with orpiment are applied as a caustic to warts on the penis and other parts of the body.

*Apámúrga taila.*² Take of sesamum oil four seers, the alkaline water prepared from the ashes of *Achyranthes aspera* sixteen seers, the ashes of the plant one seer, and boil them together in the usual way. This oil is poured into the meatus in cases of noise in the ears and deafness.

The weed itself is described as heating like fire, laxative and a promoter of secretions; it is used in combination with other medicines of its class in ascites and anasarca, (see *Cedrus Deodara*).

NAT. ORDER NYCTAGINACEÆ.

BOERHAAVIA DIFFUSA, Linn.

Sans. पुनर्नवा, *Punarnavá,* शीघ्रजी, *Shoghghni.*

Vern. Svetapunarnabá, Beng. Súnt, Hind.

BOTH the red and white varieties of this plant are noticed by Sanskrit writers but the white is preferred for use. Its root is

1. रसाञ्जनं तण्डुलककस मूलं चीद्रान्वितं तण्डुलतीयपीतम् । अक्षरं सर्वभवं विह्वलि
वासस्य मार्गो सद्यः नागरेषु ॥ भावप्रकाशः ।

* The closely allied species *A. bidentata*, *B.* is probably used as frequently as this. *G. K.*

2. अपामार्गिचारतेजम् । अपामार्गिचारजस्य तण्डुलककस्यैव साधितं तिस्रजम् । अम-
रंति कर्चनार्दं साधितं चापि पूरयतः ॥ चक्रवर्तः ।

egarded as laxative, diuretic and stomachic; it is used in oedema, ascites, anasarca, scanty urine and internal inflammations. One of its Sanskrit synonyms, namely, *sothagui* means sure for dropsy. A decoction of *punarnavá* root is recommended to be given with the addition of powdered *chirelá* and ginger in anasarca.¹ A compound decoction much used in this disease is prepared as follows.

Punarnaváshaka.² Take of *Punarnavá* root, nim bark, leaves of *Trichosanthes dioica* (*patola*), ginger, *Picrorrhiza Kurroa* (*katuki*), chebulic myrobalan, *gulancha*, and the wood of *Berberis Asiatica* (*dáruharidra*), quarter of a tola each, water thirty-two tolas; boil together till reduced to one-fourth. This decoction is given in general anasarca with ascites, cough, jaundice, difficult breathing, etc. An oil, prepared with a decoction of the root and a number of the usual aromatics in the form of a paste, is rubbed on the body in general anasarca complicated with jaundice. It is called *Punarnavá tailu*.³

The *Bhāvaprakāsa* gives an electuary under the name of *Punarnavávaleha*. It is prepared with a decoction of the root of *Boerhaavia diffusa* and a number of other ingredients, and is used in strangury or scanty urine.

NAT. ORDER LAURACEÆ.

CINNAMOMUM CAMPHORA, Nees et Ebermaier.

Sans. कर्पूर, Karpura, चन्द्राह, Chandráhba.

Vern. Kápur, Hind. Karpur. Beng.

¹ Two varieties of camphor are mentioned by Sanskrit writers, namely, *pakva* and *apakva*, that is prepared with the aid of heat

1. भूमिन्व विचकलं जम्घा पेयः पुनर्नवाकायः। अपहरति नियतमायु शोधं सव्याह्वजं नृषाम् ॥

2. पुनर्नवाटकः। पुनर्नवानिम्बपटीलयुष्ठीतिक्ताशतादाव्यंभयाकषायः। सव्याह्व-
शोधोदर कासशूलशोसान्निहतं पाण्डुगदं निहन्ति ॥ चक्रदत्तः।

3. पुनर्नवातैलम्। पुनर्नवप्रतपलं जलद्वीषे विपाचयेत्। तेन प्रादाशशेषेण तैल-
प्रक्षं विपाचयेत् ॥ विकट्ट विफला मङ्गी धन्वाकं कटुफलं तथा। शटी दास श्रियंशुच-
देषदाद् इरीशनिः ॥ कुष्ठं पुनर्नवापाथं यस्मान्नी कारवी तथा। एसा त्वं पप्रकश्च पत्रं

and without it. The latter is considered superior to the former. It would seem from the above description that by the term *apakva karpura*, was probably meant the camphor obtained in Borneo from the trunk of *Dryobalanops aromatica*, (*Shorea Camphorifera*, Roxb) and by the term *pakva karpura*, the China camphor obtained by sublimation from the wood of *Cinnamomum Camphora*.

The *Rājanirghantu* describes an oil of camphor under the name of *karpura taila*. It is said to be useful in rheumatism and in giving firmness to loose teeth. This oil is not recognized or used by the native practitioners of the present day, but it most probably meant the camphor oil or liquid camphor obtained by making incisions on the Borneo camphor tree.

Camphor is regarded as carminative, stimulant and aphrodisiac; it is used in fever, diarrhoea, impotence, cough, eye-diseases, etc. It is also much used in the preparation of medicinal oils for imparting fragrance to them, singly as well as in combination with other aromatic substances. Camphor enters into the composition of numerous medicines for the diseases mentioned above. The following is an illustration.

Karpura Rasa.¹ Take of cinnabar, opium, camphor, tubers of *Cyperus rotundus* (*mustaka*), *indrajava* seeds and nutmegs, equal parts; powder the ingredients, and make into four-grain pills with water. These pills are used in diarrhoea.

Camphor, rubbed with the milky juice of *Ficus Bengalensis*, is recommended to be applied to opacities on the cornea. It enters also into composition of several collyria.² A small tent made

नागकेशरम् ॥ एषाच कार्षिकेः कल्केः पेषयित्वा विनिक्षिपेत् । कामलापाक्षुरीगञ्ज
हलौमकमयापि वा ॥ श्रौहादमुदरचेय जीर्यञ्जरमपीहति । तैल पुनर्नवानाम मल-
न्याधीनियच्छति ॥
सारकौमुदी ।

1. कर्पूररसः । हिङ्गुलमहिफिनञ्च मुष्केन्द्रधवं तथा । जातीफलञ्च कर्पूरं सर्वं
समद्यं यंनतः ॥ जलेन वटिका काय्यो दिगुन्नापरिमाणतः । ज्वरातीसारिणे चैव तथाती-
सारतीक्ष्णे ॥ यदृशीषट्प्रकारे च रक्तातीसारउल्लेगे । अत्र केचित् टङ्गनमध्येकभाग-
निष्कन्ति ॥
रसरत्नवली ।

2. वटशरीरेष संयुक्तं स्रक्त्वं कर्पूरं रजः । क्षिप्रमञ्जरी हन्ति शकट्वापि धनीप्रतम् ॥

शकटदण्डः ।

with camphor is introduced into the urethra for the relief of irritability of the bladder and frequent micturition.¹

CINNAMOMUM ZEYLANICUM, *Breyn. Sans.* गुडेलक, *Guḍatvak.* Cinnamon is largely used as an aromatic adjunct in compound prescriptions. A combination of cinnamon, cardamoms and *tejapatra* leaves, passes by the name of *trijātaka*, these three aromatics being often used together.

CINNAMOMUM TAMALA, *Nees. and other species*, furnish the leaves called *tejapatra* in Sanskrit, and *tejpāt* in the vernacular. They are an essential ingredient of Indian cookery. For remarks on their uses in medicine see *Cinnamomum Zeylanicum*.

NAT. ORDER MYRISTICÆ.

MYRISTICA OFFICINALIS, *Lin.* Both nutmegs and mace enter into the composition of numerous medicines as aromatic adjuncts, but there is no peculiarity in their use that need special consideration here. An infusion of nutmegs is recommended by several writers as a serviceable drink in the thirst of cholera patients.²

NAT. ORDER SANTALÆ.

SANTALUM ALBUM, *Lin.*

Sans. चन्दन, *Chandana*, श्रीखण्ड, *Srikhandā.*

Vern. Chandan, *Beng.* Saphed chandan, *Hind.*

SANSKRIT writers describe several varieties of *chandana* and some include the woods of *Pterocarpus Santalinus* (*raktachandana*), and *Cesalpinia Sappan* (*pattanga*) under this common denomination. Excluding these last, two varieties of sandal wood are generally recognised, namely, *srikhandā* or white sandal wood

1. श्वेतश्यामयोनिर्वा मुखश्यामनरी शनैः । घनधारयुता रतिं धारयेन्मूत्रनिघटे
भावप्रकाशः ।

2. पित्तसामान्यदुर्बले च श्वेतश्याम्युत्सले । कापीकलया वा शीतं शनं अद्रवणस्य वा
चन्द्रमः ।

and *pitachandana* or the yellow variety. These varieties are founded on the difference in the depth of colour in the heart-wood and not on any specific difference in the plants. The use of sandal wood in carving, and the elegant and fragrant articles made from it, are too well known to need description here. The Hindus use an emulsion of the wood in the worship of their idols and for painting or anointing their bodies after bathing. Rich natives sometimes use sandal wood for burning their dead relatives. Rich or poor, all add at least one piece of the wood to the funeral pile.

The essential oil of *chandana* (*chua chandana*) obtained by distillation from the heart-wood and roots, is of a pale yellow colour and has a peculiar fragrant smell best appreciated by rubbing a few drops of it on the hand. It is much used as a perfume by the Hindus both for themselves and for their idols. In Orissa it is a practice with the better classes to rub a little sandal oil in the spices which they take with their betel-leaf.

Sandal wood is described as bitter, cooling, astringent, and useful in biliousness, vomiting, fever, thirst and heat of body. An emulsion of the wood is used as a cooling application to the skin in erysipelas, prurigo and sudamina.¹ Two tolas of the watery emulsion of sandal wood, with the addition of sugar, honey and rice-water, is given to check gastric irritability and dysentery, and to relieve thirst and heat of body.²

NAT. ORDER EUPHORBIACEÆ.

PHYLLANTHUS EMBLICA, Linn.

Syn. Emblica officinalis, Gaertn.

Sans. आमलकी, Amalaki, धत्री, Dhatri.

Vern. Amlaki, Beng. Aonla, Hind.

* LIKE chebulic myrobalan, emblic myrobalan is also extensively used in Hindu medicine, both alone and in combination with

1. पित्तजले विषर्पे क्षेपा विषेवाः सघृताः सुश्रीताः । प्रदेहाः परिवेकाश्च चन्दनेर्वा
प्रसक्तये ॥ चकदनाः ।

2. पीने भण्डसितायुक्तं चन्दनं तण्डुलान्मुना । रक्तातीकारजिद्वक्तपित्तद्व्याहमेवमुत् ॥
भायप्रकारः ।

the two other myrobalans. The fresh fruits are globular, six-
striated, with a fleshy, acidulous pulp. A preserve of the ripe
fruits made with sugar, is considered a wholesome article of diet
and a preservative of health. The dried fruits are wrinkled, of a
blackish grey colour, and have an acidulous, astringent taste.

The properties of emblic myrobalan are said to resemble
those of the chebulic. The fresh juice is cooling, refrigerant,
diuretic and laxative. The dried fruits are astringent and useful
in hæmorrhages. It is said that the exudation from incisions
made on the fruits while on the tree, is a very useful external
application in recent inflammation of the eye. It is also used as
a collyrium.¹

The following preparation is used as a cooling and stomachic
drink in irritability of the stomach. Take of emblic myrobalan
raisins, sugar and honey, eight tolas each, water half a seer; rub
them together, strain through cloth and administer the strained
fluid in suitable doses.²

About two drachms of emblic myrobalan is recommended to
be given in the form of a paste, with the addition of honey for
checking menorrhagia and discharge of blood from the uterus.
The fresh juice of the ripe fruits is given with honey as
diuretic.³ A paste of the fruits is applied over the pubic regio
in irritability of the bladder.⁴

Khandamalaki,⁵ or confection of emblic myrobalan. Take of
the pulp of an old gourd of *Benincasa cerifera*, (*kushmāṇḍa*) four

1. चावीफलनिर्यासी नव द्रुक्षीपं निहन्ति पूरयतः । तदस्यविद्वान्मलकरसः सखीं
रोगदुत् ॥ चक्रदत्तः ।

2. पिष्टा चावीफलं द्राक्षां शर्कराञ्च पशोन्मिताम् । दत्त्वा मधुपलञ्चात् कुडुवं रुि
लक्ष्मणम् । वाससा गलितं पीतं हन्ति ऋदिं विदोषजाम् ॥ चक्रदत्तः ।

3. चावीरसेन सखीद्रं सर्वमेष्टुत्तरं परम् ॥ चक्रदत्तः ।

4. चामलक्याश्च कल्केन वक्षिभागं प्रलेपयेत् । तेन प्रशाम्यति क्षिप्रं नियन्त्राम्
निषण्णः ॥ भावप्रकाशः ।

5. खड्कामलकी । खिन्नपीडितकुष्माण्डानुखात्रैश्चष्टमाख्यतः । प्रख्यात्रैः खड्कतुल्ल
पथेटामलकीरमात ॥ प्रसवे मस्त्रिभ्रकाभास्करसप्रसवे विषैर्दयम् । द्रव्यां पात्रं गते तद्विषयैः

hundred tolás, clarified butter two seers, sugar four hundred tolás, fresh emblic myrobalans four seers, juice of the gourd of *Benincasa cerifera*, four seers; first dry the pulp of the gourd and fry it in the clarified butter. Express the juice of the emblic myrobalans and boil the fried pulp in the mixed juices of the emblic myrobalan and the pumpkin, with the addition of the sugar. When the syrup is thick enough, add the following aromatic substances, namely, long pepper, nigella seeds and ginger, each sixteen tolás, black pepper eight tolás, coriander, cinnamon, leaves called *tejapatra*, cardamoms, flowers of *Mesua ferrea* (*ndágakesara*), tubers of *Cyperus rotundus* (*mustaka*), and the leaves of *Pinus Webbiana* (*tálsa*), each two tolás (all in fine powder) and stir with a ladle till intimately mixed. Then add honey one seer and stir well till reduced to the consistence of a confection. This preparation is said to be useful in dyspepsia with pain and vomiting after meals, disinclination for food, pain in the precordial region, etc. It promotes the appetite and acts as a tonic.

Dhātri lauha.¹ Take of powdered emblic myrobalan, sixty-four tolás, prepared iron thirty-two tolás, liquorice powder sixteen tolás, mix them together and soak in the juice of *gulancha* for seven times successively. This preparation is given in doses of twenty to forty grains in anæmia, jaundice and dyspepsia.

विकल्पित् ॥ इ इ पले कणाजाजीयुष्ठीनां मरिचस्य च । पलं तालीशं चन्दाक
 चातुर्जातकं मुस्तकम् ॥ कर्षप्रमाणं प्रत्येकं प्रस्थाद्धं मालिकस्य च । पक्वित्पुलं निहन्तेतद्दोष-
 तयमवशं यत् ॥ कृष्णपित्तमूर्च्छाच्च आसकासावरोचकम् । इच्छुलं रक्तपित्तञ्च पृष्ठशूलञ्च
 नाशयेत् ॥ रसायनमिदं श्रेष्ठं खण्डामलकसंश्रितम् ॥ चक्रदत्तः ॥

1. धात्रीलौहम् । धात्रीचूर्णंसाटी पलानि चत्वारि लौहचूर्णस्य । यष्टीसुषुकरजश्च
 द्विपलं दद्यादुपले षट्पम् ॥ अस्ताकाशेनेतच्चूर्णं भाव्यञ्च सप्ताहम् । चण्डातपेषु सुपकं
 भूयः पिद्वा नवे घटे स्थाप्यम् ॥ घृतमधुना सह युक्तं मुक्तादौ मध्यतीक्ष्णे च । तीनपि
 वारान् खादित् पथ्यं दीपानुबन्धेन ॥ भक्तस्यादौ नाशयति व्याधीन् पिप्पानिलीहवान् ।
 मध्येऽपि विष्टं जयति कृष्णं विदह्यते भाद्रम् ॥ पानाद्भक्तान् दीपान् भुक्तान् शीघ्रितं
 शक्यति । एषं जीर्यति चात्रे शूलं कृष्णं सुकष्टमपि ॥

*Dhatri arishin*¹ or fermented liquor of emblic myrobalan. Take the fresh juice of two thousand emblic myrobalans, honey in quantity equal to one-eighth of the juice, powdered long pepper sixteen tolás, sugar six seers and a quarter; mix them together, boil for a while and leave the mixture to ferment in an earthen jar. This liquor is used in jaundice, dyspepsia, indigestion, cough, etc.

CROTON TIGLIUM, Linn.

यपान, *Jayapála*. कनकफल, *Kanakaphala*.

Vern. *Jaypál*, Beng. *Jamágotá*, Hind.

THE seeds of *Croton Tiglium* are considered heating, drastic, and useful in fever, constipation, intestinal worms, enlargements of the abdominal viscera, ascites, anasarca, etc. They are boiled in milk and their outer skin and embryo are removed before being used internally. Croton oil is not mentioned by any Sanskrit writer and was unknown to the ancient Hindus. Croton seeds enter into the composition of a great many medicines for the diseases mentioned above. The following are a few illustrations.

Ichhhávedivaṭiká.² Take of mercury, sulphur, borax and black pepper, one part each, ginger three parts, croton seeds nine parts; rub them together with water and make into two-grain pills. These are given in fever with constipation as also in ascites and anasarca.

Rukkosa rasa.³ Take of chebulic myrobalan five parts, croton

1. धात्रिरिष्टः । धात्रीफलसहस्रे द्वे पीडयित्वा रसं भिषक् । श्वीद्राष्टभानं
पिपल्याङ्गुर्षाईकुङ्कुमान्वितम् ॥ शर्करात्रितुलीन्मिश्रं पक्वं क्षिप्रघटे स्थितम् । प्रपिवेत् पाण्डु-
रीगार्गो जीर्णं हितमिवाशनः ॥ कामला पाण्डु हृद्दोग्गतासृक्क्षिप्रमज्जरान् । कासद्विष्का-
शचिन्नासानेपीडिरिष्टः प्रथाशयेत् ॥ चक्रदण्डः ।

2. इच्छामेदी रसः । शुद्धं पारददण्डं समरिचं तुल्याद्यग्ना तथा विश्वा च त्रियुषः ।
ततो नवशुषं जेपालचूर्णं क्षिपेत् । शुद्धैकप्रमिती रसो हिमजलैः संसेविते रेचयेद्यावन्नीच-
जलं पिबेदपि नरः पथञ्च दध्यौदनम् ॥ रसेन्द्रसारसंयुक्तः ।

3. रुक्मेशीरसः । अभयाचूर्णमादाय नूतनेर्जयपालजेः । पञ्चमाशिल मिलितैः सुद्धी-
दुग्धेषिपाचितम् ॥ शुद्धिकास्तस्य कर्तव्या वर्तुलाशयकप्रभाः । विष्टभे शुद्धिजा देयं
शोदरे दाक्षणात्मके ॥ रसेन्द्रसारसंयुक्तः ।

seeds one part, soak them in the milky juice of *Euphorbia neriifolia* (*snuhi*), and make into four-grain pills. These are given with a decoction of the root of *Ipomœa Turpethum* (*trivrit*), or *Baliospermum montanum* (*danti*), as a drastic purgative in obstinate constipation.

Mahânārācha rasa.¹ Take chebulic myrobalan, pulp of *Cassia Fistula*, emblic myrobalan, root of *Baliospermum montanum* (*danti*), *Picrorrhiza Kurroa* (*tiktā*) milky juice of *Euphorbia neriifolia* (*snuhi*), root of *Ipomœa Turpethum* (*trivrit*) and the tubers of *Cyperus rotundus* (*mustaka*), each one toḷā; pound them to a coarse powder and boil in four seers of water till the latter is reduced to one-eighth. Then take a toḷā of husked croton seeds, tie them in a piece of thin cloth and boil them in the above mentioned decoction till the latter is reduced to the consistence of a fluid extract. To this extract add a powder composed of eight parts of purified croton seeds, three parts of ginger and two of black pepper, mercury and sulphur, in quantity sufficient to make a pill-mass; rub them together for twelve hours, and make into two-grain pills. These are given with cold water in tympanitis, colic, ascites, etc., as a drastic purgative. After the operation of this medicine, rice should be given with curdled milk and sugar.

BALIOSPERMUM MONTANUM, *Mull.*

Sans. दन्ती, *Danti.* *Vern.* Danti, *Hind.* Beng.

The seeds of *Baliospermum montanum* are described as drastic. Like croton seeds they are boiled in milk before use. The root of the plant is considered cathartic. Both are much used in diseases where purgatives are indicated. The following are a few examples of prescriptions containing these medicines.

1. महाभारतपरसः । अमघारस्वपी घावी दन्ती तिक्ता खुही त्रिष्टत् । मुक्ता प्रत्येक-
मेतानि यन्त्राणि प्रसमाचया ॥ तानि सङ्कुच्य सर्वाणि जलादकयुगे पचेत् । तत्र
तीक्ष्णं भागं कषायमवशेषयेत् ॥ निस्तृक्त्रैपासवीजानि नवानि प्रसमाचया । मृदु-
वस्त्रहतास्त्रेष तस्मिन् ज्ञाप्ये घनेः पचेत् ॥ स्वादयेदनर्धं मन्दं वायुतृकायो घनी भवेत् ॥
सतः खवे त्रियेहामानटी जेयास्त्रवीजतः ॥ भागान् त्रीन् नगरात् ही च मरिचादही

Nardcha rasa.¹ Take of mercury, borax and black pepper, one part each, sulphur, ginger and long pepper two parts each, seeds of *Baliospermum montanum* nine parts; powder the ingredients and make into two-grain pills with water. These are given in constipation and tympanites.

Danti haritaki.² Take twenty-five large chebulic myrobalans and enclose them in a piece of cloth; then take of the roots of *Baliospermum montanum* and *Ipomœa Turpethum* (*trivrit*), each two hundred tolás, water sixty-four seers, boil them together till the water is reduced to eight seers. Strain the decoction, take out the chebulic myrobalans and fry them in thirty-two tolás of sesamum oil. To the strained decoction add two hundred tolás of old treacle; then boil till reduced to the proper consistence for a confection. Now add to the mass the following substances, namely powdered root of *Ipomœa Turpethum* (*trivrit*) thirty-two tolás, long pepper and ginger, each eight tolás, and stir them well; when cool add thirty-two tolás of honey, cinnamon, cardamom, leaves called *tejapatra*, and the flowers of *Mesua ferrea*

च पारदात् । गन्धकादहो च तानीह यावद्याम् विमहंयेत् ॥ रसी नाराचनामायं
भक्षितो रक्तिकाक्षितः । जलेन श्रौतलेनेव रोगानेतान् विनाशयेत् ॥ आधानं यत्प्रमाणान्
प्रयाधानं तद्येष च । उदावर्तं तथा गुणामुदराधि हरत्यसौ ॥ वेगे शान्ते तु मुञ्चीत
मन्त्रं वासुदेवं दधि । ततस्तत् सैम्भवेनापि ततो दधीदनं मनाक् ॥

भाष्यकारः ।

1. नाराचरसः । सूतं टङ्गणकं तुल्यं मरिचं समतुल्यकम् । गन्धकं पिप्पली शुष्की
हो हो भागो विष्कंयेत् ॥ सर्वतुल्यं क्षिपेहन्तीवीजं निस्तुषितम्भवेत् । शुष्केण रेषनं
सिद्धं नाराचोऽयं महारसः ॥ आधानमक्षिपेत्प्रमाणान् यत्प्रमाणान् ॥

शाङ्खरः ।

2. दन्तीहरितकी । जलद्वीषे विपक्तव्या विंशतिः पञ्च चाभयाः । दन्त्याः पञ्चानि
तापनि विद्रवकाश्च तथैव च ॥ तेनाष्टभागशेषेषु पक्षेहन्तीसमं गुडम् । तासांभया
विष्कृष्याचक्षुष्यापि चतुःपञ्चम् ॥ पलमेकं कषायशुष्कीः सिद्धे लेहे च श्रौतक्षि । चौद्रं
तेषुसमं दद्यात्तानुजातपक्षन्तथा ॥ ततो लेहपलं चौद्रा जम्भा चैका हरितकीम् । सुखं
विरिञ्चति सिन्धो दीपनासो क्षानामवः ॥ शीघ्रश्चतुर्गुणाशीं श्ल्याशुयुद्धशीगदाः ।
शाम्भुनात्कौशेविषमम्बरकुडाश्वरीशकाः ॥ चन्द्रदत्तः ।

(*nágakesara*) each eight tolás, and prepare a confection. The chebulic myrobalans should be kept imbedded in the medicine. Two tolás of the confection and one of the chebulic myrobalans are to be taken every morning.

Gulúshlaka.¹ Take of *danti*, *trivrit* and *plumbago* roots, black pepper, long pepper, ginger and long pepper root, equal parts in fine powder; treacle, equal in weight to all the other ingredients and mix. Dose, about a tolá every morning in flatulence and retained secretions, anasarca, jaundice, etc.

RICINIS COMMUNIS, *Linn.*

Sans. एरण्ड, *Eranda*. रुवुक, *Ruvuka*.

Vern. Bherendá, *Beng.* Erend. *Hind.*

THE root *Ricinis Communis* and the oil obtained from the seeds have been used in medicine by the Hindus from a very remote period. They are mentioned by *Susruta*. Two varieties of the plant are described, namely red and white. Their properties are said to be identical. Castor oil is regarded as purgative and useful in costiveness, tympanitis, fever, inflammation, etc. It is much praised for its efficacy in chronic rheumatic affections in which it is used in various combinations. One of its synonyms is *vátári* or anti-rheumatic. The root of the plant is also said to be particularly useful in the local varieties of rheumatism such as lumbago, pleurodynia, and sciatica.

As a purgative, castor oil is recommended to be taken with cow's urine, or an infusion of ginger or a decoction of the combination called *dasamula* (see *Desmodium gangeticum*).²

1. गुडाटकम् । व्योषं दन्ती त्रिवृत्तिस्रं कृष्णामूलं विचूर्णितम् । तच्चूर्णं गुडसन्धिः
मन्थयेत् प्रातःकथितः ॥ एतद्गुडाटकं नाम वनवर्षाभिर्वर्षेणम् । शीघ्रीदावत्तः शुक्रं
प्रीहपाष्णामयापहम् ॥ सर्वत्रूणां हनी गुडी दियः ॥ भावप्रकाशः ।

दशमूलकवायेण पिबेद्य नारायणसा । कटिगुलेषु सर्वेषु तेकानेरण्डसम्भवम् ॥

चक्रवर्तनः ।

The seeds, freed from impurities and rubbed into a paste, are boiled in milk and water, and the decoction is given in lumbago and sciatica.¹ In pleurodynia, or pain in the sides, a decoction of the root is given with the addition of *yavakshdra*, (impure carbonate of potash).² The root of *Ricinis communis* enters into the composition of various compound prescriptions for rheumatic affections and diseases of the nervous system.

In affections of the eyes, castor oil leaves and root are used in a variety of forms and several prescriptions containing them are given by most writers. A decoction of the bark, leaves and root of the plant, in goat's milk and water is recommended for use as a wash in recent ophthalmia.³

ف

LOTUS PHILIPPENSIS, Mull.

Syn. Rottlera tinctoria, Roxb.

Sans. कम्पिङ्ग, Kampilla, रेचनक, Rechanaka.

Vern. Kamilá, Beng. Kambilá, Kamalá, Hind.

ROXBURGH and Brandis give *Punnága* as the Sanskrit for this plant. As far as my information goes, *Punnága* is the Sanskrit for *Calophyllum inophyllum*, a large tree of the Coromandel Coast with beautiful white fragrant flowers and numerous stamens arranged in rows. *Kampilla* is the red mealy powder covering the capsules of *Mallotus Philippensis*. It is described as cathartic and anthelmintic and is chiefly used to expel intestinal worms. *Kampilla* powder given in doses of one tola with treacle, is said to kill and expel all intestinal worms.⁴ It enters into the

1. विशीञ्जेरकवीजानि पिशा क्षीरे विपाचयेत् । तत्पायसं कटीयस्त्रिं यद्भ्रम
परमौषधम् ॥ सायमसाहः ।

2. परकम्बूलं त्रिपलं जलेऽट्टयुचती पचेत् । तत्काषीं यावत्काशः पापेऽहं
कफयत्सदा ॥ प्रातःपचः ।

3. परकम्बूते मूले लघिं चार्जं पयः घृतम् । कण्टकाचार्यं मूलेषु युक्तौचं क्षीरं
क्षितम् ॥ चन्द्रदासः ।

4. कम्पिङ्गमूलं कर्षाईं तुष्टेन तद्वत् क्षितम् । पातयेत् क्षितौचं सर्वाण्युदरक

composition of numerous compound prescriptions for worms. The following is an illustration. Take of *kampilla*, *báberang* seeds, chebulic myrobalan, *yavakshára* (impure carbonate of potash), and rock salt, equal parts, powder and mix. Dose, about a drachm, with bitter-milk.¹

EUPHORBIA NERIIFOLIA, Linn.

Syn. Euphorbia ligularia, Roxb.

Sans. सुही, *Snuhi*, वज्री, *Vajri*, सेहण्ड, *Sehunda*.

Vern. *Mansásij*, Beng. *Sehund*, *Thohar*, Hind.

THIS prickly shrub is sacred to Mansá the goddess of serpents. On the fifth day after full moon of the month of Sravana (July, August) it is planted in the court-yard of Hindu houses and worshipped as the representative of Mansá the goddess of serpents. *Euphorbia antiquorum*, called *tekátá sij* in Bengali on account of its triangular stem, is probably alluded to by some Sanskrit writers under the name of *vajri*, which is explained as a variety of *snuhi*. This plant is supposed to ward off lightening strokes and is generally kept in tubs or pots on the roofs or other exposed parts of native houses. Its popular medicinal uses are like those of *Euphorbia neriifolia*.

The milky juice of *Euphorbia neriifolia* is considered purgative and rubefacient. As a purgative it is generally used in combination with other medicines which are steeped in it. Chebulic myrobalan, long pepper, *trivrit* root, etc, are thus treated and administered as drastic purgatives, in ascites, anasarca and tympanitis.² It enters into the composition of several compound prescriptions of a drastic character as for example, the *Maháná-rácha rasa* described under *Oroton Tiglium*, and *Vindu ghrita* a preparation with clarified butter, of similar composition.

meric powder mixed with the milky juice of *Euphorbia*

विहङ्गसैन्धवघ्नारकान्धिलकहरीतकी । दिवेचक्रेश संप्रिटाः सुखीक्षिणिक्रियते ॥

पत्रदण्डः ।

विहङ्गहरीतकी ध्यासात् सुहीवीरिच भावयेत् । वटिकात् सुखीताकाः विहासाणाह-

पत्रदण्डः ।

scriifolia is recommended to be applied to piles.¹ Thread steeped in the above mentioned mixture is used in ligaturing external hæmorrhoids.² The powdered wood of *Berberis Asiatica* (*dâruhari-drâ*) is steeped in the milky juice of *smuli* and of *Calotropis gigantea* (*arka*), and made into tents for introduction into the tracks of fistula-in-ano and other sinuses.³

NAT. ORDER MYRICEÆ.

MYRICA SAPIDA, Wall.

Sans. कटफल, *Kaṭphala* Vern. *Kāp̄hal*, Hind.

THE bark of *Myrica sapida* (a Himalayan tree), is its most valuable product, and is largely exported to the plains. It is dark or brownish grey, with deep vertical wrinkles, and is considered heating, stimulant and useful in diseases supposed to be caused by deranged phlegm, such as catarrhal fever, cough, and affections of the throat. It enters into the composition of numerous formulæ for these diseases. The following is an example.

Kaṭphalīdī Churna.⁴ Take of the bark of *Myrica sapida*, tubers of *Cyperus rotundus* (*mustaka*), root of *Picrorrhiza Kurroa* (*kaṭuki*), *Curcuma Zedoaria* (*saṭi*), *Rhus succedanea* (*karkarīa sringī*), and the root of *Aplotaxis auriculata* (*kushta*), equal parts; powder and mix. This powder is given in doses of about a drachm with the addition of ginger-juice and honey in affections of the throat, cough and asthma.

In catarrh with headache the powdered bark is occasionally used as a snuff.

1. कुक्षीरं रजनीयुक्तं लिपाददुर्गादिमाशयम् ॥ चक्रदशः ।
2. भावितं रजनीचूर्णं कुक्षीरैः पुनः पुनः । क्वनात् सुदृढं सूत्रं मिनत्यर्थी भगन्दरम् ॥ चक्रदशः ।
3. कुक्षीरं पुनः दार्दीभिर्वति कृत्वा त्रिचयः । भगन्दरतिं ज्ञात्वा पूर्येत्ता प्रयत्नतः । एषा सर्व्वमरीरिस्तां नाशं इत्यात्र संशयः ॥ चक्रदशः ।
4. कटफलदिवृषम् । कटफलं मुसकं तिका शटी मक्की च पुष्करम् । चूर्णमेषाञ्च मधुना मञ्जरीरसेन च ॥ सिद्धेत् स्वरं च कर्णं कासवासाद्यपीन् जयेत् । वायुच्छिदिं तथा शूलं कथञ्चन व्यपीडित ॥ शक्रं चरः ।

origin has been invented for it. It is said to have been produced in the shape of nectar while the gods were churning the ocean with the mountain called Mandāra. It is the favourite drink of Indra, the king of gods, and is called *vijayā*, because it gives success to its votaries. The gods through compassion on the human race sent it to this earth so that mankind by using it habitually may attain delight, lose all fear, and have their sexual desires excited.¹ On the last day of the Durga pooja, after the idols are thrown into water, it is customary for the Hindus to see their friends and relatives and embrace them. After this ceremony is over it is incumbent on the owner of the house to offer to his visitors a cup of *bhāng* and sweet-meats for tiffin.

An intoxicating agent with such recommendations cannot but be popular and so we find it in general use amongst all classes especially in the North-West provinces and Behar. In Bengal it has latterly become the fashion to substitute brandy, but I well remember having seen in the days of my boyhood the free use of *bhāng* among the better classes of people who would have shunned as a pariah any one of their society addicted to the use of the forbidden spirituous liquor. At the doors of many rich baboos, Hindustani durwans could be seen rubbing the *bhāng* in a stone mortar with a long wooden pestle, and the paste so prepared was not solely intended for the use of the servants. I do not mean to say that all classes of Hindoos without exception are or were addicted to the use of *bhāng*. Some castes among the up-country men and some classes of people amongst Bengalis are as a rule very temperate in their habits and do not use any narcotic at all; but the ordinary run of orthodox Hindus, accustomed to have their little excitements, use *bhāng* for the purpose without incurring any opprobrium such as would result from the use of spirituous liquors.

The three principal forms in which Indian hemp is met with in India are,—1, *Gūnjā*, the dried flowering tops of the female

1. कतदा सन्धरमन्थनाच्चलनिधी पीयूषरूपा पुरा पैलीक्रे विजयप्रदति विजया श्रीदेव
लभिवा । लीकाली हितकाम्या हितितले प्राप्ता नरेः कामदा सर्वान्दुविनामहर्षजननी ये
विजयः सर्वदा ॥ राजवन्ध्याः ।

plant, from which the resin has not been removed. 2, *Charas*, the resinous exudation from the leaves, stems and flowers. 3, *Bháng*, the larger leaves and seed vessels without the stalks.

Sir William O'Shaughnessy has so well described the preparations of Indian hemp in use amongst the natives, and his name is so intimately associated with the history of this drug, that I cannot do better than quote his account of them.

"*Sidhee*, *Subjee* and *Bháng* (synonymous) are used with water as a drink which is thus prepared:—About three tolas' weight (540 troy grains) are well washed with cold water, then rubbed to powder, mixed with black pepper, cucumber and melon seeds, sugar, half a pint of milk and an equal quantity of water. This is considered sufficient to intoxicate an habituated person. Half the quantity is enough for a novice. This composition is chiefly used by the Mahomedans of the better classes.

"Another recipe is as follows:—

The same quantity of *Siddhi* is washed and ground, mixed with black pepper, and a quart of cold water added. This is drunk at one sitting. This is the favourite beverage of the Hindas who practice this vice, especially the Birjobassies and many of the Rajpootana soldiery.

"From either of these beverages intoxication will ensue in half an hour. Almost invariably the inebriation is of the most bearful kind, causing the person to sing and dance, to eat food with great relish, and to seek aphrodisiac enjoyments. In persons of a quarrelsome disposition it occasions, as might be expected, an exasperation of their natural tendency. The intoxication lasts about three hours, when sleep supervenes. No nausea or sickness of stomach succeeds, nor are the bowels at all affected; next day there is slight giddiness and vascularity of the eyes; but no other symptom worth recording.

Gánja is used for smoking alone: one rupee weight, (180 grains) and a little dried tobacco are rubbed together in the palm of the hand, with a few drops of water. This suffices for three persons. A little tobacco is placed in the pipe first, then a layer of the prepared *gánja*, then more tobacco and the fire above all. The *hookah* is usually used in this manner. The *hookah* is

passed round, and each person takes a single draught. Intoxication ensues almost instantly and from one draught to the unaccustomed; within half an hour, and after four or five inspirations to those more practised in the vice. The effects differ from those occasioned by the *siddhi*. Heaviness, laziness, and agreeable reveries ensue, but the person can be readily roused and is able to discharge routine occupations, such as pulling the pánkah, waiting at table, etc.

"The *Májoon* or hemp confection, is a compound of sugar, butter, flour, milk, and *siddhi* or *bláng*. The process has been repeatedly performed before us by Ameer, the proprietor of a celebrated place of resort for hemp devotees in Calcutta and who is considered the best artist in his profession. Four ounces of *siddhi* and an equal quantity of *ghee* are placed in an earthen or well-tinned vessel, a pint of water added, and the whole warmed over a charcoal fire. The mixture is constantly stirred until the water all boils away, which is known by the crackling noise of the melted butter on the sides of the vessel. The mixture is then removed from the fire, squeezed through cloth while hot, by which an oleaginous solution of the active principles and colouring matter of the hemp is obtained; and the leaves, fibres, etc., remaining on the cloth are thrown away. The green oily solution soon concretes into a buttery mass and is then well washed by the hand with soft water, so long as the water becomes coloured. The colouring matter and an extractive substance are thus removed and a very pale green mass, of the consistence of simple ointment, remains. The washings are thrown away; Ameer says that these are intoxicating, and produce constriction of the throat, great pain and very disagreeable and dangerous symptoms.

"The operator then takes two pounds of sugar, and adding a little water, places it in a pipkin over the fire. When the sugar dissolves and froths, two ounces of milk are added; a thick scum rises and is removed: more milk and a little water are added from time to time, and the boiling continued about an hour, the solution being carefully stirred until it becomes an adhesive clear syrup, ready to solidify on a cold surface; four ounces of tyre (new milk dried before the sun) in fine powder are now stirred

in, and lastly the prepared butter of hemp is introduced, brisk stirring being continued for a few minutes. A few drops of *Attar of roses* are then quickly sprinkled in, and the mixture poured from the pipkin on a flat cold dish or slab. The mass concretes immediately into a thick cake, which is divided into small lozenge-shaped pieces. A *seer* thus prepared sells for four rupees. One drachm by weight will intoxicate a beginner; three drachms one experienced in its use. The taste is sweet and the odour very agreeable. Amser states that sometimes by special order of customers he introduces stramonium seeds, but never nux vomica. that all classes of persons including the lower Portugess or *Kalk Feringhees* and especially their females, consume the drug; that it is most fascinating in its effects, producing extatic happiness, a persuasion of high rank, a sensation of flying, voracious appetit and intense aphrodisiac desire."*

The leaves of *Cannabis sativa* are purified by being boiled in milk before use. They are regarded as heating, digestive, astrin gent and narcotic. The intoxication produced by *bháng* is said to be of a pleasant description and to promote talkativeness.

In sleeplessness, the powder of the fried leaves is given in suitable doses for inducing sleep and removing pain.¹

*Játiphaldáya churna.*² Take of nutmeg, cloves, cinnamon cardamon, *tejapatra* leaves, flowers of *Mesua ferrea* (*ndágakesara*) camphor, sandal wood, sesamum seeds, bamboo manna, flowers o

* Bengal Dispensatory, p. 582.

1. अष्टम् विजयाचूर्णं मधुना निम्बि भक्षयेत् । निद्रानाशेऽतिसरे च यद्वृक्ष पापकक्षये ॥ द्वयम् ।

2. जातीफलसार्धं चूर्णम् । जातीफलसर्वत्रैलापत्रेषु कुम्भान्केचरेः । कर्पूरचन्दनतिर्षे सुसुखीरी तनूपासनेः ॥ ताखीत्र पिपली यथा चित्रक सुखजीरकेः । यष्टी विषक मरिचे समभागानि चूर्षितैः ॥ यावन्वेदानि सञ्जाचि कार्या भङ्गा च तावती । सर्वैश्चूर्णसमा हिं प्रकृपा च त्रिपल्लवैः ॥ कर्पूमाथं तथा खादिभङ्गना श्रवितं सुधीः । यस्य प्रभावाद्भङ्गार्थं काससाक्षात्पिचयाम् ॥ वातलेहप्रतीक्षायः प्रथमं प्राति केतः ॥

Tabernaemontana coronaria (tagara), oshunlic and amblic myrobalans, long pepper, black pepper, ginger, leaves of *Pinus Webbiana* (tālisa), plumbago root, cumin seeds and the seeds of *Embelia Ribes* (viranga), equal parts, purified bhāng equal in weight to all the above ingredients, and sugar twice as much as the bhāng. Powder and mix. Dose, about twenty to forty grains. This preparation is given in diarrhoea, indigestion and loss of appetite.

Jvālānala rasa.¹ Take of yavakshāra, and sarjikākhāra, (impure carbonates of potash and soda), borax, mercury, sulphur, long pepper, black pepper, *Piper Okaba* (chavya) and ginger, equal parts, fried leaves of *Cannabis sativa* equal to all the above ingredients, root of *Moringa pterygosperma* half the weight of bhāng; powder the ingredients, mix and soak the mixed powder for three days in each of the following fluids, namely a decoction or fresh juice of the leaves of *Cannabis Indica*, the roots of *Moringa pterygosperma* and *Plumbago rosea*, and dry in the sun. Then roast the mass lightly and make into a pill mass with the juice of the leaves of *Wedelia calendulacea* (bhringarāja), Dose, about half a drachm with honey. This medicine is given in indigestion and loss of appetite with nausea and vomiting.

Numerous confections of bhāng, such as *Kāmesvara modaka*, *Madana modaka*, *Bālyasakrāsana modaka*, etc., are described in books. These, as their names imply, are considered aphrodisiacs and are used in chronic bowel complaints and nervous debility. Most of them are prepared with equal parts of a number of supposed tonic and aphrodisiac substances in small quantities and bhāng equal in weight to all the other ingredients, together with sugar, honey and the usual aromatics. *Mājoon*, the preparation

1. ज्वालामली रसः । चारुत्रयं सूतमथौ पञ्चकोष्ठमिदं समम् । सर्वैस्तुल्या क्वया
 वदा तदहो शिशुजा जटा ॥ एतत् सर्वं जया शिशु वज्रीनां केकलेदंभैः । भावयेत् चिह्नं
 यथैः पती लघुपुटे पथेत् ॥ मार्कण्डेय इवेर्षुष्टी रसी ज्वालामली भवेत् । निष्पीडय कटुजा
 पीडितुयानं सुकानारम् ॥ इत्यलीकंमतौसारं यदधीनमिदं वम् । त्रेककालासकमन-
 मासकमदधिं जहेत् ॥

of which has been already described, would I believe, be a neater substitute for these complicated preparations. The following is an illustration.

Madana modaka.¹ Take of the three myrobalans, ginger, long pepper, black pepper, *Rhus succodanea* (*eringi*), *Páchak* root, coriander, rock salt, zedoary root, leaves of *Pinus Webbiana* (*tálisha*), bark of *Myrica sapida* (*katphala*) flowers of *Mesua ferrea* (*nágakesara*), *ajowan*, seeds of *Seseli Indicum* (*vanayamáni*), liquorice root, seeds of *Trigonella fœnum-græcum* (*methi*), cumin and nigella seeds equal parts; hemp leaves with flowers and seeds fried in clarified butter, equal in weight to all the other ingredients; sugar equal in weight to the hemp. Prepare a syrup with the sugar, then add the other substances in fine powder and make into a confection. Lastly add clarified butter, honey, powdered sesamum seeds, cardamoms, cinnamon, *tejapatra* leaves and camphor, each two tolas, and make into boluses of about eighty grains each. This confection is used in cough, chronic bowel complaints and impotence.

NAT. ORDER PIPERACEÆ.

PIPER NIGRUM, Linn.

Sans. मरिच, *Maricha*, उषष, *Ushana*.

ern. *Golmarich*, Beng. *Kálimarich*, Hind.

The use of black pepper as a condiment is too well known to require any notice here. Medicinally it is much used in

1. मदनमोदकः । त्रैलोक्यविजयापत्वं सर्वोक्तं हृतमर्जितम् । विकटुं विप्लवां कृत्वा
 इष्टं चन्दाकं सैम्बवम् ॥ इटीं तालीमपवच कटुफलं नागकेसरम् । अक्षमोदां वसामोच
 इटीमधुकरमेव च ॥ मेथीं जीरकयुष्माच्च गृह्णीत्वा व्रजसूचितम् । यावत्स्येवानि चूर्णाणि
 प्राग्देव तदीयवम् ॥ तापदेव सिता द्रिया यावदाद्याति कम्बवम् । इति च मधुना जिन
 तीदृशं परिकल्पयेत् ॥ अर्धितं तिलचूर्णं च नीदकीपरि विम्बयेत् । तिसृशस्यसामुक्त
 कर्पूरीचापिवासितम् ॥ स्वापयेत् हृतमाच्छे तु शीतकदम्बमोदकम् । सर्वैरीगहरं चोक्त
 संवाचनवर्षीहरम् ॥ एतस्य सतताम्नासाद् इतीति तद्वचयते । एतस्य काश्चिद्वर्ष

PIPER NIGRUM.

combination with long pepper and ginger, under the name of *trikata* or the three acrids. In fact, as any reader who has gone through these pages must have noticed, very few compound prescriptions are free from the three myrobalans, and the three acrids, which seem to be added often without reason, and sometimes for the sake of rhyme. Black pepper is described as acrid, pungent, hot, dry, carminative and useful in intermittent fever, hæmorrhoids and dyspepsia. Externally it is used as a rubefacient in alopecia and skin diseases.

In intermittent fever, black pepper in doses of about a drachm, is recommended to be given with the juice of the leaves of *Ocimum sanctum* (*tulasi*), or *Leucas linifolia* (*dronapushpi*).¹ It enters into the composition of numerous prescriptions for dyspepsia, piles and indigestion. The following is an example.

*Pránadá gudiká.*² Take of black pepper thirty-two *tolás*, ginger twenty-four *tolás*, long pepper sixteen *tolás*, *Piper Chaba* (*chavya*) eight *tolás*, leaves of *Pinus Webbiana* (*tálisha*) eight *tolás*, flowers of *Mesua ferrea*, (*nágukesara*) four *tolás*, long pepper root sixteen *tolás*, leaves called *tajapatra* and cinnamon one *tolá* each, cardamoms and the root of *Andropogon muricatus*, (*usira*) two *tolás* each, old treacle two hundred and forty *tolás*; rub them together. Dose, about two drachms. This confection is given in hæmorrhoids. When there is costiveness and a sense of heat, chebulis myrobalan is substituted for the ginger in the above prescription.

The bald patches of alopecia are recommended to be rubbed

1. पीठी मरिचचूर्णेन तुलसीपत्रजी रसः। द्रोणपुष्पीरसो वापि निश्चिन्ति विषम-
स्वरान् ॥ भावप्रकाशः ।

2. प्राणदा गुड़िका । त्रिपलं ग्रहवेरस्य चतुर्थं मरिचस्य च । पिपल्याः कुङ्कुमांश्च
चन्दायाः पृथगेव च ॥ ताक्षीरपत्रस्य पलं पलाहं केसरस्य च । हे पक्षे पिपलीमूला-
दर्शकस्यैव पत्रकान् ॥ सुखोत्सासर्धमेकान् कर्षे त्वगद्यथास्योः । गुडात् पलाणि नु चिञ्चत्
पृथगेकैव कारयेत् ॥ अक्षप्रभाया गुड़िका प्राणदेति च सा श्रुता । पूर्वं मन्वेतु पत्रानु
मीलनस्य यथावत्न ॥ मर्षं मरिचसं युवं श्रीरं तीर्थं पिबेत् तथा । हन्दादभ्रांसि सन्धीश्च
उद्वेगान्प्रकामानि च ॥ वातपित्तककीञ्चानि सन्निपातीह्वानि च ॥

with some rough leaves as of *Strobilus asper* (*sikhota*) and then wrinkled over with powdered black pepper.¹

PIPER LONGUM, Linn.

Syn. Chavica Roxburghii, Miq.

Sans. पिपली, Pippali. कणा, Kaná, कणा, Kriehná.

Vern. Pipul, Beng. Pipal, Hind.

THE dried catkins and the root of *Piper longum* are used in medicine. They are considered heating, stimulant, carminative, alterative, laxative and useful in cough, hoarseness, asthma, dyspepsia, paralysis, etc. Old long pepper is said to be more efficacious than the fresh article. In the form *trikatu* or the three aerids (*Piper nigrum*), it is much used as an aromatic adjunct in compound prescriptions. Powdered long pepper, administered with honey, is said to relieve cough, asthma, hoarseness, hiccup, and sleeplessness.² A mixture of long pepper, long pepper root, black pepper and ginger in equal parts, is prescribed by several writers as a useful combination for catarrh and hoarseness.³

As an alterative tonic, long pepper is recommended for use in a peculiar manner. An infusion of three long peppers is to be taken with honey on the first day, then for ten successive days the dose is to be increased by three peppers every day, so that on the tenth day the patient will take thirty at one dose. Then the dose is to be gradually reduced by three daily and finally the medicine is to be omitted. Thus administered it is said to act as a valuable alterative tonic in paraplegia, chronic cough, enlargements of the spleen and other abdominal viscera, etc.⁴

1. इहस कर्कशेः पमेरिन्द्रुसस गुण्यमम् । त्रुचिरेभरिचैः कार्यमिन्द्रुसुमिदारथम् ॥

चक्रदत्तः ।

2. मधुना पिपलीचूर्णं लिङ्गिन् कासज्वरापहम् । त्रिकानासहरं कण्ठा शीघ्रं
बालकीर्षितम् ॥

भाष्यकारः ।

3. पिपली पिपलीमूलं सरिचं विश्वमेवमम् । पिपेत् मूमेच नतिनाम् कफनी खर-
शेषी ॥

भाष्यकारः ।

4. पिपलीचूर्णनामि । कसश्चिदा दशाह्वानि दशपिपलिकं दिकम् । चर्षितम्

१. कणा कर्कशेः पमेरिन्द्रुसस गुण्यमम् ॥ त्रुचिरेभरिचैः कार्यमिन्द्रुसुमिदारथम् । चक्रदत्तः ।

Long pepper and black pepper enter into the composition of several irritating snuffs. The following is an example. Take black pepper, long pepper, seeds of *Moringa pterygosperma* (see *maricha*) and ginger equal parts; powder the ingredients and rub them together with the juice of the root of *Agati grandiflora* (*vaka*). This preparation is used as a snuff in coma and drowsiness.

Ashakatvara taila.¹ Take of ginger and long pepper each sixteen tolas, mustard oil four seers, butter-milk thirty-two seers curdled milk four seers and boil them together in the usual way. This oil is rubbed externally in sciatica and paraplegia.

PIPER CHABA, Hunter. Sans. चविका, *Chavikā*. Vern. *Chai*, *Beng. Cháb*, *Hind.* The fruits of this species of *Piper* are considered stimulant, anti-catarrhal and carminative and are much used as adjuncts to medicines for cough, cold and hoarseness.

PIPER BETLE, Linn.

Sans. जाड़ल, *Tāmbula*. Vern. *Pān*, *Beng. Hind.*

The leaves of this creeper are, as is well known, masticated by the natives of India. The Poorer classes make their packet of betle with the addition of lime, catechu and betle-nuts. The rich add cardamoms, nutmegs, cloves, camphor and other aromatics. Betle-leaf thus chewed acts as a gentle stimulant and exhilarant. Those accustomed to its use feel a sense of languor when deprived of it. The ancient Hindu writers recommend that betle-leaf should be taken early in the morning, after meals and at

प्रदीपीत्यं सङ्घस्य रसायनः ॥ दशपिप्पलिकः श्रेष्ठो मध्यमः षट्पकीर्तितः । यस्त्रिपिप्पली-
पर्याप्तः प्रदीपुः शोडशः क्षुतः ॥ बृहत्तं त्र्यम्बामुषं श्रीश्रीदरविनाशमम् । कस्यः स्वापनं
सिद्धं पिप्पलीनां रसायनम् ॥ पञ्चपिप्पलिकश्चापि दृश्यते सर्वमानकः । पिप्लस्तां मन्त्रिभिः
पेया मया मध्यमलेनरेः ॥ शीतस्त्रिया इत्यनेनोद्देशदीपामयान् प्रति ॥

अकदतः ।

१. अकदतुर तेलम् । पञ्चाश्वी पिप्पलीमूलनागरादकदूर । तैलपत्रः सभी द्वा
अकदतुरतेलिय तैलं साधेपमिषते ॥ अकदतः ।

bed-time. According to Susruta, it is aromatic, carminative stimulant and astringent. It sweetens the breath, improves the voice and removes all foulness from the mouth. According to other writers it acts as an aphrodisiac.

Medicinally it is said to be useful in diseases supposed to be caused by deranged phlegm and its juice is much used as an adjunct to pills administered in these diseases; that is, the pills are rubbed into an emulsion with the juice of the betle-leaf and licked up. Being always at hand, *pin* leaves are used as a domestic remedy in various ways. The stalk of the leaf smeared with oil is introduced into the rectum in the constipation and tympanitis of children, with the object of inducing the bowels to act. The leaves are applied to the temples in headache for relieving pain, to painful and swollen glands for promoting absorption, and to the mammary glands with the object of checking the secretion of milk. *Pin* leaves are used as a dressing for foul ulcers which seem to improve under them.

NAT. ORDER CONIFERÆ.

PINUS WEBBIANA, Wall.

Syn. *Abies Webbiana*, Lindl.

Sans. तालीपत्र, *Tālisapatra*, Vern. *Tālisapatra* Beng. Hind.

THE dried leaves used by Kavirajas under the name *tālisapatra*, were identified at the herbarium of the Royal Botanic Garden to be the leaves of *Pinus Webbiana*. They are singly spirally arranged all round the branchlets, flat, narrow, linear one to three inches long, one line broad, narrowed into a short petiole, under side with two longitudinal furrows on either side of the raised midrib, upper side shining. The Sanskrit term *tālisapatra* has been hitherto translated by most writers on Botany and Materia Medica, as *Flacourtia cataphracta*. This error originated probably in Wilson's Sanskrit-English dictionary and has since been repeated by subsequent writers. This medicinal

The powdered leaves are given with the juice of *Justicia Adhatoda* (*vāsaka*) and honey in cough, asthma and hæmoptysis.¹ A confection called *Tālisādyā churna* is prepared with *tālisāpatra*, black pepper, long pepper, ginger, bamboo-manna, cardamoms, cinnamon and sugar, and is used in the above mentioned diseases.² These leaves enter into the composition of numerous complex prescriptions.

PINUS LONGIFOLIA, Roxb.

Sans. सरल, Sarala, Vern. Chir, Saral, Hind.

THE aromatic wood of *Pinus longifolia* is used in Hindu medicine. The tree yields an oleo-resin called *sarala drava*, *sriśāsa* and *kshira* in Sanskrit. In the vernacular it is called *gandhabirozā*. Dr. Royle remarked, "The *chir* exudes or yields to incisions a very fine turpentine. This is chiefly valued by the natives for its resin, and as the latter is only obtained by exposing the turpentine to heat, the oil, the more valuable product is dissipated to procure the resin; but by adopting a very simple still, the resin was obtained as good as ever for the purposes of the natives while the oil of turpentine which distilled over was pronounced on being sent to the General Hospital of Calcutta, to be of very superior quality." Turpentine is now distilled by the natives in the Panjab but the distilled oil is not mentioned by Sanskrit writers.

The wood of *Pinus longifolia* is considered stimulant, diaphoretic and useful in burning of the body, cough, fainting and ulcerations; it is generally used in combination with other

-
1. तालीशचूर्णसंयुक्तः पियः चौद्रेण वासकस्तरसः । कफपित्त तमकवास सरनिद रकपित्त हरः ॥ चक्रदत्तः ।
 2. तालीशाद्य चूर्णम् । तालीशं मरिचं शुष्की पिप्पली वंशलीचना । एकं चिचि-
 चतुःपञ्चकपैर्भागान् प्रकल्पयेत् ॥ एलातलोऽस्तु कर्पाई प्रत्येकं भागमावहेत् । चापिशत्-
 कर्षणुचिना इदीया शकरां गुपैः ॥ तालीशाद्यनिदं चूर्णं पाचनं दीचनं शृतम् । कासवास-
 त्तदकारं कर्षणीशारनाशनम् ॥ शौशाणामकरं शीघ्रं बहुशी पाण्डुरोगिजित् । पक्षा वा शर्करां
 चूर्णं चिपेत् सादगुटिका ततः ॥ शार्ङ्गपरः ।

medicines. The oleo-resin or crude turpentine is used in the preparation of plasters, ointments and pastiles for fumigation. It is applied to buboes and abscesses for promoting absorption. The following is an example of a pastile containing crude turpentine. Take of crude turpentine, bdellium, wood of *Aquilaria Agallocha* (*aguru*), and resin of *Shorea robusta*, and make into pastiles. These are used for fumigating unhealthy and painful ulcers.¹

CEDRUS DEODARA, Loud.

Pinus Deodara, Roxb.

Sans. देवदारु, *Devadāru*. Vern. *Deodār*, Hind.

THE aromatic wood of this elegant pine is considered carminative, diaphoretic, diuretic and useful in fever, flatulence, inflammation, dropsy, urinary diseases, etc. It is chiefly used in combination with other medicines. The following is an example of a diuretic mixture containing this drug. Take of *devadāru* wood, root of *Moringa pterygosperma* (*sigru*) and *Achyranthes aspera* (*apāmārga*), one drachm each and reduce to a paste with cow's urine. This composition is given in ascites.²

NAT. ORDER PALMACEÆ.

COCUS NUCIFERA, Linn.

¹ Sans. नारिकेल, *Nārikela*, Vern. *Nārial*, Hind. *Nārikel*, Beng.

THE numerous economical uses of this valuable tree are fully detailed in standard works. I will refer only to such of them as are mentioned in Sanskrit medical works. The water of the unripe fruit is described as a fine-flavoured, cooling, refrigerent drink useful in thirst, fever and urinary disorders. The tender pulp of the fruit is said to be nonrishing, cooling and diuretic. The pulp of the ripe fruit is hard and indigestible but is used

1. श्रीवासुदेवमुनिप्रणीतसंस्कृतचिकित्सासूत्रम् । चक्रिणलं त्रया नारिकेलं चक्रेण चक्रेण चक्रेण चक्रेण ।

चक्रिणलं ।

2. देवदारुं शिबिण्डुसंज्ञकं शिबिण्डुं शिबिण्डुसंज्ञकं । पीलाय चक्रेण चक्रेण ।

medicinally. The terminal bud of the tree is esteemed as a nourishing, strengthening and agreeable vegetable. The same remark applies to the tops of *tál* palm and date trees. The root of the cocoa-nut is used as a diuretic as also in uterine diseases. Cocoanut oil is said to promote the growth of hair. It is much used as a hair-oil by the lower classes of native women. For this purpose it is scented by steeping in it a number of fragrant vegetable substances sold in packets under the Bengali name of *Máthághasá*. The ashes of the leaves are used in medicines. They contain a great deal of potash. The fresh juice of the tree is considered refrigerent and diuretic. The fermented juice constitutes one of the spirituous liquors described by the ancient writers. The cleared shell of the nut or portions of it are burnt in a fire and while red hot, covered by a stone cup. The fluid deposited in the interior of the cup is rubefacient and is an effectual domestic remedy for ringworm.

Narikelakhandá.¹ Take of the pounded pulp of cocoa-nut, half a seer, fry it in eight tolás of clarified butter, and afterwards boil in four seers of cocoa-nut water till reduced to a syrupy consistence. Now add coriander, long pepper, bamboo manna, cumin seeds, nigella seeds, cardamoms, cinnamon, *tejapatra*, the tubers of *Cyperus rotundus* (*mustaka*), and the flowers of *Mesua ferrea* (*uágakesara*) one tolá each in fine powder and prepare a confection. Dose, two to four tolás, in dyspepsia and consumption.

BORASSUS FLABELLIFORMIS, Linn.

Sans. ताल, *Tála*, तृषराज, *Trinarája*. Vern. *Tál*, Beng. *Hin*

THE properties of the various parts of this noble palm are described in detail in Sanskrit works. The root is cooling and restorative. "The saccharine juice obtained by the excision of the spadix or young flowering branch," is when freshly drawn,

1. भारिकेलखण्डः । कुडमितिमिह स्वान्नारिकेलं सुपिष्टं पलपरिमितसर्पिःपाचितं खण्डतुल्यम् । मित्रपयसि तदेतत् प्रथमात्रे विपक्वं गुटवदथ सुशीते ब्राह्मभागान् क्षिपेत् ॥
 चन्दाकपिष्णुसौपयोदनुगादिजीरान् ब्राह्मं त्रिजातमिभकेरुवदिचूर्णैः । हन्यन्मपित्तमहर्षिं
 अयमस्यपित्तं शूलं घनिं सकलशूलैश्चकारि हरिः ॥ चक्रदत्तः ।

cooling, sweet and useful in inflammatory affections and dropsy. The fermented juice called *tári* or toddy is intoxicating. The yellow pulp surrounding the seeds of the ripe fruit is sweet, heavy and indigestible. It is extracted by rubbing the seeds over a wooden scratcher, and with the addition of a little lime, it settles into a firm jelly which is a ready mode of taking the pulp. It is also made into cakes with flour and other ingredients. The young seeds contain a clear watery fluid which is very refreshing and cooling. They form one of the edible fruits of the country and are sold in the markets in large quantities when in season. The natives after extracting the pulp from the fibres surrounding the ripe seeds, preserve them for some months. When the embryo begins to germinate and enlarge, the seeds are cut open and the expanded embryo is extracted and eaten. It is cooling, sweet and palatable. The terminal bud or top of the *idli* tree is regarded as nutritive, diuretic and tonic. The leaves of this palm tree were used for writing on by the ancient Hindus. The letters were engraved upon the leaves by a pointed iron instrument. This system of writing is still followed to a considerable extent in Orissa where boys in the indigenous *patsálás* write with iron pens on palm leaves. In Bengal the leaves are written upon with pen and ink as on paper. The ashes of the flowering stalk are said to be useful in enlarged spleen.¹

ARECA CATECHU, *Linn.*

Sans. गुवाक, *Guváka* पुग, *Puga*, कमुक, *Kramuka*.

Vern. Guá, *Supári*, *Beng. Supári*, *Hind.*

The chief consumption of betel-nuts is as a masticatory, alone or in conjunction with betel leaf. The unripe nuts are said to be laxative and carminative. The fresh nuts when not yet dry in their interior, have intoxicating properties and produce giddiness. The dried nuts are masticated. They are said to sweeten the breath, strengthen the gums, remove bad tastes from the mouth, and produce a stimulant or exhilarant effect on the system. The burnt nuts are used as a tooth powder.

Medicinally betel-nuts are used in urinary disorders and as an aphrodisiac. The *Bhāvaprakāsa* gives a preparation called

¹1. वायुसंहिता: बीर: सुवह: श्रीवनासन: ॥

Nativallava pugapika. It is a confection made of betel-nuts boiled in milk, with the addition of a number of aromatic and stimulant substances supposed to have aphrodisiac properties. Sometimes *datura* seeds and the leaves of *Cannabis sativa* are added to this confection when it is called *Kāmesvaru modaka*.

Betel-nuts are also used as vermifuge. Dose, one-fourth tola rubbed into a paste with 2 tolas of fresh lemon juice.¹

PHENIX SYLVESTRIS, *Roeb. Sans.* खजूर, *Khurjura*. Vern. *Khejur*, *Beng. Hind.* The *Phoenix sylvestris* is indigenous to India and is cultivated for the sake of its sweet sap which is manufactured into *gur* or *jaguri*. The imported fruits of *Phoenix dactylifera* are used medicinally as demulcents and expectorants.

NAT. ORDER HYPOXIDEÆ.

HYPOXIS ORCHIOIDES.

Syn. Curculigo orchioides, Guertn.

Sans. मुषली, *Mushali*, तालमूली, *Tālamuli*. Vern. *Tāllura*, *Beng.*

Mushali, Hind.

THE tuberous roots of this plant are considered alterative, tonic, restorative and useful in piles, debility and impotence. They enter into the composition of several medicines intended to act as aphrodisiacs and restoratives. The following is an example. Take of the root of *Asparagus racemosus* (*satāvari*), *Sphaeranthus mollis* (*muntitika*), *gulanha*, seeds of *Butea frondosa* (*hastikarna*), and the tuberous roots of *mushali*, equal parts; powder and mix. Dose, about a drachm with honey or clarified butter, in the debility of old age.² The *Rāja nirghantu* mentions two varieties of *mushali*, namely, white and black. The properties of the white variety are said to be inferior to those of the black which is preferred for use as an alterative tonic. *Steuart* says that the black or *siya musli* is obtained from *Anilema tuberosum*. *Hop*

1. अपकं कसुकं पिष्ट पीतं जम्बीरजे रसेः । निहन्ति विह्वलं कौटं रसः खजूरं जम्बीरः ॥
मेघन्यरजावली ।

2. अश्वरी मुष्टितिका शुद्धी सहस्रिकर्षा सह तालमूली । एतानि कृत्वा समभा युक्तान्वाज्येन किंवा मधुनावलिच्छ्यात् ॥ जराकलास्युविपुक्तदीर्घी भवेन्नरी वीथ्यवसादियुक्त
भायप्रकाशः ।

(Watt.) The roots of *Bombax Malabaricum* and *Asparagus racemosus* are sometimes sold by the native druggists of Calcutta under the name of *suffed musli*. These articles have however separate names and are not designated by the name of *suffed musli* in any native medical work. On the contrary a white variety or *talamuli* or *musali* is, as already noticed, mentioned in the *Rāja nirghanta*.¹ The tubers of *Curculigo orchioides* become when dry, translucent like *ambar*. The dried roots were probably considered a separate variety, namely, the white by the ancients.

NAT. ORDER AROIDEÆ.

ACORUS CALAMUS, Linn.

सचा, *Vachá*, चङ्गुला, *Shadgrantha*. Vern. *Barh*, B. H.

THE aromatic rhizome or root-stock of *Acorus Calamus* is considered emetic in large doses, and stomachic, carminative and nervine in smaller doses.

As an emetic it is administered in doses of about eighty grains with half a seer of tepid salt-water.² The following is an example of a prescription for dyspepsia containing this drug. Take of *Acorus Calamus* root, assafetida, *dtis*, long pepper, black pepper, ginger, chebolic myrobalan and *sonchal* salt equal parts ; powder and mix. Dose, about half a drachm.³ As a stimulant or nervine it is used in combination with other medicine in low fevers, epilepsy and insanity.

AMORPHOPHALLUS CAMPANULATUS, Blume.

Syn. *Arum campanulatum*, Roxb.

Sans. शरणा, *Surana*, ओझ, *Olla*. Vern. *ol*, Beng. *Hind*.

THE *Amorphophallus campanulatus* is cultivated for the sake of its tubers, which are cooked and eaten by the natives like yams or potatoes. The tubers contain an acrid juice which should be

1. मूषली च विषा मीक्षा श्वेता वापरसंज्ञका । श्वेता सख्युशीपिला अपरा च रसायनी ॥ राजनिर्घण्टः ।

2. वचा लक्ष्मीयिन मान्त्रामि प्रशस्यते ॥ चक्रदत्तः ।

3. शशी विषैद्वकीडोऽग्निद्वेषाभिद्युर्णिताः पिबेत् । हिङ्गु प्रतिविषा व्यीष वचा शीबर्ष

to rid off by thorough boiling and washing, otherwise the vegetable is apt to cause troublesome irritation in the mouth and noses. Medicinally, *surana* is considered serviceable in hemorrhoids; in fact one of its Sanskrit synonyms is *arsoghna* or the eraser of piles. It is administered in this disease in a variety of forms. The tuber is covered with a layer of earth and roasted in a fire; the roasted vegetable is given with the addition of oil and salt.¹ Several confections are described such as the *Laghu-surana modaka*, *Vrihat surana modaka*, *Surana pindi*, *Kānkāyana modaka*, etc. These are all confections made of the tubers of *morphophallus companulatus* with the addition of treacle and various aromatics and acrids.

Scalpa or *Laghu surana modaka*² is thus prepared. Take of black pepper one part, ginger two parts, plumbago root four parts, tuber of *surana* eight parts, treacle sixteen parts, mix together and prepare a confection. Dose, about a tola every morning, in piles and dyspepsia.

SCINDAPSUS OFFICINALIS, *Schott. Syn. Pothos officinalis*, *Roxb. Sans. गजपिप्पली, Gajapippali. Vern. Gajapipul, Beng. Hind. The sliced fruits of this plant pass by the name of gajapipul. They are considered aromatic, carminative, stimulant and useful in diarrhœa, asthma and other affections supposed to be caused by deranged phlegm. They are chiefly used as an aromatic adjunct to other medicines.*

ALOCASIA INDICA, *Schott.*

Syn. Arum Indicum, Roxb.

Sans. माणक, Mānaka, Vern. Mānkachu, Beng. Mānkanda, Hind.

THE underground stems of *Alocasia Indica* constitute a valuable and important vegetable of native dietary. The stems

1. शौर्यं कन्दमादाय पुटपाकिन पाचयेत् । सतेल लवणं द्वयं सद्यस्त्वर्शोविकारणत् ॥
शाङ्गधरः ।
2. शूलशूरशमीदकः । मरिचमहीषपचितकण्ड शूरशभागा यथोत्तरं दिगुणाः ।
श्लेष्मिणी शुद्धभागः सेव्योऽयं मीदकः प्रसिद्धफलः ॥ ज्वलनं ज्वलयति लाठरमुद्गस्यति
(समुद्गमहात् । निःशेषयति त्रौपदमशीति नाशयत्यायु ॥ भावप्रकाशः ।)

sometimes grow to an immense size, from six to eight feet in length and can be preserved for a considerable time. Hence they are of great importance in jail dietary when fresh vegetables become scarce in the bazar or jail garden. They thrive best in shade under the eaves of huts or buildings and beside fences.

Medicinally *mánaka* is said to be useful in anasarca, in which disease it is used in the following manner. Take of the powdered meal of *Alocasia Indica* eight tolás, powdered rice sixteen tolás, water and milk, forty-eight tolás each, boil them together till the water is evaporated. This preparation called *Mánamañḍa*, is given as diet.¹ No other article is allowed in addition to it except milk. A *ghrita* is also ordered to be made with a decoction and paste of *mánaka* but it is not in vogue.

NAT. ORDER SCITAMINEÆ.

ZINGIBER OFFICINALE, *Roscoe*.

Sans. अर्द्रक, *Ardruka*, यङ्गवर, *Sringavera*.

Vern. *Adá*, Beng. *Adrak*, *Hind*.

GINGER is described as acrid, heating, carminative and useful in dyspepsia, affections of the throat, head and chest, piles, rheumatism, urticaria, dropsy, etc. It is much used as a carminative adjunct along with black pepper and long pepper under the name of *trikatu* or the three acrids. The dried root is called *Nágara*, *Sunṭi* and *Mahaushadha* in Sanskrit. In addition to possessing the properties of ginger it is said to be laxative.

Ginger with salt taken before meals, is highly praised as a carminative. It is said to purify the tongue and throat, increase the appetite and produce an agreeable sensation. Ginger forms the active ingredient of several medicines for dyspepsia and hæmorrhoids.

¹ *Samasarkara churna*.² Take of cardamoms one part, cinnamon

1. पुराणं भाष्यकं पिशा द्वियुक्तीकृततण्डुलम् । साधितं चौरतोषाम्बामम्बसेत् पायसं ततः ॥ इति वासीदरं शीघ्रं बद्धुं पाण्डुतामपि । सिद्धौ भिषग्विराज्यातः प्रथोनीयं निरुद्धः ।

2. समसर्करं चर्बम् । यङ्गीकचामरिचनान्दलनेलं यङ्गीकृतं कनयिषाञ्चितम् ।

two parts, flowers of *Mesua ferrea* (*nāgakasara*) three parts, black pepper four parts, long pepper five parts, dried ginger six parts, sugar in quantity equal to all the other ingredients; powder and mix. Dose, about a drachm in dyspepsia, loss of appetite and piles.

Saubhigya sunṭi.¹ Take of clarified butter, sixteen tolās, milk four seers, sugar six seers and a quarter, dry ginger one seer; boil them together so as to make an electuary. Then add coriander twenty-four tolās, fennel seeds forty tolās, *bāberang* seeds, cumin seeds, nigella seeds, long pepper, black pepper, ginger, tubers of *Cyperus rotundus*, leaves called *tejapatra*, flowers of *Mesua ferrea* (*nāgakasara*), cinnamon and cardamoms each eight tolās in fine powder, and stir with a ladle till cold. This confection is much used as a carminative tonic in dyspepsia and in disorders of the alimentary canal in females after confinement.

Sunṭi ghrita.² This is a preparation of ginger made with a decoction and paste of the root, clarified butter and *kānjika* in the usual proportions. It is said to be useful in rheumatism.

Ardraka khaṇḍa. This is a confection made with ginger, clarified butter, milk and sugar with the addition of a number of aromatics in small quantities. It is used in urticaria.

In cephalalgia and other affections of the head, ginger juice

मन्सात् । खादिदिदं समसितं गुदजाग्रिमान्धकासाश्चिद्यसनकण्डहृदामयेषु ॥

भावप्रकाशः ।

1. औभाग्यशुद्धौ । भाज्यं स्यात् पलपुष्पमत्र पयसः प्रखडयं खखतः पचायत् पल-
मत्र चूषितमथी प्रविध्यते नागरम् । प्रखादं गुडवद्विपाच्य विधिना मुष्टिमयं धान्यकान्
निश्चाः पक्षुपुलं पलं क्लिभिरिदीः साजाजिजीरादपि ॥ व्दीषाभ्नीददलोरसेन्दसुमनसर्ग-
द्राविङ्गीर्मा पलं पकं नागरखखसंज्ञकमिदं तत् स्तिकारीमहत् । तद्वद्विज्वरदाहश्रीप-
शनं सबासकासापहम् ॥ श्रौहव्याधिविनाशनं क्लमिहरं मन्दाघिसन्दीपनम् ॥

भावप्रकाशः ।

2. कर्पिर्नागरकण्डेन शौवीरं तद्यतुमुक्तम् । चिद्धमधिकरं नेष्टमामवातहरं परम् ॥

भावप्रकाशः ।

mixed with milk is used as a snuff.¹ The fresh juice of ginger taken with honey relieves catarrh, cough and loss of appetite.²

*Saindhavādyā taila.*³ Take of dry ginger forty tolās, rock-salt, long pepper root and plumbago root, sixteen tolās each, marking nuts twenty in number, fermented rice water sixteen seers, sesamum oil four seers, boil them together and prepare an oil in the usual way. This oil is rubbed externally in sciatica and other forms of rheumatism.

ZINGIBER ZERUMBET, *Roxb. Sans.* झूलशक्ति, *Sihula-granthi*, *Vern. Mahā bari bach*, *Hind. Beng.*

ZINGIBER CASSUMUNAR, *Roxb. Sans.* वनाद्रक, *Vanādraka*, *Vern. Banāda*, *Beng.*

ALPINIA GALANGA, *Linn. Sans.* कुलिञ्जान, *Kulinjāna*. *Vern. Kulinjān*, *Beng. Hind.*

THE aromatic tubers of these three species are occasionally used as carminative or fragrant adjuncts in complex prescriptions, but they have nothing peculiar in their properties or action.



CURCUMA LONGA, *Roxb.*

Sans. हरिद्रा, *Haridrā*, निशा, *Nisā*. *Vern. Halud*, *B. Haldi*, *H.*

THE turmeric plant is extensively cultivated for the sake of its tubers which are an essential ingredient of native curry powders. Turmeric pounded into a paste and mixed with oil, is rubbed on the skin to improve its appearance and prevent skin diseases. The rubbing of turmeric and oil is an essential part of the Hindu marriage festival as well as of some religious

1. नागरकल्कमिश्रं शीतं मद्येन योजितं पुंसाम् । नानादीपीकृतां शिरीषकां हनि
तीव्रतराम् ॥

2. भाद्रं कस्त्रसः शीद्रयुक्तीं वषथातनुत् । वासकासाक्षिं हनि प्रतिध्यायं
व्यपीडति ॥

3. सैन्धवाद्यं तैलम् । ते पले सैन्धवात् पञ्च शुष्कां यन्त्रिकं चित्रकात् । ते ते भङ्गान-
काक्षीनि विभ्रतिर्वै तथादके ॥ कारनालात्पचेत् प्रस्यं तैलमेतेरपत्यदम् । गृध्रस्युषवा-
श्रीपिसंश्लेषातविकारघ्नम् ॥

ceremonies. Medicinally turmeric is used chiefly in skin diseases both externally and internally. Turmeric paste with the addition of a little lime is a popular application to sprains and bruises. A decoction of turmeric is used as a cooling wash in ophthalmia; cloth steeped in it is employed as an eye-shade. A paste of turmeric and the leaves of *Justicia Adhatoda* (*vásaka*), with cow's urine is rubbed on the skin in prurigo.¹ Several other combinations of the sort are in vogue, such as turmeric and *nim* leaves, turmeric and the ashes of the plantain tree, etc. Turmeric is also given internally with cow's urine in prurigo and eczema.²

Haridrākhanda.³ Take of turmeric sixty-four tolás, clarified butter forty-eight tolás, milk sixteen seers, sugar twelve tolás, and boil them together over a gentle fire in an earthen pot. Then add black pepper, long pepper, ginger, cinnamon, cardamom, *ejapatra*, *báborang* seeds, root of *Ipomœa Turpethum* (*trivrit*), the three myrobalans, flowers of *Mesua ferrea* (*nágakesara*) tubers of *Zyperus rotundus* (*mustaka*) and prepared iron, each eight tolás in fine powder, and prepare a confection. Dose, one tolá every morning in prurigo, boils, urticaria, etc. A cure is said to be effected in seven days.

The term *haridrādvya*, or the two turmeric, signifies turmeric and the wood of *Berberis Asiatica*. They are often used together in compound prescriptions both for external and internal use and their properties are said to be analogous.

1. कर्मलं सिंहासदकं सनिमं सुरभिजलेन संपिष्टम् । दिवसमयीष नियतं चपयति
विलेपनतः ॥ चक्रदत्तः ।

2. हरिद्राकल्कसंयुक्तं भीमूचेख पलत्रयम् । पिवेन्नरः काकनाची कक्षुपामाविनाशनम् ॥
चक्रदत्तः ।

3. हरिद्राखण्डः । हरिद्रायाः पञ्चाशद्यष्टौ बट्पलं कृषिषां तथा । चीरादकेन संयुक्तं
इच्छसादेपलं तथा ॥ पचैन्दुवप्रिना वेद्यो भाजने वृष्णये हृदं । विकट्टु विजातखण्डेन
केभिर्न पिशता तथा ॥ त्रिफलं केसरं मूलं लीङ्गं प्रति पलं पखम् । संयुक्तं प्रक्षिपेत्तप
इषंकेनानु भवयेत् ॥ कक्षुं निष्क्रीटं हृद्दद्यां वाहनं परमौषधम् । प्रतप्तकाचनाभासी
ह्येकी भवति नाम्बधा ॥ भीमपिपीहृदकीठान् सम्राडादेव नामयेत् । हरिद्रागामतः खण्डः
अण्डनां उपजीवयत ॥ भेषजकारवरी ।

CURCUMA ZEDOARIA, Roscoe.

Syn. O. Zerumbet, Roxb.

Sans. कडी, Sati, Vern. Sati, Beng. Kachur, Hind.

THE rhizomes of this plant possess an agreeable camphoraceous smell and warm, bitterish, spicy taste. They are considered carminative and useful in fever and skin diseases arising from impure or deranged blood. They are generally used in combination with other medicines as also in the preparation of medicated oils. "The dry root powdered and mixed with the powdered wood of the *Cæsalpinia Sappan* makes the red powder called *ábir* by the Hindustanis, and *phág* by the Bengalis. It is copiously thrown about by the natives during the *Huli* or Hindu holidays in the month of March."

7. **CURCUMA AROMATICA, Salisb. Syn. C. Zedoaria, Roxb.**

Sans. वनहरिद्रा, Vanaharidra. Vern. Banhalud, Beng. Jedwar, Hind.

The rhizomes of this plant are of a pale yellow colour and have an agreeable fragrant smell. The *Bhāvaprakāsa* describes them as useful in skin diseases and disorders of the blood. They are sometimes used in combination with other medicines in these diseases.

8. **CURCUMA AMÁDÁ, Roxb. Sans. कर्पूरहरिद्रा, Karpura-**

haridra. Vern. Amáda, Beng. The *Bhāvaprakāsa* mentions this

plant under the name of *karpuraharidra*, but the term is not to be found in standard lexicons. The fresh root possesses the smell of green mango and is used as a condiment and vegetable. Medicinally it is described as cooling and useful in prurigo.

9. **ELETTARIA CARDAMOMUM, White et Maton. Also**

Anomum subulatum, Roxb. Sans. एला, Elá. Vern. Eláchi, Hind.

Gujrati elách, Beng. Cardamoms are largely used as aromatic adjuncts but have no peculiarity deserving of special notice.

NAT. ORDER MUSACEÆ.

MUSA PARADISIACA, Linn.

Variety of *Musa Sapientum, Linn.*

Sans. कदली, Kadali, कभा, Rambhá. Vern. Kalá, Beng. Kelá, Hind.

The economical uses of this most valuable plant are too well-known to need any notice here. I will refer only to one of them.

The leaves and leaf-stalks when burnt yield alkaline ashes which can be used instead of country soap or fuller's earth, in washing clothes. In the Noakhally jail, the old leaves are collected, dried and burnt to ashes. The ashes being placed on a piece of cloth supported on four posts, water is made to percolate through them into an earthen vessel. The alkaline water thus obtained is used for steeping clothes intended to be washed. As the stems of the plantain are cut down soon after the fruit is gathered, there is always a large quantity of leaves and stalks available in all gardens where it is cultivated. They can be readily economised in the simple method above described, if not manufactured into cloth or paper.

The unripe fruit, called *mochuka* in Sanskrit, is considered cooling and astringent; it is much used in diabetes in the form of a *ghrita* prepared as follows :—

Kadalyādi ghrita.¹ Take of plantain flowers twelve seers and a half, watery juice of the root-stock of the plantain tree sixty-four seers; boil them together till reduced to one-fourth and strain. To the strained decoction add four seers of prepared clarified butter and the following substances in the form of a paste, namely, unripe plantains, cloves, cardamoms, red sandal wood, wood of *Pinus longifolia*, (*sarala*), *jatāmānsi* root, the three myrabalans, *Raphanus sativus* (*mulaka*), and the fruit of *Feronia elephantum* (*kapittha*) in equal parts, one seer in all, and prepare a *ghrita* in the usual way. This medicine is generally given along with some preparation of tin or other metallic medicine in diabetes. Dose, about two tolas.

NAT. ORDER ORCHIDACEÆ.

VANDA ROXBURGHII, R. Br.

Syn. Cymbidium tessaloides, Roxb.

Sans. रीसा, *Rāśā*, गन्धनाकुली, *Gandhanakuli*. *Vern.* *Rāśā*, *B. H.*

UNDER the name of *rāśā*, the roots of *Vanda Roxburgh* and *Acampe papillosa*, are both indiscriminately used by natives

1. कदल्यादि घृतम् । कदलीकन्दनिर्वासे कल्पसूत्रगुणा पचेत् । चतुर्मासाव शेषेण
वृष्यस्य विपाचयेत् ॥ चन्दनं सरलं मासी कदलीमूलकं तथा । एषा खवत्त निरुजाकृदि

physicians. They are very similar in the appearance of their roots and leaves, though they differ much in their flowers and fruits. One native physician whom I consulted, pronounced both these plants to be *rāsnā*; when however I showed him the different flowers and fruits of the two species, he was puzzled. He had never looked to the flowers before, but only knew the roots and leaves. These epiphytes are very common on mango trees.

Rāsnā root is said to be fragrant, bitter and useful in rheumatism and allied disorders, in which it is prescribed in a variety of forms.

Rāsnāpanchaka.¹ Take of *rāsnā*, *gulanča*, *devadāru*, ginger, and the root of the castor oil plant in equal parts, and prepare a decoction in the usual way. This is apparently a popular prescription for rheumatism, being mentioned by most writers.

Rāsnā guggulu.² Eight parts of *rāsnā* and ten of bdellium are beaten into a uniform mass with clarified butter. Dose, about a drachm, in sciatica.

Rāsnā enters into the composition of several medicated oils for external application in rheumatism and diseases of the nervous system, such as the *Mahāmdsha taila*, *Madhyama Nardāyana taila*, etc.

NAT. ORDER LILIACEÆ.

ALOE INDICA, Royle.

Sans. हृत्कुमारी, *Ghrītakumāri*, कन्वा, *Kanyā*.

Vern. *Ghrītakumāri*, Beng. *Ghīkumāri*, Hind.

ALOES (called *mushabbar* in the vernacular), though now used in native medicine, was unknown to the Sanskrit writers. They

फलमेव च ॥ कल्केनाजिन संश्लिषं सीमरोगनिवारणम् । मूत्ररीमानशेषाश्च प्रघ्नताम्
शूलपित्तिकाञ्च ॥ प्रमेहान् विभ्रतित्थेव मूत्राघातात्समीदशः । नङ्मूत्रं विक्षिपेच मूत्रकण्ठ
तथाङ्करीम् ॥ अदस्तादि घृतं नाम विचला परिकीर्तितम् ॥

राक्षीयसारसंबन्धः ।

1. राक्षीयसंबन्धम् । राक्षीयता महादाह नागरेरुखर्ज प्रथम् । समघातुनते वाते
सामे वाक्षीयजे पिबेत् ॥

2. राक्षीयस्य पल्लवेन कर्षाम् पञ्च च शुशुकीः । सर्पिणा वटिका क्रिया खादिषा
सम्बन्धीकरणा ॥

mention only the fresh juice of the leaves which is regarded as cathartic, cooling, tonic and useful in fevers, enlarged lymphatic glands, spleen and liver, eye diseases, etc. The fresh juice is much used in making up various sorts of pill-masses and more particularly those of a purgative character, as for example the preparation called *Taruna jvāri rasa*, described under Mercury (see page 32). In glandular enlargements and spleen disease, the juice of the leaves is given with the addition of powdered turmeric.¹

ASPARAGUS RACEMOSUS, Willd.

Sans. शतावरी, *Satāvri*, शतमूली, *Satamuli*.

Vern. *Satamuli*, Beng. *Satāvri*, Hind.

THE Sanskrit name *satamuli* (that is possessing a hundred roots), is in allusion to the numerous fusiform tubers of this plant. These are regarded as cooling, demulcent, diuretic, tonic and aphrodisiac, and are used both internally and in the preparation of several medicated oils. The tubers are candied and taken as a sweet-meat. This preparation however has scarcely any other taste or flavour besides that of the sugar. The fresh juice of the root is given with honey as a demulcent in bilious dyspepsia or diarrhoea.² As an aphrodisiac tonic, it is used in a variety of forms. A *ghrita* is prepared as follows:—

Satāvri ghrita.³ Take of clarified butter four seers, juice of *Asparagus racemosus* four seers, milk forty seers, boil them together and prepare a *ghrita*. This is given with the addition of sugar, honey, and long pepper.

Phalaghrita. This is prepared with four seers of clarified butter, and sixteen seers each of the juice of *Asparagus racemosus* and cow's milk, with the addition of a number of other medicines in small quantities, in the form of a paste. Its use is said to increase the secretion of semen, to cure barrenness in women and to remove disorders of the female genitals.

1. निम्बामूलमुतः कम्मारसः शीतपत्रौहः ॥	शतमूलः ।
2. शतावरीस्य मधुना पित्तमूलहरी रसः ॥	शतमूलः ।
3. शतावरीहवत् । इत्तं शतावरीगर्भं चोदं दध्नुषं पत्रैत् । शर्करापित्तकोषोद्भृत्तं	पत्रदधः ।
सहस्रमुपति ॥	

As a diuretic, it is prescribed in combination with other medicines of its class. The following is an illustration. Take of the roots of *Asparagus racemosus*, *Saccharum spontaneum* (*kāsa*), *Poa cynosuroides* (*kusa*), *Oryza sativa* (variety called *sālidhānya*) and *Saccharum officinarum* (*ikshu*), *Batatus paniculatus* (*vidāri*), *Scirpus Kysoor* (*kaseruka*), and *Tribulus terrestris* (*gokshura*) equal parts, and prepare a decoction in the usual way. This decoction is administered, with the addition of sugar and honey, in scanty urine with heat and ardor urinæ.¹ The juice of this drug taken with milk is useful in Gonorrhœa.² The chief use of the drug however consists in the preparation of several popular cooling and emollient medicated oils for external application in disorders of the nervous system, rheumatic affections and urinary diseases.

Nārāyana taila,³ popularly known as *Madhyama nārāyana taila* is made by taking of the bark of *Aegle Marmelos* (*vilva*), *Premna spinosa* (*agnimantha*), *Calosanthes Indica* (*syonāka*), *Stereospermum suaveolens* (*pāṭalā*), *Erythrina Indica* (*pāribhadra*) *Pæderia fætida* (*prasdrāni*), *Withania somnifera* (*asvagandhā*), *Solanum Jacquini* (*kantakāri*), *Solanum Indicum* (*vrihati*), *Sida cordifolia* (*bala*), *Sida rhombifolia* (*atibalā*), *Tribulus terrestris* (*danshtrā*) and *Boerhavia diffusa* (*punarnavā*), each twenty tolas, water sixty-four seers, and boiling down till reduced to one-fourth and straining. To the

1. श्रतावरी कायं कुम्भं शर्दद्रा विहारी शालीशु कश्चिकायाम् । क्लृप्तं सुशौतं
मधुशर्करात् पिबन् अयेत् पैतिकमूलकम् ॥ चक्रदत्तः ।

2. श्रतावर्था रसं नीत्वा चौरिण सङ्घं यः पिबेत् । प्रमेहा विंशतिसहस्रं चयं यान्ति
न संशयः ॥

3. नारायण तैलम् । विष्णाघिमन्थश्रीषाकपाटलापारिभद्रकः । प्रसारण्यश्रमन्था च
इष्टतौकण्टकारिका ॥ वला चातिवला चेष शर्दद्रा सपुनर्नवा । एषां दशपलाम् भागान्
चतुर्दशिःश्रमन्थः पचेत् ॥ पादशेषं परिस्नाय्य तैलपात्रं प्रदापयेत् । शतपुष्या देवदाह मांसौ
श्लेष्मिकं चचा ॥ चन्दनं तगरं कुष्ठमेलापचीचतुष्टयम् । राक्षा तुरागन्था च सैन्धवं सपुनर्नवम् ॥
एषां द्विपलिकान् भागान् पेपयित्वा विनिक्षिपेत् । शरावरीरसश्चेत् तेषुतुल्यं प्रदापयेत् ॥
चाजं वा यदि वा मन्थं चौरं दत्त्वा चतुर्गुणम् । पाने वसो तवाभ्यङ्गे भोज्ये चैव प्रचक्षते ॥
अथो वा वातसंभ्रमो गजो वा यदि वा नरः । पशुलः पौठसर्पो च तैलेनाग्निं सिध्यति ॥
अथोभानि च ये वाताः शिरोमध्यगताश्च ये । दन्तयन्त्रे हनुस्तम्भे मन्थापान्ये वलपयं ॥ यस्य
स्यञ्चति चेत्काङ्गं कतिर्यञ्च च विह्वला । एतसैलवरं तथा नाम्ना नारायणं श्रुतम् ॥ तगरं
मदमन्थं स्नाहमाने शौचशिष्टौपयः ॥ चक्रदत्तः ।

strained decoction add four seers each of the juice of *Asparagus racemosus* and prepared sesamum oil, sixteen seers of cow's or goat's milk and the following substances, namely, fennel seeds, wood of *Cedrus Deodara* (*devadāru*), *jatimānsi* root, liquid storax, *Acerus Calamus* (*vāchá*), sandal wood, *Limnanthemum cristatum* (*tagarapdūká*), *Aplotaxis auriculata* (*kushtha*), cardamoms, *Desmodium gangeticum* (*silaparni*), *Urvia lagopodioides* (*prisiniparni*), *Phaseolus trilobus* (*mudgaparni*), *Glycine labialis* (*māshaparni*), *Withania somnifera* (*asvagandhá*), *Vanda Roxburghii* (*rāsná*), *Boerhaavia diffusa* (*punarnavá*) and rock salt, four tolás each in the form of paste and prepare an oil in the usual way. When ready, boil again with fragrant substances as directed in the introduction under the head of Medicated oils. This oil is much used by native physicians in rheumatism, diseases of the joints, stiff neck, hemiplegia and other diseases of the nervous system.

Vishnu taila. This is an oil much used in nervous diseases. It is prepared with sesamum oil, cow's or goat's milk, and the juice of *Asparagus racemosus*, with the addition of a number of substances in small quantities in the form of a paste.

Praneha mihira taila. This oil is prepared with the juice of *Asparagus racemosus* sesamum oil, decoction of lac, whey and milk with the addition of a number of substances in the form of a paste. It is rubbed on the body and more particularly over the public region in chronic gonorrhœa, stricture of the urethra, and other diseases of the urinary organs.

ALLIUM SATIVUM, Linn.

Sans. लसुन, *Rasuna*, लसुन, *Lasuna*.

Vern. *Rasun*, Beng. *Lasun*, Hind.

GARLIC is described as carminative, stomachic, alterative, tonic and useful in affections of the nervous system, flatulence, hysteria, etc. During its use, the diet should consist of wine, meat and acids.

Decoction of garlic.¹ Take of garlic thirty-two tolás, water

1. शाकदीकुडुपकस लसुनस चतुःपलम् । चीरोदकेऽष्टगुणिते चीरशेषे पाययेत् ॥
 वातयुक्तमुदावर्णे स्रग्धरी विषमज्वरम् । हृद्गेन विद्रधिं शीघ्रं हनयत्याद्यु तत्पयः ॥ एवम्
 कण्डिने जीरे देवदारु जीरे ॥

four seers, milk four seers, boil together till the water is evaporated and strain. This decoction in milk is given in small doses in hysteria, flatulence, sciatica and heart disease.

Svalparasuna pinḍa.¹ Take of garlic twelve tolás, assafœtida, oumin seeds, rock salt, *sonchal* salt, ginger, long pepper and black pepper, each one-eighth of a tolá ; powder them finely and mix. Dose, about twenty-two grains every morning with a decoction of the root of the castor oil plant, in facial paralysis, hemiplegia, sciatica, paraplegia and convulsive affections. This medicine should be continued for a month.

Garlic juice slightly warmed is used as a local application in otalgia. A bulb of garlic is sometimes introduced into the meatus for relief of pain in the internal ear.²

GLORIOSA SUPERBA, *Linn.*

Sans. लङ्गलिका, *Lāngalikā*, अग्निशिखा, *Agnisikhā*, कलिकारि, *Kalikāri*.

Vern. Bishalānguli, *Beng.* Karihāri, *Hind.*

"THE *Gloriosa Superba* is a native of the forests of India. It appears during the rainy season in Bengal, and is one of the most ornamental plant any country can boast of." Its bulb is one of the seven minor poisons of Sanskrit writers (see page 7). One of its Sanskrit synonyms is *Garbhaghātini* or the drug that causes abortion, but I am not aware of its being used as an abortive for criminal purposes. The root, powdered and reduced to a paste, is applied to the navel, supra-pubic region and vagina with the object of promoting labour pains.³ In retained placenta a paste

1. खत्वरसीनपिण्डः । पलमहै पलत्रेव रसीनस्य सुकुहितम् । द्विकुञ्जीरकसिन्धुः
सीवर्षलकटुतवः ॥ चूर्षितैर्माषकीन्दानैरवचूर्ष्यं विलोडितम् । यथाप्रसक्तं प्रातः-
कृत्वाभुपानतः ॥ दिने दिने प्रयोज्यं माषमेकं निरन्तरम् । यातरीयं निवृत्त्याय अर्दितं
सापतन्त्रकम् ॥ एकाङ्गरीगिषे चैव तथा सर्वोङ्गरीगिषे । उरुसाधे च अत्रसां किमिषीते
विशेषतः ॥ कटौपहानयं हृन्वादुदरस्य विशेषतः ॥ अक्षयः ।

2. लघुनाद्रकसिन्धुः खरसः श्रेष्ठः कटुः कर्षपूरवे ॥ अक्षयः ।

3. पाटा खत्विषिङ्गाय मयूरकण्टेः पृथक् । गामिनसिमनासिपान् सुखं भारी-
मक्षयः ॥ अक्षयः ॥

of root is applied to the palms and soles, while powdered nigella seeds and long pepper are given internally with wine.¹ This root enters also into the composition of some complex prescriptions for internal use, as for example the *Lángali guṭiká* described in the *Bhávaprakása*.

NAT. ORDER. SMILACEÆ

SMILAX CHINA, Linn.

Sans. चोवचिनि, *Chobachini*. *Vern.* *Chobchini*. *Hind.*

FLUCKIGER and Hanbury state that "the use of this drug as a remedy for syphilis was made known to the Portuguese at Goa by Chinese traders about A. D. 1535." If this statement, which is given on the authority of Garcia d'orta, is correct, the history of this drug will enable us to fix the approximate age of the latest and most comprehensive treatise on Sanskrit Medicine, namely, the *Bhávaprakása*. In this work China root is described under its vernacular name of *chobchini*, as a root like *Acorus Calamus*, brought from a foreign country and useful in rheumatism, epilepsy, insanity and particularly in syphilis.² It is used in modern Hindu medicine as an alterative along with *anantamul* and other drugs of reputed efficacy in syphilis and rheumatism.

NAT. ORDER CYPERACEÆ.

CYPERUS ROTUNDUS, Linn.

Sans. मुस्तक, *Mustaka*. *Vern.* *Muthá*, *Beng.* *Mothá*, *Hind.*

CYPERUS PERTENUIS, Roxb.*

Sans. नागरमुस्तक, *Nágaramustaka*, *Vern.* *Nágarmuthá*, *Beng.* *Hind.*

The tubers of these two species of *Cyperus* are much used in Hindu medicine. *Cyperus rotundus* is the most common variety

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1. मूलैर्न खाङ्गुलिक्काः प्रलिप्ते पाष्पिपादे च । अमरापातनं मधैः पिप्पल्यादिरजः
पिषेत् ॥ चक्रदत्तः ।
 2. चोवचीनी । हीपालरगता किञ्चित् तिक्तौष्ठा वङ्गिदीक्षिक्तम् । त्रिषस्याधान-
गलनी शक्रभ्रूविशीचनी ॥ वातव्याधिमपकारमुन्मादं तनुवेदनाम् । व्यपीडति विशेषेण
फिरङ्गामयनाग्निनी ॥ भावप्रकाशः ।

* The *Cyperus pertenuis* of Roxburgh can hardly be maintained as a species; it is a variety of the *C. rotundus* of Linnæus. G. K.

and is used internally. Its tubers are about the size of a pigeon's egg and of a dark brown colour externally; internally white and fragrant. Those growing in moist soil are preferred for use. The root of *Cyperus pertenuis* is somewhat tuberous with many dark coloured villous fibres. It grows in low wet places and is chiefly used in the preparation of medicated oils. The properties of both are said to be identical. They are considered diaphoretic astringent, stomachic and useful in fever, diarrhoea and dyspepsia. The tubers of *Cyperus rotundus* are extensively used as an aromatic adjunct to numerous compound medicines.

Shadanga pāniya.¹ Take of the tubers of *Cyperus rotundus* red sandal wood, root of *Andropogon muricatus*, (*usira*), *Oldenlandia herbacea*, (*parpata*), *Pavonia odorata* (*bālā*) and dry ginger each one drachm, water two seers; boil down to one seer. This decoction is given as a drink for appeasing thirst and relieving heat of body in fever. It may be taken *ad libitum*.

NAT. ORDER GRAMINEÆ.

SACCHARUM OFFICINARUM, Linn. ETC.

Sans. वृक्ष, *Ikshu*. *Vern.* Ak, *Beng.* Uk, *Hind.*

THE sugar-cane and its products sugar and treacle were known to the Hindus from a very early age. From the Sanskrit term *sarkara* are derived the Arabic *sakkar*, Latin, *saccharum* and English sugar.* Twelve varieties of sugar-cane are mentioned by

1. षडङ्गपानीयम् । मुसुपपंटकीशीर चन्दनीदीचनगरैः । शतशीतं कलं ददा
पिपासाञ्चरन्नाकये ॥ चक्रः ।

* In the Pharmacographia by Finckiger and Hanbury it is stated: "Cand as sugar in large crystals is called, is derived from the Arabic *kand* or *kanda* a name of the same signification. An old Sanskrit name of Central Bengal is *Gura* whence is derived the word *Gula* meaning raw sugar, a term for sugar universally employed in the Malayan Archipelago, where on the other hand they have their own names for the sugar-cane, although not for sugar. This fact again speaks, for Ritter's opinion that the preparation of sugar in its crystalline state is due to the inhabitants of Bengal." The Arabic *kand* is apparently derived from the Sanskrit *khanda*, that is treacle candied into white sand-like grains. Again the Bengali term *Gura* is derived from the Sanskrit *Guda* which is mentioned by such ancient writers as Charaka and Susruta. The manufacture of sugar therefore was evidently understood in Upper India before it was known in Bengal, at any rate there is nothing to show that sugar was first prepared in Bengal.

Sanskrit writers, but these can not all be identified at present. The products or preparations of the sugar-cane, as described by Sanskrit writers, are as follows :—

1. इक्षुस, *Ikshu rasa* or sugar-cane juice.
2. फणित, *Phanita* or sugar-cane juice boiled down to one-fourth. It can be drawn out in threads.
3. गुड़, *Guḍa* or sugar-cane juice boiled to a thick consistence, that is treacle.
4. मत्स्यण्डिका, *Matsyaṅḍikā* is sugar-cane juice boiled down to a solid consistence but which still exudes a little fluid on drawing.
5. खण्ड, *Khaṇḍa* is treacle partially dried or candied in white sand like grains.
6. शर्करा, *Sarkara* or white sugar.
7. शितीपला, *Sitopalā* or sugar candy.
8. गौड़ी, *Gauḍī* or fermented liquor obtained from treacle.
9. सौय, *Sidhu* or fermented liquor obtained from sugar-cane juice.

The properties of these preparations are described separately, but it is scarcely worth while to reproduce those details here. The root of the sugar cane is considered demulcent and diuretic. Sugar and treacle are very largely used in Hindu Medicine. Old treacle is preferred to new, for medicinal purposes.

*Trinapancha mula.*¹ Under this name the roots of five sorts of grasses are used in combination. They are as follows :—

1. इक्षु, *Ikshu*. *Saccharum officinarum*, Linn.
2. शर, *Sara*. *Saccharum Sara*, Linn.
3. कास, *Kāsa*. *Saccharum spontaneum*, Linn.
4. कुश, *Kusa*. *Poa cynosuroides*, Linn.
5. दर्भ, *Darva*. *Imperata cylindrica*, Beauv. Some practitioners substitute the root of *Andropogon muricatus* for that of *Imperata cylindrica*. A decoction of these roots is considered demulcent and diuretic and is largely prescribed as an adjunct to metallic medicines in gonorrhœa, strangury and suppression of urine. The following confection is also much used in these diseases.

1. इक्षुपत्रमूलम् । कुशः कासः शरी दर्भ इक्षुवेति दधीनिवम् । मूत्रकफहरं पच्यम् ।
 मन्दिनिवन्मूलम् ॥ मायमकायः ।

Kusāvaleha.¹ Take of the five roots above mentioned, eighty tolás each, water sixty-four seers, boil down to eight seers and strain. Then add sugar four seers, and reduce to the consistence of a thick syrup. Remove the syrup from the fire and add to it the following substances, namely, liquorice root, cucumber seeds, the seeds of *Cucumis melo* (*karkati*), bamboo-manna, emblic myrobalan, *tejapatra* leaves, cardamoms, cinnamon, bark of *Crataeva religiosa* (*varuna*), *gulancha*, seeds of *Aglaia Roxburghiana* (*priyangu*), and the flowers of *Mesua ferrea* (*nágakesara*), two tolás each in fine powder; stir them well with a ladle and prepare an electuary. Dose, one to two tolás.

ORYZA SATIVA, Linn. ETC.

THE following varieties of food grains belonging to this important natural order, are mentioned by Sanskrit writers:—

धान्य, *Dhánya*. *Oryza sativa*, Linn. Vern. *Dhán*, Beng. *Hind*.

गोधूम, *Godhuma*. *Triticum vulgare*, Linn. *Gam*, B. *Geṅhu*, H.

यव, *Yava*. *Hordeum hexastichum*, Linn. *Jab*, Beng. *Jow*, *Hind*.

These three are considered the best of grains. The following varieties pass by the name of कृषान्य, *Kudhánya* or inferior grains and क्षुद्रधान्य, *Kshudra dhánya* or minor grains.

यावनाल *Yávanála*. *Holchus Sorghum*, Linn. *Jodr*, *Janiri*, *Hind*.
Joi, Beng.

कङ्गु, *Kangu*. *Letaria Italica*, Millet, B. *Kunth*. Vern. *Kángni*,
Kawan, B. *Korá*, H.

चीन, *China*. *Panicum miliaceum*, Linn. *Chiná ghás*, B.

श्यामाक, *Syámáka*. *Panicum frumentaceum*, Roxb. *Shyámádhán*, B.

कोदर, *Kodrava*, *Paspalum scrobiculatum*, Linn. *Kodoádhán*, Beng.

नीवार, *Nivára*. Wild variety of *Oryza sativa*, Linn. *Uridhán*, B.

बजा, *Penicellaria Spicata*. *Panicum Spicatus*, Roxb. *Bajra*
Beng. *Hind*.

1. कृषावलीहः । कुशः काशी वीरपथ कृषेक्षः खण्डक्षया । एषां दश पलान् भागान्
जलद्रीषी विपाचयेत् ॥ षट्भागान्पशुत्तु कषायमवतारयेत् ॥ खण्डप्रस्थं समादाय
शेहयत् साद्य साचयेत् ॥ अथतार्यं ततः पथात् चूर्णानीमानि दापयेत् ॥ मधुकं कर्कटीवीर्यं
कर्काशं सपुष्यं तथा ॥ घृणामलकपत्राणि त्वमेवा नामकीशरम् ॥ वङ्ग्याद्यता मियङ्गुष प्रमेक-
मचक्षुषितम् ॥ अनेहान् विभक्तिं हन्ति मूत्राघातास्तथाश्मरीः । यातिकान् पित्तिकान् पेष
शैथिलिकान् सात्रिपातिकान् ॥ इत्यरीषकमलुपं वर्षभृष्टिकरं परम् । मेघश्वरवावची ।

गनेधुका, *Gavedhuká*. Some species of *Coix*, *Gargaredhán*, *Beng.*

रागी, *Rági*. *Eleusine corocana*, *Gaertner*. *Maruá*, *Beng.*

देवधान्य, *Devadhánya*, *Andropogon Saccharatus*, *Linn*. *Deodhán*, *B. H.*

वेणुज, *Venuja*. Seeds of *Bambusa arundinacea*, *Willd.*

चासक, *Cháruka*. Seeds of *Saccharum Sura*, *Roxb*. *Sarabij*, *B.*

OATS.—*Avena Sativa*. No native or Sanskrit name. It is indigenous to Europe and is cultivated in Bengal.

ORYZA SATIVA. Rice is the principal and often the only food of the great mass of the Indian population. *Dháyna* the Sanskrit name of paddy, means the supporter or nourisher of mankind. It is regarded as the emblem of wealth or fortune. On a thursday in the month of Pausha (December, January) after the new paddy has been reaped, a rattan-made grain measure called *rek* in Bengali, is filled with new paddy, pieces of gold, silver and copper coins, and some shells called *cauries*, and worshipped as the representative of the goddess of fortune. This apparatus is preserved in a clean earthen pot and brought out for worship on one thursday in each of the following Hindu months, namely, Chaitra, Srávana, and Kártika. Such is the form of the domestic goddess of wealth of an agricultural people living chiefly on rice.¹

The three principal classes of rice are *Sáli* or that reaped in the cold season, *Vrihi* or that ripening in the rainy season, and *Shashtika* or that grown in the hot weather in low lands. This last is reaped within sixty days of its sowing. The varieties of each of these three classes of rice are numerous and confounding. *Bakta-sáli* popularly known as *Dáudkháni* is the variety of rice that is considered superior to all others and suited for use by sick persons. The preparations of rice used in sick diet and described in San-krit medical works are as follows :—

यवान्, *Yavánu* or powdered rice boiled with water for the use of the sick and convalescent. It is made of three strengths, namely, with nine, eleven and nineteen parts of water ; called respectively *Vilepi*, *Peyá* and *Manḍa*. Sometimes, instead of water, a decoction of medicinal herbs is used in preparing *yavágu*.

1. पीचे च दध्नी म्रता चेन्नके पखयी तथा । नमस्ते पूर्विमा ज्ञेया गुह्यवदि विज्ञेयतः ॥
चासकं दान्धसम्पूके नानाभरणसूचितम् । सुगन्धिं यत्कपुष्येषु यत्कपुष्ये प्रपूजयेत् ॥

कथञ्चिद्विद्या ।

Thus, for example, if it is ordered to give the patient *yavágu* made with ginger and long pepper, the process adopted in preparing it is as follows. Take of dry ginger and long pepper, one tola each, boil in four seers of water till reduced to two and strain. Now take nine, eleven or nineteen parts of this strained decoction and one part of powdered rice for making *yavágu* of the strength ordered.

खाजा, *Lájá*, (Vern. *Khai*), is paddy fried in a sand bath. The husks open out and the rice swells into a light spongy body. It is considered a light article of diet suited to invalids and dyspeptics.

भटतण्डुल, *Bhrishṭa tandula*, (Vern. *Muri*) is rice fried in a sand bath. This is also a light preparation of rice and is given to sick persons as a substitute for boiled rice. It is also much used by the poorer classes for tiffin and early breakfast.

प्युक, *Prithuká*, (Vern. *Churá*). To prepare this, paddy is moistened and lightly fried. It is then flattened and husked. This preparation of rice is given with curdled milk (*dadhi*) in dysentery. It is well washed and softened in water or boiled before use.

पायस, *Páyasa* is a preparation of rice with nine parts of milk.

तण्डुलाम्बु, *Tanḍulámbu* is water in which unboiled rice has been steeped. This sort of rice-water is sometimes prescribed as a vehicle for some powders and confections.

The products of the acetous fermentation of rice and other grains have been already described in the introduction.

TRITICUM VULGARE, *Linn.* Three varieties of wheat are mentioned in the *Bhávaprakása* namely *Mahágodhuma* or large grained, *Madhuli* or small grained¹ and *Nihuki* or beardless, that is without awn. The first variety is said to come from the west and the second to be indigenous to the middle region comprising the modern provinces of Allahabad, Agra, Delhi, Oudh, etc. Wheat is considered the most nutritive of the food-grains, but less easily digested than rice.

HORDEUM HEXASTICHUM, *Linn.* Barley though less esteemed than wheat is more employed in the dietary of the sick. It is chiefly used in the form of *saktu* or powder of the parohed

1. तण्डुलकः ससनीपुनः इति उदीकरव्युत्पत्तः ॥ ११० ॥

grains. Gruel prepared with *saktu* is said to be easily digested and to be useful in painful dyspepsia.

ZEA MAYS, *Linn.* called *makkāi* in the vernacular has no Sanskrit name. It is indigenous to America but is now largely cultivated in Behar and Upper India.

The minor food grains are not of any importance in a medicinal point of view. They are used as food by the poorer classes or for cattle.

Old rice is preferred to new as being lighter and more easily digested, but new wheat and barley are considered superior to old. These are said to lose in flavour and taste by long keeping.

Poultices made of rice, barley or wheat flour, with the addition of oil or clarified butter, are applied to abscesses for hastening suppuration.¹

ANDROPOGON MURICATUS, *Retz.*

Sans. उशीर, *Usira*, वीरश, *Virana*.

Vern. Bená, *Beng. Khas, Hind.*

The root of this plant is well known as the *khas khas* root of which *tātis* or door screens are made for watering during the hot weather. It is described as cooling, refrigerant, stomachic and useful in pyrexia, thirst, inflammation, irritability of stomach, etc. It enters into the composition of several cooling medicines, as for example, the preparation called *Shadanga pāniya*, (see *Cyperus rotundus*). A weak infusion of the root is sometimes used as a febrifuge drink.

Externally it is used in a variety of ways. A paste of the root is rubbed on the skin to relieve oppressive heat or burning of the body. This use of the drug appears to have been popular with the ancients. Kālidāssa in his drama called *Sakuntalā* alludes to it as will appear from the passage quoted below.² An

1. तन्निन सर्पिषा वापि ताक्ष्मा वा शकुपिण्डिका। सुखीणः शीघ्रपाक्कार्थमुपनाहः
प्रशस्यते ॥ चक्रः ।

2. क्षान्दशुशीरं प्रमिथिलश्यालेकवलयम् । पियाशाः सानार्थं तदपि कमनीयं
वपुरिदम् ॥ शकुन्तला ।

aromatic cooling bath is prepared by adding to a tub of water the following substances in fine powder, namely, root of *Andropogon muricatus*, *Pavonia odorata* (*bāli*), red sandal wood, and a fragrant wood called *padma kīshtha*.¹ The same medicines are reduced to a thin emulsion with water and applied to the skin.²

ANDROPOGON SCHÆNANTHUS, *Linn. Sans. मृगुष
Bhustrina, Vern. Gandha bend, Beng.*

ANDROPOGON IWARANCUSA, *Roeb. Sans. लामज्ज
Lāmajjaka. Vern. Lāmjak, Hind. Karankusā, Beng.*

These two fragrant grasses are occasionally used as aromatic and refrigerant; like the roots of *Andropogon muricatus*. *A. schænanthus* is common in Bengal, being cultivated in gardens for the sake of its fragrant leaves. *A. Iwarancusa* is "a native of the skirts of the Northern mountains of India." Its virtues seem to reside in the larger roots marked with annular cicatrices.

BAMBUSA ARUNDINACEA, Willd.

Sans. वंस, Vansa. Vern. Bāns, Beng. Hind.

THE siliceous concretion found in the joints of the female bamboo is called वंस रीचन, *Bansa rochana* in Sanskrit, and is described as sweet, cooling, tonic, aphrodisiac and useful in cough, consumption, asthma, fever, etc. It enters into the composition of numerous compound prescriptions for affections of the lungs. The following is an illustration.

Sitopalādi churna.³ Take of bamboo-manna eight parts, long

1. ज्ञीवेर पत्रकोशीर चन्दनचीदवारिषा । संपूर्णामवमहेत द्रोणी दाहार्दिती नरः ।

चक्रदत्तः ।

2. प्रदेहाः परिवेकाश् शसने पञ्चवल्कलेः । पत्रकोशीर मधुक चन्दनेवा प्रशस्यते ।

चक्रदत्तः ।

3. सितीपलादिचूर्णम् । सितीपला बीडश् स्यादटौ स्याद्दशबीचना । पिपली स्याच्चतुः
षष्ठां चूडेला स्याद् विकार्षिकी ॥ एककर्षस्तत्रः कार्यचूर्णयेत् सर्वमेकतः । सितीपलादिक
चूर्णं मधुसर्पियुतं लिहेत् ॥ शसकासचयहरं हस्तपादाङ्गदाहजित् । मन्दाधिं सुप्तजिह्वा
पात्रं ग्लान्मरीचकम् ॥ ज्वरमूर्च्छां रक्तपित्तमाद्य व्यपीडति ॥

शार्ङ्गचं ।

pepper four parts, cardamoms, two parts, cinamon one part, sugar sixteen parts; powder the ingredients and mix. Dose, about a drachm with honey and clarified butter. This preparation given in phthisis with pain in the sides, hæmoptysis, loss of appetite and burning of the hands and feet.

CYNODON DACTYLON, *Pers, Sans* दृक्षा, *Duroá. Vern.* *Durbá, Beng. Dub, Hind.* This elegant and most valuable grass like many other useful vegetables, has a niche in the temple of the Hindu religion. Medicinally the fresh juice of the leaves is considered astringent, and is used as a snuff in epistaxis.¹ The bruised grass is a popular application to bleeding wounds.

PRODUCTS OF FERMENTATION AND DISTILLATION. WINES AND SPIRITS.

ALL fermented and distilled liquors causing intoxication, are called *Madya* or *Madirá* in Sanskrit. The following varieties are mentioned by the later writers.

माध्वीकं, <i>Máddhika</i> ,	or spirit distilled from grapes.		
खाजूरं, <i>Khárajura</i> ,	do. do. dates.		
गौड़ी, <i>Gauḍi</i> ,	do. do. treacle.		
श्रीषु, <i>Sidhu</i> ,	do. do. sugar-cane juice.		
सुरा, <i>Surá</i> ,	do. do. rice.		
कोहलं, <i>Kohala</i> ,	do. do. barley. (यवमनुक्लिन्नतम्।)		
मधुलिका, <i>Madhuliká</i> ,	do. do. wheat.		
पैटी, <i>Paishti</i> ,	do. do. from different sorts of grain.		
मधुकुपोत्थं, <i>Madhuka pushpottha</i> ,	do. do. the flowers of		
	<i>Bassia latifolia</i> and treacle.		
जाम्बवं, <i>Jambava</i> ,	do. do. ripe fruits of <i>Eugenia Jambolana</i> .		
कादम्बरी, <i>Kádambari</i> ,	do. do. flowers of <i>Anthocephalus</i>		
	<i>Cadamba</i> .		
वाक्कली, <i>Valkali</i> ,	do. do. belleric myrobalan and treacle.		
वारुणी, <i>Váruni</i>	is the fermented juice of the palm and date trees.		
वाक्किनी, <i>Akshiki</i>	or spirit from rice with addition of the bark of <i>Terminalis Bellerica</i> .		

¹ नक्ष दक्षिणदिशि रक्षी दूर्वाभवोऽयम् । आवापिण्डः पक्षाक्षोर्वा नास्ति वा-

शेता, *Sheta* means liquor from rice of white colour. सुरा, *Sura* being red.

मैरिय, *Moireya* or a sort of spirituous liquor from the blossoms of *Lythrum fruticosum* with sugar, etc.

अरिष्ट, *Arishtha*, Vinous spirit or more properly Tincture of drugs.

आसन, *Ashaba*, Vinous or fermented liquor from sugar or molasses Rum.

प्रसन्ना, *Prasanna*, is the clear upper portion of *sura*. According to some it is liquor distilled from rice with the addition of medicinal herbs.

Some of these spirituous liquors have several varieties. Thus two varieties of *sidhu* are mentioned, namely, that produced from boiled sugar-cane juice and that from the unboiled juice. The liquor distilled from rice receives different names according to its consistence. The clear transparent fluid which floats on the top is called *prasanna*; that below it, is called *kadambari*; *jagala* is a thicker fluid than *kadambari*; *medaka* in the thickest and weakest of all. The forms of medicated spirituous liquors have been already described in the introduction, (see page 13).

Spirituous liquors are described as stimulant, sedative, agreeable, heating, intoxicating, digestive and nourishing. They are easily assimilated but injurious to health in hot climates. New wine is disagreeable to the taste and smell, unpleasant in its effects not easily assimilated, laxative, heating and injurious to health. Old wine is agreeable, light and appetizing. It promotes the circulation of the fluids in the vessels and renders the senses acute. In amiable and virtuous men, wine promotes mirth and a desire for musical entertainments. In passionate men it gives rise to rashness and evil actions. Used at the proper season, in proper doses and with suitable food, wine acts like nectar. If taken to excess it induces a host of diseases. Medicinally, spirituous liquors are said to be useful in emaciation, debility, anæmia, urinary diseases, dyspepsia, chronic bowel complaints, chronic fever, deficient secretion of milk, etc.

A mixture of ginger, cumin seeds, treacle, wine and warm water is given in ague with prolonged cold stage.¹ In chronic

1 अणुजाती कुंडं विटं पीतमुषेन कारिष्यात् । जीर्णसद्येन सक्षेप्य पीतं शीतञ्चरं
जयिष्यत् ॥

intermittent fever with debility, spirit distilled from rice, together with the flesh of fowls is recommended to be given as diet by most writers, but their advice is not followed in the present day.¹ Several preparations of spirit distilled from treacle with the addition of various medicinal and aromatic substances are used in different diseases. The following is an example.

*Mritasanjivani surā.*² Take of new treacle eight hundred tolas and steep it in thirty times its weight of water. Add to the mixture the following substances in the form of a paste, namely, ginger sixteen tolas, bark of *Acacia Arabica* two seers, of *Ziziphus Jujuba* (*kola*) two seers, of *Symplocos racemosa* (*lodhra*) half a seer, betel-nuts as many as desired; stir in a large earthen vessel, and keep the mixture for twenty days in a covered jar. After this period remove the fermented fluid to a distilling apparatus, and add to it, the following aromatic substances, namely, betelnuts, cloves, sandal wood, cummin seeds, *ājowan*, black pepper, ginger, nutmegs, cardamoms, cinnamon, *tejapatra* leaves, fennel seeds, nigella seeds, the fragrant substances called *elavāluka*, *padmakāshtha* and *granthiparni*, *devadāru* wood, *khus khas* root, zedoary root, *jalāmānsi* root and the tubers of *Cyperus rotundus* (*mustaka*), each eight tolas, in coarse powder, and distil. This distilled liquor is used as a tonic, astringent and invigorating drink.

1 सुरां समस्तां पानार्थं भक्षार्थं चरणाद्युधान् । तित्तिरीयं मयूराद्यं प्रयुञ्जामस्विधम-
ज्वरं ॥ चक्रः ।

2 अतसञ्जीवनी सुरा । नूतनं गुडमादाय शतमेकं पलं तथा । जलमष्टगुणं दत्त्वा
स्थापयेत् स्रग्धये षट् ॥ वावरीत्वचमादाय बदरीत्वचमेव च । प्रस्थं प्रस्थं प्रदातव्यं
पूर्यं देयं यथोचितम् ॥ लोभ्रञ्च कुडवं दत्त्वा चार्द्रकञ्च पलद्वयम् । गुडं सङ्कीलकं कृत्वा दापयेत्
बुद्धिमान् भिषक् ॥ प्रथमे चार्द्रकं देयं द्वितीये वावरीत्वचः । तृतीये बदरीं दत्त्वा गोलदित्वा
भिषक् ॥ मुले शरावकं दत्त्वा यत्रे कृत्वा च बन्धनम् । मुखसंयन्त्रं कृत्वा स्थापयेद्दिन-
विंशतिम् ॥ स्रग्धये मोक्षिकापाने मयूरास्थे च यन्त्रके । यथाविधि प्रकारेण मन्दमन्देन
वक्रिणा । पुञ्जीमध्ये विधातव्यं सत्तिकाहृद्भाजने । तदौषधञ्च तन्मध्ये सङ्करित्वा विनिचयेत् ॥
कुम्भमध्ये निधातव्यं पूराञ्च सेलवालुकम् । देवदारु लयङ्गञ्च पद्मकोशीर चन्दनं । शतपुष्पा
बमानौ च भरिचं जीरकद्वयम् । शटीं मांसौ त्वगला च जातीफलसमुत्सुकम् ॥ शशियपर्णी
तथा शृण्ठी मेथी मेथी च चन्दनम् । एषां चार्द्रपलान् भागान् कृद्वयित्वा विनिचयेत् ॥
यथाविधि प्रकारेण चानलं दापयेत् सुधीः । बुद्धिमान् शोधनं कृत्वा सङ्करेत् विचयेत् सुधाम् ॥
एतन्न्यं पिबेन्नित्यं यथापातु यथावयः । आरोग्यं देहदाकार्तलं बलपुष्टिकरं सदा ॥

उक्तं पाठः ।

THE
MATERIA MEDICA
OF THE HINDUS

PART III.

ANIMAL MATERIA MEDICA.

THE LEECH.

LEECHES have been employed by the Hindus from a very remote period. Susruta gives a detailed account of their varieties, habits, mode of application, etc. His account of leeches has been translated in full by Dr. Wise. Pundit Madhu Sudan Gupta had also furnished a note on the subject for publication in the Bengal Dispensatory. I will not therefore attempt a new translation but will give an extract from Dr. Wise's work. "There are twelve varieties of leeches, six of which are venomous, and six useful. The venomous leeches are found near putrid fish or animals in foul, stagnant and putrescent water. Such leeches are consequently to be avoided. The good leeches are found in clear and deep pools of water which contain water lilies, and are surrounded with sweet smelling plants. The middle sized leeches are the best. These leeches are to be caught on a piece of leather or cloth, and placed in a new water pot in which some clay and pure water has been put. Some grass or leaves of aquatic plants are to be placed in the pot for them to lie upon, and the roots of water lilies and dry flesh are to be given them for food. The water is to be changed every third day, and water pot every seventh day. If the leeches do not fix quickly, apply a drop or two of milk or blood to the part, or make one or two very slight scarifications, which will induce them to fix themselves more readily. When the leeches

re sucking, sprinkle a few drops of cold water upon their bodies. When the leeches have removed the necessary quantity of blood, sprinkle a small quantity of salt upon their heads to make them drop off. Put the gorged leeches upon some dry bran, put a little oil and salt upon their mouths and then strip them. Put them next in fresh water and, if they are lively, they will live and may be used again; but if they are languid, they will soon die and they should therefore be at once thrown away. The part upon which the leeches have been is to be smeared with honey, cold water and astringent substances. In other cases poultices may be applied."

LAC.

Sans. लाक्षा, *Lākshā* Vern. *Lākh*, Hind. *Gālá*, Beng.

THE lac insect (*Coccus lacca*). has been known to the Hindus from a very ancient period. The *Butea frondosa* is called *Lākshā taru* or lac plant in Sanskrit, this being the principal tree in which lac is said to be produced. The fluid lac-dye obtained by dissolving the crushed stick-lac in water is called *Alaktu*. It is used in colouring silk. Cotton coloured with this dye and pressed into flat circular pieces is sold in the bazars under the name of *Alid* and is used in painting the hands and feet of Hindu females. Shell-lac is used in the preparation of sealing wax, varnish for carpenters and ornaments for women. Shell-lac, finely powdered, half-a-tola, mixed with honey and prepared in the form of an electuary is given in *Hæmatemesis*.¹ A decoction of shell-lac is much used in the preparation of several medicinal oils, such as *Lākshādi taila*, *Chandanādi taila*, *Angāraka taila*, etc.

Lakshāditaila.² Take of shell-lac two seers, water sixteen seers,

1 लाक्षाचूर्णे सुकृतं क्षौद्रान्यसमन्वितं सङ्गहोदम् । श्मयति सौहृदवमनं सरक्त-
पित्तस्य सिद्धमिदम् ॥

2 लाक्षादि तैलम् । लाक्षारससमं तैलं तेषाम्भस्तु चतुर्गुणम् । चन्द्रगन्धा निम्बा दाह-
कौन्ठी कुष्ठान्द चन्दनेः ॥ समूह्या रोहिणी राक्षा शतान्ना मधुकैः समैः । सिद्धं लाक्षादिकं
नाम तैलमभ्यङ्गनादिना ॥ सर्व्वंश्वरक्षणीत्याह त्रासापञ्चार वातशुद्ध् । यच्च राक्षस भूतान्
जर्मिणीनां च श्मयते ॥ भावप्रकाशः ।

boil till reduced to four seers and strain. To this decoction of shell lac add four seers of prepared sesamum oil, sixteen seers of whey, and two tolas each of the following substances, namely, *Withania somnifera* (*asvaghadhā*), turmeric, *devadāru* wood, root of *Sanseviĕra Zeylanica* (*murvā*), *Pandanus odoratissimus* (*ketaki*), *Vanda Roxburghii* (*rāsna*), dill seeds and liquorice root in the form of a paste and prepare an oil in the usual way; lastly add four tolas of camphor. This oil is much used for inunction in chronic fever and consumption. The other oils containing lac are prepared in a similar way, with the addition of various medicinal substances in the form of paste.

HONEY AND WAX.

Sans. मधु, *Madhu*, माक्षिक, *Mākshika*.

Vern. *Madhu*, Beng. *Shahad*, Hind.

Eight sorts of honey are described by Susruta, namely :

1. *Mākshika* or the honey collected by the common bee called *mādhumākshikā*.
2. *Bhrāmara*, or the honey collected by a large black bee called *bhrāmara*.
3. *Kshaudra*, or honey collected by a sort of small bee of tawny colour, called *Kshudra*.
4. *Pauttika*, or honey collected by a small black bee resembling a gnat, and called *puttika*.
5. *Chhatra*, or honey formed by tawny or yellow wasps which make their hives in the shape of umbrellas.
6. *Argha* or wild honey collected by a sort of yellow bee like the *bhrāmara*.
7. *Audālaka* is a bitter and acrid substance like honey found in the nests of white ants.
8. *Dāla* or unprepared honey found on flowers.

Of these varieties the first four only are described by recent writers and the first alone is used in medicine. New honey is considered demulcent and laxative. Honey more than a year old is said to be astringent and demulcent. Old honey is preferred

to new. It is much used in the preparation of confections and electuaries, and as an adjunct to decoctions, pills and powders.

Wax, called *siktha* in Sanskrit, is used in the preparation of ointments and *ghritas* for external application.

SERPENT POISON.

Sans. सर्पविष, *Sarpavisha*, गरल, *Garala*.

SERPENT poison has been used in Hindu medicine since a very recent period only. Even the *Bhāvaprākasa* which is not more than three centuries old does not mention it. Prescriptions containing it are found in such modern compilations as the *Bhaishajya Ratnābali*, *Sārkaumudi*, etc.

The poison of the black cobra (*Naga tripudians*. Vern. *Keule sarp*, Beng.) is used. It is collected by making the reptile bite on a piece of stick or wood when the poison is poured out and received on a piece of plantain leaf. It is preserved in two ways. The liquid poison is allowed to congeal and dry in a cup or it is rubbed with a fourth part of mustard oil and spread out on a piece of plantain leaf. Thus treated it rapidly coagulates into a granular agglutinated mass of a yellowish-brown colour. When allowed to dry spontaneously, serpent poison coagulates into shining, crystalline yellowish white granules. It is used in complicated fever in combination with arsenic, aconite and other medicines. Numerous formulæ containing this poison are given in recent compilations. The following are a couple of examples.

Suchikā bharana rasa.¹ Take of mercury, sulphur, prepared tin, aconite and cobra poison, equal parts, mix them together and soak the mixed powder in the bile of *rohataka* fish (*Cyprinus Rohita*), wild boar, peacock, buffalo and goat successively and make into a pill-mass. This medicine is administered in doses

1 सूचिकाभरणी रसः । रसगन्धक नागस्य विषं स्वावज्ज्वलम् । मास्यवाराह-
मायूरकागपिचैश्च भावयेत् ॥ सूचिकाभरणी नाम मेरुदेशे प्रकीर्तितः । सूचिकादेशे
दान्त्यः क्षत्रियसकुलान्तकः ॥ मेघन्यरजावधी ।

that can be taken up by the point of a needle, hence it is called *suchikābharana*. It is given in remittent fever with cerebral complications.

Kālānala rasa.¹ Take of black cobra poison, sulphur, white arsenic, aconite, black pepper, long pepper, ginger, borax, mercury prepared iron and copper equal parts; soak them in the five kinds of bile mentioned above and make into one-grain pills with the juice of *datura* root. These are given in fever with coma, delirium and drowsiness.

MUSK.

Sans. मृगनाभि, *Mriganābhi*, कस्तूरी, *Kasturi*.

THE *Bhāvaprakāsa* describes three varieties of musk, namely *Kāmrūpa*, *Nepāla* and *Kāshmirā* musk. *Kāmrūpa* musk is said to be of black colour and superior to the others. It is probably China or Thibet musk brought via Kamroop. *Nepāla* musk is described as of bluish colour and intermediate quality. *Kāshmir* musk is of inferior quality.

Musk is regarded as stimulant and aphrodisiac and is used in low fevers, chronic cough, general debility and impotence. In low fevers with prostration, two grains of musk with two of *Mahārca dhvaja* are given every three hours with the addition of honey.

Svalpa kasturi bhairava.² Take of cinnabar, aconite, borax, nutmeg, mace, long pepper, black pepper and musk, equal part

1 कालानलरसः । असतं गरलं शङ्खं लोहं तास्य टङ्गणम् । रसं गन्धं द्रुपश्च
पञ्चपित्तैर्विभावयेत् ॥ मातुलुङ्गद्रव्यैर्भाव्यं वटिका यवमानसः । चौद्रादंकरसञ्चानु दापदं
साम्प्रियातिके ॥ अतितीव्रं क्वरं हन्ति सर्वापद्रव्ययुतम् । हरिद्रा तेलं समिधं मर्दं
तीव्रतापिमम् ॥ तथा स्नानान्तरं गाढं लेपयेत् गन्धचन्दनम् । दध्यन्नं दापयेत् पर्यं द्राक्षा
काशदाहमम् ॥ कालानलरसी नाद्या गोप्यः परमदुर्लभः ॥ रसरत्नाकरः ।

2 स्वल्पकस्तूरीभैरवरसः । हिङ्गुलघु विषं टङ्गं जातिशोषफलं तथा । भरि
पिपली चैव कस्तूरी च समाश्रिता ॥ रक्तिवर्धनतः खादित् साम्प्रियाते सुदाहणे ॥

रसिन्दुसारसंघः ।

and make into four-grain pills. These are given in remittent fever of low type.

Mrigandvyddyavaleha ¹ Take of musk, cardamoms, cloves, cinnamon and dates, equal parts and make into a linetus with honey and clarified butter. This is given in hoarseness and loss of speech.

Vasantatilaka rasa. ² Take of prepared gold one part, tale and tin two parts each, iron three parts, the preparation of mercury called *rasasindura* and calcined pearls and coral, four parts each; mix them together, soak for seven days in the juice of sugar-cane, of the fruits *Tribulus terrestris* (*gokshura*) and of other strengthening vegetables. Enclose the mass in a covered crucible and roast it in a sand-bath for three hours. Lastly add to it four parts of camphor and four of musk and make into four-grain pills. These are given as an alterative tonic in a variety of diseases, but more especially in chronic affections of the lungs supposed to be caused by deranged phlegm.

CIVET CAT.

Sans. गन्धमाज्जर, *Gandha mājḍara.* *Vern.* Khâtāsi, *Beng.*

THE pouch of the civet cat (*Viverra Zibetha*, *Linn.*) contains an unctuous odorous secretion which is extracted and used in

1 दग्धमाज्जद्विरसलेहः । दग्धमाजि दग्धजेवा दग्धकुसुमाणि च । लक्ष्मीरी शिथि
लेहीर्यं मधुशर्पिःशमायुत ॥ वाक्कण्ठमूर्धं जयति श्वरर्षकलनमितम् ॥

भाष्यमाहः ।

2 दग्धमलिजकारकः । ईशो मन्त्रकमन्त्रं विमुक्तिं लोकाकथः पारदाः चन्दारी
शिवतनु कण्ठपुष्यं श्रेणीकृतं महेशित् । मुक्ताभिद्रुमवी रशिम उच्यता मीष्टर मरिचुवा
कर्म कन्धकारिच तेन सुहृदं तप्तम् पपीत् उच्यता ॥ कक्षरी वनकारमर्दिशरकः पक्वान्
दुषिहो मनेत् । वाक्कण्ठ उदित्त वाक् कथयित् पाकुञ्जवाहीन् इरित् ॥ श्रेणीकृतं
शिवदिव्यं मन्त्राकारं शिवति । इन्द्रोवापहरी ज्वरकपिहरी उषी मवीर्षयः वैद्यः
पुष्टिकरी दग्धमलिजकी दग्धुद्वीनीहितः ॥ अथपि मारामन्त्रकक्षरीनि शिवितः ॥

रश्मिकारकैवः ।

perfumery. The pouch together with the secretion contained in it, are used by native physicians in scenting medicated oils.

HARTSHORN. Sans. मृगशर्प, *Mrigasringa*.

THE antler of the deer incinerated in closed vessels is used in painful affections of the heart, pleurodynia, sciatica and lumbago. It is given in doses of about twenty-two grains with clarified butter. Burnt hartshorn leaves 57.5 per cent of phosphat of lime.¹

MILK AND ITS PRODUCTS.

THE properties of the milk of various animals are described in great detail by Sanskrit writers. Milk in general is considered cooling, nutritive, strengthening and vitalizing. Cow's milk is pleasant to take and very wholesome. It promotes memory, strength and longevity and increases the secretion of semen. Buffalo's milk is said to be sweeter, heavier and more cooling than cow's milk. It induces sleepiness, spoils the appetite and brings on cold. Goat's milk is sweet, cooling and astringent. It promotes the digestive power and is useful in hæmorrhagic diseases, phthisis, bowel complaints, etc. Ewe's milk is saltish, disagreeable and not easily digested. Mare's milk is saltish, acidulous and easily digested. Ass's milk is saltish, easily digested, and useful in debility and urinary complaints. Camel's milk is light, sweet, saltish, laxative and useful in dropsical affections. Human milk is light, cooling, nutritive, strengthening and useful as a collyrium or wash in eye diseases. All milk except human milk should be taken boiled. Warm milk just as it comes out from the teats is said to be like nectar.

As an article of diet, milk is considered demulcent, laxative, and especially adapted for children, old men, consumptive people or those reduced by debauchery, for women who are suckling and for patients suffering from chronic fever, mental diseases,

1 मृगशर्पस्य २२ दण्डं मृगं परिपक्वं विवेत् । मन्वेन कपिषा विष्टं कृत्वा च मन्वेन
पुनः । मार्गशर्पः । दन्धमभिर्गोतृषु च मृगशर्पं गोतृषु च पशुम् । इत्युक्तम् ।

yspepsia, diarrhoea, urinary complaints, ascites and anasarca. A pure milk-diet to the exclusion of every other article (not excepting even salt and water) is often prescribed in the later stages of anasarca, ascites and chronic bowel complaints. Along with this milk diet, some sort of medicine, such as *Dugdha vaji*, *Jornaparpati* or *Māna māṇḍa*, is usually prescribed.

तक्र *Takra* or butter-milk. Four sorts of butter-milk are described, namely *ghola* or pure butter milk without admixture of water, *takra* or butter-milk with one-fourth part of water, *udari* or that mixed with half its bulk of water, and *chhaachchhikā* or very dilute butter-milk. The second form called *takra* is used in medicine and as an article of sick diet. It is regarded as astringent, light, cooling, appetizing, nutritive, tonic, and useful in diarrhoea, dysentery, dyspepsia, urinary diseases, ascites, poisoning, etc. It is not suited to the weak, or consumptive nor to those suffering from fever and nervousness. The habitual use of butter-milk is said to be conducive to health and a preservative against disease.

दधि *Dadhi* or curdled milk is prepared by adding some acid or a little curdled milk as a ferment to milk previously boiled. In the course of twelve hours the whole of the milk thus acted upon is changed into a more or less thick, acidulous, jelly-like mass. It is considered agreeable, digestive and cooling, and is much used as an article of diet by all classes of natives. Taken to excess it causes biliousness and catarrh. It is useful in fever, diarrhoea, dysentery, urinary disorders and disinclination for food.

मद्यु *Mastu* or whey is said to have properties similar to those of curdled milk. In particular it is said to favour the circulation of the animal fluids and to be useful in constipation.

किलतक *Kilataka* or curd of milk (*Vern. chhendā, Beng.*) is hard of digestion, but is nourishing, tonic and suited to persons with strong digestive powers.

सन्तानिका *Santanika* or cream is also hard of digestion but nourishing, agreeable and demulcent.

नखति *Naxaniti* or butter is tonic, astringent, invigorating, stomachic and useful in phthisis, piles, facial paralysis, etc. It agrees best with the old and young.

वयं *Ghrita* or clarified butter is much used both as an article of diet and in pharmacy. Clarified butter obtained from cow's milk is considered superior to that prepared from the milk of the buffalo and is preferred for medicinal use. Clarified butter is considered cooling, emollient and stomachic. It increases the fatty tissues and mental powers, improves the voice, beauty and complexion and is useful in eye diseases, retained secretions, insanity, tympanites, painful dyspepsia, ulcers, wounds, etc. It is the basis of a form of medicinal preparation called *ghritapāka* already described in the introduction, (see page 14).

पुराण Purāna *ghrita*. Clarified butter more than ten years old, passes by this name.¹ It has a strong pungent odour and the colour of lac. The longer this old butter is kept the more efficacious it is said to prove as an external application. Clarified butter a hundred years old is often heard of. The richer natives always have a stock of old *ghrita* of this description which they preserve with care for their own use as well as for distribution to their poorer neighbours. I have seen some specimens of old clarified butter which were quite dry and hard and nearly inodorous. They looked more like some sort of earth than an animal substance. Old clarified butter is used externally. It is first repeatedly washed with cold water, and then rubbed with it till it is reduced to a soapy frothy fluid which is used as a liniment. It is regarded as cooling and emollient and is much used in nervous diseases such as insanity, epilepsy, neuralgia, paralysis, cephalalgia and asthma, in rheumatic affections, stiff joints, burning of the body, hands or feet, affections of the eyes, etc.²

The following treatment is recommended for reducing the temperature of the skin in strong fever. The patient's body should be anointed with an emulsion of sandal wood and of old clarified butter that has been washed a hundred times in cold

1 अन्नादृष्टो ह्यः वा पुत्रात् पेषत् हवत् । अथवा पुराणं आह्वयवर्जितं हवत् । आचारकनिर्णयौ मद्राजमनःपरम् । चण्डः ।

2 मधुवीर्यं हवात्मनः शीतवातादिद्वेषम् । शीतवातादिद्वेष्याः शवा दाहार्थि-
चण्डः ।

water. He should then enter a tepid bath for a short while. His bedding should be made of the leaves of *Nolumbium speciosum* (*kamala*).¹

BILE.

Sans. विस, *Pitta*.

THE bile of the buffalo, wild boar, goat, peacock and *rohataka* fish (*Cyprinus Rohita*), is used in medicine, either singly or in combination under the designation of *Pancha pitta* or the five biles. Bile is considered laxative and is chiefly used in soaking powders intended for being made into pill-masses.

Udakamanjari rasa.² Take of mercury, sulphur, calcined orax, and black pepper each one part; sugar and the bile of *rohataka* fish, four parts each; rub them together for three days and make into six-grain pills. These are given with ginger juice in recent bilious remittent fever. If there is much heat of head, cold water should be applied to it. For other preparations containing bile, see under serpent poison, page 278.

गोरक्षन *Gorochana*, or the concretions found in the gall-bladder of the ox, are considered cooling, aromatic and useful in abortions and diseases supposed to be caused by evil spirits. *Gorochana* is sometimes given to infants in small doses as a laxative. It enters into the composition of some medicines for skin diseases.

URINE. *Sans.* मूत्र, *Mutra*.

THE properties of the urine of various animals, such as the cow, buffalo, goat, sheep, horse, elephant, ass and camel are minutely described. Of these, cow's urine is much used both internally and externally, in the purification of various metals

1 शीतान्धः कानुग्रहस्तत्र विधीकितेन मन्वेन चन्दनवृतेन घनेन दिग्वा । दाहज्वरी
कमलोत्पलसोमशारो श्वित्रं विधेत् सच्चिदकाचमनस्यकाचम् ॥ काञ्चिकादपट्टेनापवृद्धम्
चनान्धम् ॥

2 उद्दहनश्चरीरकः । मूत्रं बन्धत्तत्रः शीतचक्रं चर्मोत्पन्नाः शर्करा मन्त्रविधेः ।
शीतलो नर्हयेत् तत् पित्तार्थं शही देवः शक्रवेदनेच ॥ शीतं शीतं शीतमन्त्रमन्त्रमाकाचं
धनेतत् प्रदिष्टम् ॥ अत्र शीतं इति सद्योच्चरन्तु पित्ताधिकं मूर्च्छं शीतचक्रं चनान्धम् ॥

एवमदीयः ।

and in the preparation of oils, decoctions, etc. It is described as laxative, diuretic and useful in constipation, suppression of urine, colic, anasarca, jaundice, leprosy and other skin diseases. Goat's urine is sometimes given internally as for example in the prescription quoted under *Nardostachys jatamansi*. In congestive fever with constipation, flushed face and headache, an ounce of fresh and warm cow's urine is given as a domestic medicine. It is sometimes given as the vehicle for administering castor oil, (see page 231). Cow's urine is used in the preparation of various medicines for jaundice, anasarca and allied diseases. The following is an illustration.

*Punarnavā manūra.*¹ Take of *Boerhaavia diffusa* (*punarnavā*) *Ipomœa Turpethum* (*trivrit*), ginger, long pepper, black pepper, *bāberang* seeds, *devadāru* wood, plumbago root, *pāṭchak* root, the three myrobalans, turmeric, wood of *Berberis Asiatica*, (*dāruharidrā*) root of *Baliospermum montanum*, (*danti*) *Piper Chaba* (*chavikā*), *indrajava* seeds, root of *Picrorrhiza Kurroa* (*katuki*), long pepper root and the tubers of *Cyperus rotundus* (*mustaka*), equal parts; iron rust in weight equal to twice that of all the other ingredients; mix them together and boil the mixed powder in eight times its weight of cow's urine till the watery parts is evaporated. Dose, about twenty-two grains, in jaundice, ascites, anasarca, enlargements of the abdominal viscera, painful dyspepsia etc.

Marichādyā taila. Take of mustard oil four seers, cow's urine sixteen seers, aconite eight tolās, orpiment, realgar, black pepper, milky juice of *Calotropis gigantea* (*arka*), root of *Nerium odorum* (*karavira*), root of *Ipomœa Turpethum* (*trivrit*), solocynth root, *Aplotaxis auriculata* (*kushīka*), turmeric, wood of *Berberis Asiatica* (*dāruharidrā*), *devadāru* wood, and red sandal wood, each four tolās, and prepare an oil in the usual way. This oil is said to

१ पुनर्नवातकुरम् । पुनर्नवा विहङ्गुची पियली मरिचानि च । विकर्षं देवकाष्ठं
विषकं पुष्कराद्भवम् ॥ त्रिषत्वा च हरिद्रे च दन्ती च चरिचलया । कुटजक कर्षं विह
पियलीसुतं सुकामम् ॥ यथाणि समसामानि सन्धूरं विहङ्गं ततः । नीलुनेष्टदुर्वे तत्र
स्वापयेत् विष्णुसन्धने ॥ साङ्गुचीवीदरानाह अक्षयः त्रिमिषुकात्तुम् ॥

भाष्यभाष्यः ।

वत्स, *Matsya*, or fishes.

Of these classes, *Jāngalī* or animals living in the wilderness and *Viśhkira* or birds which scatter their food are considered superior to the others in an alimentary point of view. The different properties of the meat of various animals are described by Sanskrit writers in great detail. The flesh of the goat domestic fowl, peacock and partridge is said to be easily digested and suited to the sick and convalescent. The meat of the deer sambar, hare, quail, and partridge is recommended for habitual use. Fish, beef and pork are considered hard to digest and unsuited for daily use.

The flesh of various animals is used in medicine chiefly in the form of *ghrita* or *taila pāka*. The following is a list of the more important and commonly used *ghritas* and oils made with the flesh of different animals.

Hansādi ghrita, prepared with the flesh of geese, and used in cephalalgia and nervous diseases.

Kukkutādi ghrita, prepared with the flesh of fowls, and used in chronic cough.

Sivā ghrita, prepared with jackal's flesh and used in insanity.

Ohhḡgalādi ghrita, prepared with goat's meat, and used in nervous diseases.

Sāmbukādītāila is an oil prepared with the flesh of snails and used externally in ear diseases.

Nakulādyā ghrita is prepared with the flesh of the mungoos and used in nervous diseases.

The following are two illustrations of preparations with animal flesh.

Ohhḡgalādyā ghrita.¹ Take of goat's meat six seers and a quarter, the ten drugs called *dasamula* six seers and a quarter if

1 कामवास्यं वृत्तम् । चार्जं चर्कविनिर्मुक्तं सप्तमरुतमृच्छादिकम् । पञ्चमूलीयवर्षे
कवचोश्च विद्यापदीत् । तेन पादावशिष्येण वृत्तमर्जं विद्यापदीत् । जीवनीयेः कवचान्ने
कीरयेव वृत्तावरी । कामवास्यमिदं नाम्ना कर्मवातविकारमुत् । बहिर्ते कर्मशुद्धे ।
वापिर्ते मूकालिन्निभे । लफकहृत्त वदूनां कश्चै मृत्प्रचिकुम्बवीः । चपलाभिःपञ्चमे
वर्षिरेत्तम् अजकते । क्वच कटिकम्बु जायवमिति विपदासः ।

all, water sixty-four seers: boil till the latter is reduced to one-fourth and strain. Take of clarified butter, milk and the juice of *Asparagus racemosus* (*satamuli*), four seers each; and the following substances in the form of a paste, namely, *Tinospora cordifolia* (*guruchi*), bamboo-manna, *Withania somnifera* (*asvagandhá*), *Hemidesmus Indicus* (*sárivá*), berries called *kákoli*, bulbs called *kshirakákoli*, pulse of *Phaseolus trilobus* (*mugáni*), and of *Glycine debilis* (*masháni*), *Coelogyne ovalis*, (*jivanti*), and liquorice root, one seer in all; boil them together and prepare a *ghrita*. This preparation is given in facial paralysis, deafness, loss of voice or indistinct speech, convulsions, hysteria, sciatica, paralysis and other diseases of the nervous system.

Másha taila.¹ Take of goat's meat eight seers, water sixty-four seers; boil together till the latter is reduced to sixteen seers. Take of the pulse of *Phaseolus Roxburghii* (*másha*), linseed, barley root of *Barleria Prionites* (*kurantaka*), of *Solanum Jacquinii*, (*kantakári*), *Tribulus terrestris* (*gokshura*), bark of *Calosanthos Indica* (*syonáka*), *jaámánsi* root, seeds of *Mucuna pruriens* (*kapikvachchhu*), each one seer, water sixty-four seers; boil down to sixteen seers. Take of cotton seeds, seeds of *Crotalaria juncea* (*sana*), pulse of *Dolichos uniflorus* (*kulattha*), dried pulp of *Ziziphus Jujuba* (*kola*), each two seers, water sixty-four seers; boil down to sixteen seers. Take of ginger, long pepper, dill seeds, root of *Ricinus communis* (*eranda*), of *Berhaavia diffusa* (*punarnavá*), *Pæderia fetida* (*prasávani*), *Vanda Roxburghii* (*rásná*), *Sida cordifolia* (*berelá*), *Tinospora cordifolia* (*gulancha*) and *Picrorrhiza Kurroa* (*katuki*) equal parts; in all one seer, and reduce them to a paste. Boil the above mentioned decoctions and the paste with four seers of sesamum oil in the usual way. This oil is rubbed externally in convulsions, paralysis, wasting of limbs and other diseases of the nervous system.

1 अश्वमेधम् । माषातली वक्त्रकण्ठक कण्ठकारी गोबल टुण्डक लटा कपिलकु-
लीये । कापांसकास्त्रि अश्वलीज कुसुमकीचक्राद्येन मद्यपिप्रितस्य रसेन चापि । इच्छा
समावधिकवा इत्युपवा च ईरच्छमूल सुपुनर्नवा सुरक्षा । रासा मन्वाचत लता
कटुकैर्विपक्षं माषाक्यमेतदववाङ्गुच तेजम् । अदीङ्गशीघ्रप्रपानक माषावातमाशेषं
समुज्जकाम्बितः प्रकम्पम् । मज्जेन वसिदिधिना परिवेषयेन इत्यात् कटीजघन काशुवकः
समीपात् ।
सेक्यरकावली ।

A
GLOSSARY
 OF
INDIAN PLANTS
MENTIONED IN SANSKRIT MEDICAL WORKS
 WITH BENGALI, HINDI AND LATIN
 SYNONYMS.



SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Āohohhuka आहुक	Āob, B. Āl, H.	Morinda citrifolia, Linn. and Morinda tinctoria, Roxb.
Ādhaki आदकी	Arhar, B. Tor, H.	Cajanus indious, Spreng. <i>Syn. Oytisus Cajan, Linn.</i>
Ādityabhaktā आदित्यभक्ता	Harhuriā, B. Hurhur, H.	Cleome viscosa, Linn. <i>Syn. Polanisia icosandra, W. & A.</i>
Āgasti अगस्ति	See Vaka.
Āgnimantha अग्निमन्थ	Ganiāri, B. Arni, Agetba, H.	Premna integrifolia, Linn. <i>Syn. Premna spinosa, Roxb.</i>
Āgnisikhā अग्निखिन्ना	See Lāngalikā.
Āguru अगुरु	Agar, B. Agar, H.	Aquilaria Agallocha, Roxb.
Āhinsarā आहिनसा	Kāntāgurkāmāi, B.	Capparis sepiaria, Linn. °
Āhiphena आहिपेना	Āphim, B. Āphim, H.	Papaver somniferum, Linn. Opium poppy.
Ājamodā अजमोदा	Ajmad, H. Rāndhani, B.	Carum Roxburghianum, Benth. <i>Syn. Apium involucreatum, Roxb.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Ākarākarabha आकारकरम	Ākarkarā, B. H.	Anacyclus Pyrethrum, DC. Pellitory root.
Ākāsamānei आकाशमंसी	...	A small variety of Jatamānsi said to be produced in the Kedar mountain.
Ākāsavalli आकाशवल्ली	Ākāsel, B. Amarbeli, H.	Cassytha filiformis, Linn.
Ākhukarni आखकपर्णी	...	See Mushikaparni.
Ākahoṭa आषोट	Ākhrot, H. B.	Juglans regia, Linn.
Alābu अलाबु	Lāu, B. Laukā, H. Mithi tumbi, H.	Lagenaria vulgaris, Sering. <i>Syn. Cucurbita lagenaria, Willd.</i>
Alarka अलक	Svetākand, B. Mādār, H.	Calotropis gigantea, or procera, B. Br. The varieties with white flowers.
Āmalaki आमलकी	Āmlā, B. Āpolā, H.	Phyllanthus Emblica, Linn. <i>Syn. Emblica officinalis, Gaert.</i>
Ambashṭhā अम्बश्टा	...	See Pāṭhā.
Ambuvestasa अम्बुवेतस	Barabet, B.	Calamus fasciculatus, Roxb. *
Amlalouikā अम्ललोविका	Āmrul sāk, B. H.	Oxalis corniculata, Linn.
Amlāna अम्लान	Lālgulmakhmaḷ, B.	Gomphrena globosa, Linn.
Amlavetasa अम्लवेतस	...	See Chukra.

* Roxburgh gives *ambuvestasa* as the Sanskrit for *Calamus fasciculatus*, but *ambuvestasa* means rattan growing in water, while *Calamus fasciculatus* grows in woods and not in marshes. The translation is therefore doubtful. I have not been able to procure the plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Amra	Ám, B.	<i>Mangifera Indica</i> , Linn.
आम [haridrā	Ám, H.	The Mango tree.
Ámragandhi- आमिगन्धिहरिद्रा	Ámbahaldi, H.	<i>Carcama reclinata</i> , Roxb.
Ámrātaka	Ámra, B.	<i>Spondias mangifera</i> , Willd.
आम्रातक	Ambrá, H.	Hog plum.
Amritaphala	Nashpáti, H.	<i>Pyrus communis</i> , Linn.
अमृतफल	Nák, Punj.	The pear-tree.
Anantá	Anantamul, B. H.	<i>Hemidesmus indicus</i> , R. Br.
अनन्ता		<i>Syn. Asclepias pseudosarsa</i> , Roxb.
Anjira	Ánjir, H.	<i>Ficus Carica</i> , Linn. in Bengal, <i>Psidium pomiferum</i> , Linn. is called Anjira in Sanskrit.
आंजीरा		
Ánkoṣa	Dhalákura, B.	<i>Alangium Lamarkii</i> , Thwaites.
आंकुष	Dhera, H.	<i>Syn. A. Hexapetalum</i> , Roxb.
Apámarga	Ápung, B.	<i>Achyranthes aspera</i> , Linn.
अपामार्ग	Latjira, H.	Also <i>A. bidentata</i> , Bl.
Aparájitá	Aparájita, B.	<i>Clitoria Ternatea</i> , Linn.
अपराजिता	Visnukrānti, H.	
Áragbadha	Sondhali, B.	<i>Cassia Fistula</i> Linn.
आरगब्ध	Ámaltas, H.	<i>Syn. Cathartocarpus fistula</i> , Pers.
Arala,	...	See Syonáka.
आराल		
Ádraka	Ádá B.	<i>Zingiber officinale</i> , Rosc.
आद्रक	Adrak, H.	Common ginger.
Arimesa	Guábáblá, B.	<i>Acacia Farnesiana</i> , Willd.
अरिमिद	Gandbábul, H.	<i>Syn. Mimosa Farnesiana</i> , Roxb.
Arjuna	Arjun, B.	<i>Terminalia Arjuna</i> , Bedd. c
अर्जुन	Kahú, H.	<i>Syn. Pentaptera Arjuna</i> , Roxb.
Arkamulá	Ishermul, B.	<i>Aristolochia indica</i> , Linn.
अर्कमुला		
Arka	Ákand, B.	<i>Calotropis gigantea</i> or <i>procera</i> , R. Br.
अर्क	Mádár, H.	<i>Syn. Asclepias gigantea</i> , Willd.

SANSKRIT.	VEENACULAR.	SCIENTIFIC NAMES.
kapushpika कर्पूषिका	Arkahuli, B. Sādāhurhuria, B.	Gynandropsis pentaphylla, DC. Syn. <i>Cleome pentaphylla</i> , Linn.
ushkara अशकर	See Bhallātaka.
ana असन	Piasal, B. Asan, H.	<i>Terminalia tomentosa</i> , W. and A. Syn. <i>Pentaptera tomentosa</i> , Roxb.
btavarga* अष्टवर्गी
soka अशोक	Asok, B. H.	<i>Saraca indica</i> , Linn. Syn. <i>Jonesia Asoka</i> , Roxb.
sthisanhara अस्थिसंहार	Harjora, B. Harsankari H.	<i>Vitis quadrangularis</i> , Wall. Syn. <i>Cissus quadrangularis</i> , Linn.
svagandhā अश्वगन्धा	Asvagandhā, B. Asgandh, H.	<i>Withania somnifera</i> , Dunal.
svakarna अशककण	Sāl, B. H.	<i>Shorea robusta</i> , Gaertn.
svattha अश्वत्थ	Asvattha, B. Pipal, H.	<i>Ficus religiosa</i> , Linn. Syn. <i>Urostigma religiosum</i> , Gasp.
lasi अतसी	Masinā, B. Tisi, H.	<i>Linum usitatissimum</i> , Linn.
libalā अलिबाला	Pitbalā, B.	<i>Sida rhombifolia</i> , Linn.

* This is a collective name for eight medicines, six of which are not available at present. Their names and the articles substituted for those that are not procurable, are as follows :—

Medā, मेदा Asvagandhā is used instead.

Mahamedā, महामेदा Śārivā, ..

Jivaka, जीवक Guḍuchi, ..

Bishabhaka, बिषभक Vansalochana, ..

Riddhi, अरि Balā, ..

Vridhhi, अरि Mahābalā, ..

Kākoli, काकीली See under this name.

Kshirakākoli, क्षीरकाकीली Do. Do.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Ativisba अतिविषा	Átis, H. B.	Aconitum heterophyllum, Wall.
Átmaguptá आत्मगुप्ता	Álkusi, B. Kiwanch, H.	Mucuna pruriens, DC. <i>Syn. Carpopogon pruriens, Roxb.</i>
Avalguja अवलगुज	See somaraji.
Ávartani आवर्तनी	Atmorá, B. Mararphali, H.	Helioteres Isora, Linn. <i>Syn. Isora corylifolia, Schott et End.</i>
Bádama बादाम	Bádam, H. B.	Prunus Amygdalus, Baill. <i>Syn. Amygdalus communis, Linn.</i> The almond tree.
Badara बदर	See kola.
Bahuvára बहुवार	Bahuári, B. Lasorá, H.	Cordia Myxa, Linn. <i>Cordia latifolia, Roxb. Bara Lasorá.</i>
Balá बला	Berelá, B. Khareti, Bariar, H.	Sida cordifolia, Linn.
Balá बाला	Bála, H. Sugandha Balá, H.	Pavonia odorata, Willd.
Bandhuka बन्धुका	Bándhuli, B. Dopohoriá, H.	Pentapetes phœnicea, Linn. [Roxb.]
Bhadramunjá भद्रमुञ्जा	Rámsar, B. H.	A variety of Saccharum Munja,
Bhadravalli भद्रवल्ली	Háparmáli, B.	Vallisneria Heynei, Spreng. <i>Syn. Echites dichotoma, Roxb.</i>
Bhallátaka भल्लातक	Bhelá, B. Bhiláwá, H.	Semecarpus Anacardium, Linn. The marking nut tree. [Gaertn.]
Bhándira भण्डीर	Bhánt, B. H.	Clerodendron infortunatum, <i>Syn. Volkameria infortunata, Roxb.</i>
Bhangá भङ्गा	Siddhi, B. Bháng, H.	Cannabissativa, Linn. Var. Indica. Indian hemp.
Bhantáki भण्ठकी	See Vartáku.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
3háradváji भारदवाजी	See Vanakárpási. [R. Br.
3hárgi भार्गी	Bámanhāti, B. Bhárangi, H.	Clerodendron Siphonanthus, <i>Syn. Siphonanthus Indica, Lamk.</i>
3havya भव्य	Cháltá, B.	Dillenia indica, Linn. <i>Syn. Dillenia speciosa, Thunb.</i>
3hringarája शङ्कराज	Bhimráj, B. Bhénrá, H.	Wedelia calendulacea, Less. <i>Syn. Verbesina calendulacea Willd.</i>
3humicham- aka] भूमिचम्पक	Bhuichámpá, B.	Kæmpferia rotunda, Linn.
3humijambu [भिजम्बु [mánda]	Bhuijám, B.	Premna herbacea, Roxb.
Bhumikush- भूमिकुशाण्ड [ki	Bhuikumrá, B.	Ipomœa digitata, Linn. <i>Syn. Batatas paniculata, Chois</i>
3humyámala- भूम्यामलकी	Bhuiámala, B. Jarámli, H.	Pbyllanthus Niruri, Linn.
3hunimba भूमिम्ब	See Kirátatikta.
3hurjapatra भुरजपत्र	Bhurjapatra, B. Bhujpatar, H.	Betula Bhojpattra, Wall.
3hustrina भूष्टक	Gandhabená, B.	Andropogon Schoenanthus, Linn.
3hutakesi भूतकीसी [tika	Bhutkesi, B. H.	Corydalis Govaniana, Wall. [R. Br.
bráhmanayas- ब्राह्मणवहिका	Bámanhāti, B. Bhárangi, H.	Clerodendron Siphonanthus, <i>Syn. Siphonanthus Indica, Lamk.</i>
3rahmi ब्राह्मी [ka	Brihmi sak, B. Barambhi, H.	Herpestes Monnieria, H. B. K. <i>Syn. Gratiola Monnieria, Linn.</i>
3hakramarda- शङ्खमर्दक	Chákundiá, B. [H. Panwar, chakaund,	Cassia Tora, Linn. <i>Syn. Senna Tora, Rozb.</i>
3hampaka शम्पक	Champá, B. H.	Michelia Champaca, Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Chanaka चणक	Chholá, B. Chauá, H.	<i>Cicer arietinum</i> , Linn. Gram or chick-pea
/ Chandana चन्दन	Chandan, B. Safed Chandan, H.	<i>Santalum album</i> , Linn. White sandal-wood.
Chandriká चन्द्रिका	See Chandrasura.
X Chandrasura चन्द्रसूर	Hálim, H	<i>Lepidium sativum</i> , Linn.
/ Chángeri चाङ्गेरी	Ámrul sák, B. H.	<i>Oxalis corniculata</i> , Linn.
Chaviká चविका	Chai, B. Chavi, H.	<i>Piper Chaba</i> , Hunter. <i>Syn. Chavica officinarum</i> , Mig.
Chhikkani छिक्कनी	Nákshhikni, B. H.	<i>Centipeda orbiculata</i> , Lour. <i>Syn. C. Minuta</i> , Benth.
Chiehinda चिचिण्ड	Chiehingá, B. Cháchenda, H.	<i>Trichosanthes anguina</i> , Linn.
China चीन	Chiná ghás, B. Chena, Chin, H.	<i>Panicum miliaceum</i> , Linn.
/ Chitraka चित्रक	Chitá, B. H.	<i>Plumbago seylanica</i> , Linn.
/ Chobachini चोबचिनी	Chobohini, H.	<i>Smilax China</i> , Linn.
Chorapushpi चोरपुष्पी	Chorkántá, B.	<i>Chrysopogon acicularis</i> Retz. <i>Syn. Andropogon aciculatus</i> , Rozi
Chukra चुक	Chukapálang, B. Chukeká sák, H.	<i>Rumex vesicarius</i> , Linn. Country sorrel.
/ Dádima दादिम	Dálim, B. Ánar, H.	<i>Punica Granatum</i> , Linn. Pomegranate tree.
/ Dadrughna ददृघ्न	Dádmardan, B. H.	<i>Cassia alata</i> , Linn.
Dahu दहू	Mádár, B. Dahu, H.	<i>Artocarpus Lakucha</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Damanaka दमनक	Doná, B. Daoná, Marwá, H.	<i>Artemisia vulgaris</i> , Linn. <i>Syn. Artemisia indica</i> , Willd.
Dandálu दण्डालु	Khámálu, B.	<i>Dioscorea alata</i> , Linn.
Dandotpala दण्डोत्पल	Dánkuni, B.	<i>Cassia decussata</i> , Roem. et Schult. <i>Syn. Pladera decussata</i> , Roxb.
Danti दन्ती	Danti, B. H.	<i>Baliospermum montanum</i> , Mull. Arg. <i>Syn. Croton polyandrum</i> , Roxb.
Darbha दभ	Ulu, B. Dábh, H.	<i>Imperata arundinacea</i> , Cyrill. <i>Syn. I. Cylindrica</i> , Beauv.
Dáruharidrú दारुहरिद्रा	Dáruharidrú, B. Dáruhaldí, H.	<i>Berberis asiatica</i> , Roxb. Also <i>B. aristata</i> , DC.
Dárvi दार्वी	See <i>Dáruharidrú</i> .
Devadáru देवदारु	Debdáru, B. Deodár, H.	<i>Cedrus Deodara</i> , Loud. <i>Syn. Pinus Deodara</i> , Roxb.
Devadhánya देवधान्य	Deodhán, B. H.	<i>Sorghum saccharatum</i> , Pers. <i>Syn. Andropogon saccharatus</i> , Roxb.
Devatáda देवताद	Detára, H. B.	<i>Andropogon serratus</i> , Retz.
Dhanvana धन्वन	Dhámani, B. H.	See <i>Dbarmana</i> .
Dhánya धान्य	Dhán, B. H.	<i>Oryza sativa</i> , Linn. Common rice plant.
Dhányaka धन्याक [ba]	Dhane, B. Dhaniá, H.	<i>Coriandrum sativum</i> , Linn. Coriander plant.
Dhárakadam- धारकदम	Kelikadamba, B. Haldu, H.	<i>Adina cordifolia</i> , Benth & Hook. <i>Syn. Nauclea cordifolia</i> , Roxb.
Dharmana धर्मन	Dhámani, H. B.	<i>Grewia asiatica</i> var. <i>vestita</i> , Wall. <i>Syn. G. Elastica</i> , Boyle.
Dhátaki धातकी	Dháiphul, B. Dhai, H.	<i>Woodfordia floribunda</i> , Salisb. <i>Syn. Grisea tomentosa</i> , Roxb.

SANSKRIT.	VERNAÇULAR.	SCIENTIFIC NAMES.
Dhava धव [driká]	Dháoyá, B. H.	Anogeissus latifolia, Wall. <i>Syn. Conocarpus latifolia, Roxb.</i>
Dholasamu- दोलसमुद्रिका	Dholsamudra, B.	Leea macrophylla, Roxb.
Dhustura धुस्तर [ka]	Dhaturá, B. Dhaturá, H.	Datura Metel, Linn. Also Datura fastuosa, Linn.
Dirghapafoli- दीर्घपर्णालिका	Dhundul, B. Ghiátorai, H.	Luffa aegyptiaca, Mill. <i>Syn. L. Cylindrica, Roem.</i>
Dráksbhá द्राक्षा	Angur, B. H.	Vitis vinifera, Linn. Dried fruits called Kismis.
Dronapushpi द्रोणपुष्पी	Halkasá, B. Gumá, H.	Leucas linifolia, Spreng. <i>Syn. Phlomis Zeylanica, Roxb.</i>
Dugdihiká दुग्धिका	Khirai, B. Dudhiálatá, B. H.	Oxystelma esculentum, R. Br. <i>Syn. Asclepias rosea, Roxb.</i>
Durálabhá दुरालभा	Duralabhá, B. Jawásá, H.	Alhagi Maruorum, Desv. <i>Syn. Helysarum Alhagi, Linn.</i>
Durvá दूर्वा	Durbá, B. Dab, H.	Cynodon Dactylon, Pers. <i>Syn. Panicum Dactylon, Linn.</i>
Elásukshma एलासुक	Gujráti eláchi, B. Chhoṭa eláchi, B.	Elettaria cardamomum, Maton Also Amomum subulatum, Rox
Elabáluka एलाबालुक	Láluká, B. Eluá, H.	A red powder sold under the names; the seed of some plant
Eraká एरका	Hoglá, B. Pater, H.	Typha angustifolia, Linn. <i>Syn. Typha elephantina, Roxb.</i>
Eranda एरण्ड	Bherendá, B. Erand, H.	Ricinus communis, Linn. Castor oil plant. [disc]
Erváru एर्वाण्ड	Phuṭi, B. Phooṭ, H.	Cucumis Melo, Linn. var. Mom <i>Syn. Cucumis Momordica, Roxl</i>
Gajapippali गजपिप्पली	Gajapipal, B. H.	Scindapsus officinalis, Schott. <i>Syn. Pothos officinalis, Roxb.</i>
Gambhári गम्भारी	Gámáti, H. Khambhári, H.	Gmelina arborea, Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Gandagātra गण्डगात्र	Átá, B. [H. Sharifá, Sitáphal,	Anona squamosa, Linn. Custard apple.
Gandharāja गन्धराज	Gandbaraj, B.	Gardenia florida, Linn.
Gandhatrina गन्धतृण	...	See Bhustrina.
Ganikáriká गणिकारिका	Ganiári, B. Arni, H.	Premna integrifolia, Linn. <i>Syn. P. spinosa, Roxb.</i>
Gardhabhānda गर्दभाण्ड	Parespipal, B. Gajahanda, H.	Thespesia populnea, Corr. <i>Syn. Hibiscus populneoides, Roxb.</i>
Garjara गर्जर	Gájar, H.	Daucus Carota, Linn.
Gavedhuká गवेधुका	Gargaredhán, B.	Some species of Coix.
Ghanṭápatāli घण्टापटली	Ghantaparul, B. H.	Schrebera swietenioides, Roxb.
Ghantáráva घण्टारवा	Jhanjhanía, B.	Crotalaria sericea, Retz. [sp. Forek.
Ghritakumári घृतकुमारी	Ghritakumari, B. Ghikumár, H.	Aloe Vera, Linn. Var. officinalis <i>Syn. A. Indica, Royle.</i>
Godhápadi गोधपदी	Goñilatá, B.	Vitis pedata, Vahl. <i>Syn. Cissus pedatus, Lamk.</i>
Godhuma गोधूम	Gam, B. Genhu H.	Triticum vulgare, Linn. Common wheat.
Godumbá गोधुम्बा	Gomuk, B.	Cucumis Melo, Linn. [Roxb. <i>Syn. Cucumis madraspatanus,</i>
Gojibhá • गोजिभा	Gojálátá, B. Gobhi, H.	Elephantopus scaber, Linn.
Gokshura गोक्षुर	Gokshura, B. Gokhuru, H.	Tribulus terrestris, Linn. <i>Syn. T. lanuginosus, Linn.</i>
Grantbiparna ग्रन्थिपर्ण	Gántiálá, B. Thiyan, H.	A sort of gall caused by an in- sect on some tree.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Grishmasuun श्रीशङ्खर [dara]	Gimásák, B.	Mollugo cerviana Seringe. Syn. <i>Pharnaceum Mollugo</i> , L.
Gudatvaka गुडत्वक्	...	See Tvacha.
/ Guduehi गुडुही	Gulancha, B. Gurash, H.	Tinospora cordifolia, Miers. [W] Syn. <i>Menispermum Cordifolium</i>
/ Guggulu गुग्गुलु	Guggul, B. H.	Balsamodendron Mukul, Hook Also B, pubescens, Stooks.
Gundra गुन्द्र	Gand pater, H.	Panicum uliginosum, Roxb.
/ Gunjá गुजा	Kunch, B. Chirmiti, Gunj, H.	Abrus precatorius, Linn.
/ Guváka गुवाक	Supári, H. Gua, B.	Areca Catechu, Linn.. The betle-nut tree.
Hallaka हलक	Raktakambal, B.	Nymphaea Lotus, Linn. Syn. <i>N. rubra</i> , Rozb.
Hapushá हपुषा	Habush, H.	Black stalks like those of bl pepper; aromatic.
Harishandana हरिषन्दन	Pitehandan, B.	Yellow variety of sandal woo
/ Haridrá हरिद्रा	Halud, B. Haldi, H.	Curcuma longa, Roxb.
/ Haritaki हरितीक्षी [ása]	Haritaki, B. Har, H.	Terminalia Chebula, Retz. Chebulis myrobalan.
Hastikarnapa हस्तिकर्णपाप	...	Butea superba, Roxb.
Hastieunda हस्तिपुन्डा [ka]	Hástieurá, B.	Heliotropium indicum, Linn. Syn. <i>Heliophytum Indicum</i> , L
Hemapushpi हैमपुष्पिका	...	See Savarnajuthiká.
Hijjala हिज्जल	Hijjal, B. H.	Barringtonia acutangula, Ga Syn. <i>Eugenia acutangula</i> , Lin

SANSKRIT.	VERNAICULAE.	SCIENTIFIC NAMES.
Kilamochiká हिलमोचिका	Hinchá, B. Harbueh, H.	Enhydra fustnans, Lour. <i>Syn. Hingstha repens, Roxb.</i>
Hingu हिंगु	Hing, H. B.	Ferula Assafœtida, Linn. F. Alliacea, Boiss.
Hingupatri हिंगुपत्री	The subsaid leaves of <i>Balanites Roxburghii</i> , Planchon, are so called.
Hintála हिनताल	Hental, H. B.	Phoenix paludosa, Roxb.
Hriversa ह्रीर्वर	Bála Sugandha bála, H.	Pavonia odorata, Willd.
Ikhu इखु	Uk, H. Ák, B.	Saccharum officinarum, Linn.
Indraváruni इन्द्रवारुणी	Indráyan, B. Mákál, H.	Citrullus Colocynthis, Sehrad. <i>Syn. Cucumis Colocynthis, Linn.</i>
Indrayava इन्द्रयव	Indrajab, H. B.	Seeds of <i>Holarrhena antidyenterica</i> , Wall.
Ingudi इणुदी	Hingan, H. Inguá, H.	<i>Balanites Roxburghii</i> , Planchon. <i>Syn. Ximenia Ægyptiaca, Roxb.</i>
Jalapippali जलपिपली	Pánikanchira, B. Jalpipari, H.	<i>Commelyna salicifolia</i> , Roxb.
Jambira जम्बीर	Goránebu, B. Jambir nebu, H.	<i>Citrus medica</i> , Linn. <i>Citrus aoida</i> , Var. 3. of Roxb.
Jambu जम्बु	Kála jam, B. Jáman, H.	<i>Eugenia Jambolana</i> , Lamk, [A. <i>Syn. Syzygium Jambolanum, W. &</i>
Jaámánsi जटामांसी	Jaámánsi, B. H. Báluehar, H.	<i>Nardostachys Jatamansi</i> , D. C. <i>Syn. Valeriana Jatamansi, Jones.</i>
Jati जाती	Chameli, H. Játi, B.	<i>Jasminum grandiflorum</i> , Linn.
Játiphala जतिफल	Jayphal, B. H.	<i>Myristica fragrans</i> Houtt. <i>M. Officinalis</i> , Linn. The nutmeg tree.
Javá जवा	Jabá, B. Gudhal, H.	<i>Hibiscus Rosa-Sinensis</i> , Linn. Shoe-flower plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Jayanti जयन्ती	Jayanti, B. H.	<i>Sesbania aculeata</i> , Pers. <i>Syn. Aeschynomene sesban</i> , Roxb.
Jayapála जयपाल	Jayapál, B. Jámalgoṭá, H.	<i>Croton Tiglium</i> , Linn. Croton oil plant.
Jhāvuka जावुक	Jháu, B. H.	<i>Tamarix gallica</i> , Linn. <i>Syn. T. Indica</i> , Willd.
Jhingáka भङ्गाक	Jhingá, B. Torái, H.	<i>Luffa acutangula</i> , Roxb. <i>Syn. Cucumis acutangulus</i> , Linn.
Jhinji जिन्जी	Jhánti, B.	<i>Barleria cristata</i> , Linn.
Jingini जिङ्गिनी	Jiol, B. Jingau H.	<i>Odina Wodier</i> , Roxb.
Jiraka जिरक	Jirá, B. H.	<i>Cuminum Cymizum</i> , Linn. Cummin seeds.
Jivanti जीवन्ती	Jibai, B. Jiba ság, H.	<i>Cælogyne ovalis</i> , Lindl.
Jyotishmati ज्योतिष्मती	Nayaphatki, B.	<i>Cardiospermum Halicacabum</i> , Linn.
Kaobehi काओबी	Kachu, B. H.	<i>Colosasia antiquorum</i> , Schott. <i>Syn. Arum Colocasia</i> , Roxb.
Kadali कादली	Kalá, B. Kelá, H.	<i>Musa sapientum</i> , Linn. Var. <i>Musa Paradisiaca</i> , Linn.
Kadamba कादम्ब	Kadam, B. H.	<i>Anthocephalus Cadamba</i> , Benth. and Hook. <i>Syn. Nauclea Cadamba</i> , Roxb.
Kairáta करात	...	See Bhunimba.
Kákádani काकादानी	Káliakará, B. Kántágurkámái, B.	<i>Capparis sepiaria</i> , Linn.
Kákadumbar काकादुम्बर	Toṭmilá, H. Kákadumar, B. H.	<i>Ficus hispida</i> , Linn. fil. <i>Syn. Ficus oppositifolia</i> , Roxb.
Kákajanghá काकजङ्घा	Kákjanghá, H. B.	<i>Leea hirta</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kákali काकली	Kákoli, H. B.	A root said to be brought from Nepal or Morung.
Kákamāchi काकमाची	Gurkāmái, B. Mako, H.	Solanum nigrum, Linn.
Kákatinduka काकतिन्दुक	Mákrá kendu, B.	Diospyros melanoxylon, Roxb. Also Diospyros tomentosa, Roxb.
Kákatundi काकतुण्डी	Kowáloḍi, H.	Asclepias curassavica, Linn.
Kakkolaka काकलक	Kákálá, B. H. Sitalohini, H.	Berries containing a black aromatic waxy substance.
Kálakuta काककूट	A sort of Aconite.
Kalambi कलम्बी	Kalmi sák, B.	Ipomaea aquatica Forsk. <i>Syn. I. Heptans, Poir.</i> [Griseb.]
Kálanusárivá कालानुशरिवा	Shiuliobhop, B. Tagarmul, H. B.	Limnanthemum cristatum, <i>Syn. Menyanthes cristata, Rob.</i>
Kálasáka कालशक	Narchá, B. Ghinalitá, B.	Corchorus capsularis, Linn. Jute plant.
Kalíya कलिया	Maṭar, B. H.	Pisum sativum, Linn. Common pea.
Kamala कमल	Padma, B. Kamal, H.	Nelumbium speciosum, Willd. The sacred Lotus.
Kámalata कामलता	Parulata, B.	Ipomaea Quamoolit, Linn. <i>Syn. Quamoclit vulgaris, Choisy.</i>
Kampillaka कम्पिलक [da]	Kamaláguri, B. Kamilá, Kambilá, H.	Mallotus Philippensis Mull. Arg. <i>Syn. Rottlera tinctoria, Roxb.</i>
Kánana erap. काननैरख	Pábári, erand, H. Bághherendá, B.	Jatropha Curcas, Linn. The physic nut tree.
Kánohana काञ्चन	Kachnar, H. Kánohan, B.	Bauhinia acuminata, Linn.
Kánchanáda. काञ्चनाड	Rakta Kánchan, B. Kachnar, H.	Bauhinia variegata, Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kanchaja कञ्चट	Káshrádám, B. Kánohará, B.	<i>Commelina bengalensis</i> , Linn.
Kangu कङ्गु	Kangu, korá, B. Kangni, H.	<i>Setaria italica</i> , Beauv. <i>Syn. Panicum Italicum</i> , Linn.
Kantakári कण्टकारि	Kanatakári, B. Kaťái, Kaťeli, H.	<i>Solanum xanthocarpum</i> , Schrad. & Wendl. <i>Syn. Solanum Jacquinii</i> , Willd.
Kapikahehu कपिकञ्चु	Ákusi, B. Kiwash, H.	<i>Mucuna pruriens</i> , D. C. <i>Syn. Carpopogon pruriens</i> , Roxb.
Kapittha कपिल	Kathbel, B. Kaith, H.	<i>Feronia elephantum</i> , Corr. The wood apple tree.
Karamardaka करमदक	Karamehá, B. Karaundá, H.	<i>Carissa Carandas</i> , Linn. <i>Syn. C. congesta</i> , Wight.
Karanja करञ्ज	Dahar karanja, B. Kiramál H.	<i>Pongamia glabra</i> , Vent. <i>Syn. Galedupa Indica</i> , Lamk.
Káravella कारवेळ	Karalá, B. Kareli, H.	<i>Momordica Charantia</i> , Linn. <i>Syn. M. muricata</i> , Willd.
Karavira करवीर	Karabi, B. Kaner, H.	<i>Nerium odorum</i> , Soland. Sweet scented oleander.
Karira करीर	Karil, H.	<i>Capparis aphylla</i> , Roth. <i>Syn. Capparis Sodada</i> , R. Br.
Karkataka ककटक	Kákrol, B. H.	<i>Momordica mixta</i> Roxb. <i>Syn. M. Cochinchinensis</i> , Spreng.
Karkatasringi ककटस्यङ्गी	Kákrá sringi, B. Kákar singi, H.	<i>Rhus succedanea</i> , Linn. <i>Syn. R. acuminata</i> DC. [sima.
Karkati ककटौ	Kákur, B. Kákri, H.	<i>Cucumis Melo</i> , Linn. Var. <i>Utilis</i> . <i>Syn. Cucumis utilisissimus</i> , Roxb.
Karmaranga कर्मरङ्ग	Kámrángá, B. Kamarakh, H.	<i>Averrhoa Carambola</i> , Linn. Carambola tree.
Karnikára कनिष्कार	Kanakohampá, B. Kaniár, H.	<i>Pterospermum acerifolium</i> , Willd.
Kárpási कार्पासी	Kárpás, B. Kápas, H.	<i>Gossypium herbaceum</i> , Linn. Cotton plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
✓ Karpura कर्पूर [drā]	Karpur, B. Kápur, H.	Cinnamomum Camphora, Nees. Camphor.
Karparahari- कर्पूरहरिद्रा	Karpurhaldi, H. Amádá, B.	Cureuma Amada, Roxb. Mango ginger.
✓ Karuná करुणा	Karuná nebu, B.	Citrus medica (variety of).
Kása काश	Kás, B. H.	Saccharum spontaneum, Linn.
Kásamarda कासमर्द	Kálkásundá, B. Kásaunda, H.	Caesia Sophora, Linn. <i>Syn. Senna Sophora, Roxb.</i>
Kaseruka कशेरुक	Kesur, B. Kasuru, H.	Sairpus Kysoor, Roxb.
Kásmari काश्मिरी	...	See Gambhári.
✓ Kataka, कटक	Nirmali, B. H.	Strychnos potatorum, Linn. Clearing nut tree.
Kaṭphala कटफल	Káyaphal, B. Káephal, H.	Mirica Nagi, Thunb. <i>Syn. M. sapida, Wall</i>
Katrina करुण	Rámkarpura, B. Rohish, H.	A fragrant grass.
✓ Kaṭuká कटुका	Katki, B. Kutki, H.	Picrorrhiza Kurroa, Benth.
Kaṭutumbi कटुतुम्बी	Tikta láu, B. Tumbi, H.	Wild variety of. Lagenaria vulgaris, Sering.
Kemuka केमुक	Keu, B. Keuá, H.	Costus speciosus, Linn.
Kesaráñj केसरानज	Kesuria, B.	Eolipta alba, Hassk. <i>Syn. E. Prostrata & erecta, Linn.</i>
Ketaki केतकी	Keyá, B. Keorá, H.	Pandanus odoratissimus, Roxb.
✓ Khadira खदिर	Khayer, B. Kat, H.	Acacia Catechu, Linn. <i>Syn. Mimosa Catechu, Linn.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Khaggara खगगर	Khágrá, B.	A large variety of <i>Saccharum spontaneum</i> , Linn.
Kharjura खजूर	Khejur, B. Kbajur, H.	Phoenix sylvestris, Roxb. Wild date palm.
Kharvujá खव्वुजा	Kharbujá, H.	Cucumis Melo, Linn.
Kinsuka किंसुक	See Palása.
Kirátatikta किराततिक्त	A name for chireyta. See Bhunimba.
Kodrava कोद्रव	Kodoá dhán, B. Kodo, H.	Paspalum scrobiculatum, Linn
Kokanada कोकनद	Rakta kamal, B.	Nelumbium speciosum, Willd. Red variety.
Kokiláksha कोकिकाश	Kantakulika, B. Kuliákhára, B Tálmakháná, H.	Hygrophila spinosa, T. Ander. <i>Syn. Ruellia longifolia, Roxb.</i>
Kola कोल	Kul, B. Baer, H	Zizyphus Jujaba, Lamk.
Kosámra कोशाम	Koshám,	Mangifera sylvatica, Roxb.
Koshátaki कोशातकी	Ghoshálatá, B. Karwitáruí, H.	Luffa acutangula Roxb. <i>Syn. Luffa amara, Roxb.</i>
Kovidára कोविदार	See Kánchanada.
Krishnachudá कृष्णचुडा	Krishna chura, B	Cæsalpinia pulcherrima, Sw. <i>Syn. Poinciana pulcherrima, Linn.</i>
Krisnajiraka कृष्णजीरक	Kálájírá, B. H. Magrelá, H.	Nigella sativa, Linn.
Krisnakeli कृष्णकेली [pati]	Krishnakeli, B.	Mirabilis Jalapa, Linn.
Kshetrapar- क्षेत्रपार्श्वी	Khetpáprá, B. Daman papar, H.	Oldenlandia herbaea, DC. <i>Syn. Oldenlandia Corymbosa Linn.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kshirakákoli शौरकाकोली		A bulb of the onion tribe brought from the Himalaya.
Kubjaka कुब्जाक	Ktjá, B. Kujái, H.	<i>Rosa moschata</i> , Mill. (variety of.) <i>Syn. Rosa pubescens</i> , Roxb.
Kuehilá कुपिला	See Vishamushí
Kukubba कुकुम्भ	See Arjuna.
Kukuradru कुकरद्	Kukursungá, B. Kukkurbandá, H.	<i>Blumea lacera</i> , DC. <i>Syn. Conyza lacera</i> , Burm.
Kuláhala कुलाहल	Koksímá, B.	<i>Celsia coromandeliana</i> , Vahl.
Kulanjana कुलञ्जन	Mahábarivaach, B. Kulinján, H.	<i>Alpinia Galanga</i> , Willd. <i>Syn. Galanga major</i> , Rumph.
Kulattha कुलत्थ	Kulthi, B. H.	<i>Dolichos uniflorus</i> , Lamk. <i>Dolichos biflorus</i> , Linn.
Kulika कुलिक	See Kokiláksha.
Kumbhiká कुम्भिका	Tákapána, B. H. Jalkumbhi, H.	<i>Pistia Stratiotes</i> , Linn.
Kumkuma कुकुम्भ	Jáfran, B. H.	<i>Crocus sativus</i> , Linn. Saffron.
Kumuda कुमुद	Sálnk, B. Koi, H.	<i>Nymphæa Lotus</i> , Linn.
Kunda कुन्द	Kundphul, B. H.	<i>Jasminum pubescens</i> , Willd. [Colebr.
Kunduru • कुन्दुरु	Kundarkhati, H.	<i>Boswellia serrata</i> . Roxb ex <i>Syn. B. Thurifera</i> , Colebr.
Kupilu कुपीलु	Kuehilá, B. H.	<i>Strychnos Nux-vomica</i> , Linn.
Kuruntaka कुण्टक	Kántájáti, B. Katsareyá, H.	<i>Barleria prionitis</i> , Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kuruvaka कुवक	Raktajhīṭī, H.	Barleria cristata, Linn. Red variety.
Kusa कुस	Kus, B. H.	Poa cynosuroides, Linn. Syn. <i>Eragrostis cynosuroides</i> , Retz.
Kushmānda कुशाण्ड	Kumrā, B. Peṭhā, H.	Benincasa cerifera, Savi. Syn. <i>Cucurbita Pepo</i> , Roxb.
Kusumbha कुसुम्भ	Kusamphul, B. Kusum, H.	Carthamus tinctorius, Linn. Safflower.
Kushṭha कुष्ठ	Kur, B. Pāchak, Kut H.	Saussurea Lappa C. B. Clarke. Syn. <i>Aplotaxis auriculata</i> , DC.
Kuṭaja कुटज	Kurehī, B. H. Kureyā, H.	Holarrhena antidysenterica, Wal Syn. <i>Echites antidysenterica</i> , Roxb.
Lajjālu लज्जालु	Lājak, B. Lājāvati, H.	Mimosa pudica, Linn. The sensitive plant.
Lakoocha लकुच	Mādār, H. Barhal, Dahu, H.	Artocarpus Lakoocha, Roxb.
Lāmajjaka लामज्जक	Lāmjak, H.	Andropogon Iwaranousa, Linn. Syn. <i>Andropogon laniger</i> Desp.
Lāngalika लाङ्गलिका	Bishalānguli, B. Karihāri, H.	Gloriosa superba, Linn.
Latākasturika लताकस्तुरिका	Latākasturi, B. Muehkdāna, H.	Hibiscus Abelmoschus, Linn. Syn. <i>Abelmoschus moschatus</i> , Moench.
Lavali लवली	Lonā, B.	Anona reticulata, Linn.
Lavanga लवङ्ग	Lang, H. Langa, B.	Caryophyllus aromaticus, Linn. Cloves.
Lavangalata लवङ्गलता	Langphul, B.	Luvunga scandens, Hem. Syn. <i>Limonia scandens</i> , Roxb.
Lavani लवणी	Noāri, B. Harfarauri, H.	Phyllanthus distichus, Mull. Arg Syn. <i>P. longifolius</i> , Roxb.
Limpāka लिम्पाक	Pātinebu, B.	Variety of Citrus acida, Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Lodhrá लोध्र	Lodh, B. H.	<i>Symplocos racemosa</i> , Roxb.
Loni लोण	Chhotaluniá, B. H. Baraluniá, B. H.	<i>Portulaca oleracea</i> , Linn. Also <i>P. quadrifida</i> , L.
Madana मदन	Madan, B. Mayin, H.	<i>Randia dumetorum</i> , Lamk. <i>Syn. Posoqueria dumetorum</i> , Roxb.
Madhavi माधवी	Madhaviatá, B. H.	<i>Hiptage Madhahlota</i> , Gaertn. <i>Syn. Gaertnera racemosa</i> , Roxb.
Madhuka मधुक	Mauá, B. H.	<i>Bassia latifolia</i> , Roxb.
Madhuriká मधुरिका	Mauri, B. Sopf, H.	<i>Foeniculum vulgare</i> , Gaertn. Fennel seeds.
Madhvulu मध्वलु	Manálu, B.	<i>Dioscorea aculeata</i> , Roxb.
Mahábala महाबला	Svet berelé, B. Sabadebi, H.	<i>Sida rhomboides</i> , Roxb.
Mahákala महाकाल	Mákál, B. Indráyan, H.	<i>Trichosanthes palmata</i> , Roxb.
Mahanimba महानिम्ब	Ghoránim, B. Bakáin, H.	<i>Melia Azedarach</i> , Linn. <i>Syn. Melia sempervirens</i> , Sw.
Makhána मखान	Makhána, B. H.	<i>Euryale ferox</i> , Salisb. <i>Syn. Anneslea spinosa</i> , Roxb.
Mukushṭaka मुकुटक	Maṭ, H. Banmudga, B.	<i>Phaseolus aconitifolius</i> , Jacq.
Malati मालती	Málati, H. B.	<i>Aganosma caryophyllata</i> , G. Don. <i>Syn. Echites caryophyllata</i> , Roxb.
Malliká, मल्लिका	Malliká, B. Bel, H. B.	<i>Jaeminum Sambac</i> , Ait.
Mánaka मानक	Mán kaobu, B. Mán kand, H.	<i>Alocasia indica</i> , Schott. <i>Syn. Arum Indicum</i> , Roxb.
Mandára मन्दार	...	<i>See Párijáta.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Mandukaparni मण्डुकपर्णी	Thulkuri, B. [B. Brahmamanduki,	Hydrocotyle asiatica, Linn.
Manjishṭa मन्जिष्ठा	Manjishṭā, B. Manjit, H.	Rubia cordifolia, Linn. <i>Syn. R. Munjista, Roxb.</i>
Maricha मरिच	Golmarich, B. Kālimarich, H.	Piper nigrum, Linn. Black pepper.
Mārisha मारिष	Natiyā sāg, B. Marsá, H.	Amarantus oleraceus, Linn.
Māsha माष	Māshkalūi, B. Urid, H.	Phaseolus Mungo Linn. Var. radiatus Linn. <i>Syn. Phaseolus Roxburghii, W. A.</i>
Māshaparni माषपर्णी	Māshāni, B. Māshoni, H.	Teramnus labialis, Spreng. <i>Syn. Glycine debilis, Roxb.</i>
Masura मसूर	Masur, B. H.	Leus esculenta Mœnch. <i>Syn. Cicer lens, Roxb.</i>
Mātulanga मातुलङ्ग	Chholanga nebu, B.	Citrus medica, Linn. var. acida.
Mayurasikha मयूरसिखा	Lāl murgā, B. Kokan, H.	Celosia, cristata, Linn.
Mendikā मेदिनी	Mendī, B. Henā, H.	Lawsonia alba, Lamk. <i>Syn. L. inermis, Linn.</i>
Meshasringī मेषशर्ङ्गी	Merāsingī, B. H.	Gymnema sylvestre, R. Br. <i>Syn. Asclepias geminata, Roxb.</i>
Methikā मेथिका	Methi, B. H.	Trigonella fœnum-græcum, Linn.
Misreyā मिरीया	Sulpha, B. Sowā, H.	Peucedaniam graveolens Benth. <i>Syn. Peucedanum Sowa,</i> <i>Bth. & Hf.</i> Dill seeds.
Muchukunda मुचुकुन्द	Muchkand, B. H.	Pterospermum suberifolium, Lamk.
Mudga मुद्गा	Moong, B. H.	Phaseolus Mungo, Linn.
Mudgaparni मुद्गपर्णी	Mugāni, B. H.	Phaseolus trilobus, Ait.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
fulaka मूलाक	Mulá, B. Muli, H.	<i>Raphanus sativus</i> , Linn. Garden radish.
lunditiká मुष्टितिका	Murmuriá, B. Gorak mundi H.	<i>Sphœranthus indiens</i> , Linn. <i>Syn. S. mollis</i> , Roxb.
fauja मुञ्ज	Munj, B. H.	<i>Saccharum Manja</i> , Roxb.
furvá मूर्वा	Goráobakra, B. Murvá, B.	<i>Sansevieria zeylanica</i> , Willd. <i>Syn. S. Roxburghiana</i> , Schult.
fushikaparni मूषिकपर्णी	Indurkáni, B.	<i>Salvinia cucullata</i> , Roxb.
fushkaka मुष्काक	Ghañṭa páruḷ, B. Banpalás, H.	<i>Sohrebera swietenioides</i> , Roxb.
fustaka मुसाक	Muthá, B. Mothá, H.	<i>Cyperus rotundus</i> , Linn.
vágabalá वागबला	Gorakoháuliá, B. Gulsakari, H.	<i>Sida spinosa</i> , Linn. <i>Syn. S. alba</i> , Linn.
vágadamani वागदमनी	Nágdoná, B. Nágdoni, H.	<i>Artemisia vulgaris</i> , Linn. <i>Syn. A. Indica</i> , Willd.
vágakesara वागकेसर	Nágkesar, B. H.	<i>Mesua ferrea</i> , Linn.
vaganá वगना [taka	...	See <i>Jautishmatí</i> .
vágara mus- वागरमुसाक	Nágarmnthá, B. H.	<i>Cyperus pertennis</i> , Roxb. <i>Syn. Cyperus scariosus</i> R. Br.
vágaranga वागरङ्ग	Kamlá nebu, B. Nárange, H.	<i>Citrus Aurantium</i> , Linn. The sweet orange.
vágavalli वागवल्ली	Pán, B. H.	<i>Piper Betle</i> , Linn. <i>Syn. Chavica Betle</i> , Miq.
váktamála वाक्तामाला	...	See <i>Karanja</i> .
vakuli वाकुली	Nái, B. H.	This is said to be a variety Rásná (<i>Vanda Roxburgh</i> which is substituted for it in prescription.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Nala नल	Nal, B. Narkul, H.	Phragmites Karka, Trin. <i>Syn. Arundo Karka, Retz.</i>
Náli नाली	Mestápát, B. Nálitá, H.	Hibiscus cannabinus, Linn.
Naliká नालिका	Nalipatári, H.	A red bark used in scenting medicinal oils.
Nandi vriksha नन्दोरथ	Tun, B. H.	Cedrela Toona, Roxb. Is a large tree.
Nádika नाडीक	Pát, B. H.	Corchorus olitorius, Linn. Jute plant.
Nárikela नारिकेल	Nárikel, B. Nárial, H.	Cocos nucifera, Linn. Cocoa-nut palm.
Navamáliká नवनालिका	Nabamalliká, B. Motiá, H.	Jasminum Sambac, Linn. Double flowered Jasmine.
Nidigdihiká निदिग्धिका	See Kantakári.
Nila नील	Nil, B. H.	Indigofera tinctoria, Linn. Indigo plant.
Nilakamala नीलकमल	Blue Lotus ?
Nilotpala नीलोत्पल	Niláplá, B. Nilofar, H.	Nymphaea stellata, Willd.
Nimba निम्ब	Nim, B. H.	Melia Azadirachta, Linn. <i>Syn. Azadirachta Indica, Juss.</i>
Nimbuka निम्बुक	Kágjinembu, H. B.	Citrus medica, Linn var, acida.
Nirgundi निर्गुन्दी	Nisindá, B. Sambhálu, H.	Vitex Negundo, Linn. ^c
Nirvishá निर्विषा	Nirbishi, B. H.	Kyllingia monocepala, Linn.
Nisá निषा	Hálad, B. Háldi, H.	Curcuma longa, Linn. Turmeric plant.

SANSKRIT	VERNACULAR.	SCIENTIFIC NAMES.
Nishpáva निष्पाव	Barbaṭi, B. Lobia, H.	<i>Vigna catiāng</i> , Endl. <i>Syn. Dolichos sinensis</i> , Linn.
Nivára निवार	Uridhān, B.	Wild variety of <i>Oryza sativa</i> , Linn.
Nyagrodha न्यग्रोध	See Vata. [Blume.
Olla ओल्ल	Oi, B. H. Jimikaud, H.	<i>Amorphophallus campanulatus</i> , <i>Syn. Arum campanulatum</i> , Roxb.
Padma पद्म	Padma, B. H.	<i>Nelumbium speciosum</i> , Linn.
Padmaohárinī पद्मचारिणी	See Sthala padma.
Padmakāshṭa पद्मकाष्ठ	Padmakāshṭa, B. H.	A fragrant wood resembling toon brought from Malwa or Southern India.
Palāndu पलाण्डु	Piāj, B. H.	<i>Allium Cepa</i> , Linn. Common onion.
Pálanki पालङ्की	Pálang ság, B. Pálanki, H.	<i>Beta maritima</i> , Linn. <i>Syn. B. Bengalensis</i> , Roxb.
Palāsa पलाश	Palás, B. Dhák, H.	<i>Butea frondosa</i> , Roxb.
Panasa पनस [máni	Kāntál, B. Kathar, H. [H.	<i>Artocarpus integrifolia</i> , Linn. Indian jack-tree. [Linn.
Párasikaya- पारसिकयाम्बी	Khurásáni jamáni.	Seeds of <i>Hyoscyamus niger</i> ,
Párijáta पारिजात	Pálitá mandár, B. Pharhad, Pangrá, H.	<i>Erythrina indica</i> , Linn. Coral tree.
Párisa पारिष	Palás pipal, B. Pares pipal, H.	<i>Thespesia populnea</i> , Corr. <i>Syn. Hibiscus populneoides</i> , Roxb.
Parkaṭi पर्कटी	Pákur, B. Pakhar, H.	<i>Ficus infectoria</i> , Roxb.
Parpaṭa परपट	See <i>Kahetraparnati</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Parusha परुष [dana	Phalsá, B. Pharsá, H.	<i>Grewia asiatica</i> , Linn.
Páshán abhe- पाशाभेदन	Háthájeri, B. H.	<i>Selaginella imbricata</i> , Spring. <i>Syn. Lycopodium imbricatum</i> , Ro.
Páshánabhedí पाशाभेदी	Páthor áhur, B. H.	<i>Coleus aromaticus</i> , Benth. <i>Syn. C. Amboinicus</i> , Lour.
Pátalá पाटला	Pámul, B. Pár, H.	<i>Stereospermum suaveolens</i> , DC <i>Syn. Bignonia suaveoleus</i> , Roxb.
Páþha पाठा	Akanádi, B. Nemuká, B.	<i>Stephania hernauidifolia</i> , Walp <i>Syn. Cissampelos hernauidifolia</i> , Linn.
Pathyá पथ्या	...	See Haritaki.
Pátola पटोल	Patol, B. Palwal, H.	<i>Trichosanthes dioica</i> , Roxb.
Pattanga पतङ्ग	Bakam, B. Pattang, B.	<i>Cesalpinia Sappan</i> , Linn.
Phenila फेणिल	Ríthá, H. B.	<i>Sapiindus trifoliatus</i> , Linn. <i>Syn. S. Emarginatus</i> , Vahl.
Pilu पिल [ra	Pilu, B. H.	<i>Salvadora persica</i> , Linn. <i>Syn. Salvadora Indica</i> , Wight.
Pindakharju- पिण्डकखर्जूर	Pindakhejur, H.B.	<i>Phoenix dactylifera</i> , Linn. The date palm.
Pindálu पिण्डालु	Chupriálu, B.	<i>Dioscorea globosa</i> , Roxb.
Pindára पिण्डार	Pindára, H. Piñáli, B.	<i>Trewia nudiflora</i> , Linn.
Pippali पिप्पली	Pipul, B. Pipal, H.	<i>Piper longum</i> , Linn. <i>Syn. Ohavica Roxburghii</i> , Miq.
Piyála पियाल	Piyál, B.	<i>Buchanania latifolia</i> , Roxb. The nuts are called Cheranji.
Plaksha प्लक्ष	...	See Parkati.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Prāchināmala- ka प्राचीनामलक	Paniāla, B. Pāniamlak, H.	Flacourtia Cataphracta, Roxb.
Prapaṇḍarī- ka प्रपौण्डरीक	Panderia, H.	Root-stock of Nymphaea lotus, Willd.
Prasarani प्रसारणी	Gandbahadula, B. Khip, Gandhali, H.	Paderia foetida, Linn.
Prikka प्रका	Piring sak, B. Chini, H.	See Sprikka.
Prisniparni प्रसिपार्णी	Pitvan, H. Chakulia, B.	Uria lagopoides, DC. <i>Syn. India lagopodioides, Koch.</i>
Priyangu प्रियङ्गु	Priangu, B. H.	Aglaia Roxburghiana, Miq.
Puga पुग	...	See Gavāka.
Panarnavā पुनर्नवा	Punarnaba, B. Sant, H.	Boerbaavia diffusa, Linn. <i>Syn. B. procumbens and erecta.</i>
Pandarika पुण्डरीक	Svetpadma, B. H.	Nelumbium speciosum, Willd. white variety.
Punnāga पुन्नाग	Punnag, B. Polāng, Oorya,	Calophyllum inophyllum, Linn.
Pushkaramu- पुष्करमूल	Pohokarmuly, H.	This root is not available; the root, of Aplotaxis auriculata is substituted for it.
Putikā पूतिक	Puisak, B. Poi, H.	Basella rubra, Linn.
Putikaranja पूतिकरञ्ज	Nātā, B. Katkarauj, H.	Caesalpinia Bonducella, Fleming.
Putranjiva पुत्रञ्जीव	Jiāputa, H. B.	Putranjiva Roxburghii, Wall. <i>Syn. Nageia Putranjiva, Roxb.</i>
Rāgi रामी	Maruā, B. Manduā, Ragi, H.	Eleusine Coracana, Geartn.
Rajādani	Khirkhejur, B.	Mimusops hexandra, Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Rájakoshátaki राजकोशातकी	Dhundul, B. Ghiátarui, H.	<i>Luffa aegyptiaca</i> , Mill. <i>Syn. Luffa pentandra</i> , Roxb.
Rája másha राजमाष	Barbaṭi, B. Lobiá, H.	<i>Vigna Catiang</i> , Endl. <i>Syn. Polichos sinensis</i> , Linn.
Rajanigandhá राजनीगन्धा	Rajanigandha, B. Gulshabbá, H.	<i>Polyanthes tuberosa</i> , Linn. Tube rose.
Rájasarsapu राजसर्षप [na	Ráisarísá, B. Rái, H.	<i>Brassica juncea</i> , Hf. and T. <i>Syn. Sinapis ramosa</i> , Roxb.
Raktachanda- रक्तचन्दन	Raktachandán, B. Lálohándan, H.	<i>Pterocarpus santalinus</i> , Linn. Red sandal wood.
Raktachitraka रक्तचित्रक	Lálohitá, B. H.	<i>Plumbago rosea</i> , Linn.
Raktálu रक्तालु	Bāngálu, B. Ratálu, H.	<i>Ipomoea Batatas</i> , Lamk.
Raktotpala रक्तोत्पल	Raktakambala, B.	<i>Nymphcea Lotus</i> , Linn. <i>Syn. N. rubra</i> , Roxb.
Randá रन्दा	See <i>Mushikaparni</i> ,
Rásná रासना	Rásná, B. H.	<i>Vanda Roxburghii</i> , R. Br. <i>Syn. Cymbidium tessaloides</i> , Roxb.
Rasonaka रसनीक	Rasun, B. Lahasun, H.	<i>Allium sativum</i> , Linn. Garlic. [bahly
Renuká रैणुका	Renuká, B.	<i>Piper aurantiacum</i> , Wall. ; pro-
Rohitaka रोहितक	Tiktaráj, B. Harinhará, H.	<i>Amoora Rohituka</i> , W. and A. <i>Syn. Andersonia Rohituka</i> , Roxb.
Rudráksha रुद्राक्ष [ya	Rudráksha, B. Rudrákb, H.	<i>Eleocarpus Ganitrus</i> , Roxb.
Sailaja, Saile- शैलजा शैल्य	Chharilá, H.	A species of Lichen.
Saivála शैवाल	Seyála, B. Sivál, H.	<i>Vallisneria spiralis</i> , Linn. <i>Syn. Blyxa octandra</i> , Lich.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sāka शाक	Segun, B. H.	<i>Tectona grandis</i> , Linn. fil. Teak tree.
Sākhotaka शाकहोटक	Syaorā, B. H. Siorā, H.	<i>Streblus asper</i> , Lour. <i>Syn. Trophis aspera</i> , Retz.
Sala शाल	Sāl, B. H. Sākhu, H.	<i>Shorea robusta</i> , Gaertn.
Sālaparni शालपर्णी	Sālpāni, B. Sarivan, H.	<i>Desmodium gangeticum</i> , De. <i>Syn. Hedysarum gangeticum</i> , Linn.
Sālineha शालिन्ध	Sānehi, B.	<i>Alternanthera sessilis</i> , R. Br. <i>Syn. Acheranthes triandra</i> , Roxb.
Sallaki शल्लकी	Salāi, B. H.	<i>Boswellia serrata</i> , Roxb. ex. Colebr.
Sālmali शाल्मली	Simul, B. Semal, H.	<i>Bombax Malabaricum</i> , DC. <i>Syn. B. heptaphylla</i> , Cav.
Sāluka शल्लुक	Sāluk, B.	Roots of different species of <i>Nymphoa</i> .
Sami शमी	Sāiṅ, B. Chhikura, H.	<i>Acacia Suma</i> , Ham. <i>Syn. Mimosa Suma</i> , Roxb.
Sana शय	San, B. H.	<i>Crotalaria juncea</i> , Linn. Indian hemp.
Sanapushpi शयपुष्पी	Bansanui, B. Sanhuly, B.	<i>Crotalaria verrucosa</i> , Linn.
Sankhālu शङ्खालु	Sāṅkālū, B.	<i>Pachyrhizus angulatus</i> , Rich. <i>Syn. Dolichos bulbosus</i> , Linn.
Sankhapushpi शङ्खपुष्पी	Dānkuni, B. Sankhahuli, H.	<i>Canscora decussata</i> , R. et. Sch. <i>Syn. Pladera decussata</i> , Roxb.
Saptachhada सप्तच्छद	Chhātīn, B. Chhātīān, H.	<i>Alstonia scholaris</i> , R. Br. <i>Syn. Echites scholaris</i> , Roxb.
Sara शर	Sar, B. Rāmsar, H.	<i>Saccharum Sara</i> , Roxb. Pen reed grass.
Sarala शरल	Chir, Saral, H.	<i>Pinus longifolia</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sarapunkhá शरपुङ्खा	Sarphoká, B. H.	<i>Tephrosia purpurea</i> , Pers. <i>Syn. Galèga purpurea</i> , Linn.
Sariva शारिवा	Syamlatá, B.	<i>Ichnocarpus frutescens</i> , R. Br. <i>Syn. Echites frutescens</i> , Roeb.
Sarpagaudhá सर्पगन्धा	Chandri, B.	<i>Rauwolfia serpentina</i> , Benth.
Sarpákshi सर्पाक्षि	Gandhanákuli, B. Sarahafi, H.	<i>Ophiorrhiza Mungos</i> , Linn.
Sarsbapa सर्षप	Sarisá, B. Sareon, H.	A common name for mustard seeds.
Sarvajaya सर्वजया	Sarbajaya, B.	<i>Canna indica</i> , Linn. Indian shot.
Satamuli शतमूली	Satabari, B. Satavar, H.	<i>Asparagus racemosus</i> , Willd.
Satapatri शतपत्री	Seuti, H. B.	<i>Rosa moschata</i> , Mill. <i>Syn. R. glandulifera</i> , Roeb.
Satapushpi शतपुष्पी	...	See Misreya.
Sati शटी	Karchur, H. Safi, B.	<i>Curcuma Zerumbet</i> , Roxb.
Satili सतीला	Majar, B. H.	<i>Pisum sativum</i> , Linn.
Saureya शौर्य	Saklajhinfi, B.	See Jhinfi.
Selu शैल	Bahnára, B. Lasora, H.	<i>Cordia Myxa</i> , Linn.
Sepháliká सेफालिका	Seuli, B. Harsingár, H.	<i>Nyctanthes Arbor-tristis</i> , Linn.
Seva सेव	Seb, B. Sev, H.	<i>Pyrus Malus</i> , Linn. The apple tree.
Sevati सेवती	...	See Satapatri.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES
Sigru शिशु	...	See Sobhānjana.
Silhaka सिंहक	Silha, Silāras, B. Nāgorigonā, H.	Liquidamber orientalis, Miller. Liquid storax.
Simbi शिव्बी	Sim, B.	A name for several species of Deliehos.
Sindhuvāra सिन्धुवार	Nishindā, B. Sambhāl, H.	Vitex Negundo, Linn.
Sinsapa शिशपा	Sisu, B. H.	Dalbergia Sissoo, Roxb.
Sirisa शिरिष	Siris, B. H.	Albizzia Lobbek, Benth. <i>Syn. Mimosa sirisis, Roeb.</i>
Sitalapatrikā श्रीतलपत्रिका	Muktāpātī, B. Sitalpātīr gach, B.	Maranta dichotoma, Wall. <i>Syn. Phorpeum dichotomum, Roeb.</i>
Sitali श्रीतली	...	See Kalāussarvā.
Suahi सुही	Mansā sij, B. Thohar, H.	Euphorbia nervifolia, Linn. <i>Syn. E. ligularia, Roeb.</i>
Sobhānjana श्रीभाञ्जन	Sajinā, B. H. Sahinjan, H.	Moringa pterygosperma, Gaertn. <i>Syn. Hyperanthera moringa, Willd.</i>
Somalatā श्रीमलता	Somlatā, B. H.	Sarcostemma brevistigma, W. A. <i>Syn. Asclepias acida, Roeb.</i>
Somarāji श्रीमराजि	Somraj, B. Bākuehi, H.	Vernonia anthelmintica, Willd. <i>Syn. Serratula anthelmintica, Roeb.</i>
Sprikkā सुक्का	Piring sāk, B. Lankāyikā, H.	Trigonella corniculata, Linn.
Sribāsa श्रीबास [ka	Gandhabirajā, H. B.	Resin of Pinus longifolia, Roxb.
Srigālakanta श्रीगालकण्ठक	Siāl kāntā, B.	Argemone mexicana, Linn.
Srigālakoli श्रीगालकोलि	Siākul, B.	Zizyphus (Euphloia), Mill.

SANSERIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sringátaka शृङ्गाटक	Pániphal, B. Singhárá, H.	<i>Trapa bispinosa</i> , Roxb.
Sringi शृङ्गी	See <i>Karkatasringi</i> .
Sripkala श्रीफल	See <i>Vilva</i> .
Sthalapadma स्थलपद्म	Sthalpadma, B. Sthalkamal, H.	<i>Hibiscus mutabilis</i> , Linn.
Sthanneya स्थानेय	See <i>Granthiparni</i> .
Sthulailá स्थूलेला	Bara eláchi, B. H.	<i>Amomum subulatum</i> , Roxb.
Sudarsana सुदर्शन	Padma gulancha, B.	<i>Tinospora tomentosa</i> , Miers. [<i>Roxb.</i> <i>Syn. Menispermum tomentosum</i> ,
Sunandá सुनन्दा	Ishermul, B.	<i>Aristolochia Indioa</i> , Linn.
Sunisannaka सुनिषण्णक	Sunsuniá, B. Chaupatte, H.	<i>Marsilea quardrifolia</i> , Linn. [<i>Blume</i> .
Surana शूरण	Oí, B. H. Jimikand, H.	<i>Amorphophallus campanulatus</i> , <i>Syn. Arum campanulatum</i> , Roxb.
Surjamani सूर्यमणि	Surjamani, B.	<i>Hibiscus phœniceus</i> , Willd.
Sarjávarta सूर्यावर्त	Harhuriá, B. Hul hul, H.	<i>Gynandropsis pentaphylla</i> , DC. <i>Syn. Cleome pentaphylla</i> , Linn.
Sushavi सुषवी	Shiá jirá, H.	<i>Carum Carui</i> , Linn.
Sushavi सुषवी	Uchchhe, B. Karelá, H.	<i>Momordica Charantia</i> , Linn. <i>Syn. Momordica muricata</i> , Willd.
Svarnajuthiká सुरज्युषिका	Svarnajui, B.	<i>Jasminum humile</i> , Linn. <i>Syn. J. chrysanthemum</i> , Roxb.
Svarnakshiri सुरज्युषिरी	Chos, Chok, H.	<i>Cleome felina</i> , Linn. f. <i>Syn. Polanisia felina</i> , DC.

SANSKRIT.	VERNACTLAR.	SCIENTIFIC NAMES.
Syamāka श्यामाक	Syamā dhān, B. Samak, H.	<i>Panicum frumentaceum</i> , Roxb.
Syamalatā श्यामलता	Syamalatā, B.	<i>Ichnocarpus frutescens</i> , R. Br. <i>Syn. Ecklites frutescens</i> , Roeb.
Syamāka श्यामाक	Sonā, B. Aru, H.	<i>Oroxylum indicum</i> , Vent. <i>Syn. Bignonia Indica</i> , Linn.
Tagara तगर	Tazar, B. Chāndni, H.	<i>Tabernaemontana coronaria</i> Br.
Tāla ताल	Tāl, H. B.	<i>Borassus flabelliformis</i> , Linn.
Tālamuli तालमूली	Mushali, H. Tāl muli, B.	<i>Carenligo orchioides</i> , Gaertn.
Tālisapatra तालीशपत्र	Tālisapatra, B.	<i>Pinus Webbiana</i> , Lindl. <i>Syn. Abies Webbiana</i> , Lindl.
Tamāla तमाल	Tamal, B. H.	<i>Garcinia Nanthoobymus</i> , Hook. f. Also a name for <i>Cinnamomum Tamala</i> , Nees.
Tāmbula ताम्बूल	Pān, B. H. Tāmbula, H.	<i>Piper Betle</i> , Linn. <i>Syn. Charica Betle</i> , Mig.
Tāmrakuṣa ताम्रकुट	Tāmāk, B. Tāmbāku, H.	<i>Nicotiana Tabacum</i> , Linn. Tobacco plant.
Tandūliya* तण्डुलीय	Chāmpā naṣiā, B. Cholāi, H.	<i>Amaranthus polygamus</i> , Linn.
Tankāri टङ्कारी	Tekāri, B. Tepuriā, B.	<i>Physalis peruviana</i> , Linn. <i>Syn. P. edulis</i> , Sims.
Tarambujā तराम्बुज	Tarmuj, B. Tarbuz, H.	<i>Citrullus vulgaris</i> , Sohrad. <i>Syn. Cucurbita Citrullus</i> , Roxb.
Taruni तरुनी	Seuti, B. Svet Golāb, B.	<i>Rosa alba</i> , Linn. The Indian white rose,
Tejapatra तेजपत्र	Tejpāt, H. B.	<i>Cinnamomum Tamala</i> , Nees. <i>Syn. Laurus Cassia</i> , Roxb.

* Some Bengali physicians use the *Amaranthus spinosus*, Linn. under the name of Tandulīa.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Tila तिल	Til, B. H.	<i>Sesamum indicum</i> , DC. <i>Syn. S. orientale</i> , Linn.
Tindisa टिण्डिश	Dheras, B. Rámtarui, H.	<i>Hibiscus esculentus</i> , Linn. <i>Syn. H. longifolius</i> , Roxb.
Tinduka तिन्दुक	Gáb, B. H.	<i>Diospyros Embryopteris</i> , Pers. <i>Syn. D. glutinosa</i> , Koenig.
Tinisa तिनिश	Sandan, H. Tinis, B.	<i>Ougeia dalbergioides</i> , Benth. <i>Syn. Dalbergia anjeinensis</i> , Roxb.
Tinjiri तिलिडो	Tentul, B. Imli, Amlí, H.	<i>Tamarindus indica</i> , Linn. Tamarind tree.
Trapusa बपुषा	Khiri, H. Sasá, B.	<i>Cucumis sativus</i> , Linn.
Tráyamáná ब्रायमाबा	Balábahulá, B. Baladumar, B.	<i>Ficus heterophylla</i> , Linn. fil.
Tripnti त्रिपटी	Khesári, H. B.	<i>Lathyrus sativus</i> , Linn.
Trivrit त्रिवृत्	Teoti, B. Nisoth, Turbad, H.	<i>Ipomœa Turpethum</i> , R. Br. <i>Syn. Convolvulus Turpethum</i> , Linn.
Tuda, Tula तूद, तुल	Tut, B. H. Tutri, H.	<i>Morus indica</i> , Linn. <i>Syn. M. parvifolia</i> , Royle.
Tulasi तुलसी	Tulsi, B. H.	<i>Ocimum sanctum</i> , Linn.
Tambaru तुम्बू	Tumru, H. Nepáldhaniá, B.	<i>Zanthoxylum alatum</i> , Koxb. <i>Syn. Z. hostile</i> , Wall.
Tunna तुन्न	Tun, B. H.	<i>Cedrela Toona</i> , Roxb.
Tvacha त्वचा	Dálohini B. H. Tvach, H.	<i>Cinnamomum zeylaucum</i> ; Breyn.
Udumbara उदुम्बरा	Jagna dumar, B. Gular, H.	<i>Ficus glomerata</i> , Roxb. <i>Syn. Covellia glomerata</i> , Mig.
Ushira उशीर	Benámul, B. Khas khas, H.	<i>Andropogon muricatus</i> , Retz. The root is so called.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Utpala उत्पल	...	See Nilotpala.
Vachā वचा	Bach, H. B.	<i>Acorus Calamus</i> , Linn.
Vajri वज्री	Tekāfasi, B.	<i>Euphorbia antiquorum</i> , Linn.
Vaka वक	Bak, B. H. Agasti, H.	<i>Sesbania grandiflora</i> Pers. [<i>Rarb.</i> <i>Syn. Aeschynomene grandiflora</i> ,
Vākuchi वाकुची	...	See Somajāji.
Vakula वकुल	Bakul, B. Maul-ari, H.	<i>Mimusops Elengi</i> , Linn.
Vanabaridra वनहरिद्रा	Banhalud, B.	<i>Curcuma aromatica</i> , Salisb. <i>Syn. Curcuma Zedoaria</i> , Roxb.
Vanākārpāsa वनकापांस	Banākāpās, B.	<i>Hibiscus vitifolius</i> , Linn.
Vanamallikā वनमल्लिका	Banmallikā, B. H.	<i>Jasminum Sambac</i> , Ait. The single flowered variety.
Vanamethikā वनमेथिका	Banmethi, B. H.	<i>Melilotus parviflora</i> , Desf. <i>Syn. Trifolium Indicum</i> , Willd.
Vanārdreka वनाद्रक	Banādā, B. H.	<i>Zingiber Cassumunar</i> , Roxb.
Vanayamāni वनश्यामी	Bonjoān, B.	<i>Seseli indicum</i> , W. A. <i>Syn. Onidium diffusum</i> , DC.
Vandāka वन्दाक	...	See Rāpnā.
Vausa वसू	Baps, B. H.	<i>Bambusa arundinacea</i> , Retz.
Vansarochanā वंशरोचना	Bansa lochan, B. Tabā sir, H.	<i>Bambusa nana</i> .
Vārābhakrāntā वराहक्रान्ता	Lājśk, B. Lājśā vati, H.	<i>Mimosa pudica</i> , Linn. The sensitive plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Vársiki वार्सिकी	Bel, H. B.	Jasminum Sambac, Ait. Also a name for Triyamáná, x
Vártáka वार्ताकु	Begun, B. Bhantá, H.	Solanum Melongena, Linn.
✓ Varuna वरुण	Barun, B. Barná, H.	Crataeva religiosa, Forst. Syn. Capparis trifoliata, Ro.
✓ Varvara वरवर	Bábuntulsi, B. Bábul, H.	Ocimum Basilicum, Linn. Syn. O. pilosum, Willd.
✓ Vavvula ववुल	Bábla, B. Bábul H.	Aecacia arabica, Willd.
✓ Vāsaka वासक	Bákas, B. Arushá, H.	Adhatoda Vasica, Nees. Syn. Justicia Adhatoda, Roxb.
Vásphika वाष्पिका	Randhuni, B.	Carum Roxburghianum, Be
✓ Vástuka वास्तुक	Bethná sák, B. H.	Chenopodium album, Linn.
✓ Vata वट	Bar, H. B.	Ficus bengalensis, Linn. Syn. F. Indica, Roxb.
Vetasa, Vetra वेतस, वेव	Bet, B. H.	Calamus Rotang, Linn. Syn. C. Roxburghii, Griff.
✓ Vibhitaka विभितक	Bahera, H. B.	Terminalia bellerica, Roxb.
Vidanga विडङ्ग	Biranga, B. Béberang, H.	Embelia Ribes, Burm. Syn. E. glandulifera, Wight.
✓ Vidári विदारि	Bhumi kumra, B. Bilái kand, H.	Ipomœa digitata, Linn. Syn. Batatus paniculatus, Ch
• Vijapuraka बीजपुरक	Tábá nebu, B.	Citrus Medica, Linn. var.
✓ Vijayá विजया	...	See Bhangá.
Vikankata विकङ्कत	Bainob, B. Kantái, H.	Flacourtia Ramontehi, L'Her. Syn. Flacourtia sapida, Roxb.

SANSKRIT	VERNACULAR.	SCIENTIFIC NAMES.
Vilva विल्व	Bel H. B.	<i>Egle Marmelos</i> , Corr.
Vimbi विम्बी	Telakucha, B. Kanduri, H.	<i>Cephalandra indica</i> , Nand. <i>Syn. Momordica monadelphæ</i> , Rorb.
Virana वीरण	Benā, B. Khas khas, H.	<i>Andropogon muricatus</i> , Retz.
Visha विष	Springi bish, B. Dagra bish, H.	<i>Aconitum ferox</i> , Wall.
Visalyakrit विशल्यकृत	Hapar māli, B.	<i>Vallatis Heynei</i> , Spreng. <i>Syn. Echites dichotoma</i> , Rorb.
Visamushji विषमुष्ट	...	<i>Strychnos Nux-vomica</i> , Linn.
Vitkhadira विटखदिर	Guā bābla, B.	<i>Acacia Farnesiana</i> , Willd. <i>Syn. Mimosa Farnesiana</i> , Linn.
Vridhadāraka वृद्धदारक	Bijtarkā, B.	<i>Argyrea speciosa</i> , Swt. <i>Syn. Leptomia nervosa</i> , Rorb.
Vrihati वृहती	Byākur, B. Gurkāmāi, B.	<i>Solanum indicum</i> , Linn.
Vrischikāli वृश्चिकाली	Barhatā, H. Bihatī, B.	<i>Tragia involucrata</i> , Linn.
Yajnadumbur यज्ञदुम्बुर	...	See Udumbara.
Yamāoi यमानो	Joān, B. Ajwān, H.	<i>Carrn Copticum</i> , Benth. <i>Syn. Ptychotis Ajowan</i> , DC.
Yashimadhu यष्टिमधु	Jasi timadhu, B. Jeṭi madhu, H. Mulhatī, H.	<i>Glycyrrhiza glabra</i> , Boiss.
Yava * यव	Jab. B. Jav, H.	<i>Hordeum vulgare</i> , Linn.
Yāvanāla यवनाल	Joār, H.	<i>Sorghum vulgare</i> , Pers. <i>Syn. Holchus Sorghum</i> , Linn.
Yuthikā युथिका	Juṅ, B. Juthi, H.	<i>Jasminum auriculatum</i> , Vahl.

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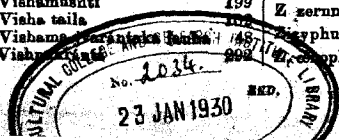
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OPINIONS OF NEWSPAPERS AND EXPERTS.

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This is the most interesting work on the *Materia Medica* of India, which has yet been published in the English language and will be welcomed by all students of the history of medicine. It is only through the united efforts of English educated native scholars that we can hope to acquire an adequate knowledge of the immense repository of pharmaceutical and therapeutical learning treasured up in the ancient Sanskrit medical literature of India and of which we still really know nothing. * * * In this work we have for the first time a strict compilation as regards prescribing, compounding and the therapeutics of the actual texts of the principal Hindu writers on *Materia Medica*.

* * *

Dr. Birdwood in the Academy—August, 1877.

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Although the author modestly describes the book as a compilation from standard Sanskrit medical works, he has evidently brought very considerable personal knowledge to bear upon it, availed himself of all the possible sources of information, and exercised great discrimination in distinguishing between the practical uses of the drugs from those which are occasional, or in many cases only theoretical. The author has evidently taken great pains also to make the work as trustworthy as possible, having given the original Sanskrit text in foot-notes so that the reader may be able to compare it with the translations given.

* * *

Much interesting information will be found scattered throughout the book; the general tenor of it shows that the Hindus are far in advance of many other Asiatic peoples in their knowledge of the properties of medicines and that they use with boldness and skill many powerful medicines, such as arsenic, aconite, mercury, &c.

A very comprehensive glossary of the native names of Indian plants in Sanskrit and Vernacular with their scientific equivalents, and a good index, conclude a work which should be in the hands of every European physician in India and which from its intrinsic value should find a place in every medical and pharmaceutical library.

The Pharmaceutical Journal and Transactions, February, 1878.

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The information conveyed is very interesting, not only to those numerous members of the profession who will be practising in India but also to the cultivators of therapeutical knowledge throughout the world.

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Medical Times and Gazette, June, 1878.

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