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THE
MATERIA MEDICA

OF THE HINDUS

BY

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LATE CIVIL MEDICAL OFFICER, SERAMPORE.

WITH

A GLOSSARY OF INDIAN PLANTS

BY

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REVISED EDITION.

WITH ADDITIONS AND ALTERATIONS

BY

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and

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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 exhausted.

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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.

<i>CALCUTTA.</i>	}	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 Nidána, "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, Agnivesa, Bhela, Játukarna, Parásara, Hárita and Kharapáni. Agnivesa 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 Agnivesa 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 Agnivesa and corrected by Charaka. A later writer Vágbhatta in his introduction to his *Ashtánga-hridaya-sanhitá* says, that that work had been compiled from the treatises

of Agnivesa, Háríta, Bhela, Sásvata, Susruta, Kavala, and others. From this it would seem that the six disciples of Átreya, mentioned in Charaka, were not mythical beings, but authors of books, for two of them, namely, Agnivesa and Bhela are mentioned by Vágbhata. It would appear also, that at the time Vágbhata 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. Átreya 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 Drídhabala, 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. †

* अखण्डार्थं दृढबली जातः पञ्चनदे पुरे । कृत्वा बहुभ्यस्तन्नेभ्यो विशेषाच्च बलीश्रयम् ।
सप्तदशौषधाध्यायेः सिद्धिकल्पैरपूरयत् ॥ शेषाध्यायचरकसिद्धिस्थानम् ।

† कुञ्चिकांश्च किलाटांश्च शौकरं गव्यमाह्वये । सव्यान् दधि च माषांश्च यावकांश्च न
शीलयेत् ॥ चरकनृतस्थान मावाशितौषाध्यायः ।

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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 Āyurveda* is thus described in the introduction to that work. *Dhanvantari*, the surgeon of heaven, descended upon earth in the person of *Divadāsa*, 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 besought 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 *Āyurveda*, 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 cautery 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 *Káyachikitsá* or the treatment of general diseases, and from the work of Videhidhipa on *Sálakya Sástra* 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 *Káyachikitsaka* or physicians. The surgeons were also called *Dhanvantaryia sampradáya* 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 Kavirája 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 विकल्पितस्यैतत् समासेन प्रकीर्तितम् । सुविंशमध्यायशतमस्य व्याख्या भविष्यति । तच्च सुविंशमध्यायशतं पञ्चसु स्थानेषु । तत्र सूत्रस्थान निदान शरीर विकल्पित कल्पेष्वर्थवशात् संविभज्योत्तरे तन्त्रे शेषानर्थान् व्याख्यास्यामः । इति सुसुतः प्रथमाध्यायः ।

† तत्र धन्वन्तरीयानामधिकाः क्रियाविधौ वैद्यानां कृतधोम्यानां व्यथशीघ्रन रोपणे ॥ चरकविकल्पितस्थानमुक्ताधिकारः ।

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 sampradaya is a phenomenon unknown in Hindustan.

The next compilation on Hindu Medicine is said to be the *Aṣṭāṅga-bridaya-saṅhitā* by Sinha 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 Mādhyava 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 Mādhyava 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 Pandit 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-ratnábharana, 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 Sárangadhara. 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 Bhávaprakása and the two works on inorganic medicines generally used in Bengal, namely, Rasendra-chintámani and Rasendrasárasangraha. 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 Playfair, page 99.

2. Idem, page 26.

3. Idem, page 146.

in the Bhāvaprakāsa ; the Amrita-sāgar, a Hindi translation of a treatise on Sanskrit medicine ; and Kesava-binoda-bhāsa Nirghantu, 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 Dispensatory, 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*, *Pratānavatya* or *Vallili*. Lastly, those grasses, etc., which die after maturing their fruits, are called *Oshadhi*. Animals are divided into four classes, namely, *Jarāyuja* 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 *Indragopa*, 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 *Vísaka* (*Justicia Adhatoda*.)

Fruits, as the three Myrobalans.

Flowers, as of *Dhūtaki* (*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*.) Chandan
(sandal) etc.

Gum, as Myrrh, Assafœtida, etc.

Sometimes the entire plant is used as *Kantakūri* (*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 *Kālakrita* 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 diseases, 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. वृंहणीय *Vrinhaniya*—Medicines which promote nutrition and increase corpulency.
3. लेखनीय *Lekhaniya*—Medicines which thin the tissues, or reduce corpulency.
4. भेदनीय *Bhedaniya*—Promote excretions.
5. सन्धानीय *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 *Kanthya*—Improve the voice, or cure hoarseness.
10. हृद्य *Hridya*—Promote cheerfulness or relish.
11. तृप्तघ्न *Triptighna*—Remove a supposed phlegm which causes a sense of satiety.
12. अशोच *Arsoghna*—Cure piles.
13. कुष्ठघ्न *Kushthaghna*—Cure skin diseases.
14. कण्डूघ्न *Kandughna*—Cure pruritis.
15. कृमिघ्न *Krimighna*—Cure worms.
16. विषघ्न *Vishaghna*—Act as antidotes to poisons.

17. सन्यजनन *Stanyajanana*—Promote secretion of milk.
18. सन्यशोधन *Stanyasodhana*—Improve the quality of milk.
19. शुक्रजनन *Sukrajanana*—Increase the secretion of semen.
20. शुक्रशोधन *Sukrasodhana*—Purify the semen.
21. स्नेहोपयोग *Snehopayoga*—Emollients.
22. स्वेदोपयोग *Svedopayoga*—Diaphoretics.
23. वमनोपयोग *Vamanopayoga*—Emetics.
24. विरेचनोपयोग *Virechanopayoga*—Purgatives.
25. आस्थापनीपयोग *Asthāpanopayoga*—Medicines for use in enemas.
26. अनुवासनीपयोग *Anuvāsānopayoga*—Medicines for oily enemas.
27. शिरोविरेचनोपयोग *Śirovirechanopayoga*—Promote discharge from the nose.
28. कर्दिनिग्रहण *Chhardinigrahana*—Relieve vomiting.
29. तृणनिग्रहण *Trishnānigrahana*—Relieve thirst.
30. हिकानिग्रहण *Hikkānigrahana*—Relieve hiccup.
31. पुरीषसंग्रहणीय *Purishasangrahanīya*—Render the fæces consistent.
32. पुरीषविरजनीय *Purishavirajaniya*—Alter the colour of the fæces.
33. मूत्रसंग्रहणीय *Mutrasangrahanīya*—Reduce secretion of urine.
34. मूत्रविरजनीय *Mutravirajaniya*—Alter colour of urine.
35. मूत्रविरेचनीय *Mutravirechaniya*—Increase secretion of urine.
36. कासहर *Kāśahara*—Cure cough.
37. श्वासहर *Śvāsahara*—Cure difficult breathing or asthma.
38. शोथहर *Sothahara*—Cure anasarca or swellings.
39. ज्वरहर *Jvarahara*—Febrifuges.
40. श्रमहर *Śramahara*—Remove fatigue.
41. दाहप्रशमन *Dāhaprasamana*—Relieve burning or heat of body.
42. शीतप्रशमन *Śitaprasamana*—Relieve sense of coldness.
43. ऊर्ध्वप्रशमन *Urdhwaprasamana*—Cure urticaria. [limbs.
44. अङ्गमर्दप्रशमन *Angamarddāprasamana*—Relieve pain in the
45. शूलप्रशमन *Sulāprasamana*—Cure pain in the bowels.
46. शोणितस्थापन *Śonitasthāpana*—Styptics.
47. वेदनास्थापन *Vedanāsthāpana*—Anodynes.
48. प्रजास्थापन *Sanjñāsthāpana*—Restore consciousness.
49. प्रजास्थापन *Prajāsthāpana*—Cure sterility.
50. वयःस्थापन *Vayahsthāpana*—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* (*Baliospermum Montanum*,) which though similar in properties to *Chitraka* (*Plumbago Zeylanica*,) yet, unlike the latter, acts as a purgative. The result

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 depuratories. Sàrangadhara and other writers describe the actions of medicines in further detail and mention the following classes :—

दीपन *Dīpana* 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.

विरचक *Virechaka* or purgatives are described under three heads, namely, अंसन *Sransana*, भेदन *Bhedana*, and रेचक *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* (*Pricorrhiza 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, *Trivrit* (*Ipomœa Turpethum*.) These last again are

subdivided into three orders, namely, *mridu* or mild, *madhyama* or intermediate, and *krura* or drastic.

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

क्षेदन *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.

लेखन *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 स्तन्यजनन *Stanyajanana*.

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

ग्राहि *Gráhi* 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*).

अभिष्यन्दि *Abhishyandi* 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.

रसायन *Rasáyana* 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.

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

वृंहण *Vrinhana* are medicines which promote nutrition and increase the bulk of the body.

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

विष *Visha* or poisons are said to be endowed with the following qualities, namely, व्याप्यी *Vyaváyi*, that is affecting the entire system, as for example, opium and hemp. सूक्ष्म *Sukshma*, that is, penetrating into the minutest pores of the body. विकृशि *Vikási*, that is drying the humours, depressing the system and causing relaxation of the joints, as for example betel-nuts. आग्नेय *Ágneya*, that is, heating or stimulant. मदावह *Madávaḥa*, 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 *vatsanábha*, *háridra*, *saktu*, *pradipana*, *sauráshtrika*, *sringi*, *kálakuta*, *haláhala*, 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, *gunjá* (seeds of *Abrus precatorius*), *đatura*, roots of *Nerium odorum* (*karavirá*), and *Gloriosa superba* (*lángulí*) and the milky juices of *Calotropis gigantea* (*arka*) and *Euphorbia neriifolia* (*snuhi*). The mineral poisons mentioned in *Susruta* are *phenásma bhasma* or white arsenic, and *haritála* 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 *Mágadhi*, *Kálinga*, *Cháraka*, *Sausruta*, etc. The number of *gunjás* making a *tolá* 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 *gunjá*, (seed of *Abrus precatorius*) for its lowest weight. The *gunjá*, 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 *gunjá* गुञ्जा. This scale is as follows :—

- 6 *Gunjás* make one *áná*.
- 12 *Gunjás* make one *máshá* मासा.
- 8 *Máshás* or 16 *ánás* make one *tolá* तीलक.
- 8 *Tolás* make one *pala* पल.
- 8 *Palas* or 64 *Tolás* make one *seer* शराव.
- 2 *Seers* make one *Prastha* प्रस्थ.
- 8 *Seers* make one *ádhaka* आढक.
- 32 *Seers* make one *drona* द्रोण.
- 100 *Palas* or $12\frac{1}{2}$ *seers* make one *Tulá* तुला.

In the scale above described ninety-six *gunjás* make one tola. It would seem, however, that in ancient days Susruta's scale of forty *gunjás* to a *tolá* 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 *tolís*, the doses for children of different ages would be as follows:—For infants a month old, one *gunjá*, and an additional *gunjá* for each additional month. For children a year old, the dose would be one *máshá* or twelve *gunjás*, and an additional *máshá* for every year, till the full dose of sixteen *máshás* or two *tolís* 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.

स्वरस *Svarasa* 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.

क्वाथ *Kvātha* 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.

फाण्ट *Phánta* 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 *Sítakasháya* 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 *Pániya* 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 *Pra nathyá* 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 *Mantha* is an emulsion of medicines in fine powder with four parts of cold water.

क्षीरपाक *Kshírapáka* 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.

यवागु *Yavágu*. 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-sádhya-yavágu* or gruel made with medicinal paste, in contradistinction to another form called *Kvátha-sádhya yavágu* or gruel made with a decoction of medicines, for which last see *Oryza sativa*.

अवलिह *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 *Vatiká* and गुड़िका *Gudiká* 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.

मोदक *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 *Khandapáka* 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 *Bhāvaná* 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 *Putapáka* or roasting. In this process vegetable drugs are reduced to a paste which is wrapped up in *jamvu* or *vatapatra* (leaves of *Eugenia Jambolona* 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.

सन्धानवर्ग *Sandhānavarga* or products of a tedious fermentation.

काञ्जिक *Kánjika*. This is a sour liquid produced from the acetous fermentation of powdered paddy. Two seers of powdered *áus dhán* (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 *Kánjika* or *Dhánýāmla*, that is, the acid produced from paddy. *Kánjika* 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 *Sintáki*. If the husked grains of barley are boiled and steeped in water, the resulting acid liquor is called *Sauvira*. When the husks of fried *máshakaláya* (pulse of *Phaseolus Roxburghii*) and barley are boiled together for acetous fermentation, the acid is called *Tushāmvu Árnála* 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, *kánjika* 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 *kánjika* of Sanskrit Materia Medica.

द्रावक *Drávaka* 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.

खल्पद्रावक *Svalpadrāvaka*. Take of alum, chloride of ammonium, borax, sulphide of antimony, impure carbonates of potash and soda called *yavakshāra* and *svarjikākshāra*, 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.

आसवारिष्ट *Asava* and *arishta* 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 *Arishta*. 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 *Drākshārishta* 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 *Ghritas*. 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 *ghritas* 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 *Kánjika*, 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.

घृतपाक *Ghritapaka* 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. *Ghrita* 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. *Ghrita* 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 páka*. 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 *Tailapáka* 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 *naliká*, the three myrobalans, root of *Paronia odoráta* (*bálá*) 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 *ghritapáka*. 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 páka* 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, *jatámansi* root, *Curcuma Zedoaria* (*sati*), *Cyperus rotundus* (*mustaka*), *kakkola* (an aromatic seed,) resin of *Pinus longifolius* (*gandhavirajá*), storax, long pepper root, root of *Andropogon muricatus* (*usira*), *nakhi* (*Unguis odoratus*),* pouch of civet cat (*khattási*), camphor, musk, *Permelia perlata* (*saileya*), root of *Aplotaxis auriculata* (*kushta*), seeds of *Abelmoschus moschatus* (*latákasturi*), etc.

* This *nakhi* according to Rumphius who describes ten kinds of the odori-ferous 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.—*Royle'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* (*nāgakesara*), *Nigella* seeds, root of *Pavonia odorata* (*bálá*), 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* (*vaijayanti*), *Pavonia odorata* (*hrivera*), wild dates, tender red buds of *Ficus Bengalensis* (*vatasunga*), turmeric, wood of *Berberis Asiatica* (*Náruharidrā*), 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 *Kinjika* (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.

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 *Phalararti* 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 assafoetida 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 *Arapida* and the latter, *Pradhama*. 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 *mashakalaya* 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 *Parishleka*. 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 *Vidalaka*. 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.

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

1. तापस्वेद *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. उष्णस्वेद *Ushnasveda* 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 *kānjika* 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 *māshakalāya* and a bed made over it for the patient.

3. उपनाहस्वेद *Upanāhasveda*. 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. *द्रवस्वेद Dravasveda*. This means the hot hip-bath and hot bath with warm water or decoctions. Milk, broth, oil. *kānjikā* 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, langour 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.

धूमपान Dhumapāna 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 unpleasant smells and supposed evil spirits.

चारकर्म *Kshúrakarma* 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 *Pátalá*.—*Stereospermum suaveolens*.

कुटज *Kutaja*.—*Holarrhena antidysenterica*.

पलाश *Palása*.—*Butea frondosa*.

अश्वकर्ण *Asvakarna*.—*Shorea robusta*.

पारिमद्र *Páribhadra*.—*Erythrina Indica*.

विभीतक *Vibhitaka*.—*Terminalia Bellerica*.

आरग्वध *Aragvadhá*.—*Cassia fistula*.

लोध्र *Lodhra*.—*Symplocos racemosa*.

अर्क *Arka*.—*Calotropis gigantea*.

सुहि *Snuhi*.—*Enphorbia neriifolia*.

अपामार्ग *Apámárga*.—*Achyranthes aspera*.

करञ्ज *Karanja*.—*Pongamia glabra*.

वासक *Vásaka*.—*Justicia Adhatoda*.

कदलि *Kadali*.—*Musa sapientum*.

चित्रक *Chitraka*.—*Plumbago Zeylanica*.

पूतिक *Putika*.—*Cæsalpinia Bonducella*.

देवदारु *Devadáru*.—*Cedrus Deodara*.

आस्फोता *Āsphotá*.—*Vallaris dichotoma*.

करवीर *Karavira*.—*Nerium odorum*.

सप्तपर्षि *Saptaparni*.—*Alstonia scholaris*.

गाम्भारि *Gambhári*.—*Gmelina arborea*.

गुच्चा *Gunjá*.—*Abrus precatorius*.

कोषातकी *Koshátaki*.—*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 nerijolia* (*snuhi*), 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 *kánjika* should be applied. Caustics are applied to external piles, sinuses, 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 *Svarnamākshika* and *Tāramākshika*, 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, *Kankushita* a sort of mountain earth, *Saurāshtri* a fragrant earth from Surat, sand, clay, etc.

The precious stones described are, 1 *Hiraka*, diamond; 2 *Gārumat*, emerald; 3 *Pushpurāga*, 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 *Vidruma*, corals. Collectively they are called *Nava-catua* or the nine gems. *Rājavarata*, an inferior kind of diamond from Virat, and *Voikrānta*, 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; *Saurarchala*, sonchal salt; *Bit*, black salt; *Sāmudra*, sun-dried sea salt, commonly known as *Karkach*; *Aulbhida*, a saline efflorescence on *reh* lands; *Pānsuja* or salt obtained from saline earth; *Yavakshāra*, impure carbonate of potash; *Sarjikākshāra*, impure carbonate

of soda ; *Sarvakshūra*, mixed ashes of several plants ; *Narasāra*, chloride of ammonium ; *Soraka*, nitrate of potash, and *Tankana*, borax. The term *Ushara*, is applied 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 *kulattha* (*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 *mūrana*, 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 [crucibles 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 गजपुट *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.

मुषायन्त्र *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.

बालुकायन्त्र. The sand-bath called *Váluká 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.

दोलायन्त्र. When medicines, tied in a piece of cloth or other material, are suspended and boiled in a pot of water, the apparatus is called *Dolá 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 ऊर्ध्वपातनयन्त्र *Urdha-pátana 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.

तिर्यक्पातनयन्त्र. *Tiryak pátana 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 *ámhá-sár*, 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 taila*, and is taken internally, and applied externally, in skin-diseases.¹ 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. गन्धतैलम् । आवर्त्तमाने पयसि दत्त्वा गन्धकजं रजः । तज्जातदधिकं सर्पिर्गन्धतैलं वदन्ति हि । गन्धतैलं गन्धत्कुष्ठं इति लिपाञ्च भवणात् ॥ सन्देहभङ्गनी ।

2. गन्धपाषाणचूर्णेन यवचारिण्यं पेषितम् । शिभा भागं ब्रजत्याग्यं कटुतैलयुतेन वा ॥

*Adityapāka taila.*¹ Take of sesamum 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 *Rasu.*

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. आदित्यपाकतैलम् ॥ मञ्जिष्ठा त्रिफला लाक्षा निशा शिलालगन्धकैः । चूर्षितै-
सैलमादित्यपाकं पामाहरं परम् ॥ चक्रः ।

2. सिंहादगुग्गुलुः । पलत्रयं कषायस्य त्रिफलायाः सुचूर्षितम् । सौमन्धिकपल-
त्रैकं कौशिकस्य पलत्रया ॥ कुडवं चित्रतैलस्य सर्वमादाय यत्नतः । पाचयेत् पाकविद्वैद्यः
पात्रे लौहमये दृढे ॥ हन्ति वातं तथा पित्तं श्लेष्मानं खञ्जपङ्कताम् । श्वासं सुदुर्जयं हन्ति
काशं पञ्चविधं तथा ॥ कुष्ठानि वातरक्तञ्च गुल्मशूलोदराणि च । आमवातं जयेद्देतदपि
वैद्यविवर्जितम् ॥ चक्रः ।

* There is a passage in Charaka in the chapter on *Kashtha* or skin diseases which some physicians construe into a recommendation for the use of mercury. It is this सर्वव्याधिविनाशनमद्यात् कुष्ठो रसश्च निगृहीतम्. 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-diseases only.

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 *Kavirajas*. 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 *Urddhapātana 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 *Shadyantabali 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. हिङ्गुलीत्यरसः । जम्बीरनिम्बनीरेण मर्दितं हिङ्गुलं दिनम् । ऊर्ध्वपातनयन्त्रेण
याद्यः स्यान्निर्मली रसः । कञ्चुकैर्नागवङ्गाद्यैर्निर्मुक्तो रसकर्मणि ॥

रसेन्द्रसारसंग्रहः ।

2. षड्गणबलिजारितरसः । षट्प्रभाण्डे रसं कृत्वा बालुकायन्त्रमध्यगम् । षड्गणं
गन्धकं तत्र क्षिपेदल्पात्पकं शनैः । तैलरूपो यदा गन्धस्ततोऽवतारयेत् द्रुतम् । साङ्गशोते
दृष्टे गन्धे स्फोटयित्वा रसं नयेत् । सर्व्वरोगेषु दातव्यो रसो व्याधिनिमृदनः ॥

रसेन्द्रसारसंग्रहः ।

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*, *sveta*, *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 *pānsu* (salt obtained from saline earth) and the juice of *Euphorbia nereifolia* (*snuhi*) 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 *Bhūcaprakāsa* gives the following process for its preparation.³ Take of purified mercury, *gairika* (red-ochre),

1. कृष्णभस्म । लौहपात्रेऽथवा ताम्बे पलैकं शुद्धमन्धकम् । सृष्टिना द्रुते तस्मिन् शुद्धसूतं पलत्रयम् ॥ त्रिषाद्य चालयेत् किञ्चित् लौहदर्व्या पुनः पुनः । गोमये कदलीपत्रं तस्योपरि च ढालयेत् ॥ रसेन्द्रसारसंग्रहः ।

2. खेतभस्म । पिष्टं पांशुपटु प्रगाढममलं बज्राम्बुना नैकशः, सूतं धातुगतं खटीकबलितं तत्संपुटे रोधयेत् । अन्तःस्थं लवणस्य तस्य च तले प्रज्वाल्य बर्हिं दृठात्, घसं ग्राह्यमथेन्दु-कुन्दघवलं भस्मीपरिस्थं शनैः ॥ रसेन्द्रसारसंग्रहः ।

3. अथ कपूररसस्य विधिः । तत्र पाण्डस्य संचिप्तशोधनं कर्तव्यम् ।

शुद्धमूतसमं कुर्यात् प्रत्येकं गैरिकं सुत्रीः । दृष्टकां खटिकां तद्वत् स्फटिकां सिन्धुजम्ब च । बर्हिकं चारलवणं भाण्डरञ्जकमृत्तिकां । सर्वाण्येतानि संचूर्ण्य वाससा चापि शोधयेत् । एभियूर्णैर्युतं मृतं यावद्यामं विमर्दयेत् । तच्चूर्णसहितं मृतं स्थालीमध्ये परिक्षिपेत् ।

brick dust, chalk, alum, rock salt, earth from ant-hill, *kshári lavana* (impure sulphate of soda) and *bhánduranjaka*, 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 *bhunyámalaki* (*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 स्थाल्या मुखे स्थालीमपरां धारयेत् समाम् । सवस्त्रकुट्टितमृदा मुद्रयेदनयोर्मुखम् ।
संशोष्य मुद्रयेद्भूयो भूयः संशोष्य मुद्रयेत् । सम्यक् विशोष्य मुद्रां तां स्थालीं चल्या विधारयेत् ।
अग्निं निरन्तरं दद्यात् यावद्दिनचतुष्टयम् । अङ्गारीपरि तद्यन्तं रक्षेद्यत्रादहर्निशम् । शनै-
रुद्घाटयेद् यन्मूर्धस्थालीगतं रसम् । कर्पूरवत् सुविमलं गृह्णीयाद् गुणवन्तरम् ॥

भावप्रकाशः ।

1. पीतभस्म । रसगन्धौ समौ कृत्वा हस्तिशुण्डीद्रवैर्दृढम् । भूधात्रिकरसैः पिष्ट्वा पर्याप्तं
दिनसप्तकम् । विष्टृत्य बालुकायन्त्रे मूषायां सन्निवेश्य तत् । दिनमेकं ददेदग्निं मन्दं मन्दं
निशावधि । एवं निष्ठाद्यते पीतः शीतः सूतस्तु गृह्यते ॥

रसेन्द्रसारसंग्रहः ।

2. रक्तभस्म वा रससिन्दूरः । पलमात्रं रसं शुद्धं तावन्मात्रन्तु गन्धकम् । विधिवत्
कञ्जलीं कृत्वा न्यग्रोधाङ्कुरवारिभिः ॥ भावनावितथं दत्त्वा स्थालीमध्ये निधापयेत् ॥ विरच्य
कवचीयन्त्रं बालुकाभिः प्रपूरयेत् ॥ दत्त्वा तदन्ते मन्दाग्निं पचेद्यामचतुष्टयम् । जायते
रससिन्दूरं तरुणाङ्गणसन्निभम् ॥ अनुपानविगर्षणं करोति विविधान् गुणान् ॥

रसेन्द्रसारसंग्रहः ।

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 सूतं तथा गन्धं खले तावद्विमर्दयेत् । सूतं न दृश्यते यावत् किन्तु कज्जलवद्भवेत् ॥ एषा कज्जलिका म्याता वृद्धणी वीर्यवर्द्धिनी । नानानुपानयोगेन सर्व्वव्याधिविनाशिनी ॥

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

*Taruna jvarári.*² Take of mercury, sulphur, aconite and croton seeds, equal parts, rub together with the juice of *Aloe 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.

*Vajrakapáta rasa.*³ Take of mercury, sulphur, opium, *mocharasa*, (gum of *Bambax 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* (*Vijayá*) and *wedelia calendulacea* (*Bhringarája*) 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. हिङ्गुलेश्वरः । तुल्यांशं मर्दयेत् खले पिप्पलीहिङ्गुलं विषम् । द्विगुञ्जं मधुना दीयं वातज्वरविमुक्तये ॥ भैषज्यरत्नावली ।

2. तरुणज्वरारिः । जयपाल गन्धं विषं पारदञ्च तुल्यं कुमारीखरसेन पिष्टम् । अस्य द्विगुञ्जा हि सितोदकेन खातो रसोऽयं तरुणज्वरारिः । दातव्य एषोऽहनि पञ्चमे वा यष्टेऽथवा सप्तमे एव वापि । जाते विरेके विजितज्वरः स्यात् पटीलमुद्गाम्बुनिषेवणेन ॥

भैषज्यरत्नावली ।

3. वज्रकपाटरसः । पारदं गन्धकं चैवाहिफेनं सह मीषकम् । त्रिकटु त्रिफलञ्चैव ससमेकात्र कारयेत् । भङ्ग-भृङ्ग द्रव्यैश्चैतद् भावयेच्च पुनः पुनः । रक्तित्वयं ततश्चैव मधुना सह भक्षयेत् । असाध्यां ग्रहणौ हन्ति रसो वज्रकपाटकः ॥ भैषज्यरत्नावली ।

4. रसपर्पटी । पूर्वोक्ती द्विविधशुद्धौ समानी रसगन्धकौ । सम्पद्यं कञ्जलाभन्तु चूर्णं कुर्याद्ददाशये ॥ ततो वदरवङ्गिस्थे लौहपात्रे द्रवीकृतम् । गोमयीपरि सञ्चलकदलीपत्रपातनात् । कुर्याच्च पर्पटाकारं तस्य रक्तित्वयं क्रमात् । हादश रक्तिका यावत् प्रयोगः प्रहराईतः ॥

चिकित्सारवः ।

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, *Svarna parpati*, *Panchámrita parpati* etc. The preparation of the former will be described under the head gold. The latter is thus prepared.

Panchámrita parpati.¹ Take of sulphur eight tolás, mercury four tolás, prepared iron two tolás, prepared talc one tolá, prepared copper half a tolá. 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.

Mahágandhak rasa.² Take of mercury and sulphur each two tolás, and make a *Parpati* as before described. Take of nutmegs, mace, cloves, and *nim* leaves, each two tolás, 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. पञ्चामृतपर्पटी । अष्टौ गन्धकतोलका रसदलं लौहं तदर्द्धं शुभम् । लौहाइञ्च वराभकं सुविमलं ताम्रं तदभार्द्धिकम् ॥ पात्रे लौहमये च मर्दनविधौ चूर्णीकृतञ्चैकतः । दद्याद्वा दरवह्निनातिमृदुना पाकं विदित्वा दले ॥ रन्भाया लघु ढालयेत् पटुरियं पञ्चामृता पर्पटी । स्याता चौद्रष्टतान्विता प्रतिदिनं गुञ्जाद्वयं वृद्धितः ॥ लौहे मर्दनयोगतः सुविमलं भक्तक्रिया लौहवत् । गुञ्जाष्टावधवा त्रिकं त्रिगुणितं सप्ताहमेवं भजेत् ॥

मैषज्यरवावली ।

2. महागन्धकम् । रसगन्धकधीर्याद्यं कर्षमेकं सुशीघ्रितम् । ततः कज्जलिकां कृत्वा मृदुपाकेन शोधयेत् ॥ जातीफलं तथा कीषं लवङ्गारिष्ठपत्रके । एतेषां कर्षमात्रेण चूर्णेन सह मर्दयेत् ॥ मुक्तागृहे पुनः स्याप्यं पुटपाकेन साधयेत् । गुञ्जाद्वयप्रमाणेन वटिकां कारयेद्बुधः ॥ एतत् प्रोक्तं कुमारराणां रक्षणाय महौषधम् । अर्शाघ्नं दीपनञ्चैव बलवर्णप्रसादनम् ॥ दुर्ज्वारयहृणीरीगं जयेच्चैव प्रवाहिकाम् । सूतिकाख्यं जयेदतदपि वैद्यविवर्जितम् ॥

रसेन्द्रसारसंग्रहः ।

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

*Pándusudana rasa.*¹ In jaundice, mercury is used along with other alteratives and purgatives, as in the following, called *Pándusudana rasa*. Take of mercury, sulphur, prepared copper, croton seeds and bdellium, equal parts, rub them together with ghee 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 gudiká.*² Take of purified mercury two tolás. Add to it one tolá 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 tolás and soak in the juice of *Wedelia calendulacea* (*bhringarája*). When dry, mix the sulphur with the mercury, and rub together with sixteen tolás 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.

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

1. पाण्डुसूदनरसः । रसं मत्स्यं मृतं ताम्रं जयपालश्च गुग्गुलुम् । समांशमाज्यसंयुक्तां गुडिकां कारयेद्विषक् । एकैकां खादयेन्नित्यं पाण्डुशोथोपशान्तये । शीतलश्च जलं माम् वञ्चयेत् पाण्डुसूदने ॥ रसेन्द्रसारसंग्रहः ।

2. रसेन्द्रगुडिका । कर्षं शुद्धरसेन्द्रस्य स्वरसेन जयाद्रथीः । शिलायां खल्ययेत्तावद्यावत् पिष्टं घनं ततः ॥ कलकर्षां काकमाचीरसाभ्यां भावयेत् पुनः । सौगन्धिकपलं भृङ्गस्वरसेन विभावितम् ॥ चूर्णितं रससंयुक्तमजाचीरपलद्वये । खल्लितं घनपिष्टन्तु गुडीं स्विन्नकलायवत् ॥ कृत्वादौ शिवसभ्यर्चां द्विजातीन् परितोष्य च । जीर्णाद्रो भक्षयेदेकां चीरमांसरसाशनः ॥ सर्वरूपं चयं कासं रक्तपित्तमरोचकम् । अपि वैद्यशतैस्त्यक्तमस्यपित्तं नियच्छति ॥ चक्रः ।

3. राजमृगाङ्गरसः । रसमन्वयथो भागा भागैकं द्विमभस्मकम् । मृतताम्रस्य भागैकं शिलागन्धकतालकम् ॥ प्रतिभागद्वयं शुद्धमेकीकृत्य विमर्दयेत् । वराटीं पूरयेत्तेन अजचीरश्च

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 tolás, prepared talc two tolás, prepared iron one tolá, prepared gold half a tolá, 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 *Rasasindura*, already described, is much used in a variety of

टङ्गणम् ॥ पिप्पला तेन मुखं बुद्धा सुज्ञाण्डे तत् निधापयेत् । शुष्कं गजपुटे पाच्यं चूर्णयेत्
खाङ्गशीतलम् ॥ रसो राजसृगाङ्गीऽयं चतुर्गुञ्जः क्षयापहः । दशपिप्पलिकं चौद्वैर्मरिचैकीन-
विंशतिम् ॥ सघृतेर्हापयेद्वैद्यो वातघ्नेभवे चये ॥

भैषज्यरत्नावली ।

1. चिन्तामणिचतुर्मुखः । कर्षकं रससिन्दूरं तत्समं मृतमभकम् । तदईं मृतलौहञ्च
स्वर्णशाणं क्षिपेदुधः ॥ कन्यारसेन सम्पिष्य गुञ्जामानां वटीञ्चरेत् । अनुपानादिकं दद्यात्
बुद्धा दोषबलाबलम् ॥ हन्ति पित्तात्मकं वायुं केवलं पित्तसंयुतम् । हलासमरुचिं दाहं
वान्ति भान्ति शिरीशहम् ॥ प्रमेहं कर्णनादञ्च जडमद्गदमूकताम् । वाधियं गर्भिणीरोग-
मश्मरीनृतिकामयम् ॥ प्रदरं सोमरीगञ्च यन्नाशं ज्वरकामकम् । बलवर्णाग्निदः सम्यक्
कान्तिपुष्टिप्रदायकः ॥ चिन्तामणिरसश्चायं चिन्तामणिरिवापरः ॥

रसेन्द्रसारसंग्रहः ।

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

Shadguna balijarita 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 pellitory 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 सुवर्णस्य सुशुद्धं कीलसन्मितम् । शुद्धसूतपलैकेन मेलयेद् यवती भिषक् ॥ साईं पलं गन्धकञ्च कृत्वा कज्जलिकां ततः । निवेश्य काचकूप्याञ्च दृढायां परिवेष्टयेत् ॥ तां कर्पटैर्मुदा चैव स्वटिकाभिः समन्ततः । सम्यङ्निरुध्य यवनेन संपूज्यं सहीमया ॥ बालुकायन्त्रमध्ये तां सत्रिरुध्य समाहितः । पचेद्द्वादश यामान्तु निःसम्पाते मुनिर्जने ॥ एकाकी पाकविद्वैद्यः स्वाङ्गशीतं समुद्धरेत् । स्वर्णसिन्दूरमित्येतत् सर्वरोग- निमूदनम् ॥

संचितसारः ।

2. ममशालीवटी । पारदष्टइमानः स्यात् खट्विरष्टइसंमितः । आकारकरभश्यापि याञ्च दृढद्वयीन्मितः । टङ्कवयोन्मितं चीटं खल्लं मर्च्चञ्च निक्षिपेत् । संमद्यं तस्य सर्व्वस्य कुर्यात् सप्त वटीभिर्भिषक् । स रोगी भक्षयेत् प्रातरैकैकमम्बुना वटीम् । वज्जयेदस्रलवणं किरङ्कस्य नश्यति ॥

भावप्रकाशः ।

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. रसकर्पूरप्राशने विधिः । फिरङ्गसंज्ञकं रोगं रसः कर्पूरसंज्ञकः । अवश्यं नाशयेदितद्रूचः पूर्वचिकित्साकाः ॥ लिख्यते रसकर्पूरप्राशने विधिरुत्तमः । अनेन विधिना खादेन्मुखे शोथं न विन्दति ॥ गोधूमचूर्णं सत्रीयं विदध्यात् सूक्ष्मकूपिकाम् । तन्मध्ये निक्षिपेत् सूतं चतुर्गुणमितं भिषक् ॥ ततस्तु गुटिकां कुर्याद्यथा न दृश्यते वहिः । सूक्ष्मचूर्णं लवङ्गस्य तां वटीमवधूलयेत् ॥ दन्तस्पर्शो यथा न स्यात् तथा तामन्मसा गिलेत् । ताम्बूलं भक्षयेत् पश्चाच्छाकान्मलवसान् त्यजेत् । शममातपमध्वानं विशेषात् स्त्रीनिषेवणम् ॥

भावप्रकाशः ।

2. पीतपुष्पबलापत्ररमैष्टङ्गमित रसम् । हस्ताभ्यां मर्दयेत्तावद्यावत् सूती न दृश्यते । ततः संस्वेदयेद्भस्त्रानेवं वासरसतकम् । त्यजेत्तत्रमन्त्रं फिरङ्गस्तस्य नश्यति ॥

भावप्रकाशः ।

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 tolá, realgar half a tolá, 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*), *baberung*, *Cleome felina* (*svarnakshiri*), and the root of *Aplotaxis auriculata* (*kushta*) 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, eezema, 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 कर्षमात्रः स्यात्तावानेव हि गन्धकः । तण्डुलाश्लक्ष्मावाः
स्युरेषां कुर्वीत कञ्जलीम् ॥ तस्याः सप्तवटीः कुर्यात्ताभिर्धूमं प्रयोजयेत् । दिनानि सप्त
तेन स्यात् फिरङ्गान्तो न संशयः ॥ भावप्रकाशः ।

2. हेमचौरी विडङ्गानि दरदं गन्धकं तथा । दद्रुघ्नः कुष्ठं सिन्दूरं सर्वाण्येकत्र मर्दयेत् ।
धतूरनिम्बताम्बूलोपत्राणां स्वरसैः पृथक् । अस्य प्रलेपमात्रेण यामाहृदुविचर्चिकाः ।
कण्डूशूलसकथैव प्रशमं यान्ति वेगतः ॥ शाङ्गधरः ।

3. रसेन्द्रेण समायुक्ती रसो धतूरपत्रजः । ताम्बूलपत्रजो वापि लेपो यूकाविनाशमः ॥

चक्रः ।

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*, साम्बलचार *Sámbala kshára*, फेनाश्मभस्म *Phenásma bhasma*, and दारुमुच् *Dárumuch*. None of these terms, however, is to be found in standard lexicons, such as Wilson's Sanskrit-English Dictionary, or Sir Rájá Rádhakanta Deva's Sabdakalpadruma. *Phenásma bhasma* is mentioned by Susruta in his chapter on poisons, where he says, it and *haritála* (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 *Phenásma bhasma*. At a later period imported white arsenic had been used in medicine under the designations of *sámbalakshára*, *dárumuch*, and *sankha visha*.

WHITE ARSENIC.

Sans. शङ्खविष *Sankha vish*. दारुमुच् *Darumuch*.
साम्बलचार *Sambala kshara*.

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 brahmástra.¹ Take of white arsenic two tolás, soak it in cow's urine for three days, and afterwards in the juice of

* फेनाश्मभस्म हरितालञ्च द्वे धातुविषे । Susruta. kalpasthána, chapter II.

1. ज्वरब्रह्मास्त्रः । विपनीञ्च समागम्य युञ्ज्वर्यं सुशोभनम् । चानीय सम्बलं देवि तिलकद्वयसन्मितम् ॥ स्वच्छगोमूत्रमानीय शरावे स्थापयेद्बुधः । सम्बलं तत्र संचिप्य

Celsia Coromandeliana (*kokasima*), 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.

Dārubrahma 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.

दिवसत्रयमेव च ॥ तत उद्धृत्य देवेशि शूकशिखीरसेषु च । स्थापयेद्दिनमेकन्तु ततः स्वच्छजलेन च । संशोध्य स्थापयद्देवि निर्मले काचपात्रके । एकसर्षपमानं तत् ज्वरागमनपूर्वतः ॥ फेणुमध्यगतं कृत्वा भक्षेच्च स्थिरमानसः । अथवा शर्कराद्रावैः पीत्वा रोगी सुखी भवेत् । एवं दिनत्रयं भुक्त्वा मुच्यते ज्वरसङ्घटात् । जीर्णज्वरे तथा दाते कम्पज्वरे विशेषतः । निश्चितं ज्वरमुक्तः स्यात् सत्यं सत्यं न संशयः । तन्वीक्तः ।

1. दारुब्रह्म वा कर्षिकरसः । रसं शङ्खविषञ्चैव कृष्णाधुस्तूरवीजकैः । जम्बीराणां द्रवैर्मर्द्यै द्विगुञ्जं परिमाणतः । गन्धपत्रानुपानेन कर्षिकाणां कुलान्तकृत् ॥

संचितसारः ।

2. चण्डेश्वररसः । रसं गन्धं विषं ताम्रं साम्बलं चारमेव च । चार्द्रकस्य रसेनेव मर्दयेद्याममात्रकम् ॥ रसेनापि च तेनास्य भावयेत् सप्तवारकम् । निर्गुण्डीस्वरसेनापि भावयेत् सप्तधा पुनः ॥ गुञ्जाईमाना वटिका शङ्खार्द्रकरसेन वै । मूलादेव ज्वरं हन्ति तैलाभ्यङ्गं समाचरेत् ॥ सुशीतलजले स्नानं तैलमत्स्यादि भोजनम् । चण्डेश्वरो रसो नाम सर्वरोगकुलान्तकृत् ॥

संचितसारः ।

ORPIMENT.

Sans. हरिताल, *Haritála.*

ORPIMENT occurs in two forms, namely, in smooth shining gold-coloured scales called *Vansapatri haritála*, and in yellow opaque masses called *Pinda haritála*. *Vansapatri haritála* is preferred for internal use as an alterative and febrifuge. *Pinda haritála* 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 *haritála*, to preserve them from the ravages of insects, and this it does most effectually.*

* Babu Rájendralála 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 Kásmiri 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 puthis; 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

Haritála is purified for internal use by being successively boiled in *kánjika*, the juice of the fruit of *Benincasa cerifera* (*kushmánda*), sesamum oil, and a decoction of the three myrobals, 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 *Bhávaprakása* recommends that orpiment should be powdered and made into a ball with the juice of *Boerhaavia diffusa* (*punarnava*) 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 *yavakshára*, 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 arsenicised 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."

Vetāla 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.

Vidyādihara 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 nereifolia* (*vajri*). Make into pills about six grains each. These pills are given with honey in enlarged spleen and other enlargements of the abdominal viscera.

*Tālatesari 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 (*svarnamākshika*), 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 *Pinus*

1. वेतालरसः । रसं गन्धं विषं तालं मरिचञ्च समाशिकम् । शिलायां मर्दयेत्तावत्
यावत् कज्जलसन्निभम् ॥ गुञ्जामात्रं प्रयोक्तव्यं हरेद्वादशसंज्ञकम् । साध्यासाध्यं निहन्त्याशु
सन्निपातं सुदारुणम् ॥ स्नानेषु लिप्तदेहेषु मोहयस्त्रेषु देहेषु । दातुमर्हसि वेतालं यमदूत-
निवारणम् ॥ भैषज्यरत्नावली ।

2. विद्याघररसः । गन्धकं तालकं ताप्यं मृतं ताम्रं मनःशिला । शुद्धसूतस्य तुल्यांशं
मर्दयेत् भावयेद्दिनम् ॥ पिप्पल्याः स्वकषायेण वज्रीक्षीरेण भावयेत् । निष्काड्यं भक्षयेत् क्षौद्रैः
घ्रीहगुल्मादिकं जयेत् ॥ रसेन्द्रसारसंग्रहः ।

3. तालकेशरी । तालताप्यशिला सूतटङ्गणाः सिन्धुसंयुताः । गन्धकी द्विगुणः सूतात्
शङ्खचूर्णञ्च तत्समम् ॥ जम्बीराद्भिर्दिनं घृष्टा त्रिंशदंशं विषं क्षिपेत् । अस्य माषद्वयं
खादेन्महिषीघृतसंयुतम् ॥ मध्वाजैर्वाकुचीबीजकर्षं लिङ्घ्यात् ततः परम् । तालकेशरनामायं
सर्वकुष्ठहरो रसः ॥ भावप्रकाशः ।

Deodara 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, *sarjikákshúra* (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. मनःशिला, *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 *Viter Negundo* (*nirgundi*),

1. दाव्नीमूलकबीजानि तालकं सुरदारु च । ताम्बूलपत्रं सर्वाणि कार्षिकाणि
पृथक् पृथक् ॥ शङ्खचूर्णं शणमात्रं सर्वाण्येकत्र चूर्णयेत् । लेपोऽयं वारिणा पिष्टः सिद्धानां
नाशनः परः ॥ शार्ङ्गधरः ।

2. शङ्खचूर्णस्य भागौ द्वौ भागैकं हरितालकम् । मनःशिला चार्द्धभागा सर्जिका चैक
भागिका ॥ लेपोऽयं वारिपिष्टस्तु केशानुत्पाद्य दीयते । अनया लेपयुक्त्या च सप्तवेलं
प्रयुक्त्या । निर्मूलकेशस्थानं स्यात् चपलस्य शिरो यथा ॥ शार्ङ्गधरः ।

3. अपामार्गोद्भवान्मलात् चारः सहरितालकः । लिङ्गार्थो लेपती हन्ति चिरजात-
मसंशयम् ॥ भेषज्यरत्नावली ।

4. चण्डेश्वर रसः । समांशं योजयेत् खड्गे रसं गन्धं शिलां विषम् । निर्मूङ्गी स्वरसै-
भायं चिवारं चार्द्रकद्रवैः । गुञ्जैकं भक्षयेत् प्रातः ज्वरं हन्ति महीदतम् ॥

रसेन्द्रसारसंघः ।

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

*Svása kuthára rasa.*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* (*apámárga*) 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

*Chandraprabhá 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. श्वासकुठाररसः । सूतं गन्धं विषञ्चैव टङ्गनञ्च मनःशिला । एतानि टङ्गमात्रानि मरिचं तच्चतुर्गुणम् ॥ त्रिकटु त्रिगुणञ्चैव खल्ले पिष्ट्वा विचूर्णयेत् । रसः श्वासकुठारीशं श्वाससर्वज्वरापहः ॥ रसेन्द्रसारसंयुतः ।

2. मनःशिलाल मरिचानि तैलमार्कं पयः कुष्ठहरः प्रदेहः ॥ चक्रः ।

3. चन्द्रप्रवावर्तिः । चञ्चनं श्वेतमरिचं पिप्पलीं मधुयष्टिका । विभीतकस्य मध्यन्तु शङ्खनाभिर्मनःशिला ॥ एतानि समभागानि अजाक्षीरेण पेषयेत् । क्वाथाशुष्कां कृतां वर्तिं नेत्रेषु च प्रधीजयेत् ॥ शर्वुर्दं पटलं काचं तिमिरं रक्तराजिकाम् । अधिमांसं मलञ्चैव यद्य रात्रौ न पश्यति ॥ वर्तिश्चन्द्रप्रभा नाम जाताम्बमपि शोधयेत् ॥ चक्रः ।

An oil for application to fistulous sores is prepared as follows. Take of sulphur, realgar and turmeric, eight tolás each, mustard-oil one seer, juice of *daturú* 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, *Kánta lauha* or cast-iron, *Mandura* or iron rust, and *Lauhasára* 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. *Lauhasára* 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 diarrhoea, 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* (*kulattha*), 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. चूर्णेन गन्धकशिला रजनीभवेन मुख्यशक्तेन कटुतैलपलाष्टकं तु । धमूर पचरस-
तुल्यमिदं विषकं नाडीं जयेत् चिरभवामपि कर्णजाताम् ॥ 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 *Vrihat Sarvajvara hara lauha*, *Chandanaūdyalauha*, etc.

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

1. बृहत्सर्वज्वरहर लौहम् । पारटं गन्धकं शुद्धं ताम्रं मात्तिकमभकम् । हिरण्यं हरितालञ्च कर्षमेकं पृथक् पृथक् ॥ मृतकान्तं पलं देयं सर्वमेकीकृतं शुभम् । वक्ष्यमाणौषधैर्भाज्यं प्रत्येकं दिनसप्तकम् ॥ कारवल्लरसेनापि दशमूलरसेन च । पर्षटस्य कषायेष काथिन त्रैफलेन च ॥ गुडुच्याः स्वरसेनापि नागवल्लीरसेन च । काकमाचीरसेनैव निर्गुण्ड्याः स्वरसेन च । पुनर्नवार्द्रकाम्भीभिर्भावनां परिकल्प्या च ॥ रक्तिकादिक्रमेणैव वटिकां कारयेद्भिषक् । पिप्पली गुडसंयुक्ता वटिका वीर्यवर्द्धिनी ॥ ज्वरमष्टविधं हन्ति चिरकालसमुद्भवम् । विविधं वारिदीषीत्यं नानादोषीद्भवन्तथा ॥ सततादि ज्वरं हन्ति साध्यासाध्यमथापि वा । क्षयोद्भवञ्च धातुस्थं कामशोकभवं तथा ॥ भूतावेशज्वरं हन्ति ऋचदोषभवन्तथा । अभिघातज्वरञ्चैव अभिचार समुद्भवम् ॥ अभिन्यासं महाघोरं विषमञ्च त्रिदीषजम् । शीतपूर्वं दाहपूर्वं विषमं शीतलं ज्वरम् । प्रलेपकज्वरं घोरं अर्द्धनारीश्वरं तथा । घ्नीहज्वरं तथा कासं चातुर्थकविपर्ययम् ॥ पाण्डुरोगान् गन्धान् सर्वान् अप्रिमान्यं महागदम् । एतान् सर्वान् निहन्त्याशु प्रक्षार्हेन न संशयः ॥ शाल्यन्नं तक्रसहितं भोजयेद्विजसंयुतम् । ककारपूर्वकं सर्वं वर्जनीयं विशिषतः ॥ मीथुनं वर्जयेत्तावत् यातन्न बलवान् भवेत् । सर्वज्वरहरं श्रेष्ठमनपानं प्रकल्पयेत् ॥

भैषज्यरत्नावली ।

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 *kákamáchi* (*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* (*páthá*), *Andropogon muricatus* (*usir*), long pepper, chebulic myrobalan, emblic myrobalan, ginger, *Nymphaea stellata* (*nilotpala*), *Charica 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 *Tinosphora 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. चन्दनाद्यलौहम् । रक्त चन्दनह्रीवेर पाठीशीरकणाशिवा । नागरीत्यख धात्रीभि
स्त्रिमदेन समन्वितः । लौहं निहन्ति विविधान् समस्तान् विषमज्वरान् ॥

रसेन्द्रसारसंग्रहः ।

2. विषमज्वरान्तकलौहम् । हिङ्गुलसम्भवं सूतं गन्धकीम सुकञ्जलीम् । पर्पटीरस-
वत्याद्यं सूताङ्घ्रिह्रीमभस्मकम् ॥ लौहं ताम्रमभकञ्च रसस्य द्विगुणं तथा । वङ्कं गैरिकञ्चैव
प्रवालञ्च रसाईकम् ॥ मुक्ता शङ्ख युक्तिमभ्य प्रदेयं रसपादिकम् । मुक्तागृहे च संस्थाप्य
पुटपाकेन साधयेत् ॥ भक्षयेत् प्रातरुत्थाय द्विगुणाफलमानतः ॥ अनुपानं प्रयीतव्यं
कषादिहृससैध्ववम् । ज्वरमटविधं हन्ति वातपित्तकफोद्भवम् । श्लीहानं यत्कृतं गुण्यं
साध्यासाध्यमथापि वा । मन्ततं सतताप्यञ्च विषमज्वरनाशनम् ॥ भैषज्यरत्नावली ।

prepare it, take of mercury obtained by sublimation of cinnabar and sulphur, each one tolá. 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 tolá, prepared iron, copper, and talc, two tolás each, prepared tin, red ochre, and corals, half a tolá each, roasted pearls, conch-shell and bi-valve shell, each a quarter of a tolá. 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 assafœtida, 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 *Mána suranādyā lauha*, *Arsāri lauha*, *Agnimukha lauha* etc. The first mentioned compound is prepared as follows.

Mána suranādyā lauha.¹ Take of the root-stocks of *Colocasia Indica* (*mána*) and *Amorphophallus campanulatus* (*surana*), of the roots of *Ipomœa Turpethum* (*trirrit*) and *Baliospermum montanum* (*danti*), marking nuts, the three myrobalans, black pepper, long pepper, ginger, seeds of *Embelia Ribes* (*baberung*), 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.

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

1. मानसूरणायलोहम् । मानसूरणभस्मात्विहृन्तीसमन्वितम् । त्रिकवयसमायुक्तमयी दुर्गामनाशनम् ॥ भैषज्यरत्नावली ।

2. लौहासवम् । लौहचूर्णं त्रिकटुकं त्रिफलाश्च यमानिकाम् । दिङ्गं चिचकं मुसुं चतुःपलमितं पृथक् । चूर्णीकृत्य ततः क्षौद्रं चतुःषष्टिपलं क्षिपेत् । दद्याद् गुडतुली तत्र जलद्रोणद्वयं तथा । घृतभास्वे विनिःक्षिप्य निदध्यान्नासमात्रकम् । लौहासवमिदं मर्त्यः पित्तेदङ्गिकरं परम् । पाण्डुशयथुगुल्मानि जठरास्त्रर्षसा रजम् । कुष्ठप्रीहामयं कण्डू कास शसं भगन्दरम् । अतोषकश्च यद्वर्षी हृद्दोग्ध विनाशयेत् ॥ शार्ङ्गपरः ।

plumbago root, and tubers of *Cyperus rotundus* (*mustaka*), each thirty-two tolás, 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.

Amalakádyā lauha.¹ Iron enters into the composition of several medicines for hæmorrhagic diseases, of such as the *Khandakádyā lauha*, *Sudhānidhī rasā*, *Amalakádyā lauha* 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 chebulic myrobalans one part each, and iron rust three parts. These are rubbed together with honey and *ghee*, 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.

Vidyádharúbhra.³ Take of *haberung* seeds, tubers of *Cyperus rotundus* (*mustaka*), the three myrobalans, *gulanča*, root of

1. आमलकाद्यलौहम् । आमलापिप्पलीचूर्णं तुल्यया सितया सह । रक्तपित्तहरं लीहयोगराजमिति ऋतम् । वृष्याग्निदीपनं बल्यं चास्यपित्तविनाशनम् । पित्तीत्यानपि वातीत्यान् निहन्ति विविधान् गदान् । रसेन्द्रसारसंग्रहः ।

2. गुडमण्डूरम् । गुडामलकपथ्यानां चूर्णं प्रत्येकशः पलम् । त्रिपलं लीहकिङ्कम तत्सर्वं मधुसर्पिषा ॥ समालोद्य समश्रीयादचमात्रप्रमाणतः । आदिमध्यावमानेषु भोजनानि निहन्ति तत् ॥ अत्रद्रवं जरत्पित्तमस्यपित्तं सुदारुणम् । परिणामसमुत्पद्य शूलं संवत्-सरीत्वितम् ॥ भावप्रकाशः ।

3. विद्याधराभः । विडङ्गमुस्ताविफना गुडुषी दन्ती तृहृदङ्गिकटुत्रयश्च । प्रत्येकमेषां पित्तुभागचूर्णं पथ्यानि चत्वार्ययसो मलस्य । गोमूत्रगुडस्य पुरातनस्य यदायसन्तानि शिरा-

Baliospermum montanum (*danti*), of *Ipomœa 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, diarrhœa, phthisis etc.

Naváyasa lauha.¹ In anæmia iron is much used in a variety of forms. The following compound powder called *Naváyasa lauha* is a popular and well known medicine. To prepare it take of ginger, long pepper, black pepper, the three myrobalans, *Huberung* seeds, tubers of *Cyperus rotundus* (*mustaka*) 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 । कृष्णाभचूर्णस्य पलं विशुद्धं निवृद्धस्य अक्षामतीव सूतात् । पादीनकषं स्वरसेन खले शिलातले मनुमनीदलस्य । विशीष्य पश्चादतिशुद्धगन्धपाषाणचूर्णेन पिचून्मितेन । युक्त्या ततः पूर्व्वरजामि दत्त्वा सर्पिमधुभ्यां परिमर्द्य यद्वात् । निधापयेत् सिग्धविशुद्धभास्त्रे ततः प्रयोज्योऽस्य रसीत्तमस्य । प्राञ्जापकी दावथ वा तथी वा गवां पथी वा शिशिरं जलं वा । पिवेद्यं योगवरः प्रभूतकालप्रणष्टानलदीपनेषु । योगेषु हन्यात् परिणामशूलं शूलं तथात्र-द्रवसंज्ञकञ्च । अक्षान्त्रपित्तं यद्दृणीं प्रवृद्धां जीर्णज्वरं लीहितपित्तकुष्ठम् । न सन्ति ते यानि निवृन्ति रोगात् योगीत्तमः सम्यगुपास्यमानः ।

रसेन्द्रसारसंग्रहः ।

1. नवायसं लौहम् । चुपवणविफलामुस्तविह्वचित्तकाः समाः । नवायीरजसी भागसङ्घर्णे मधुसर्पिषा । भक्षयेत् पाण्डुहृद्रोगकुष्ठार्शःकामलापहम् ॥

चक्रः ।

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

Mahāsvāsāri 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 talc one tolā, honey and sugar four tolās each, the three myrobalans, liquorice root, raisins, long pepper, kernel of jujube fruits, bamboo-manna, *tālisāpatri* (leaves of *Pinus Webbiana*,) *baberung* seeds, cardamoms, root of *Aplotaxis auriculat* (*kushtha*,) and flowers of *Mesua ferrea* (*nāgakēśura*), 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, talc and copper, each four tolās, root of variety of citrus *Acida Roxb.* (*limpāka*) eight tolās, burnt

1. गुडूच्यादिलौहम् । गुडूचीसारसंयुक्तं विकल्पसयी रजः । वातरक्तं निहन्त्याश्च सर्व्ववातहरं परम् ॥
रसेन्द्रसारसंग्रहः ।

2. महाश्यासारिलौहम् । कर्षद्वयं लौहचूर्णं कर्षार्द्धमभमेव च । सिताकर्षद्वयञ्चैव मधुकर्षद्वयं तथा । विफला मधुकं द्राक्षा कथा कोलास्थिवंशजा । तालीशपत्रं वैडङ्गमैला पुष्करकेशरम् ॥ एतानि श्लक्ष्णचूर्णानि कर्षार्द्धं समांशिकम् । लौहेच लौहदण्डेन मर्दयेत् प्रहरद्वयम् । ततो मात्रां लिहेत् क्षौद्रैर्बुहा दोषबलावलम् । इदं श्यासारि लौहञ्च महाश्यासं विनाशयेत् ॥ कासं पञ्चविधञ्चैव रक्तपित्तं सुदारुसम् एकजं हन्वजञ्चैव तथैव सान्निपातिकम् । निहन्ति नात्र सन्देहो भास्करस्तिमिरं यथा ॥
भैषज्यरत्नावली ।

3. यकृदरिलौहम् । द्विकर्षं लौहचूर्णञ्च अभञ्चापि तथैव च । कर्षद्वयं मृतं ताम्रं लिम्बाकाहिल्वचः पलम् । मृगाजिनं पलं भस्म सर्व्वमेकत्र कारयेत् मवगुञ्जा प्रमाणेन वटिका कारयेद्भिक्षम् । यकृत्प्रौढोदरं हन्ति कामलाञ्च हलीमकम् । कासं श्यासं ज्वरं हन्त्याहल्वर्षांपिप्लवं ॥ यकृदरि त्विदं लौहं वायुगुणविनाशम् ॥

deer-skin eight tolas, 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 *Tryushanādi 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 *Kālāgnirudra rasa*² is recommended. Take of mercury, sulphur, prepared talc, 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 *Ipomoea Turpethum* (*trivrit*), each one tola, prepared iron fifteen tolas, bdellium eight tolas, mix them together and beat into a uniform mass with *gāca*. 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 । अथोरजस्तूप्रथमं यावत्कं चूर्णञ्च पीतं विफलारसेन । शीघ्रं निहन्त्यात् सहसा नरस्य यथाशनिर्हं च मुदीर्णवेगम् ॥ रसेन्द्रसारसंग्रहः ।

2. कालाग्निरुद्ररसः । सूतकान्ताभलौहानां भक्तं मात्त्रिकगन्धकम् । भृषगाख्ये पुटे पञ्चाह्निकं तद्विपाचयेत् । दशमांशं विषं यीच्यं मापमात्रञ्च भजयेत् । रसः कालाग्निरुद्रोऽयं दशाह्नेन विस्पर्णत् ॥ रसेन्द्रसारसंग्रहः ।

3. मेहमुद्गररसः । रसाञ्जनं विडं दाहविल्वगीचुरदाडिमाः । भूनिम्बं पिप्पलीमूलं चिकटु विफला विव्रत ॥ प्रत्येकं तीलकं देयं लौहचूर्णं तु तत् समम् । षलैकं गुग्गुलुं दत्त्वा हृतेन वटिकां कुह ॥ सापैकप्रमितां चैयं मेहमुद्गरसंज्ञिनी । यै मद्गहननाथेन निर्मिता मेहनाशिनी ॥ अनुपानं प्रथोक्तञ्च हामीदग्धं जलञ्च वा । विंशत्येहं निहन्त्यापु मूत्रकण्ठं हलीमकम् ॥

*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 *Aloe Indica* (*ghritakumúri*) 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. वृहत्सोमनाथरसः । द्विद्भुलात् सन्धवं :सूतं पालिधारसमर्दितम् । रण्डाशीधित
गन्धश्च तेनैव कञ्जलीकृतम् ॥ तद्वयद्विगुणं लौहं कन्वारसविमर्दितम् । अश्वकं वङ्गकं रोष्यं
खर्परं माचिकं तथा ॥ सुवर्णञ्च समं सर्वं प्रत्येकञ्च रसार्चकम् । तन्मूर्ध्वं कन्यकाद्रावैर्मर्दये
द्भावयेत्तथा । भेकपर्णीरसेनैव वर्टी गुञ्जाद्वयां हितान् । मधुना भक्षयेच्चापि सोमरोग-
निवृत्तये । प्रमेहं विंशतिं इति बहुमूत्रञ्च सोमगम् । मूत्रातिसारकञ्च मूत्राघातं सुदारुणम् ।
मूत्रदोषं बहुविधं प्रमेहं मधुसंज्ञकम् । इक्षिमेइमिचुमेहं लालामेहं विनाशयेत् । गृहे
यस्य शतं स्त्रीणां विद्यते च व्याधिनाः । न तस्य सिद्धशैथिल्यं युक्तक्षयी न जायते ।
अपिच कुरुते दीप्तमस्रपित्तञ्च नाशयेत् । वातिकं पित्तिकं चैव श्लैष्मिकं सोमनाथकम् ।
नाशयेत् बहुमूत्रञ्च प्रमेहमविकल्पतः ॥ रसेन्द्रसारसंश्लेषः ।

2. लौहचूर्णस्य कर्षन्तु दशाहं चूतमज्जतः । धात्रीफलद्वयं पथ्ये द्वे तथैकं विभीतकम् ।
पिशा नोडमये भाण्डे स्थापयेन्निशि वासयेत् । लेपोऽयमचिराद्भक्तिं पलितं नात्र संशयः ।

SULPHATE OF IRON.

Sans. काशीश *kásisa*.

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, *Dhátukásis* or green variety and *Phushpa kásis* 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 (*gorochanú*) *rusot* and orpiment, equal parts and beat into to a paste with *kánjika*. It is useful in intertrigo, pruritis etc.²

Kásisádyutaila.³ Take of sesamum oil four seers, water sixteen seers, sulphate of iron, wood of *Withania somnifera* (*asvagandhá*), bark of *Symplocos racemosa* (*ledhra*), root of *Pothos officinalis* (*gajapippali*) each sixteen tolás. 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.

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1. हिक्काश्रासे अवलेहः । काशीशं दधिनामच हिक्काघ्ना मधुसंयुताः । चक्रः
 2. काशीशं रोचनातुल्यं हरितानं रसाञ्जनम् । चम्रपिष्टः प्रलीपीऽयं हवकच्छुद्धि-
पुतयोः ॥ चक्रः ।
 3. काशीश्राद्यतैलम् । काशीशतुरगगन्धा श्रावरगजपिप्पलीविपकेन । तैलेन यान्ति
हृदि सनकसंभराकलिकानि ॥ चक्रदत्तः ।

IRON PYRITES.

Sans. स्वर्णमाचिक *Svarnamākhika*, तारमाचिक *Tāramākhika*.

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 *Svarnamākhika* and the latter *Tāramākhika*. 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 tolás, ginger, long pepper and black pepper, each three tolás, cloves and mace, each six tolás,

* न केवलं स्वर्णरूपगुणास्तापिजयोर्मता । द्रव्यान्तरस्य संसर्गात् सस्यन्वेऽपि गुणास्तयोः ॥

भावप्रकाशः ।

1. स्वर्णमाचिकम् । अथस्तिखन्नुषणकोलभागैः सर्वैः समं माचिकघातुचूर्णम् ।
तेर्माचिकः चौद्रयुतोऽनुतकः पाण्डुामये दूरमतेऽपि शस्तः ॥ चक्रः ।

2. गर्भविनोदरसः । त्रिभागं विकट्टु देयं चतुर्भागं च द्विहुलम् । जातीकोषं लवङ्गश्च
प्रत्येकं च विकार्षिकम् । सुवर्णमाचिकश्चैव पलाईं प्रचिपेद्दुषः । जलेन मर्दयित्वा च
चणमात्रा बटी कृता । निहन्ति गर्भिणीरोगं भास्करस्तिमिरं यथा ॥

रसेन्द्रसारसंग्रहः ।

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 *Kavirája* Binod Lál 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 cinabar, 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* (*sepháliká*), 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.

*Mrigánka 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 *kánjika*. 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 hemigarbha rasa*, and *Ratnagarbha pottali rasa*, respectively, are similar in composition to the *Mrigánka rasa*. They contain mercury, sulphur, gold, pearls, borax etc, in varying proportions.

1. जयमङ्गलरसः । द्विद्वुलसम्भवं सूतं गन्धकं टङ्गणं तथा । ताम्रं दङ्गं माचिकञ्च
सैन्धवं मरिचं तथा । सर्वं समं समाहृत्य द्विगुणं स्वर्णभस्मकम् । तदङ्गं कान्तलीडञ्च
हृष्यभस्मापि तद्वसम् । एतत्सर्वं विचूर्णाय भावयेत् कनकद्रवैः । शीफालीदलजैश्चापि दश
मूलरसेन च । किराततिक्तकक्ताथैः त्रिवारं भावयेत् सुधीः । भावयित्वा ततः कार्या गुञ्जद्वय-
मिता बटी । अनुपानं प्रयोक्तव्यं जीरकं मधुसंयुतम् । जीर्णज्वरं महाघोरं चिरकाल-
समुद्भवम् । ज्वरमष्टविधं हन्ति साध्यासाध्यमथापि वा । पृथक् दोषाय विविधान् समस्तान्
विषमज्वरान् ॥

रसेन्द्रसारसंग्रहः ।

2. मृगाङ्गरसः । आद्रसेन समं हीमं मौक्तिकं द्विगुणं भवेत् । गन्धकसु समसेन
रसपादसु टङ्गणः ॥ सर्वं तद्गोलकं कृत्वा काञ्चिकेन विशोधयेत् । माखे लवणपूर्णे च
पषेयामचनुष्टयम् ॥ मृगाङ्गसंज्ञको ज्ञेयो रोमराजनिर्गमनः ॥

रसेन्द्रसारसंग्रहः ।

Suvarna parpati.¹ Take of mercury eight tolás, gold one tolá, rub them together, then add sulphur eight tolás 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. स्वर्णपर्पटी । रसीत्तमं पलं शुद्धं हेमतीलकसंयुतम् । शिलायां मर्दयेत् तावत्
यावदेकवमागतम् ॥ गन्धकस्य पलत्रैकमयःपात्रे ततो दृढे । मर्दयेद्दृढपात्रिभ्यां तावत्
कञ्चलतां ब्रजेत् ॥ ततः परं विधानज्ञः पर्पटीं कारयेत्सुधीः । रक्तिकादिक्रमेणैव बीज्यै-
दनुपानतः । यद्दृष्टो विविधा इन्ति त्वया सर्व्वञ्चरापदा ॥

रसेन्द्रसारसंग्रहः ।

2. मध्यामखकचूर्णञ्च सुवर्णञ्चेति तत्रयम् । प्राञ्जारिष्टमृहीतोऽपि मुच्यते प्राचसंज्ञयात् ।
वशाघृतं सुवर्णञ्च मधुना सह संलिङ्घेत् । संवत्सरं प्रयुञ्जानः शुक्तिपारी भवेन्नरः ।

हन्देहमञ्जरी ।

take of leaf-gold one tolá, mercury eight tolás, beat into a mass, then add sulphur sixteen tolás, and rub together till the mass becomes black. Rub this mass repeatedly with the juice of the red cotton flower and of *Aloe Indica*, and dry. Now take a bottle with a flat bottom, wrap it with layers of cloth and clay to strengthen it, and dry. Place the mixture of gold, mercury and sulphur at the bottom of the bottle, insert it in a sand-bath upto its neck and cover the mouth lightly with a piece of chalk. Apply heat gently at first. When the process of sublimation commences the heat should be increased, and the chalk-stopper removed. The sulphur now burns with its characteristic blue flame at the mouth of the bottle and a red sublimate collects below its neck. The narrow neck of the bottle is apt to be closed with sulphureous deposits and when there is this tendency, it should be cleared with an iron rod. The sublimation is over in the course of about nine hours. When done the bottle is broken, and the sublimate extracted from its neck in the shape of shining dark red scales. In this process the sulphur and mercury are sublimed in the form of red sulphide, and the gold remains at the bottom of the bottle. The latter may be used again in the preparation of *Makaradhvaja* or converted into powdered gold. *Makaradhvaja* is administered in doses of one grain daily with honey or other suitable adjuncts in nervous debility, weakness of brain from excessive mental labour, habitual costiveness, general debility, female complaints after delivery, spermatorrhoea etc.

Chandrodaya makaradhvaja.¹ When *Makaradhvaja* is administered as an aphrodisiac, it is usual to mix it with some stimulant

1. चन्द्रोदयमकरध्वजः । पलं मृदुस्वर्णदलं रसेन्द्रात् पलाटकं षोडशं गन्धकस्य । शीतैः सुहापासभवैः प्रसूनैः सर्वे विमद्योय कुमारिकादिः । यत्काचकूपे निहितं प्रगाढं सृत्-
कपटैस्तद्विवसवयश्च । पचेत् कनाषी सिकताख्ययन्त्रे ततो रजः पङ्कवरागरम्यम् । निगृह्य
चैतस्य पलं पलानि चत्वारि कर्पूररजसुधैव । जातीफलं सीषणमिन्द्रपुष्पम् । कसूरिकाया
इह शाक एकः । चन्द्रोदयोऽयं कषितोऽस्य नाषी भुक्तोऽद्विवशीदखमध्यवर्ती । मनोन्मदानां
प्रमदाश्रतानां गर्वादिस्वप्नं श्लथयत्यवश्यम् । घृतं चनीभूतमतीवदुग्धं गुरुचि मांसानि
समस्तकानि । माषाशपिटानि भवन्ति पथ्यान्वानन्ददायीन्वपरादि चान । वलीपलित
नाशनस्तनुवर्ता वदःशम्भनः समस्तमदनाशनः प्रवररोगपञ्चाननः ।

drugs, the resulting preparation being called *Chandrodaya 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 *Aṣṭavaktra rasa*, is sublimed from a mixture of mercury, sulphur, gold, silver, lead, copper, zinc and tin in equal parts. It is used as a nervine 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 *Urddhapātana 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 *Rasasindura*. Properly speaking, therefore, it is but a preparation of mercury, although the gold may possibly exercise some catalytic influence during the process of sublimation. Some physicians use the preparation called *Sadgunabalijarita rasasindura* (see page 36) under the name of *Makaradhvaja*.

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* (*sringi*), 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 *silājatu*), *Jayamangalura* (see gold) etc.

COPPER.

Sans. ताम्र, *Tāmra*. *Vern.* *Támá*.

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. हृद्वातगजादुःशः । सुतामतीकृतावाधि तारतालकगन्धकम् । स्वयं पृष्ठी
बला घान्यं कट्फलखामया विषम् ॥ पथ्या शङ्खी पिप्पली च मरिचं टक्कशमघा । तुल्यं सप्त
दिनं मर्द्यं मुसुडीनिर्गुखीजैर्द्रवैः । निगुर्वा वटिकां स्यादेत् सर्व्ववातप्रशान्तये । साध्यासाध्यं
निहन्त्याय रसो वातगजादुःशः ॥

रसेन्द्रसारसंबद्धः ।

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 vomiting.¹

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 realger, two, one, half and quarter parts, respectively, rub them together into a thin paste with the juice of *Momordica Charantia* (*káravella*). 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 panchánana rasa*, and used in enlarged spleen.

*Spachchhanda 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. चौद्रलीढं ताम्रजीवमनं गरदीषमुत् ॥

चक्रः ।

2. शीतभञ्जीरसः । तालकी दरदीङ्गती पारदी गन्धकः शिला । क्रमाद्भागार्द्धं विहितं कारवेल्या प्रमर्दितम् ॥ अनेनास्य प्रमाणेन ताम्रपत्रं प्रलेपयेत् । अधोमुखे दृढे भाग्ये तान्निष्ठ्याय पूरयेत् ॥ चुल्यां बालुकायन्त्रे चग्निं प्रज्वालयेद्दृढम् । शीतं संचूर्णं मार्णऽस्य नागबन्नीदले स्थितः ॥ भक्षिती मरिचैः सार्धं समस्तान् विषमञ्जरान् । शीतदाहादिकान् हन्ति पथ्यास्यौदनं पयः ॥

रसप्रदीपः ।

3. स्वच्छन्दमैरवरसः । ताम्रमया विषं हेमः शतधा भावितं रसैः । गुञ्जार्धं सन्निपातादिनवञ्जरहरं परम् । आर्द्राम्बुशर्करातिन्मुपुतः स्वच्छन्दमैरवः । चौद्रं द्राक्षासिताद्यादि दधिपथ्यं हवी ददेत् ॥

रसेन्द्रसारसंयुतः ।

*Mahāmritunjaya lauha.*¹ Take of mercury, sulphur, talc, orpiment and realger, each one part, iron two parts, copper four parts, *yavakshāra* and *sarjikāhshāra* (impure carbonates of potash and soda), borax, black salt, burnt couries, and conch-shells, plumbago-root, assafoetida, 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*), *Achyranthes aspera* (*apāmārga*), ashes of the spikes of the palm-tree, turmeric and wood of *Berberis Asiatica* (*dāruharidrā*), 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. महामृत्युञ्जयलोहम् । शुद्धसूतं समं वन्धं जारिताधं समं तथा । गन्धकाङ्गिगुणं लोहं सतताधं चतुर्गुणम् । विचारं टङ्गणविडं वराटीमघ शङ्कनम् । चित्रकं कुण्टी तालं रामठं कटुकीं तथा । रोहितकं त्रिवत् विद्या विद्याला धवमड्टम् । अपामार्गं ताललस-मस्त्रिका च निघायुगम् । कानकं तुल्यकश्चैव यत्कन्धदरसाञ्जनम् । एतानि समभागानि चूर्णयित्वा विभावयेत् । शार्दूलकस्य रसेनैव गुडूचीस्वरसेन च । मधुनः कुडूवैर्भाञ्चं वटिकां माषमाषकम् । भक्षयेत् प्रातश्चत्याय सर्वोदरकुलान्तकृत् । शीतानं त्वरमुग्रश्च कासश्च विषमज्वरम् । कासं श्वासं शिरीरोगं कर्णरोगं सशोषजम् । चिरणं कुलजश्चैव शीपदं हन्ति दाहणम् । रोगानोक्ताविनाशाय धन्वन्तरिकृतं पुरा । मृत्युञ्जयमिदं लोहं सिद्धिदं शुभदं वृषाम् ॥

रसेन्द्रसारसंघः ।

2. केवलं जारितं ताधं यद्भवेत्तस्यैः सह । दातव्यं पर्याखण्डेन सर्वगुण-निवारणम् ॥

रसेन्द्रसारसंघः ।

*Gulma kálinala 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* (*gajapippuli*), 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* (*parparti*), *Heliophytum Indicum* (*hastisundi*), *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, *Suryávarata rasa*, *Hridayárnava rasa* etc.

*Suryávarata 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 *Adiantum Vasica* (*vásaka*).

1. गुल्मकालानलरसः । सूतकं गन्धकं ताम्रं तालकं टङ्गणं समम् । तौलद्वयमितं भागं यवचारुञ्च तत्समम् ॥ मुस्तकं मरिचं शुण्ठी पिप्पली मजपिप्पली । हरीतकी वचाकुष्ठं तौलकं चूर्णयेत् सुधीः ॥ सर्वमेकीकृतं पात्रे भावना क्रियते ततः । पर्पटी वारुण शुण्ठीमपामार्ग पटोलकैः ॥ तत्पुनश्चूर्णयेत् पश्चात् सर्वगुणविनाशनम् । गुञ्जाचतुष्टयं स्वाद्यं हरीतक्यनुपानतः ॥ वातिकं पैत्तिकं गुल्मं श्लैष्मिकं च त्रिदोषजम् । इन्द्रजं च निहन्त्याश्च वातगुल्मं विशेषतः ॥ श्रीमद्गणेशनाथेन निर्मिता विश्वसम्पदे । गुल्मकालानली नाम्ना रसीऽयं भुवि दुर्लभः ॥

रसेन्द्रसारसंग्रहः ।

2. सूर्यावर्तारसः । सूतकं गन्धकञ्चैव यापिकं कन्यकाद्रवेः । इयोस्तुङ्गं तानपत्रं कन्धाकन्धेन लेपयेत् । दिनैकं कुण्डिकायन्त्रे पचेत् शीतं समुद्धरेत् । सूर्यावर्ती रसी नाम त्रिगुणः श्वासकासजित् ।

रसरत्नावली ।

*Hridayárnava 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* (*kákamáchi*). 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 tolás, in all of the drugs and thirty-two tolás of water, which is boiled down to one-eighth, or four tolás. They are said to be useful in heart disease.

*Támresvara.*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. हृदयार्णवरसः । शुद्धसूतं समं गन्धं मृत्तामं तयोः समम् । मर्दयेत् त्रिफला-
काये काकमाचीद्रवैर्दिनम् ॥ चणमावां वटीं खादेद्रसोऽयं हृदयार्णवः । काकमाचीफलं कर्षं
त्रिफलाफलसंयुतम् ॥ द्वात्रिंशत्तोलकं तोयं काथमष्टावशेषिकम् । अनुपानं पिवेशात्
हृद्रोगे हि कफात्मके ॥ रसेन्द्रसारसंघट्टः ।

2. ताम्रेश्वरः । ताम्रं रसं टङ्गणगन्धलौहं भस्मीकृतं नागधिका समेतम् । पञ्चाङ्ग-
निम्बेन फलवयेण विभाषितं राजतरोस्तथैव ॥ नियोजयेद्द्वयुगं प्रमाणं कुट्टेषु सर्वेष्वपि
रोगसंघे ॥ उपाचरेत् कृष्णजुष्टं नान्यथा सिद्धिमिच्छति ॥ रुचा सिग्धा क्रिया कार्या
विपरीता विपर्यये ॥ रसेन्द्रसारसंघट्टः ।

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 *Jvaránkusa* mentioned in *Bhāvaprākāsa*, but arsenic is the active ingredient in these preparations. In quartan fever the following, called *Cháturthakùri*,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.

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

* तुल्यं वितुन्नकश्चापि शिखिणीवं मयूरकम् । तुल्यन्ताम्रीप धातुर्हि किञ्चित्ताम्री च तद्वेत् ॥ किञ्चित्ताम्रगुणन्तस्याद्वल्यमाणगुणञ्च तत् ।

भावप्रकाशः ।

1. चातुर्थकारिरसः । हरितालं शिलातुल्यं शङ्खचूर्णञ्च गन्धकम् । समांशं मर्दयेत् प्राञ्जः कुमारीरसभावितम् । शरावसंपुटे कृत्वा लिप्ता गजपुटे पचेत् । कुमारिकारसेनैव बद्धमात्रा वटी कृता । दत्त्वा शीतज्वरं हन्ति चातुर्थकं विशेषतः । मरिचघृतयोगेन तक्रं पीत्वा चरेद्वटीम् । एतथा वमने जाते ज्वरः सद्यो विनश्यति ॥

भैषज्यतन्त्रः ।

2. यङ्गुलीकपाठः । तुल्यं तालं रसं कान्तं माचिकं टङ्गुणं तथा । सपादनिकं प्रत्येकं पञ्चमिष्कवराटिका । दिनिकं गन्धकं सर्व्वं पिष्ट्वा जम्बीरज्जेर्द्रवैः । अर्द्धभागकरीषेण पुटितं भसा शीभनम् । योजितं यङ्गुलीगुञ्जचयकुष्ठप्रमेहजित् ॥

copper, orpiment, mercury, iron, iron pyrites and borax, each five *māshās*. Prepared couries two and a half *tolás* and sulphur one *tolá*. 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 *Sutikārinoda* 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, *kālājirā*, 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 chancres. 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, *Vanga.* वपुः, *Trapu.* *Vern.* Kāng.

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. गर्भविद्यासरसः । रसं मन्थकतुल्यं च व्रह्मं अम्बीरमर्दितम् । द्विजीरकं त्रिकटुना देयं गुञ्जाचतुष्टयम् । गर्भिण्याः शूलविष्टना ज्वराजीर्णेषु केवलम् ॥ रसेन्द्रसारसंयुक्तः ।
 2. व्रणविशोधने । कुष्ठं त्रिवृत्तिलादन्तीमागध्यः सैन्धवं मधु । रजनी त्रिफला तुल्यं द्रितं व्रणविशोधनम् ॥ चक्रः ।
 3. चक्षुःरोगे । तुल्यकं वारिष्ठा युक्तं शुक्तं इत्यधिपूरणात् ॥ चक्रः ।

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* (*arka*). It is prepared for medicinal use by melting it in an iron cup, adding to it one-fourth part of its weight of *yavakshúra* (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* (*durrá*) and the decoctions of liquorice root, gum of *Bombax Malabaricum* (*Mochu-rasa*), 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 । वङ्गं सूतं गन्धकं भावयित्वा लोहे पात्रे मर्दयेदेकघसम् । दूर्वायष्टी शाल्मलीगोक्षुरैस्तु मुषामध्ये मूषरे पाचयित्वा । तत्तद्रवैर्भावयित्वास्य वङ्गं दद्याच्छीतं पायसं वक्ष्यमाणम् । दूर्वायष्टी शाल्मलीवल्कतुल्यैर्दुग्धैः कुर्यात् पायसं तद्ददौत । प्रातःकाले शीत-पानीयपानात् मूत्रे जाते स्यात् सुखी च क्रमेश्च ॥

रसेन्द्रसारसंग्रहः ।

2. वङ्गेश्वरः । रसभक्षसमायुक्तं वङ्गभक्ष प्रकल्पयेत् । अस्यमाषद्वयं हन्ति प्रमेहान् चौद्रसंयुतम् ॥

रसेन्द्रसारसंग्रहः ।

*Vrihat Vangesvara rasa.*¹ Take of prepared tin, mercury, silver and talc, sulphur and camphor each two tolás, prepared gold and pearls, each half a tolá, mix them together, soak the mixture in the juice of *Eclipta prostrata* (*kesarájá*), 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 juice of the ripe fruit of *Ficus glomerata* (*udumbara*).

*Svarnaranga.*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. बृहदङ्गेश्वरः । बहुभन्ना रसं गन्धं रौप्यं कर्पूरममकम् । कर्षं कर्षं मानमेवां
सूताङ्गि, ईम मीक्षितम् । केशराजरसैर्मान्यं दिगुञ्जाफलमानतः । बृहदङ्गेश्वरी नाम सीनरोगं
निहन्त्यलम् । बहुमूत्रं बहुविधं स्त्रीषु सम्यक् तृपायते । बलवर्णहरं रुच्यं शुक्रसञ्जनकं
परम् । ज्ञातं वा यदि वा गन्धं पयो वा दधिनिर्मितम् । अनुपानं प्रयोक्तव्यं बुध्वा दीपमतिं
भिषक् । दद्यात् काले च प्रौढेषु सेवयेत्तु रसायनम् ॥

भेषज्यरत्नावली ।

2. स्वर्णवङ्गः । सूतेन मर्दितं बद्धी गन्धकेन सुकञ्जली । नरसारेण तत् पयात्
सर्वतुल्येन खल्लयेत् । रथात् तं बालुकायन्त्रे काचकृष्णां मिषापयेत् । पाकं कुर्याद्विषक्
प्राप्तं स्वर्णवर्णं यदा भवेत् । तदा सिद्धं विजानीयात् सर्वमेहेषु योजयेत् । वातिकं
पैत्तिकं चैव शैथिलिकं सात्रिपातिकम् । सर्वव्याधिविनाशाय महादेवेन तिग्मितः ॥

भेषज्यरत्नावली ।

ZINC.

Sans. यज्ञद, *Yasada.* *Vern.* Dastá.

Zinc is not mentioned by the older writers, such as Susruta, nor does it enter into the composition of many prescriptions. The Bhávaprakása 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 málati 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. स्वर्णमुक्तादरदमरिचं भागवद्भा प्रदिष्टं खर्पराष्टौ प्रथममखिलं मर्दयेत् सृचयेत् ।
यावत् स ही व्रजति विलयं निम्बुनीरेण तावत् गुञ्जादन्तं मधु चपलया माखतीप्राग् वसना ॥
मेवितेयं हरेत्तूर्णं जीर्णञ्च विषमञ्चरम् । व्याधीनन्यांश्च कामादीन् प्रदीप्तं कुरुतेऽनलम् ।

वैद्यविनीदः ।

2. खर्परवर्तिः । शिलायां रसकं पिष्ट्वा सम्यगाप्लाव्य कारिणा, गृह्णीयात् तज्जलं
सर्वं त्यजेत्तूर्णं ऋघोमतम् । पुष्कञ्च तज्जलं सर्वं पर्यटीसन्निभं भवेत् । विचूर्ण्य भावयेत्
सम्यक् विवेकं त्रिफलारसैः । कर्पूरस्य रजसुव दशभागैश्च निक्षिपेत् । चञ्चयेत् नद्यने तेन
सर्वदोषहरं हि तत् । सर्वरोगहरं चूर्णं चतुषः सुखकारि च ॥

शाङ्गपरः ।

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 *saffedá*, now common in the bazars and extensively used as a paint, is not mentioned by the ancient writers. The name *saffedá* 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 *Sindurádya 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*. सौवीराञ्जन, *Sauviránjana*.

Galena or sulphide of lead is called *anjana* or *sauviránjana* in Sanskrit, and *krishna surmá* 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 *srotanjana*, *pushpánjana* and *rasánjana*.

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

1. सिन्दूराद्यं तैलम् । सिन्दूरार्द्धफलं पिष्ट्वा कौरकस्य फलं तथा । कटुतेजात् पचेन्मानो सद्यः पानाहरं परम् ॥

name. The article supplied under its vernacular name *surma* is the sulphide of lead ore. *Surma* 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.

स्रोतोऽञ्जन *Srotonjana* is described as of white colour, and is said to be produced in the bed of the Jamuna and other rivers. It is called *saffed surma* 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 *surma* or galena.

पुष्पाञ्जन *Pushpanjana* 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 *Rasanjana* 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.

Sauviranjana 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

1. सौवीरमञ्जनं कृष्णं कालनीलं सुवीरजम् । स्रोतोऽञ्जनं तु स्रोतोऽञ्जनं नदीनां यामुनं वरम् । सौवीरं यादृ मधुरं चक्षुष्यं कफवातजित् ॥ सिध्दय्यासनुष्ठीतं स्रोतोऽञ्जनमपी-
ह्यम् ॥ पुष्पाञ्जनं पुष्पकेतु रोतिजं कुसुमाञ्जनम् । पुष्पाञ्जनं चाग्मुष्णं काचार्मपटलापहम् ॥

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, *Kánsya*), 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.

*Nityánanda rasa.*³ Take of mercury, prepared copper, iron, bell-metal and tin, purified orpiment, sulphate of copper and

1. अग्निप्रसक्तं सोवीरं निषिञ्चेत् त्रिफलारसैः । सप्तवेदन्यथास्तन्यैः स्त्रीणां सिक्तं
विचूर्णितम् । अत्रयेन्नयने तेन प्रत्यङ्गुष्णोर्हितम् । सर्वानन्निविकारांस्तु हन्यादतत्र
संशयः ॥

शार्ङ्गधरः ।

2. शुद्धे नागे द्रुते तुल्यं शुद्धं सूतं विनिक्षिपेत् । कृष्णाञ्जनं तथीस्तुल्यं सर्वमेकत्र
चूर्णयेत् । दशमांशित कर्पूरं तस्मिन् चूर्णे प्रदापयेत् । एतत् प्रत्यञ्जनं नेत्रगदजिन्नवना-
मृतम् ॥

शार्ङ्गधरः ।

3. नित्यानन्दरसः । हिङ्गुलात् सम्भवं सूतं गन्धकं मृतताम्रकम् । कांश्यं वङ्गं
हरितालं तुल्यं शुद्धं वराटकम् । चिकटु त्रिफलालीहं विडङ्गं पटुपञ्चकम् । चविकापिप्पली-
मूलं इवुषा च वषा तथा । शटीषाठादेवदारु एलाच उद्ददारकम् । एतामि समभागानि
संचूर्ण्य वटिकां कुरु । हरीतकीरसं दत्त्वा पञ्चगुञ्जामितां शुभाम् । एकैकां खादयेन्नित्यं
शीतलञ्च जलं पिबेत् । त्रीपदं कफघातोत्थं रक्तमांसाशितञ्च यत् । मैदीगतं चातुमत्तं

calcined conch-shell and couries, sulphur, ginger, long pepper and black pepper, the three myrobalans, *baberung* seeds, the five salts, namely, rock, sun-dried sea, black, *sonchál* and Sambar Lake salts, *Chavica officinarum* (*chavika*), long pepper root, *havusa* (an aromatic substance), *Acorus Calamus* (*vacha*), *Curcuma zedouria* (*sati*), *Stephania hernandifolia* (*póthá*), *Pinus deodara*, cardamoms, seeds of *Argyrea speciosa* (*vridhya daruka*) each two tolás, 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. अभ्र, *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 *sheúbhra*.

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* (*tandulia*) 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

इन्धवश्च न संशयः । अर्जुदं गण्डमालाच्च चन्द्रहृदि विरस्तमीम् । वातहृदि पित्तहृदि
श्लेष्महृदि निहन्ति च । अपिहृदि कगीत्येवमलवशंकरः परः । श्रीमद्भद्रनाथेन निर्मितो-
विश्वसम्पदे । नित्यानन्द रसो नाम यथोक्तः श्रीपदे गदे ॥

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 anæmia, 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.

*Agnikumara 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 सैन्धवञ्च विषं ताम्रं समं समम् । सर्वं चूर्णसमं लौहं तन्ममं गडममकम् । लौहे च लौहदण्डेन निगुण्डीस्वरसेन च । मर्दयेद् यवतः पश्चात् मरिचं सूततुल्यकम् । नामवज्रादलेनैव दातव्यं रक्तिसन्धितम् । सर्वज्वरहरः श्रेष्ठः ज्वरान् हन्ति सुदारुणान् । कासं श्वासं महाश्वीरं विषमाख्यं ज्वरं वमिम् । धातुस्थं प्रवलं दाहं ज्वर दीपं चिरोद्भवम् । यक्रदग्बोदरं प्रीहं श्वयथुञ्च विनाशयेत् ॥

भैषज्यरत्नावली ।

2. अग्निकुमार रसः । रसं गन्धं विषं व्योषं टड्गणं लौहममकम् । अजमोदाऽहिफेषञ्च सर्वतुल्यं मृतामकम् । चित्रकत्वक्कषायेण मर्दयेद्याममावकम् । मरिचामां वटीं स्वादिदजीर्णं ग्रहणीं तथा । नाशयेन्नात्र सन्देही गुह्यमेतच्चिकित्सितम् ॥

भैषज्यरत्नावली ।

Suluchanāmritābhra.¹ Take of prepared talc eight tolás, rub it with eight tolás each of the fresh juice or decoction of the following drugs, namely, pulp of *Ziziphus Jujuba* (*kola*), *Chavica officinarum* (*chaviká*), root of *Andropogon muricatus* (*usira*), pomegranate fruit, lemon juice, emblic myrobalan and *Oxalis corniculata* (*amlaloniká*), and make into pills about six grains each. This medicine is used in loss of appetite, disinclination for food, dyspepsia, vomiting, urinary diseases, anasarca and debility. It is tonic, alterative and aphrodisiac. The preparation called *Kandarpa kumárābhra* is very similar to the above in composition. In disorders of the urine the following called *Harisankara rasa*² is used. Soak some prepared talc 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 talc 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 talc in the juice of the bark of *Terminalia Arjuna*, seven times,

1. मुलीचनामृताभम् । पलं सुजीर्णं गगणन्तु वज्रकं तेजीवती कोल मुशीरदाडिमम् ।
धात्यम्लोनीरुवकं प्रथक् रसैः पलोन्मितैर्मर्दितमेव सेवितम् । अरीचकं वातकफत्रिदोषजं
पित्तोद्भवं गन्धसमुद्भवं नृणाम् । कामं स्वराघातसुरीयहं रुजं श्यामं बलामं यकृतं भगन्दरम् ।
श्रीहासिमान्द्यं श्वयथं समीरणं मेहं भृशं कुष्ठममृदरकमीन् । गुलाम्नापितं जयरीगमुद्भवं
स रक्तपित्तं वमिदाहमशरीम् । निहन्ति चार्शासि मुलीचनामृतं बलप्रदं हृष्यमिदं
रसायनम् ॥

रसेन्द्रसारसंग्रहः ।

2. हरिशङ्कर रसः । मृताभमामलकजैः सप्ताहं भावयेत् रजः । हरिशङ्करसङ्गः
स्यद् भुक्तः सर्वप्रमेहजित् ॥

रसेन्द्रसारसंग्रहः ।

3. अर्जुनाभम् । सहस्रपुटितैः सिद्धं वज्राभमर्जुनत्वचः । सत्त्वैर्विमर्दितं सप्तदिनं
खले विशीपितम् । च्छायाशुष्का वटी कार्या नाम्नेदमर्जुनाभम् । हृद्रोगं सर्वशूलार्शो-
हृत्तासच्छरीरचकान् । अतिसारं मन्दमद्यं रक्तपित्तं चतत्रयम् । शीथोदरः कृमिपित्तं
विषमज्वरमेव च । हृत्त्यन्यापि रोगांश्च बल्यं हृष्यं रसायनम् । अनुपानं पिवेद्वात हृद्रोगी
च कफाशकं ॥

रसेन्द्रसारसंग्रहः ।

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 tolás, camphor, cardamoms, nutmegs, mace, cloves, root of *Paronia odorata* (*bàlá*), *Pothos officinalis* (*gajapippuli*), leaves called *tejpatra*, *jatamansi* root, leaves of *Pinus Webbiana* (*tálisapatra*), cinnamon, flowers of *Mesua jarrea* (*nágakesara*), root of *Aplotaxis auriculata* (*kushtha*), flowers of *Woodfordia Floribunda* (*dhátaki*) and purified sulphur, each one tolá, mercury half a tolá. 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.

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

1. शङ्कराभम् । शुद्धं कृष्णाभचूर्णं द्विपलपरिमितं शाश्वमानं यदन्यत् । कर्पूरं जातीकीषं सजलमिभकनातेजपत्रं लवङ्गम् । सांसीतालौशचीचेगजकुसुममदं धातकीचित्ति तुल्यम् । एलाजातीफलाख्यं चित्तिस्त्रविधिना शुद्धगन्धार्णवकीलम् कीलाईं पारदस्य प्रतिपदविहितं पिष्टमैकत्र मिश्रम् । पानीयेनैव कार्याः परिणतचणकस्त्रितुल्याश्च बद्ध्यः । प्रातः खाद्याश्रयतस्तद्दनुखलु कियत् शङ्करं सपर्यम् । पानीयं पीतमन्तेध्रुवमपहरति चिप्रमेतान् विकारान् । कीष्टेदुष्टाग्निजातान् ज्वरमुदररुजां राजयत्न चयच्च । कासं श्वासं सशीघ्रं नयनपरिभवं मेहमेदीविकारान् ।

सारकीमुदी ।

2. महालक्ष्मीविलासः । पलं कृष्णाभचूर्णस्य तदर्द्धं गन्धपारदम् । वङ्गभस्म तदर्द्धं च तदर्द्धं तारकस्य च । तत् समं हरितालञ्च तदर्द्धं ताम्रभस्मकम् । रसतुल्यं कर्पूरञ्च जातीकीषफलं तथा । वृद्धदारकबीजञ्च बीजं स्वर्णफलस्य च । प्रलोकान् कार्ष्णिकान् भागान् मृतस्वर्णञ्च शाणकम् । नागवल्लोरसैः पिष्टा त्रिगुञ्जाफलमानतः । वटीकार्यानुपानञ्च व्याधिं वीक्ष्य प्रयोजयेत् । निहन्ति सन्निपातीत्यान् गदान् घोरान् सुदारुणान् । प्रीतः प्रयोगराजोऽयं अगस्त्येन महात्मना । महालक्ष्मीविलासीऽयं वामुदेवी जगद्गुरुः । अस्य प्रसादाद् भगवान् लक्ष्मणरीषु वल्लभः ॥

रसेन्द्रसारसंग्रहः ।

half a tolá, gold half a tolá, camphor, nutmegs and mace, each four tolás, seeds of *Argyreia speciosa* (*brídhadáraka*) and of *datura*, two tolás each. Mix together, rub with the juice of betle leaves and make into pills of about six grains each. Another preparation of composition similar to the above is called *Manmathábhra rasa*. It is, as its name implies, intended for the votaries of Cupid.

Galitakushthóri rasa.¹ Take of mercury, sulphur, prepared copper and iron, bdellium, plumbago root, *silájatu*, nux vomica, and the three myrobalans, each one part, prepared talc and the seeds of *Pongamia glabra* (*karanja*), four parts each, rub together with honey and *ghee*, and preserve in an earthen pot smeared with *ghee*. Dose about a drachm. It is given in leprosy with ulceration of the toes and fingers. The diet should consist of fine rice, milk, sugar and honey. The patient must live apart from his wife.

ALUM.

Sans. सफटिकारि *Sphatikári*.

ALUM is prepared from alum shale in the Punjab and Behar. It is not mentioned by Susruta, in his list of metallics, but later writers give its synonyms and uses. It is described as an astringent, and as useful in leucorrhœa, strangury, vomiting, ulcers, white leprosy, eye diseases etc. It enters into the composition of several applications to the eye in combination with *rusot*, opium etc., for which see *Berberis Asiatica*. It is seldom used internally.

1. मल्लिककुष्ठारि रसः । रसीवलिस्त्रामभ्यः पुरीऽग्रिशिलाकृत स्याद्विषतिन्दुकथ ।
वराच तुल्यं गगणं करञ्जबीजं पृथक् भागचतुष्टयञ्च । संमर्द्य सर्वं मधुना घृतेन घृतस्य पात्रे
निहितं प्रयत्नात् । कर्षं भजेत् प्रत्यहमग्नौ पथं शाल्यीदनं दुग्धं मधुवयञ्च । विशीर्ण-
कर्षाङ्गुलिनासिद्धीऽपि भवेदनेन स्वरतुल्यमूर्तिः । दारा परित्याग इह प्रदिष्टी जलोदनं
तत्र निवृत्तमूले ॥

BORAX.

Sans. टङ्कन, *Tankana.* *Vern.* Sohúgá.

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 *kánjika*, 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 formulæ for dyspepsia, such as the *Amritakalpa rasa*, *Tankanádi vati* 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 *Wedelia calendulacea* (*bhringarája*) and make into two-grain pills. This medicine is said to be useful in loss of appetite, indigestion and dyspepsia. *Tankanádi vati* contains the above ingredients with the addition of ginger and black pepper, all in equal parts.

*Chandrámrta rasa.*² Take of the three myrobalans, ginger, long pepper and black pepper, *Charica officinarum* (*chaviká*),

1. अमृतकल्परसः । पारदं गन्धकञ्चैव समानी कञ्जलीकृती । तयोर्दं विषं शुद्धं तत् समं टङ्कणं भवेत् । भृङ्गराजं द्रवैर्भाष्यं विदिनं यवतः पुनः । मुद्गप्रमाणा वटिका कर्तव्याभिषजां वरेः । वटीद्वयं हरिश्चूलं अग्निमान्द्यं सुनिश्चितम् । अर्जीणि जरयत्याग धातुपुष्टिं करोति च । नानाव्याधिहरा चैयं वटी गुरुवशी यथा । अनुपानविशेषेण सम्यग् गुणकारी भवेत् ॥ रसेन्द्रसारसंग्रहः ।

2. चन्द्रामृतरसः । त्रिफला त्रिकटु चथं दान्यं जीरकं सैन्धवम् । प्रत्येकं तीक्ष्णं यास्यं चाग्नीदुग्धेन पेषयेत् । रसगन्धकलौहानि प्रत्येकं कार्ष्णिजाणि च । टङ्कणस्य पलं दत्त्वा मरिचस्य पलायकम् । नवगुञ्जाप्रमासेन वटिकां कारयेद् भिषक् । एकैका वटिका खादेत् रक्तोत्पलजलप्लुताम् । मौलीत्यल रसेर्वापि कुलत्यस्य रसेन वा । हागीचीरेच मखेन कैशराजरसेन वा । निहन्ति विविधं कासं यत्प्राणनपि शक्यम् । वासा गङ्गुचिका भार्गी मुक्तकं कण्टकारिका । समभागं कृतं काथं प्रत्यहं भक्षयेद् ॥ रसेन्द्रसारसंग्रहः ।

coriander, cumin seeds and rock salt, each one tolá, and rub them together with goat's milk. Then add mercury, sulphur and iron, each two tolás, borax eight tolás and black pepper four tolás, 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 *gulanha*, *Adhatoda vasica* (*rásaka*), *Clerodendron Siphonanthus* (*brahmayashti*), *Cyperus rotundus* (*mustaka*), and *Solanum Jacquini* (*kantakári*) should be administered.

Borax enters into the composition of several prescriptions for diarrhœa, along with opium, such as the *Grahanikapáta 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 *Vallisneria spiralis* (*bhadrauralli*) is applied to diseased nails.

LIME.

Sans. शङ्खभस्म *Sankha 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 टङ्गणं समचूर्णं या पिवेत् पटमा । अतिसमये नहि तस्य र्भः
सञ्जायते कापि ॥

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 gulika.*² Burnt conch-shell 1 toláh, ginger officinale (sunthi) long pepper and black pepper each one-third toláh, five salts one toláh in equal parts and rub these with the juice of Iponoca 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.

*Agnikumára rasa.*⁴ Take of borax, mercury and sulphur, each one tolá, aconite, calcined cowries and conch-shells, each three tolás, black pepper eight tolás, 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. शम्बुकजं भस्मपीतं जलेनोष्णेन तत्क्षणात् । पक्तिजं विनिहन्त्येतत् शूलं विष्णु-
रिवासुरान् । निर्मांसीकृतशम्बुकभस्ममाषमेकं द्वयं वा । घृताक्तमुखकुहरेण उष्णाम्बुना
गोलयित्वा पेयम् । भेषज्यरत्नावली ।
2. शम्बुकादिगुड़िका । शम्बुकं चूषणञ्चैव तथैव लवणानि च । समाशा गुड़िका कार्या
कलम्बकरसेन च । प्रातर्भोजनकाले वा भक्षयेत्तद् यथावलम् । शूलात् विमुच्यते जन्तुः
सहका परिणामजाम् । भेषज्यरत्नावली ।
3. अमृतवटी । अमृतवराटक मरिचैर्द्वि पञ्चनवभागिकैः क्रमशः । वटिकासमुद्र-
माना कफपित्ताग्निमान्द्यहारिणी । भेषज्यरत्नावली ।
4. अग्निकुमारोरमः । रसेन्द्रगन्धौ सह टण्डलेन समं विषं योज्यमिह विभागम् । कपर्द-
शुद्धाग्निहनेवभागी मरिचमात्राष्टगुणं प्रदेयम् । सुपक्वजम्बीररसेन घृतः सिद्धी भवेदग्निकुमार-
रमः । विमूचिहाजीर्णं समीरणार्त्तं दद्यात् द्विवह्नं यद्वशीमर्दं च ।
भेषज्यरत्नावली ।
5. रसेन जम्बीरफलस्य गृह्णनाभिरजः पीतमवश्यमेव । शालग्रामाणं शस्येदर्शयं
जीहसां कुम्भसमानमायु । भावप्रकाशः ।

Lime is used in various combinations as a caustic for different diseases. Thus a mixture of conch-shell lime, impure carbonate of soda (*sarjiká*) 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 tolás, orpiment and the ashes of *Butea frondosa* (*palása*), one tolá each, and rub them together with the juice of plantain stalks or of *Calotropis gigantea* (*arka*). 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 *Sáindhava*, 2 *Sámudra*, 3 *Vit* or *Vid*, 4 *Sauvarchala*, 5 *Romaka*, 6 *Audbhida*, 7 *Gutiká*, 8 *Pánsuja*, also called *Ushasuta*. 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 *Sámudra* literally means produced from the sea. The term is applied to sun-dried sea-salt, manufactured in the Madras

1. सर्जिकामूलकचक्रः शङ्खचूर्णसमन्वितः । प्रलीपी विहितस्त्रीणी हन्ति दृश्यार्द्धादिकान् ।
चक्रदत्तः ।

2. तालकं शाक्युषं सान् षट्श्राणं शङ्खचूर्णकम् । दिशाणिकं पलाशस्य चारं दत्त्वा
वमयेत् । कदलीदालीचीन रविपत्रमेव वा । अस्मापि सप्तभिर्जेपीर्षोन्वांशानाममुत्तमम् ।
शाक्युषः ।

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.

बिट्त्वण *Vit lavana* 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 *aonlās* (*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 *calanemuc* 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.

सौवर्चल *Sauvarchala* called *sonchal* or *kálanímak* in Hindustani is said to be aromatic, agreeable and digestive, and useful in the same sort of cases as *vitlavana*. 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 "*sajimati*" (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. II, Page 192.

crystalline form of rock salt, but up-country physicians always translate *sauvarchala* as *sonchal* or *kálánimak*. 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 *kálánimak*."

रोमक *Romaka*, also called शकम्बरी *Sákambari*, 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.

शौद्धि *Audbhid*, 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 *Gutiká*. This salt, mentioned by Susruta 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 *gutiká* 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.

पौषज *Pánsuja* or *Ushasuta* literally means, salt manufactured from saline earth. *Pángá* 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. वसत त्वलस पूने लवणेनापकारिणा ।

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

*Nárikelakshára.*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 tolá.

*Bháskara larana.*² Take of *karkach* salt sixteen tolás, *sonchal* salt ten tolás, black salt, rock salt, coriander, long pepper, long pepper root, leaves called *tejpatra*, seeds of *Nigella sativa* (*krishnajiraka*), leaves of *Pinus Webbiana* (*talisa patra*), flowers of *Mesua ferrea* (*nágakesara*), fruits of *Calamus fasciculatus* (*amlaveasa*), four tolás each, black pepper, cumin seeds and ginger, two tolás each, pomegranate seeds eight tolás, cinnamon and cardamoms one tolá 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 *Acaria 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.

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1. नारिकेलवारः। नारिकेलं सतीवच्च लवणेन प्रपूरितम्। विपक्रमग्निना सम्यक् परिणामजशूलनुते वातिकं पैत्तिकश्चैव श्रेणिकं नात्रिपातिकम्। चक्रदत्तः।
2. भास्करलवणचूर्णम्। सामुद्रलवणं कार्यमष्टकर्षमितं बुधैः। पञ्चसौवर्चलं याज्ञं विड्मैश्वधान्यकम्। पिप्पलीपिप्पलीमूलं कृष्णजीरकपत्रकम्। नागकीशर तालीशमस्र-
 वेतककं तथा द्विकपेदावाग्येतानि प्रत्येकं कारयेद्बुधः। मरिचं जीरकं विड्मैकैकं
 कर्षमात्रकम्। दाडिमं स्याच्चतुष्कषं त्वगेलिचाईकार्षिकं। बीजपूररसेनैव भाषितं
 समवारकम्। एतच्चर्णीकृतं सर्वं लवणभास्कराभिधम्। शाण्डप्रमाणं देयन्तु मस्तुतक-
 सुरामवैः। वातश्लेष्मभवं गन्धं प्रीङ्गानमुद्गरचयम्। मन्दाग्निं भास्करेदितहीपनं पाचनं परम्।
 मर्त्यलोकहितार्थाय भास्करेणीदितं पुरा। शाङ्गधरः।

CARBONATE OF POTASH.

Sans. यवचार, *Yavakshára.*

THIS article, as well as the next one called *sarjikákshára*, is mentioned by Susruta, and has been used in medicine from a very remote period. *Yavakshára* is prepared by reducing to ashes the green spikes of the barley (*Hordeum herastichum*), 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. *Yavakshára* is described as stómachic, 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 *rohítaka* 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 *gulma*.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. सजिकाचार *Sarjikákshára.* *Vern.* Sájji.

Sájji or barilla is produced from several species of salt-worts growing in brackish soil in the Punjab and North-West Provinces. The process of manufacturing *sájji* 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 *gharús* or earthen vessels having small holes pierced in their upper portion

1. पञ्चारीहितकं काथं यवचारकषायुतम् । पिबेत् प्रातर्धक्तुष्ठीहृगुन्कोदरनिहतये ।

शाङ्खरः ।

2. यवचारस्य चूर्णं संयोज्य सितया सह । भक्षयेन्नियतं तस्य प्रशमेन्मूत्रनियहः ।

भाबप्रकाशः ।

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 *sájji* of the first quality, called *sájji lotá* because it is found in the *lotá* or pot. The residuary mass in the pit is crude dirty potash.

Sarjikákshára or *sájji*, 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.

Sájji, or barilla, should not be confounded with *sájimáti* or fuller's earth. The latter is earth impregnated with soda and not a barilla. *Sájimáti* 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*.

Sarjikálya churna.¹ Take of *sarjikákshára* and *yarakshára*, rock, *sonchal*, *rit*, *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. स्वर्जिकाद्यचूर्णम् । स्वर्जिका च यवचारः सिन्धुसौरचलं विडम् । सामुद्रिकं रोमकञ्च कोलमावाणि कारयेत् । एकीकृत्याखिलं चूर्णं भावयेन्मातुलुङ्गजैः । रसेर्वा दाडिमैर्वापि शोषयेदातपेन वा । तच्चूर्णं नाशयेद्गुल्मं यद्दृशोमामजां रुचम् । अग्निञ्च कुरुते दीप्तं हविर्कृतं कफनाशनम् ।

शाङ्ग धरः ।

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 *yavakshára* and *sarjikáshára* 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 *Bhávaprakása* mentions *Suvarchiká* as a variety of *sarjiká* or barilla, and gives *sorá* as its vernacular equivalent. But *suvarchiká*, according to standard lexicons, is a synonym of *sarjiká* and not a separate article. Some recent Sanskrit formulæ 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 *sorá*, 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 *yavakshára*. 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 *narasára*, a term apparently derived from the vernacular *nansadar* of Persian origin. Another salt mentioned in recent Sanskrit compilations is the impure sulphate of soda called *Khárinoon* in the vernacular. It is called *Kshári lavana* in Sanskrit, and is used in combination with other saline medicines.

ALKALINE ASHES.

Sans. क्षार, *Kshára*.

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.

Váisvánarakshára.¹ Take of the mixed ashes of *Euphorbia neriifolia* (*snuhi*), *Calotropis gigantea* (*arka*), *Plumbago Zeylanica* (*chitraka*), *Ricinus communis* (*eranda*), *Cratœva Roxburghii* (*varuna*), *Boerhaavia diffusa* (*punarnarâ*), *Sesamum Indicum* (*tila*), *Achyranthes aspera* (*apámârga*), *Musa sapientum* (*kádali*), *Butea frondosa* (*palâsa*), 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, *ajowan*, cumin seeds, *kálújirú*, ginger, long pepper, black pepper and assafœtida, each four tolâs, and mix. This combination is given in doses of one to two scruples, with cold water in dyspepsia, anasarca etc.

1. वैश्वानरक्षारः । सुहृकचित्रकैरण्डवरुणं सपुनर्नवम् । तिलापामार्गकदली पलाशं तिलिङ्गीं तथा । गृहीत्वा ज्वालयेदितत् प्रस्थं भस्माखिलं यथा । जलाठके विपक्षव्यं यावत् पादावशेषितम् । सुप्रसन्नं विनिस्त्राव्य लवणं प्रस्थसंयुतम् । पक्वं निर्धूमकठिनं सूक्ष्मचूर्णीकृतं पुनः । यवानो जीरकव्योषस्थूलजीरकहिङ्गुभिः । शीतोदकेन तच्चूर्णं पिबेत् प्रातर्हि मात्रया । तस्मिन् जीर्णोद्गमश्रीयाद् यूषैर्जाडसजै रसैः । ईषदसैः स लवणैः सुखीणैर्वद्भिदीपनैः । एतेनाग्निविवर्द्धेत बलमारोग्यमेव च । तत्रानुपानं शस्तं हि तक्रं वा भोजने हितम् । मन्दाम्न्यशौं विकारेषु वातश्लेष्मामयेषु च । सर्वाङ्गशोष- रोगेषु शूलगुल्मीदरेषु च । अशम्यक्षां शर्करायाञ्च विष्णुत्रानिलरोगिषु ।

Abhayā-lavana.¹ This is a preparation similar to *Vaisvānara-kshīra* 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, assafoetida, *ajowan*, root of *Aplotaxis auriculata*, (*kushtha*), and *Curcuma Zedoaria (sati)*, each four tolās, and the whole intimately mixed. This medicine is given in doses of half to one tola 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, Hiraka.

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 । पारिभद्रपलाशार्कसुञ्जपामार्गचिवकम् । कषायिमन्यदसुकं
शदंश्रावहतीवयम् । पूतिष्कास्कोतकुटजकोषातक्यः पुनर्नवा । समूलपत्रशाखाय चोदयित्वा
उदूखले । तिलनालेन दीप्ताग्नि सुदग्धं भक्षणीतलम् । चारं प्रस्थं गृहीत्वा च न्यसेत्
पात्रे नवे दृढे । जलद्रीणे विपक्षव्यं यावत् पाटावशेषिम् । पूर्ववत् चारकत्केन साधयेत्
विचक्षणः । प्रस्थमेकञ्च लवणं तदर्द्धाञ्च हरीतकीम् । गोमूत्रस्यादकं दत्त्वा चारवत् साधयेत्
शनेः । किञ्चिद्धारिणि सान्ध्रे च सम्यक् सिद्धेऽवतारिते । अजाजीवृषणं विद्ध्यमानौ
पुष्करं शटी । एतैरर्द्धपलैर्भागैश्चूर्णीकृत्य प्रदापयेत् । लवणञ्चाभयानाम भक्षयेत् यथावलम् ।
न्याधीन् वेद्य मतिमाननुपानं यथावलम् । यत्कृत्स्नीहोदरानाह गुल्माष्ठीलाग्निमान्यजित् ।
यावत् क्षीणगतान् रोगान् निहन्त्याय नसंशयः । प्रतितुन्वन्निहृद्रीमशर्कराग्मरिनाशनम् ॥

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 *Trailokya 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 *Muktá*, Pearls. प्रवाल *Pravála*, 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. त्रैलोक्यचिन्तामणिरसः । हीरं सुवर्णं सुकृतञ्च तारं एषां समं तीक्ष्णरजश्चतुर्णाम् ।
समं मृताभं रससिन्दूरञ्च निषेध्य तीक्ष्णञ्च तथा श्रमवारा । खले द्रवेषुैव कुमारिकाया
गुञ्जाप्रमाणाद्य वटी प्रकाश्या । अद्यादिमं योमश्तैरवाय्यामयप्रणाशाय मुनिप्रणीतम् ।

रसेन्द्रसारसंग्रहः ।

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.

*Pillántaka rasa.*¹ Take of nutmegs, mace, *jatámánsi* root, root of *Aplotaxis auriculata* (*kushtha*), leaves of *Pinus Webbiana* (*tálisha 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 Kusumákara 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 Vasica* (*vásaka*), decoction of lac and of *Paronia odorata* (*bálá*), juice of the flowers and root-stock of the plantain tree, of the root-stock of *Nelumbium*

1. पित्तान्तकरसः । जातोकीषफलं मांसी कुष्ठं तालीशपत्रकम् । मालिकामृत लोहञ्च
चन्द्रं दिव्यं समांशकम् । सर्वतुल्यं मृतं तारं सम्यक्निषेधे वारिणा । द्विगुञ्जाभा वटी
कार्या पित्तरीगविनाशिनी । कीष्ठाश्रितञ्च यत्पित्तं शाखाश्रितमथापि वा । शूलचैवान्न-
पित्तञ्च पाण्डुरोगं हलीमकम् । दुर्नामभान्तिं वान्तिञ्च क्षिप्रमेव विनाशयेत् । रसः
पित्तान्तकी क्षेप काशीराजेन भाषितः । तारशब्देनात्र शुद्धभौतिकं गृह्यते वृधैः ।

रसेन्द्रसारसंग्रहः ।

2. वसन्तकुसुमाकरः । पृथग् द्वौ हाटकं चन्द्रं तयो वङ्गाहिकान्तकम् । चत्वारि-
शुद्धमञ्च प्रवालं भौतिकं तथा । भावना गन्धदुग्धेन भावनेक्षुरसेन च । वासा लाक्षा-
रसोदीचरश्चाकन्दप्रसूनकैः । शतपत्रसेनैव मालत्याः कुसुमीदकैः । पशान्मृगमदैर्भाव्यं
सुगन्धिरससम्भवे । गुञ्जाहयनिदं सेञ्चं सितामध्वाज्यसंयुतम् । मेहघ्नं कान्तिदञ्चैव कामदं
पुष्टिदं तथा । वलीपलितहृत्तैव स्मृतिभ्रंशविनाशनम् । तुष्टिदं बल्यमायुष्यं पुत्रप्रसव-
कारकम् । प्रमेहान् विंशतिञ्चैव त्रयमेकादशं तथा । तथा सीमकजं हन्यात् साध्यासाध-
मथापि च । कुसुमाकरनामायं वसन्तपदपूर्वकः ।

भैषज्यरत्नावली ।

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 *Kusávalehá* (see Sugar cane).

SILAJATU.

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 Hindu Medicine.

minalia tomentosa (*asana*) and *Acacia catechu* (*khadira*). *Silájatu* 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 *silájatu* is given in doses of six to twelve grains. In strangury 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 *silájatu*, prepared iron, iron pyrites and silver, each five parts, of the three myrobalans, ginger, black pepper and long pepper, plumbago root and *háberung* seeds, each one part, sugar eight parts. Powder, mix and make into a confection with honey. Dose about half a *tolá*. 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. गैरिक *Gairika*. Vern. *Gerumúti*.

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

1. लेह्यं शुक्रविवन्धीत्ये शिलाजतु समाचिकम् । चक्रदत्तः ।
2. योगराजः । विफलायास्त्रयोभागास्त्रयस्त्रिकटुकस्य च । भागश्चित्तकमूलस्य विडङ्गानां तथैव च । पञ्चाशजतुनी भागास्तथारूप्यमलस्य च । माचिकस्य विष्टुडस्य लौहस्य रजसस्तथा । षष्ठी भागाः सितायाश्च तत्रैवै शक्ताचूर्णितम् । माचिकेण पुतं स्थाप्यमायसे भाजने शुभे । उडुम्बरसर्मा भार्वा ततः खादित् यथाग्निना । दिने दिने प्रयोगेन जीर्णे भौष्यं यथैमितम् । वर्जयित्वा कुलत्याश्च काकमाचीं कपीतकाम् । योगराज इति ख्याती योषोऽयममृतीपमः । रसायनमिदं श्रेष्ठं सर्वरोगहरं परम् । पाण्डुरोगं विषं कासं यक्ष्मां विषमज्वरम् । कृष्णान्जकं मेहं श्वासं हिकामरीचकम् । विजिघातुन्त्यपस्मारं कानलां गदज्ञानि 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 *Jwarakunjara p̄arindra 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 *Saurástra mríttiká* 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*. वत्सनाभ, *Vatsanábha*.

Vern. *Mithábish*, *Sringibish*, *Dagrá*.

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 *Bhabaprakasa*, as follows.

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

Háridra. 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.

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

Sauráshtrika 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 । विषस्यैकं तथा भागं सरिचं पिप्पली कषा । गन्धं टङ्गं तथा भागं विभागं द्विङ्गुलं भवेत् । जलेन वटिकां कार्या गुञ्जामात्रा प्रमाणात् । मधुना लिङ्गं कार्यं सर्वज्वरनिवृत्तये ।

of *Ananda 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 murári 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 *Saubhágya vatiká*.³ Take of aconite, borax, cumin seeds, the five salts, viz. rock, sea, *sonchal 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 *Viter*

1. अजरमुरारिः । द्विगुलञ्च विषं व्योषं टङ्गुलं नागराभया । जयपालसमायुक्तं
सद्योज्वरनिवारणम् । सर्वचूर्णसमं जयपालचूर्णे सर्वं पिष्ट्वा कलायप्रमाणा वटिका काय्या
आर्द्रकस्त्रसेन पेया ॥

भैषज्यरत्नावली ।

2. पञ्चवक्त्ररसः । शुद्धसूतन्विषं गन्धं सरिचं टङ्गुलङ्गुणा । मह्येष्टुर्त्तजैर्द्राविर्दिनमेकञ्च
शीषयेत् । पञ्चवक्त्ररसी नाम द्विगुलः सन्निपातहा । अर्कमूलकषायन्तु सचूर्णं पिबेदनु ॥

शार्ङ्गधरः ।

3. सौभाग्यवटिका । सौभाग्यासूत जीरपञ्चलवण व्योषाभयाचामला । निद्रान्द्राभक
शुद्धगन्धकरसानेकीकृतान् भावयेत् । निर्गुल्लीयुग भृङ्गराजक वृषापामार्गपत्रीकसत् ।
प्रत्येकस्त्रसेनं सिद्धवटिका इन्ति त्रिदीषोदयम् । वैषा शीतमतीव दाहमखिलं खेदद्रवादी-
कृतम् । निद्रां घोरतरां समस्तकारणव्यामीहमूढं मनः । गुलं श्वासवसासकाससहितं
मूर्च्छावचित्तज्वरम् । तेषां वै परिहृत्य जीवितमसौ गृह्णाति मृत्योर्मुखात् ।

भैषज्यरत्नावली ।

Negundo (*nirgundi*) *Nyctanthes Arbor-tristis* (*sephalikā*), *Eclipta prostrata* (*kesarāja*), *Adhatoda Vasica* (*vāsaka*) and *Achyranthes aspera* (*apámārga*), and make into four-grain pills.

Aconite is much used in dyspepsia with loss of appetite, in a variety of combinations. The following called *Rāmarāna 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 *Hutāsana 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 hemicrania it is recommended to be given in the following form. Take of aconite one part, liquorice root and the pulse of *Phaseolus Roxburghii* (*māsha*), 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. रामवाणरसः । पारदामृत लवङ्गगन्धकं भागयुग्मं मरिचैर्न मिश्रितम् । तत-
जातिफलमर्द्धभागिकं तिलिङ्गीफलरसेन मर्दितम् । वह्निमान्द्यदश्वक्रानाशनी रामवाण
इति विद्युतो रसः ।

रसेन्द्रचिन्तामणिः ।

2. कफकेतुरसः । टङ्गुलं मागधी शङ्खं वत्सनाभं समं समम् । चार्द्रकस्य रसेर्नापि
भावयेद्विवसत्रयम् । गुञ्जामात्रं प्रदातव्यमार्द्रकस्वरसेन वै । पीनसं श्वास कासश्च नखरोगं
गलयद्दम् । कर्णरोगं नेत्ररोगं दन्तरोगश्च दारुणम् । एतान् रोगान्निहन्त्याश्च कफकेतू-
रसोत्तमः ।

रसेन्द्रसारसंयुक्तः ।

*Visha taila.*¹ Take of sesamum oil four seers, aconite root eight tolás, seeds of *Pongamia glabra* (*karanja*), turmeric, wood of *Berberis Asiatica* (*dáruharidrâ*), root of *Calotropis gigantea* (*arka*), of *Nerium odorum* (*karavira*), flowers of *Tabernaemontana coronaria* (*tagara*), *Acorus calamus* (*vacha*), *Aplotaxis auriculata* (*kushtha*), *Vallaris dichotoma* (*ásphotá*), red sandal wood, flowers of *Aganosma curyophyllata* (*málati*), bark of *Alstonia Scholaris*, (*saptaparna*), madder and leaves of *Vitex 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. अतैच, *Átaicha*, अतिविष, *Ativisha*. *Vern.* *Atis*.

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

In fever with diarrhoea the following compound decoction² is much used in practice. Take of *átis*, ginger, *kurchi* bark, tubers of *Cyperus rotundus* (*mustaku*), and root of *Tinospora cordifolia* (*gulanha*), 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 । गन्धमालं हरिद्रे इ चर्कसगरमेवच । करवीरं वचा कुष्ठमास्मीता रक्तचन्दनम् ॥ मालतीं सप्तपर्णञ्च मञ्जिष्ठा सिन्धुवारिका । एषामहंपलान् भागान् विषस्यापि पलन्तया । चतुर्गुणे गवां मूत्रे तैलप्रस्थं विपाचयेत् । श्वितविस्कीट किटिम कीटलूता विचशिकाः । कण्डू कच्छु विकाराश्च ये व्रणा विषदूषिताः । विषतैलमिदं नाम्ना सर्व्वव्रण-विशोधनम् ॥

चक्रदत्तः ।

2. नामरं कुटजो मुस्तमन्तातिविषा तथा । एभिः कृतं पिबेत् काथं ज्वराक्षीसार-नाशनम् ॥

शाङ्ग परः ।

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

In the fever, diarrhœa, cough, and irritability of stomach of infants *átis* is used alone or in the following combination. Take of *átis*, 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 *Bála-cháturbhadra*,² from its being composed of four ingredients.

NIGELLA SATIVA.

Sans. कृष्ण जीरक, *Krishnajiraka*. *Vern.* Kálájirá, *Beng.* Mugrela, *Hind.*

THE seeds of *Nigella sativa* are regarded as aromatic, carminative, stomachic and digestive, and are used in indigestion, loss of appetite, fever, diarrhœa, 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

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1. क्रीवेरादिः । क्रीवेरातिविषामुक्त विन्धुधान्यकनागरैः । पिबेत्पिच्छाविकम्बुं
शूलदीपामपाचनम् । सरक्तं हृन्वतीसारं सञ्चरं वायु विञ्चरम् ।
चक्रदत्तः ।
 2. बालचतुर्भद्रिका । घनतण्डुलाशुण्ठीचूर्णं शीतरेण संयुतम् । त्रिशीर्ष्वराति-
सारघ्नं कासशासवमोचरम् ।
चक्रदत्तः ।
 3. काष्ठाजानी तु समुदा विषमन्वरनाशिनौ । भावप्रकाशः ।

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 páka*³ is used. Take of nigella seeds, cumin seeds, aniseeds, *ajowan*, seeds of *Carum sativum* (*ajamodá*), *Anethum Sowa* (*sulpha*) and *Trigonella Fœnum græcum* (*methi*), coriander, ginger, long pepper, long pepper root, plumbago root, *habushá* (an aromatic substance) dried pulp of the fruit *Ziziphus Jujuba* (*radari phala*), root of *Aplotaxis auriculata* (*kushtha*) and *kamala* powder, each one *tolá*, treacle one hundred *tolás*, milk one seer, clarified butter four *tolás*. Boil them together and prepare a confection. Dose about a drachm every morning.

NAT. ORDER. MENISPERMACEÆ.

STEPHANIA HERNANDIFOLIA.

Syn. Cissampelos hexandra. Rox.

Sans. बम्बहा, Ambashthá. पाठा, Páthá. Vern. Akanddi, Nemuka.

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

1. कारञ्जकाजीमरिचं द्राक्षा वृचाम्ना दाडिमम् । सौवर्चलं गुडं चीदं सर्व्वारोचक-
नाशकम् । चक्रदत्तः ।
2. उपकुञ्चिकां पिप्पलीञ्च मदिरां लाभतः पिबेत् । सौवर्चलेन संयुक्तां शीनिगूल-
निवारिणीम् ॥ चक्रदत्तः ।
3. पञ्चजीरक पाकः । जीरकं मूलजीरञ्च शतपुष्पादयं तथा । यमानी चाजमीदा
च धान्यकं मेथिकापि च । गुण्ठी कृष्णा कशामूलं चित्रकं इवेषापि च । बदरीफलचूर्णञ्च
कुडं कम्पिङ्गकं तथा । एतानि पलमात्राणि गुडं पञ्चशतं मतम् । शीरप्रस्थद्वयं दद्यात्-
सर्पिषः कुडवं तथा । पञ्चजीरकपाकीऽयं प्रसृतानां प्रशान्तये । युज्यते शूतिकारोगे शीनिरीगे
श्वरी चये । काशे शाले पाण्डुरोगे काशे वातामयेषु च ॥ भावप्रकाशः ।

common throughout India. Other authorities say, that the true Pareira Brava is derived from *Chondodendron 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, diarrhoea, urinary diseases, dyspepsia etc.

In fever with diarrhoea, the following compound decoction¹ is recommended by Chakradatta. Take of *páthá* root, *indrajava* seeds, chiretta, tubers of *Cyperus rotundus* (*mustaka*), *Hedyotis biflora* (*parpati*), *guluncha*, and ginger, equal parts, in all two tolás, water thirty-two tolás; and boil till reduced to one-fourth. In diarrhoea 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* (*prishniparni*), root of *Solanum Indicum* (*vrihati*), liquorice root and *indrajava* seeds, equal parts, in all two tolás. Boil down to one-fourth.

1. पाठेन्द्रियवभूनिस्व मुसपपटकानृताः । जयन्त्याममतीसारं सज्वरं समहोषधाः ।

चक्रदत्तः ।

2. शमयति पाठामूलं चोन्द्रयुतं तखुलाभसा पीतम् । अमर्भृतं विद्रधिमुद्धतमात्रे व
मनुजस्य ॥ अपक्वे तदुद्दिष्टं पक्वे तु व्रणवत् क्रिया ॥

चक्रदत्तः ।

3. पारिजातजयानिस्ववङ्गिगायत्रिणां पृथक् । पाठायाः सागुरीः पीताद्वयं शारदस्य
च । जलेचुमद्यसिकताशनेलंबणपिच्छकान् । सान्द्रमेहान् क्रमात् क्षन्ति अमौ काषाः
समाचिकाः ।

चक्रदत्तः ।

4. हृत्तीषावनीपाठायष्टीमधुकलिङ्गकाः । पावनोथी हृत्त्यादिः कच्छदीषत्रयापहः ।

चक्रदत्तः ।

TINOSPORA CORDIFOLIA.

Sans. गुडूची, *Guduchi*. अमृता, *Amritá*.

Vern. *Gulanha*, *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 *gulanha* is given with honey in bilious fever. A decoction¹ of *gulanha* 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 *gulanha*, *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 *gulanha*, four parts, water sixteen parts. Boil till reduced to one-fourth, and prepare a confection with eight parts of sugar. When of

1. पिप्पलीमधुसंमिश्रं गुडूचीस्वरसं पिबेत् । जीर्णं ज्वर कफ श्लेह कासारीचक-
नाशनम् । गुडूचीं पर्यटं मुस्तं किरातं विश्वमेघजम् । वातपित्तज्वरे दीयं पञ्चमद्रमिदं
शुभम् ।

भावप्रकाशः ।

2. धात्रीमीदकः । धात्रीं पथ्यां कृष्णां गुण्डो सुल्पाञ्च तूर्ययेद् दृढम् । चतुःसप्त-
सृतादीया शर्करा च पलं तथा ॥ मधुना मीदकं कुर्यात् जीर्णज्वरहरं परम् । मन्दाग्नि-
दीपनं चैव सद्योदाहंविनाशनम् ॥ जीर्णज्वरे तथा कासे तथा च रक्तपित्तके । दापयेत्
मीदकं वैद्यः धात्रीनाममिदं महेत् ॥

सारसीमुदी ।

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 prescriptions for chronic skin diseases. The juice of the plant or its decoction is given alone, or with the addition of *guggulu* 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.

Guduchyādi 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 guduchyādi 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 guduchyādi 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. बन्नादन्नुद्भवः काषः पीती गुग्गुलुसंयुतः ॥

2. गुडूच्याः स्वरसं कल्कं चूर्णं वा काषमेव वा । प्रभूतकालमासेन्य मुच्यते वात-
शीघ्रतात् ॥ चक्रदत्तः ।

3. गुडूचीकाषकल्काभ्यां तैलं वा वातरक्तमुत् ॥

चक्रदत्तः ।

NAT. ORDER. BERBERIDEÆ.

BERBERIS ASIATICA AND OTHER SPECIES.

Sans. दारुहरिद्रा, *Dáruharidrā*. दार्वी, *Dārvi*.

Vern. *Dáruhaldi*. 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 *Rasánjana** 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, diarrhoea, jaundice and above all, in affections of the eyes.

Rasánjanádi churna,¹ or compound powder of *rasot*. Take of *rasot*, *átis*, the bark and seeds of *Holarrhena antidysenterica*, flowers of *Woodfordia floribunda* (*dhátaki*) and ginger, in equal parts. Powder and mix. Dose, about a drachm, with rice water (*tandulámbu*) and honey. This powder is said to be useful in bilious diarrhoea.

* Galena or the sulphide of lead ore is sometimes called "rasánjana" in Sanskrit and some physicians in Bengal use the lead ore or "rasánjana," whenever this term occurs in a prescription. In the Upper Provinces however, "rasánjana" 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.

† दार्वीकायसमं चीरं पादस्यक्ता यथाघनम् । तदा रसाञ्जनाख्यं तत् केचयीः परमं हितम् ॥

1. रसाञ्जनादि चूर्णः । रसाञ्जनं सातिविषं कुटजस्य फलं लक्षम् । घातकी यक्षवेरञ्च प्रपिबेत्तण्डुलाम्बुना ॥ चोद्रेण युक्तं नुदति रक्तातिसारमुल्लसम् । रुद्धं दीपयते चाग्निं युक्तञ्चापि निवर्तयेत् ॥

चक्रदत्तः ।

Dárvyádi kvátha,¹ or compound decoction of Indian barberry. Take of the root bark of Indian barberry, *rasot*, *chiretta*, *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.

Sárangadhara 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 apthous 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. दाव्यादिकाथः । दाव्यी रसाञ्जन वृषाब्द किरात विल्व भल्लातकैरविक्रतो मधुना-
कषायः । पीती जयत्यतिबलं प्रदरं सशूलं पीतासितारुण विलोहित नील युक्तम् ॥

चक्रदत्तः ।

2. दाव्यी तथैवामलकीरसेन समाचिकां पैत्तिक मूत्रकृच्छ्रे ।

चक्रदत्तः ।

3. त्रिफला खदिरौ दाव्यी म्ययोधादिवला कुशाः । निम्ब कोलकपत्राणि कषायः

शोधने हितः ।

चक्रदत्तः ।

4. रसाञ्जनं विशेषेण पानालेपनयोर्हितम् । गुदभंगे गुदं सै रभ्याभ्यामु प्रवेष्टयेत् ॥

चक्रदत्तः ।

and apply round the orbit in inflammatory affections of the eyes.¹ *Rasot* mixed with honey may also be used in the same way. An emulsion of *rasot* 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 *Pundarika*, the red, *Kokanada* and the blue, *Indivara*. The entire plant including root, stem and flower is called *Padmini*. The torus or receptacle for the seed is, called *Karnikāra*, and the honey formed in the flowers, *Makaranda*. The filaments round the base of the receptacle, pass by the name of *Kinjalka* and the leaf stalk by that of *Mrināla*. The species of *Nymphaea* described, are as follows:—

Nymphaea Lotus. Kumuda, Sans. Sāluka. Beng. Koi. Hind.

Nymphaea stellata. Nilotpala, Sans. Nilsaphlī, Beng.

Nymphaea 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. हरीतकीं सैयवञ्च मैरिकाञ्च रसाञ्जनम् । विडालकीं जले पिटः सर्व्वनेत्रा-
मवापहः ॥ शार्ङ्गधरः ।

2. दाव्वीं रसाञ्जनं वापि सल्लयुक्तं प्रपूरणम् । निहन्ति शीघ्रं दाहायुवेदनाः सुन्द-
सम्भवाः ॥

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 *makhanna* 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 *sonchal* salt, nigella seeds, liquorice powder, curdled milk and honey.² A compound decoction is thus prepared.

*Utpaládi 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 tolás, 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. सपत्रकेशरं चोद्रं नवनीतं नवं लिहन् । सिताकेशरसंयुक्तं रक्ताशंसि सुखीभवेत् ॥

भावप्रकाशः ।

2. दध्ना सौवर्चलाजाजी मधुकं नीलमुत्पलम् । पिबेत् चोद्रयुतं नारी वातासृग्दर-पीडिता ॥

चक्रदत्तः ।

3. गुर्विण्या गर्भती रक्तं सवेद्यदि मुहमुद्दः । तत्रिरीषाय सा दुग्धमुत्पलादि मृतं पिबेत् ॥

भावप्रकाशः ।

4. मणालविमणालूकचन्दनीत्यलकेशरैः । त्रिभृशीतैः शिरीदिह्लातददाकसकीत्यलैः ॥

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, *Ahiphena.* *Vern.* *Aphim.*

OPIMUM 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 *Khákhas* 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 *Amarákshasi*,² is used. Take of opium, nutmeg, cloves, cinnabar and camphor,

1. चन्दनाम्बु कषायन्दितालवन्तोपवीजितः । मुष्याद्वाहादितोऽश्वीजकदलीदल-
सम्भवे ॥ चक्रदत्तः ।
2. आमराचसी । जातीफलं लवङ्गं स्यादहिफेनं सशोणितम् । कर्पूरं समभागश्च
वटीं कुर्यात् हिरण्यकाम् । अन्नस्थीदकमुच्यन्तु अनुपानं प्रशस्यते । असाध्ये त्वामरोगे न
एष एव महोपधमः । आमराचसीनामायं रसः परमदुर्लभः ॥ रसेन्द्रसारसंघः ।

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

In chronic diarrhoea 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 *Pæderia foetida* (*prasārani*). In diarrhoea 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 diarrhoea, 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. यइणीकपाटरसः । जातीफलं टङ्गणमभकञ्च धसूरबीजं समभागचूर्णम् ।
भागद्वयं स्यादहिफेषकस्य गन्धालिकापत्ररसेन मह्यम् ॥ चणप्रमाणा वटिका प्रकार्या
यवादिदध्यात् यइणीगदेषु । सामेषु शूलेषु सरक्तकेषु पक्वेष्वकषेषु गुदामयेषु । पथ्यं
सदध्योदनमव दीर्य रसीत्तमीज्यं यइणीकपाटः ।

रसेन्द्रसारसंयहः ।

2. दुग्धवटी । अमृतं सुर्यगुञ्जं स्यात् अहिफेषं तथैव च । पञ्चरक्तिक लौहञ्च
चतुरक्तिकमभकम् ॥ दुग्धैर्गुञ्जाद्वयमिता वटी कार्या भिषग्विदा । दुग्धानुपानं दुग्धैश्च
भोजनं सर्वथा हितम् ॥ शीथं नानाविधं इन्ति यइणीं विषमञ्जरम् । मन्दाग्निं पाण्डुरीमञ्च
नाम्ना दुग्धवटी परा । वर्जयेत् लवणं वारि ज्याधिनिःशेषतावधि ॥

भेषज्यरवावली ।

3. शम्भुनाथरसः । तालकं टङ्गणं रक्तं फटिकारी मनःशिला । गीदन्तं
वत्सनाभञ्च सर्वतुल्यञ्च भागिकम् ॥ सर्वतुल्यं रसं गन्धं तत्समं फणफेषकम् । शक्राशन-
रसैर्भाञ्जं निर्गुञ्जाय रसेन च ॥ कनकस्य पत्ररसैर्निम्बपत्ररसैः पुनः । प्रथमेषां रसैः सप्त
भावयेत् कुशलो भिषक् । वटीं रक्तिद्वयं कुर्यात् शङ्खवेरानुपानतः । सर्वरूपं सान्निपात-
सतिमारञ्च नाशयेत् । यइणीमामदीषञ्च ज्वरं सर्वं विनाशयेत् । उदरे भस्त्रके तैलं पथ्यञ्च

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.

Akarádi churna.¹ Take of pellitory root, ginger, seeds called (*kakkola*), saffron, long pepper, nutmeg, cloves and red sandal wood, each two tolás, opium eight tolás. Rub them together and pass the powder through a cloth. Then add sugar, 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 Sárangadhara in porrigo of the scalp.²

The Amritaságar 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.

दधिभक्तकम् । शीतोपचारं कर्तव्यं क्रमेण गुणवद्भये । शम्भुनाथ इति ख्याती महादेवेन
भाषितः ॥

भेषज्यतन्तः ।

1. पक्वरादिचूर्णः । पक्वराकरभः शुण्ठी ककीलं कुङ्कुमं कषा । जातीफलं लवङ्गञ्च
चन्दनञ्चेति कार्षिकान् । चूर्णानिमांस्ततः कुर्यादद्विफेणं पत्नीन्मितम् । सर्व्वमेकीकृतं
चूर्णं सूत्रां तदस्त्रगालितम् । सिता सर्व्वसमा दियामाषैकं मधुनालिहेत् । शक्रसम्भकरं
चूर्णं पुंसामानन्दकारकम् । नारीणां प्रीतिजननं सेवेत निशि कामुकः ॥

शाङ्ग धरः ।

2. दुग्धेन खाखसं बीजं प्रलेपाद्द्वारणं जयेत् ॥

शाङ्ग धरः ।

NAT. ORDER. CRUCIFERÆ.

SINAPIS.

Sans. सिद्धार्थ, *Siddhārtha* राजिका, *Rājiká*.

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 *rājiká* or dark brown variety, (*Sinapis ramosa* 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 (*vacha*), 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. Sárangadhara recommends the following application² in urticaria. Take of mustard seed, turmeric, *pátchuk* root, sesamum and the seeds of *Cassia Tora* (*chakramardaka*), equal

1. सिद्धार्थक वचा लोध्र सैन्धवेश्च प्रलेपनम् । वमनञ्च निहन्त्याशु पिङ्कां यौवनो-
द्भवाम् ॥ चक्रदत्तः ।

2. सिद्धार्थरजनौकुष्ठप्रपुत्राटतिलैः सह । कटुतैलेन संमिश्रमुदद्घ्नं विलेपनम् ॥
शाङ्गधरः ।

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 Sārangadhara. 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.

CRATÆVA RELIGIOSA.

Syn. Capparis trifoliata. Rox.

Sans. वरण, 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. गौरसर्षपकल्केन प्रदेही वा रुजापहः ॥

भावप्रकाशः ।

2. पुनर्नशां दाहं शुष्णं सिद्धार्थं शिशुमेव च । पिशा चैवारनालेन प्रलेपः सर्वशोथहा ॥

शाङ्गधरः ।

3. चन्द्रगूरुसः । चन्द्रगूरुस्य बीजानि क्षिपेदष्टगुणं जले । यदा मृदूनि मृद्रीयन्तती वाससि गालयेत् ॥ दिकातिवेगविकलसञ्जलं पलमात्रया । पिबेत् पिबेत् पुनयापि दिवावस्यं पशाम्यति ॥

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 *yavakshára* and honey.² A compound powder called *Varunádya churna*³ is prepared as follows. A solution of the ashes of *varuna* is made as directed under the head of alkaline water (*Kshárodaka*). This solution is boiled with the addition of *varuna* bark in powder and *yavakshára* (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 *Varunádya guda* is prepared by adding to the fluid extract of the bark, treacle and a number of diuretic and aromatic substances.

*Varunádya ghríta.*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 tolás each of the following substances in the form of a paste, namely, *varuna* bark, unripe

1. वरुणत्वक्कषायन्तु पीतञ्च गुडसंयुतम् । अश्लीं पातवत्याशु वस्तिशूलनिवारणम् ॥

चक्रदत्तः ।

2. वरुणस्य त्वचं श्रेष्ठा शुण्ठीगीचुरसंयुताम् । यवक्षारं गुडं दत्त्वा काथयित्वा पिवेद्भि ताम् ॥

चक्रदत्तः ।

3. वरुणकभस्मपरिश्रुतसलिलं तच्चूर्णं यावशुकयुतम् । कथनीयं तत्तावद्यावत्चूर्ण्यत्व-
मायाति ॥ तद्गुडयुक्तं हन्यात् तदुदारामश्लीं घोराम् । श्लेहानं गुल्मवरं श्लेष्मां
कुक्षी रुजा तीव्राम् ॥

भावप्रकाशः ।

4. वरुणाद्यं घृतम् । वरुणस्य तुलां चुलां जलद्रोणे विपाचयेत् । पादशेषं परिस्त्रान्य
घृतप्रस्थं विपाचयेत् । वरुणं कदली विल्वं तृणजं पञ्चमूलकम् । अश्लीं चाश्लीजं देयं
बीजञ्च वपुषीद्भम् । शतपर्वतिलक्षारं पलाशक्षारमेव च । यूथिकायाश्च मूलानि कार्ष्णिकाणि
समावपेत् । अस्य मात्रां पिवेज्जनुर्देशकालाद्यपेक्षया । जीर्णं तस्मिन् पिवेत् पूर्वं गुडं
जीर्णन्तु मस्तना । अश्लीं शर्कराञ्चैव मूत्रकृच्छ्रञ्च नाशयेत् ॥

भावप्रकाशः ।

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

Varunādyā 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* (*punarnavā*) is given internally.³

NAT. ORDER. MORINGACEÆ.

MORINGA PTERYGOSPERMA.

Sans. शोभाञ्जन, *Sobhānjana*. गिरु, *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

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1. वरुणाद्यं तैलम् । त्वक्पत्रमूलपुष्पस्य वरुणात्मत्रिकण्डकात् । कषायेण पचेत्तैलं वस्तिनास्थापनेन च । शर्कराशमरीशूलघ्नं मूत्रकृच्छ्रनिवारणम् ॥ चक्रदत्तः ।
 2. काञ्चनारत्वचः काथः शुष्कीचूर्णेन नाशयेत् । गण्डमासां तथा काथः क्षौट्रेण वरुणत्वचः ॥ शार्ङ्गधरः ।
 3. पुनर्नवावरुणयोः काथोऽन्तविद्रधिञ्जयेत् ॥ शार्ङ्गधरः ।

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* (*amlaloniká*) 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 *yavakshāra* (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 ग्रीहीदरं इत्यादिप्यलीमरिचान्वितः । अम्लवेतससंयुक्तः शिग्रुक्वाथः समैश्वरः ॥
चक्रदत्तः ।
 2. शोभाञ्जनकनिर्यूहं सैश्ववायिकणान्वितम् । पलाशचारयुक्तं वा यवचारं प्रयोजयेत् ।
चक्रदत्तः ।
 3. शोभाञ्जनक निर्यूही हिङ्गुसैश्वसंयुतः । अचिरं विद्रधिं इन्ति प्रातःप्रतिनिषेवितः ॥
चक्रदत्तः ।
 4. शिग्रुमूलं जले पीतं दरपिष्टं प्रमासयेत् । तद्रसं मधना पीत्वा इन्त्यन्तविद्रधिं
नरः ॥
चक्रदत्तः ।
 5. खेदीपनाहाः कर्तव्याः शिग्रुमूलसम्बन्धिताः ॥
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. नागकेशर, *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. काषय शिगुमूलोत्थः कटूष्णोऽम्भरीघातनः ॥ चक्रदत्तः ।
2. सैश्ववं श्वेतमरिचं सर्षपाः कुष्ठमेव च । वस्तमूत्रेण संपिष्टं तन्द्रालस्यनिवारणम् ॥
भावप्रकाशः ।
3. शीभाञ्जनकनिर्यासक्षिलतैलेन संयुतः । व्यक्तीषणः पूरणः कर्णं कर्णशूलोपशान्तये ॥
चक्रदत्तः ।
4. नवनीततिलैः कल्की जैता रक्तार्णसां स्यूतः । नवनीतसितानागकेशरश्यापि रुदिषः ॥
शाकंभरः ।
5. नागकेशरचूर्णं वा शतधीतेन सर्षपा । पिष्टा लेपो विधातथी दाहे हर्षच पादयोः ॥
चक्रदत्तः ।

NAT. ORDER. DIPTEROCARPEÆ.

SHOREA ROBUSTA.

Sans. शाल, *Sála*, अश्वकर्ण, *Asvakarna*.

THE resin of *Shorea robusta*, called *Rála* in Sanskrit and *Dhuná* 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*. बाद्यालक, *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. अतो वा यदि वा रक्तः सुरको गृहणीगदः । गुडेनाधिकसर्जेन भचितेनाप्य नश्यति ॥

भावप्रकाशः ।

2. सिन्धुसुगन्धगुडमधुमहिषाचगेरिकं सष्टतम् । सिक्थकमेतत् पक्वं पादस्फुटनापङ्क
सिद्धम् ॥ चक्रदत्तः ।

* 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 balādi 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* (*ātmagugtā*), *Hygrophila polysperma* (*katrina*), *Vanda Roxburghii* (*rāsnā*), and *Withania somnifera* (*asvagandhā*), equal parts, in all two tolās, 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 महीषघाम्यां काथी निहत्यादिषमञ्जरं हि । शीतं सकम्पं परिदाह-
युक्तं विनाशयेत् द्विदिनप्रयोगात् ॥

भावप्रकाशः ।

2. प्रदरं हन्ति वलाया मूलं दुग्धेन मधुयुतं पीतम् ॥

चक्रदत्तः ।

3. माषवलादिः । माषवलाद्यकशिम्बीकटुकरान्नाश्वगन्धोरुकाणाम् । काथी
मस्यनिपीतो रामठलवणान्वितः कीणः ॥ अपहरति पञ्चवातं मन्यास्तम्भं सकर्णनादरुजम् ।
दुर्ज्वमर्दितवार्त सप्ताहाञ्चयति चावश्यम् ॥

चक्रदत्तः ।

4. वलातैलम् । वलानिःकायकल्काभ्यां तैलं पक्वं पर्योऽन्वितम् । सर्व्वातविकारस्यमेवं
श्रेयसिपाचितम् ॥

चक्रदत्तः ।

BOMBAX MALABARICUM.

Sans. शाल्मली, *Salmali*, मोचा, *Mochá*.

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 *kárpása* (cotton of *Gossypium herbaceum*.)

The gum of this tree, called *mocharasa* is used in medicine.* It is considered astringent, tonic and alterative, and is used in diarrhoea, dysentery and menorrhagia. *Mocharasa* with sugar in equal parts, is given in doses of twenty to forty grains, in the diarrhoea 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 Hindi *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 *Hypoxis orchioides* of Botanists.

(*dhātaki*), root of *Mimosa pudica* (*lajjālu*), and the filaments of the lotus, equal parts, in all one tolá, powdered rice one tolá, water eleven tolás, and boil together to the consistence of a gruel (*yavágu*).¹ In the dysentery of adults a decoction of *bela* fruit in goat's milk, is given with the addition of powdered *mocharusa* and *indrajava* seeds.²

HIBISCUS MOSCHATUS. *Sans.* लताकस्तूरिका *Latákasturiká*, *Vern.* *Latákasturi* *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 *Bála*, क्रीवेर *Hrivera*. *Vern.* *Sugandha bálá*, *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. *Bála* enters into the composition of a well-known fever drink called *shadunga pániya*, (see *Andropogon muricatum*).

NAT. ORDER. STERCULIACEÆ.

PTEROSPERMUM SUBERIFOLIUM. *Sans.* मुचुकुन्द, *Muchukundu*. The flower of this tree, rubbed into a paste with *kánjika* 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. मीचरसः समङ्गा च घातकी पत्रकेशरम् । पिष्टैरेतैर्यवागुः स्याद्रक्तातीसारनाशिनौ ।

भावः रक्तनाशः ।

2. विलं कामपयः सिद्धं सिता मीचरसान्वितम् । कलिङ्गचूर्णसंयुक्तं रक्तातिसारनाशनम् ॥

चक्रदत्तः ।

3. शिरीरुतिं वातजां हन्यात्पुष्यं वा मुचुकुन्दजम् ॥

शाङ्गधरः ।

NAT. ORDER. GERANIACEÆ.

OXALIS CORNICULATA.

Sans. अम्ललीणिका, *Amlaloniká.* चाङ्गेरी, *Chángerí.*

Vern. Amrulsák, *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.

*Chángerí ghrita.*¹ Take of clarified butter, four seers, the fresh juice of *Oxalis corniculata*, four seers, curdled milk called *dudhi*, 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 *Bhávaprakása* 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.* कर्मरङ्ग, *Karmaranga.*
Vern. Kámránga, *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 कल्कैरेतैर्विपाचितम् । चतुर्गुणे च दध्ना च तदघृतं कफवातनुत् ॥ अर्शांसि यद्वणोदीषं मूलकच्छं प्रवाहिकाम् । गुदभंशान्तिमानाहं घृतमेतद्विपोहति ॥

चक्रदत्तः ।

2. चाङ्गेरी कील दध्ना चार नागरसंयुतम् । घृतं विपकं पातव्यं गुदभंशगदापहम् ॥

भाद्रप्रकाशः ।

NAT. ORDER. ZYGOPHYLLACEÆ.

TRIBULUS TERRESTRIS.

Sans. गोचुरी, *Gokshuri.* इक्षुगन्धा, *Ikshugandhá.*

Vern. *Gokshura,* *Beng. Hind.*

THIS plant is also called *Sthala sringátaka* 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-kshára* (impure carbonate of potash), in painful micturition.¹ A decoction of the entire plant is given with *silájatu* (a bituminous substance) and honey, in the same affection. Equal parts of *gokhuru* and sesamum seeds, taken with goat's milk and honey, is said to cure impotence arising from bad practices.²

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

1. कायं गोचुरबीजस्य यवघारयुतं पिबेत् । मूत्रकृच्छ्रं सकृञ्च पीतं शीघ्रं निवारयेत् ॥

चक्रदत्तः ।

2. समतिलगोचुरचूर्णं काशीचीरेण साधितं समधु । मुक्तं क्षपयति पाण्डुरं यच्चनितं कुप्रवीगेण ॥

भावप्रकाशः ।

3. गोचुराद्यवलेहः । गोक्षटकं सदलमूलफलं गृहीत्वा, संकुट्टितं पलशतं कथितं तु तोये । पादस्थितेन सलिलेन पलानि दत्त्वा पञ्चाशतन्तु विपचेदथ शर्करायाः । तस्मिन् घनत्वमुपगच्छति चूर्णितानि दद्यात् पलद्वयमितानि सुमाजानानि । शुण्ठी कषा मरिच नागदल त्रिगुलाजातीयकीर्षककुभवपुषीफलानि । वाग्नेयपलाष्टकमिह प्रणिधाव निष्कं लिङ्गं तु शुद्धममृतं पलसन्धितन्तु । इत्यायु मूत्रपरिदाह विवन्ध मुक्तकृच्छ्राश्मरी रुधिरमेहमधु प्रमेहान् ॥

भावप्रकाशः ।

seers and a half, water, sixty-four seers and boil till reduced to one-fourth. To the strained decoction, add six seers and a quarter 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, cardamoms, flowers of *Mesua ferrea* (*nágakesara*), leaves called *tejapatra*, nutmeg, bark of *Terminalia Arjuna*, and cucumber seeds, each sixteen tolás, bamboo-manna half a seer, and prepare an electuary. It is given in doses of two tolás, 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>Goránebu</i> , Beng. <i>Citrus acida</i> . Roxb. Var. 3			
लिम्पाक, <i>Limpáka</i> . Vern. <i>Pátinebu</i> , Beng. do. do. 1			
निम्बुक, <i>Nimbuka</i> . Vern. <i>Kágujinebu</i> , Beng. do. do. 2			
बीजपूर, <i>Vijapura</i> . Vern. <i>Tabánebu</i> , Beng. do. do. 7			
मधुकर्कटिका, <i>Madhukarkatiká</i> , Vern. <i>Mithánebu</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>Kamlánebu</i> , Beng. <i>O. Aurantium</i> .			

The variety of *Citrus acida*,* called *Jambira*, yields the lemon juice used in medicine. *Limpáka* 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. Lumia* 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 *Járuk nebu* (that is digestive lemon) in the vernacular.

The variety of *Citrus acida* called *káguji nebu* has larger fruits than that of *páti 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 *kamlá nebu* in Bengali. The variety grown in the plains has an acid taste and is called *nárengá* in the vernacular.

The Sanskrit term *karuná 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 *karuná* is applied to a variety of *Citrus medica*.

Citrus decumana has I believe no Sanskrit name. In the vernacular it is called *Bátávi 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.

Madhukarkatiká. This variety of *Citrus medica* is probably the one described by Roxburgh as *Mithá 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 *Hingvāshtaka* (see *Assafoetida*), *Kravyādi churna* etc.

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

Rasáyanámrita lauha.³ Take of long pepper, black pepper, ginger, the three myrobalans, *bíberung* seeds, cumin and nigella seeds, *ajowan* and the seeds of *Cnidium diffusum* (*vanajamíni*), *chiretta*, *trivrit*, root of *Boliospermum mantanum* (*danti*), *nim* bark, and rock salt, each two tolás, prepared iron sixteen tolás, 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 हृत्त्यम्नापित्तकम् ।

चक्रदत्तः ।

2. बीजपूररसः पानान्मधुचरयुतीजयेत् । पाचं हृदस्तिशूलानि कीष्ठवायुञ्च दाहणम् ॥

शाङ्गधरः ।

3. रसायनामृतलौहः ।—विकटु विफला मुस्तं विडङ्गं जीरकद्वयम् । यमानीद्वयं मूनिम्बं त्रिवृहन्तीच निम्बुकम् ॥ सर्वेषां कार्षिकं भागं सैन्धवं कर्षमर्द्धकम् । खण्डस्य षोडशपलं प्रस्थञ्च विफलाजलम् ॥ जम्बीराणां रसं दद्यात् पलषोडशकं तथा । पाचं सर्वं प्रयत्नेन लौहं दत्त्वा पलद्वयम् ॥ सिद्धे पाके पुनर्दद्याद् घृतं पलचतुष्टयम् । सर्वरोगेषु संयोज्यं महामृतरसायनम् ॥ गुल्मं पञ्चविधं हन्ति यत्कृत्प्रीहोदराणि च । कामलां पाण्डुरोगञ्च शीथं जीर्णञ्चरं तथा । रोगान् सर्वान् निहन्त्यायु भास्करस्तिमिरं तथा ॥

भैरव्यरत्नावली ।

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 *sonchal* 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.

ÆGLE MARMELLOS.

Sans. विल *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* (*dhátaki*), root of *Stephania hernandifolia* (*páthá*), 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* (*gajapippuli*), root of *Pavonia odorata* (*bálá*), flowers of *Woodfordia floribunda* (*dhátaki*), and bark of *Symplocos racemosa* (*lodhra*), in equal parts.³

A decoction of the root of *Ægle 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.⁵ In external inflammations, the juice of the leaves is given internally, to remove the supposed derangement of the humours.

1. गुडेन खादयेद्विलं रक्तातिसारनाशनम् । आमशूलविवन्धनं कुक्षिरीनविनाशनम् ॥

चक्रदत्तः ।

2. बिल्वान्द घातकी पाठा गुण्ठी मोचरसाः समाः । पीता कन्धन्वतीसारं गुड़तक्रीण दुर्जयम् ॥

चक्रदत्तः ।

3. बिल्वञ्च पुष्पाणि च घातकीनां जलं सलीध्रं गजपिप्पलीच । काषावलेहो मधुना विमिश्रो बालेषु धीन्यावतिसारितेषु ॥

चक्रदत्तः ।

4. बिल्वमूलकषायेण लाजाशैव सशर्कराः । आलीय पाययेद्विलं कर्षतीसार- नाशनम् ॥

चक्रदत्तः ।

5. बिल्वपत्ररसं पूतं सीषणं त्रयसौ विजे । विट्सङ्गे चैव दुर्गामि विदध्यात् कामला मपि ॥

चक्रदत्तः ।

Vilva taila is thus prepared.¹ Take of dried *bela* fruits, twelve seers and a half and boil in sixty-four seers of water, till reduced to one-fourth. To the strained decoction, add four seers of prepared sesamum oil and six tolás each of the following substances, in the form of paste, namely, *Vanda Roxburghii* (*rásná*), *Boerhaavia diffusa* (*punarnavá*), *Aplotaxis auriculata* (*kushta*), ginger, dried *bela*, flowers of *Woodfordia floribunda* (*dhátaki*), wood of *Pinus deodara* (*devadáru*), bark of *Symplocos racemosa* (*lodhra*), tubers of *Cyperus rotundus* (*mustaka*), *Acorus Calamus* (*vachá*), and gum of *Bombax Malabaricum* (*sálmaliveshta*), and prepare an oil in the usual way. This oil is used externally in chronic bowel complaints.

FERONIA ELEPHANTUM.

Sans. कपित्थ, *Kapittha*. *Vern.* Kúthbel, *Beng.* Kaith, *Hind.*

THE wood apple tree is met with throughout India and is cultivated for the sake of the fruits, the pulp of which is edible. A *chátni*, made of the ripe pulp with the addition of oil, salt, tamarind and spices, is esteemed by many. The unripe fruit is described as astringent and is used in combination with *bela* and other medicines in diarrhoea and dysentery. The ripe fruit is said to be useful in hiccup and affections of the throat. The leaves are aromatic and carminative.

1. विल्वतैलम् । अतं संग्रहविल्वस्य जलद्रीणे विपाचयेत् । तेन पादाषश्रेषण तैलप्रस्थं विपाचयेत् ॥ रास्नां पुनर्नशां कुष्ठं नागरं विल्वमेव च । धातकीं देवदारुञ्च लीध्रं मुस्तं वचां तथा ॥ शाल्मलीवेष्टकञ्चैव पृथक्कषपञ्चयं पचेत् । अस्य तैलस्य सिद्धस्य शण्ण वीर्यमतःपरम् ॥ दुर्वासग्रहशीरोम मतीमारं सवेदनम् । कामलां पाण्डुरोगघ्नं कृमिदोषविनाशनम् । वङ्गि-सन्दीपनं बल्यं मेदमांस विवर्द्धनम् । अपचीं गण्डमालाञ्च अरं जीर्णं व्यपीहति । अग्निभ्यां निर्मितं पूर्वं विल्वतैलनिदं महत् ॥

ते लावलीसंग्रहीतम् ।

Kapittháshtaka churna.¹ Take of the pulp of unripe wood apples eight parts, sugar six parts, pomegranate juice, tamarind pulp, *bela* fruit, flowers of *Woodfordia floribunda* (*dhátaki*), *ájmad*, and long pepper, each three parts, black pepper, cumin seeds, coriander, long pepper root, root of *Paronia odorata* (*bálá*), *sonchal* salt, *ájowan*, cardamoms, cinnamon, *tejapatra*, flowers of *Mesua ferrea* (*nágakesara*), ginger and plumbago root, each one part, powder the ingredients finely and mix. Dose, about one drachm. This preparation is used in chronic diarrhœa and dysentery with loss of appetite and in affections of the throat.

XANTHOXYLUM HOSTILE. Sans. तुम्बुरु, *Tumburu*. Vern. Nepáli *dhanicá*, *Tumri*, 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 Agallocha*.

Sans. गुग्गुलु, *Guggulu*. Vern. *Guggulu*. Beng. 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. कपित्थाष्टकचूर्णम् । अष्टौ भागा कपित्थस्य षड्भागाः शर्करा सताः । दाडिमं तिलिङ्गीकञ्च श्रीफलं धातकी तथा ॥ अजमीदाच पिप्पल्यः प्रत्येकं सुस्त्रिभागिकाः । मरिचं जीरकं धान्यं ग्रन्थिकं बालकन्तथा ॥ सौवर्चलं यमानीञ्च चातुर्जातं सचित्रकम् । नागरञ्चैक- भागाः स्युः प्रत्येकं सूक्ष्मचूर्णिताः ॥ कपित्थाष्टकसञ्ज्ञं स्यात् चूर्णमेतद्वलामयान् । अतीसारं चयञ्चैव यदृशीञ्च व्यपीडति ॥

शाङ्गधरः ।

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.¹ Take of plumbago root, long pepper root, ajowan, seeds of *Nigella sativa* (*kálajirá*), *báberang* seeds, seeds of *Curum Roxburghianum* (*ajamodá*), cumin seeds, *Pinus Deodara* (*devadáru*), *Chavica officinarum* (*chavya*), cardamoms, rock salt, root of *Aplotaxis auriculata* (*kushtha*), root of *Vanda Roxburghii* (*rásnú*), fruits of *Tribulus terrestris* (*gokshura*), coriander, the three myrobalans, tubers of *Cyperus rotundus* (*mustaka*), long pepper, black pepper, ginger, cinnamon, root of *Andropogon muricatus* (*usira*), *yavakshára* (impure carbonate of potash), leaves of *Pinus Webbiana* (*tálisapatra*) 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 tolá. 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 *Trayodasánga 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 । चित्रकं पिप्पलीमूलं यमार्णो कारवीन्तथा । विडङ्गान्ध-
जमोदाञ्च जीरकं सुरदारुच ॥ चवैला सैन्धवं कुष्ठं राक्षामोक्षुरधान्यकम् । विफलामुस्तकं
व्योषं त्वगुशीरं यवायजम् ॥ ताखीशपत्रं पत्रञ्च सूक्ष्मचूर्णानि कारयेत् । यावन्त्येतानि
चूर्णानि तावन्मात्रन्तु गुग्गुलुम् ॥ संमर्द्य सर्पिषा गाढं द्विग्वे भाण्डे निधापयेत् । ततोमात्रा
प्रयुञ्जीत यद्येष्टाहारवानपि ॥ योगराज इति ख्याती योगीश्वरमसृतीपमः । आमवाताद्य-
वातादीन् क्लमिदुष्टव्रणानपि ॥ श्लेष्मागुब्बीदरानाहदुर्गामानि विनाशयेत् । अपिञ्च कुरुते दोषं
तेजोहृद्धिं वसन्तथा । वातरोगान् जयत्येष सन्धिमज्जगतानपि ॥

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 tolás, cinnamon and cardamoms four tolás 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 tolás of *guggulu* and beat together into a uniform mass. Dose, half to one tolá.

Vatári 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 *Hingvastaka* (see *Assafœtida*), 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, *gulanha* and the three myrobalans, each two seers, water ninety-six seers. First

1. आदित्यपाक गुग्गुलु बटकः । पृथक् पलांशा त्रिफला पिप्पलीचेति चूर्णितम् । दशमूलाम्बुना भाव्यं त्वगीलाईं पलान्वितम् ॥ दत्त्वा पलानि पञ्चैव गुग्गुलोर्वटकीकृतः । एष मांसरसाभ्यासादातरोगान् विशेषतः ॥ इन्ति सम्यस्थिमज्जस्यान् वृषमिन्द्राश्रनिर्यथा । भाव्यद्रव्यसमं काथ्यं काथीऽष्टांशस्तुतेन च । चार्द्रं यावद्दिनं भाव्यं सप्तार्द्रं भावनाविधिः ॥
चक्रदत्तः ।

2. वातारिरसः । रसो गन्धी वरा बद्धि गुग्गुलुः क्रमवर्द्धितः । त्रिभागा त्रिफला योग्या चतुर्भागस्तु चित्रकः ॥ गुग्गुलुः पञ्च भागः स्याद्बुबुतैलेन मर्दितः । चिन्ना तवीदितं चूर्णं तेन तैलेन मर्दयेत् ॥ गुटिकां कर्षमात्रान् भक्षयेत् प्रातरवधि । वातारिसंज्ञकोद्येष रसो नियतसेवितः । मासेन मरुती रोगान् हरेत् सुरतवर्जिनः ॥
भावप्रकाशः ।

3. कैशोरगुग्गुलुः । त्रिफलायास्त्रयः प्रस्थाः प्रस्थैकाचामृता भवेत् । सङ्ख्यलीहपात्रेषु सार्धद्रोणाम्बुना पचेत् ॥ जलमर्दयितं ज्ञात्वा गृह्णीयादस्त्रगालितम् । ततः काथे चिपेच्छुद्धं गुग्गुलुं प्रस्थसन्मितम् ॥ पुनर्देयमथःपात्रे दर्व्या संघर्षयेन्मुहः । सान्दीभूतं ततोज्ञात्वागुडपाक-समाकृतिम् । चूर्णीकृतं ततस्तत्रद्रव्याणीमानिप्रक्षिपेत् । त्रिफलादिपला ज्ञेया गुडचूचीपलिका-मता । गड्दं चतुषणं प्रीकं विडङ्गानां पलाईकम् ॥ दन्तीकर्षमिताकार्या त्रिवल्कषमिता तथा । ततः पिन्डीकृतं सर्वं घृतपात्रेविनिक्षिपेत् ॥ गुटिकां शायमात्रेण युक्त्वाद्दोषत्वपेक्षया । अनुपानं भिषग्दद्यात्कीष्णं नीरं पयोऽथवा । मञ्जिष्ठादिशतं वापि युक्तियुक्तं ततः परम् ॥ जयेत्सर्वान्चिकुष्ठानि वातरक्तं त्रिदोषजम् । सर्वत्रयानिगुण्यांश्च प्रमेहपिडकान्तथा ॥
शार्ङ्गधरः ।

boil the *gulanča* 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 tolás, *gulanča* eight tolás, ginger, long pepper and black pepper, each six tolás, *báberang* seeds four tolás, root of *Baliospermum montanum* (*lantí*) and *Ipomœa Turpethum* (*trivrit*), each two tolás, and beat them together into a uniform mass. Dose from a quarter to one tolá, 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.

Sadanga 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* (*vásaka*). A similar preparation is recommended for secondary syphilitic ulcerations. In unhealthy ulcerations, the following, called *Amrita guggulu*² is recommended. Take of *gulanča*, root of *Momordica dioica* (*patala*), the three myrobalans, long pepper, black pepper, ginger, and *báberung* 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 । विभीतक शिवा धात्री पटोलारिष्ट वासकैः । काशी गुग्गुलुना पेयः शीघ्रशुलाचिपाकहा ॥ पिलुञ्च सत्रणं शुक्रं रागादींश्चापि नाशयेत् । एतैश्चापि धृतं पक्वं रोगांस्तान् व्यपोहति ॥

चक्रदत्तः ।

2. अमृतागुग्गुलुः । अमृता पटोलमूल त्रिफला विकट्टु कनिष्ठानाम् । समभागानां चूर्णं सर्व्वसमगुग्गुलीभागः ॥ प्रतिवासरमेकैकां स्वादेदचप्रमाणाम् । जेतुं ब्रह्मान्वाता-सृग्गन्धोदरश्चयथुरोगादीन् ॥

चक्रदत्तः ।

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. MELIACĒÆ.

AZADIRACHTA INDICA.

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 *Amritāshṭaka*.² Take of *nim* bark, *gulanča*, root of *Picrorrhiza Kurroa* (*katuki*), tubers of *Cyperus rotundus* (*mustaka*), seeds of *Holarrhena antidysenterica* (*indrāyava*), leaves of

1. चवीवीरेष गोधूमकल्कं कुन्दुरकस्य वा । प्रलेपनं सुखीणं स्याद्बध्नश्चरः परः ॥
चक्रदत्तः ।

2. चमृताष्टकः । चमृतारिष्ट कटुका मुलेन्द्रयव नामरैः । पटीष्वचन्द्रनाभ्याश्च
पिप्पलीषूर्णयुक्शतम् ॥ चमृताष्टकमेव च पित्तश्लेष्मज्वरापहम् । हृद्यरीषकङ्कास दाह
दृष्या निवारणम् ॥
शाकं धरः ।

Momordica dioica (*patala*), ginger and red sandal wood, each quarter of a tolá, 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 tolá 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 gudiká*, *Pancha kasháya*, etc.

Pancha tikta ghrita.² Take of *nim* bark, leaves of *Momordica dioica* (*patala*), *Solanum Jacquini* (*kantakúri*), *gulan*, and bark of *Adhatoda vasica* (*vásaka*), each eighty tolás, 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 धात्रोविमिश्राण्यथबोभ्युञ्ज्यात् । विस्फोटकोट चत
श्रोतपित्तं कण्डुसपित्तं सहसा च जह्यात् ॥

चक्रदत्तः ।

2. पञ्चतिक्तकं घृतम् । निम्बं पटोलं व्याघ्रीञ्ज गुडूर्चीं वासकं तथा । कुर्याद्दशपत्रान्
भागानेकैकस्य सुकृष्टितान् ॥ जम्बूद्रीमे विपक्तव्यं यावत्पादावशेषितम् । घृतप्रस्थं पचेत्तेन
त्रिकलागर्भसंयुतम् । पञ्चतिक्तमिदं ख्यातं सर्पिः कृष्टविनाशनम् ॥

चक्रदत्तः ।

3. निम्बार्जुनाश्लथकदम्ब शाल जम्बूद्रीहुम्बर वेतसेष । प्रचालमालेष घृतानि
कुर्याद्दूर्धानि पित्तासभवोपदंश ॥

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 scrofulous 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* (*játipatra*), and of *Limnanthemum cristatum* (*tagarapáduká*), each eight tolás, 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, *Drákshá*. मृद्विका, *Mridviká*.

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

GRAPES have been known in India from a very remote period and are mentioned by Susruta 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

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

1. निम्बपत्र तिलैः कल्की मधुना चतशीधनः । चक्रदत्तः ।

2. मनःशिलासु भल्लात सूक्ष्मैलागुरु चन्दनैः । जातीपल्लव कल्कैश्च निम्बतैश्च विपा-
चयेत् ॥ बल्लोकं नाशयेत्तद्वि बहुकिद्रं बहुसवम् ॥ भावप्रकाशः ।

3. द्राक्षामखमखसुखूर्णं विपलीमरिचान्वितम् । पित्तकासापहं ह्येतन् विद्याम्बिकावि-
सर्षिणा ॥ शार्ङ्गपरः ।

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* (*núgakesara*), fruit of *Aglaia Roxburghiana* (*priyangu*), black pepper, long pepper and *búberang* 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, Linn.

Sans. ज्योतिष्मती, *Jyotishmati*.

Vern. Latáphatkiri, Nayáphatki, 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, *sarjiká*, (impure carbonate of potash) *Acorus Calamus* root (*vachá*) 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.³

1. द्राघारिष्टः । द्राघा तुलाह्नं द्विद्रोणे जलस्य विपचेत्सुधीः । पादशेषे कषाये च पूते शीते विनिःक्षिपेत् ॥ गुडस्य द्वितुलान्तत्र त्वगेला पत्र केसरम् । प्रियङ्गुमरिचं लक्षां विडङ्गं चेति चूर्शयेत् ॥ पृथक् पक्षीन्मितैर्भागैस्ततो भाण्डे निधापयेत् । समन्ततो घट्टित्वा पिवेज्जातरसन्ततः ॥ उरुचतं चयं इति कासश्वास गलामयान् । द्राघारिष्टाद्वयः प्रीक्षो बलकृन्मलशीघ्रनः ॥ शार्ङ्गधरः ।

2. सक्ताञ्जिवां जवापुष्पं भटं न्योतीष्मतीदलम् । दुर्व्यापिष्टञ्चसंप्राश्य वनिता त्वात्तं चमेत् ॥ चक्रः ।

3. पीतं न्योतीष्मतीपत्रं सज्जिंकोयासनं वाहम् । शीतेन पवसा पिष्टं कुसुमं जलयेद् ध्रुवम् ॥ भावप्रकाशः ।

NAT. ORDER ANACARDIACEÆ.

RHUS SUCCEDANEA, Linn.

Sans. कर्कटशङ्खी *Karkatasringi*.

Vern. *Kákrásringi*, Beng. *Kakarsing*, 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 supida* (*katphala*), and long pepper is recommended to be given in doses of about a drachm, with honey.² The following called *Sringyádi churna* is much esteemed as a cough linctus for children. Take of *karkatasringi*, *úti*, 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

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1. मार्गो द्राक्षा शटी शङ्खी विप्लवीविश्वभेषजैः । गुड़तैलयुथी लीही द्विती मारुत-
कासिनाम् ॥ चक्रदत्तः ।
 2. मधुना कृष्णा कट्फल कर्कटशङ्खीभवं चूर्णम् । आसामय महीये लीढा लीकः
सुखी भवति ॥ भावप्रकाशः ।
 3. शङ्खादिचूर्णम् । शङ्खी प्रतिविषा कृष्णा चूर्णिता मधुना लिङ्गेत् । शिशुः कास-
ज्वरश्चदिशान्त्यै वा शैवला विषाम् ॥ शार्ङ्गधरः ।

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 *Terminolia 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, *Linn.*

Sans. भल्लतक, *Bhallātaka*. अरुष्कर, *Arushkara*.

Vern. Bhelā. *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. यो ग्व्यक्त्वाति सारिषु विलासास्थिभवसथा ।

शाङ्ग'परः ।

2. आमजम्बू च ककुभं चूर्णीकृत्य जले क्षिपेत् । दिमं तस्य पिबेत्प्रातः सुखीद्रं

रक्तपित्तमित् ॥

शाङ्ग'परः ।

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 Bhallātaki.*² 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 *Saindhavādya taila*, for which see Ginger.

1. तिलभल्लातकं पथ्या गुडश्चेति समाश्रितम् । दुर्नामकासत्रासप्तं श्रीहपाण्डुज्वरा-
पथम् ॥ चक्रदत्तः ।

2. असतभल्लातकी । सुपकभल्लातकानि सम्यक् द्विधाविदार्यादकसन्धितानि ।
विपाच्य तीर्थेन चतुर्गुणेन चतुर्थशेषे व्यपनीय तानि । पुनः पचेत् चौरचतुर्गुणेन घृतां पयुक्तेन
घनं यथा स्यात् । सितोपलाषोडशभिः पलेस्तु विमिश्र्य संस्थाप्य दिनानि सप्त ॥ ततः
प्रयोष्यापिबन्नेन माता जयेद्गुदीत्यानखिलात् विकारान् । कचान् सुनीलान् घन-
कुचितायान् सुपर्णदृष्टिं सुकुमारताञ्च ॥ एवं हयानाञ्च मतङ्गञ्च बलं स्वरं मयूरस्य हुताश-
दीप्तिम् । लोबल्लभत्वं लभते प्रजाञ्च नीरीगमन्देहतानि आयुः ॥

चक्रदत्तः ।

NAT. ORDER. LEGUMINOSÆ.

SARACA INDICA, *Linn.**Syn. Jonesia Asoca, Roxb.**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 Rámchandra, 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 tolás of the bark in eight tolás of milk and thirty-two tolás 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. Jashti madhu, Beng. Mulhatti. 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. अशोकवल्कलकाशयतं दुग्धं सुशीतलम् । यथाबलं विवेत्यातसीवामृन्दरनाशनम् ॥

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 *Rubas sus* in Hindustani.

TRIGONELLA FŒNUM-GRÆCUM, *Linn.*

Sans. मेथि, *Methi.* *Vern.* Methi, *Hind. Beng.*

THE *Trigonella Fœnum-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*, *Svalpa methi modaka* etc., and are recommended for use in dyspepsia with loss of appetite, in the diarrhoea 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* (*katphala*), *pâtchak* root, *Rhus succedanea* (*karkatasringi*), ajowan, rock salt, black salt, leaves of *Pinus Webbiana* (*túlisa*), flowers of *Mesua ferrea* (*nágakesara*), *tejpatra*, 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. मेथिमोदकः । विकटु विकला मुस्तगीरकद्वय घान्यकम् । कटफलं पीप्लरं शङ्खी
युमानो सैन्धवं विडम् ॥ तालीञ्जं केसरं पत्रं त्वमेखा च फलं तथा । जातीशीषं लवङ्गञ्च
सुरा कर्पूरं चन्दनम् ॥ यावन्त्येतानि चूर्णानि तावदेव तु मेथिका । संचूर्णं मोदकः सार्थः
पुरातनगुणेन च । घृतेन मधुना किञ्चित् खादेदपिबलं प्रति । अपिञ्च कुरुते दीप्तं सामे
मेदे महीषणम् ॥

मैथमारवावणी ।

ALHAGI MAURORUM, *Tournef.*

Sans. दुरासभा, *Duralabhá*, यवास, *Yavása*. *Vern.* *Yavása 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 *yásasarkará* or the sugar obtained from *yavása*. 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 Sárangadhara in constipation with suppression of urine. Take of *Alhagi Maurorum*, chebulic myrobalans, pulp of *Cassia Fistula* (*áragbadha*), fruits of *Tribulus terrestris* (*gokshura*), and root of *Coleus aromaticus* (*páshanbhid*), 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 *yavása*, raisins, chebulic myrobalans and long pepper in equal parts, powder and mix with honey and clarified butter.²

DESMODIUM GANGETICUM, *DC.*

Syn. *Hedysarum Gangeticum.* (*Rob.*)

Sans. शालपर्णी, *Sálaparni*. *Vern.* *Sálpáni*, *Beng.* *Sariran*, *Hind.*

THIS little shrub is regarded as febrifuge and anti-catarrhal. It forms an ingredient of the compound decoction called *dasamula kvatha*, a combination much used in a great variety of diseases. *Dasamula* is made up of *Desmodium Gangeticum* (*sálaparni*), *Uraria lagopodioides* (*prishniparni*), *Solanum Jacquini* (*kantakári*), *Solanum Indicum* (*vrihati*), *Tribulus terrestris* (*gokshura*), *Ægle Marmelos*

1. इरीतकी दुरासभा कतमासक मोचुरैः । पाषाणभेदसहितैः काशी माषिक संयुतः । विबन्धमूषकृच्छे च सदाहै सरले हितः ॥ शाकधरः ।

2. द्राक्षा यासामया कृष्णा वर्षे सचीद्र सपिंसा । लीटं शसं निहन्याश्च कासश्च तमकं तथा ॥ चक्रदत्तः ।

(vilva) *Calosanthus Indica* (syonáka), *Gmelina arborea* (gumbhári), *Stereospermum suaveolens* (pítula) and *Premna spinosa* (gunikáriká). The first five in the above list, are collectively called *hrasvapancha mula* or the five minor plants, and the last five are called *vrihat 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 *vrihat 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 *Ashtádasánja páchanu* consists of the ten drugs above mentioned, with the addition of the eight following, namely, *chiretá*, *devadáru*, ginger, tubers of *Cyperus rotundus* (*mustaka*), root of *Picrorrhiza Kurroa* (*katuki*), *indrojara* 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 । विल्ल श्योनाक शान्भारी पाटला मणिकारिकाः । दीपनं कफ-
वातघ्नं पञ्चमूलमिदं महत् ॥ शालपर्णी पृश्निपर्णी हृत्तीक्ष्य नीचुरम् । वातपित्तहरं हृष्यं
कनीयः पञ्चमूलकम् ॥ उभयं दशमूलन्तु सन्निपातज्वरापहम् । कासे शोथे च तन्द्रार्था
पाश्वं श्लेच शक्यते । पिपली चूर्णसंयुक्तं कण्ठहृदयहनाशनम् ॥ चक्रदत्तः ।

2. पित्तशोथहरोऽष्टादशाङ्गः । मूनिक्क दाह दशमूल महीषघाद तिलेन्द्रबीज
वनिकेभक्तशाकषाद्यः । तन्वीपलाप कसनाक्षि दाहमोह वासादिमुक्तमखिलं ज्वरमाह
इति ॥ चक्रदत्तः ।

URARIA LAGOPODIODES, *DC. Edgew. Syn. Doodia lagopodioides Roeb. Sans. पृथ्वर्णी Prithvāṇī. Vern. Chākuliā, 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-catarrhal, but is seldom used alone.

CLITOREA TERNATEA, *Linn.*

Sans. अपराजिता, Aparājitā, विशुकान्ता, Vishukrāntā.

Vern. Aparājitā, Beng. Aprājil, Hind.

THE root of *Clitoria 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 *aparājitā* root. Take of the roots of *aparājitā*, *Pladeria decussata* (*sankhīni*), *Baliospermum montanum* (*danti*) and *Indigofera tinctoria* (*nilini*), 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. शतमगुता, Shatmagutā. कपिकच्छु, Kapikachchhu. वानरी, Vānari.

Vern. Alkusi, Beng. Kivuch, Hind.

THE English names Cowage or Cowitch are derived from the Hindi *Kivuch*. 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. कवाची शदिनी इन्दी नीलिनीककसंयुतम् । सर्वोदरविनाशाय गोमूत्रं
पानुमारमेत् ॥ चक्र. ।

2. खयंगुमेदुःकथीर्वाजिचूर्णे सशर्करम् । धारीकेन नर. पीत्वा पयसा न खयं
ब्रजेत् ॥ सुयुतः ।

Bhāvaprakāsa recommends the following preparation called *Vānavari vati*. Take of the seeds of *Mucuna pruriens* thirty-two tolās, 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 tolā. This preparation is said to be the best of aphrodisiacs.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 *Māshbalādi*, for which see *Assafoetida*.

BUTEA FRONDOSA, Roxb.

Sans. पलाश, *Palāsa*. किंसुका, *Kinsuka*. Vern. Dhák. Hind.

DR. HOOKER states "that when in full flower the *Dhák* 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। बीजानि कपिकक्षा कुडुवमितानि खेदयेद्भनकैः। प्रस्थे गीमवदुग्धे तावत् यावद्भवेत् गाढम् ॥ त्वग्रहितानि च कृत्वा सूक्ष्मं सम्पेशयेत्तानि। पिष्टिका वा लघुवटिकाः कृत्वा गव्ये पचेदाजैः ॥ द्विगुणित शर्करापाता वटिकाः सम्पकया लेप्याः। वटिका मात्रिक मध्ये मज्जनयोग्ये विरलाः स्याप्याः ॥ पञ्चटङ्क मिलासाम्नु प्रातः सादृश मन्त्रयेत्। अनेन शीत्रद्रावी यो यश्च स्यात् पतितध्वजः ॥ सोऽपि प्राप्नोति सुरते सामर्थ्यमति वाञ्छितम्। मानेन सदृशं किञ्चिद्द्रव्यं वाञ्छिकरं परम् ॥ भावप्रकाशः।

2. पलाशबीजस्वरसं पिष्टिका बीद्रसंयुतम्। पिवेत्तद्बीजकं वापि तक्रंण कृमिनाशनम् ॥

भावप्रकाशः।

Take of the seeds of *Butea frondosa*, root of *Ipomœa Turpethum* (*trivrit*), seeds of *Hyoscyamus niger* (*pīrasika yamāni*), kamalī powder, báberang 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.
 मुद्गरणी, *Mudgaparni*. *P. trilobus*, Ait. Vern. Mugāni, B.
 मकुठ, *Makushtha*. *P. aconitifolius*, Jacq. Vern. Mot, H.
 कुलत्थ, *Kulattha*. *Dolichos uniflorus*, Lamark. Vern. Kulthi, H.B.
 राजमाष, *Rājumāsha*. *Vigna Sinensis*, Linn. Vern. Barbati, B.
 शिन्धि, *Simbi*. A common name for several species of *Dolichos*.
 चणक, *Chanaka*. *Cicer arietinum*, Linn. Vern. But, Beng. Chená, H.
 मसूर, *Masura*. *Vicia Lens*, Benth. Vern. Masur, H. B.
 सतिवा, *Satilá*. *Pisum sativum*, Linn. Vern. Matar, H. B.
 चादकी, *Adhaki*. *Cajanus Indicus*, Sprengel. Arar, B. Tor, H.

1. चिह्नतपलाशबीजानि पारसीकयमानिका । कम्पिहकं विद्वहसु गृह्य सम-
 भागिकः ॥ तकोष कल्क एतेषां पीतः किमिगणापहः ॥ शाङ्खरः ।

2. चन्दमं सैन्धवं पथ्या पञ्चाग्रतद्वशीणितम् । कसुहमिदं चूर्णं शुक्राग्नादि-
 विविधनम् ॥

विपुटी *Tripiti*. *Lathyrus sativus*, Linn. *Khesári*, H. B.

माषपर्णी *Máshaparni*. *Glycine labialis*, Linn. Vern. *Másháni*, 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*, *kulathla* 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 *chanakámbla* in Sanskrit. It is collected by spreading a cloth over the plants during the night and rinsing the fluid absorbed by it. *Chanakámbla* 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* (*átmaguplá*) and *Sida cordifolia* (*balá*), half a tolá 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 seers, 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. गुच्चा, 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 tolá or rupee.

1. माषात्मगुप्फकैरस्य वाद्यालकं ग्रतं पिबेत् । हिङ्गुसैन्धवहंयुक्तं पचाघात निवारकम् ॥

चक्रदत्तः ।

2. खन्यमाषतैलम् । तैलं सङ्घृष्टितेऽभ्यङ्गी माससैन्धवसाधिरम् । वाह्नीर्षमते नस्यं पाण्ड्योत्तरमन्त्रिकम् । काषीऽत्र माषनिषादः सैन्धवं कल्कमेव च ॥

चक्रदत्तः ।

*Gunjá bhadra rasa.*¹ Take of the seeds of *Abrus precatorius* six parts, mercury three parts, sulphur twelve parts, *nim* seeds, *Cannabis 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 *Cannabis sativa*, of datura leaves and of the leaves of *Solanum nigrum* (*kákamachi*). This medicine is given in doses of about eight grains, with rock salt and assafoetida, 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 *gunjá* seed and plumbago root is applied as a stimulant dressing. In alopecia a paste of *gunjá* seed is recommended to be rubbed on the bare scalp.³

*Gunjádyā tailam.*⁴ Take of prepared sesamum oil four seers, juice of the leaves of *Wedelia calendulacea* (*bhringarāja*) 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. गुञ्जाभद्ररसः । निष्कत्रयं शुद्धसुतं निष्कद्वादश गन्धकम् । गुञ्जाबीजञ्च षमिष्कं निम्बीजं जया तथा ॥ इत्येकं निष्कमानन्तु निष्कं कैपालबीजकम् । जयाजम्बीरधूसूर-काकमाची द्रवैर्दिनम् ॥ भाषयित्वा बटीं कृत्वा दद्याद्गुञ्जाचतुष्टयम् । गुञ्जाभद्ररसो नाम हिङ्गुसैन्धव संयुतः । शमयतुल्लणं दुःखमुरुस्तम्भं सुदारुणम् ॥

रसेन्द्रसारसंयुतः ।

2. तत्र प्रदेहं दद्याच्च विष्टं गुञ्जाफलैः कृतम् । तेनाववाहजा पीडा विपची गृध्रसी तथा । अन्यापि वातजा पीडा प्रशमं याति वेगतः ॥

शार्ङ्गधरः ।

3. गुञ्जाफलाग्निचूर्णञ्च लेपितं श्रेतकुष्ठनुत् ॥

शार्ङ्गधरः ।

गुञ्जाफलैश्चिरं लिम्पेत् वैशम्भिमं समन्ततः । हस्तिदन्तमसीं कृत्वा मुख्यचैव रसाञ्जनम् ॥ लोमान्यनेन जायन्ते नृणां पाण्डितदेष्वपि ॥

चक्रदत्तः ।

4. गुञ्जादि तैलम् । गुञ्जाफलैः शृतं तैलं भङ्गराजरसेन च । कण्डुदारुणहृत् कुष्ठं कपालव्याधिनाशनम् ॥

भाषप्रकाशः ।

PONGAMIA GLABRA, *Vent.*

Sans. करञ्ज, *Karanja* नक्तमाल, *Nactamāla*.

Vern. Darkaranja, *Beng* Kiramāl, *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 *Aplotaxis auriculata* (*kushtha*), are rubbed into a paste with cow's urine, and applied to eruptive skin diseases.¹

*Prithisāra taila.*² Take of the expressed oil of the seeds of *Pongamia glabra* one seer, *kānjika* eight tolās, roots of *Plumbago Zeylanica* (*chitraka*), *Nerium odorum* (*kararira*), *Vitex Negundo* (*nirgundi*), aconite, and the seeds of *Corchorus olitorius* (*nādika*), eight tolās 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.

*Tiktādya ghrīta.*³ Take of the leaves and fruits of *Pongamia glabra*, root of *Picrorrhiza Kurroa*, (*katuki*), wax, turmeric, liquorice root, leaves of *Trichosanthes dioica* (*patala*), *Aganosma caryophyllata* (*mālati*) 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 Bonduc nuts called पूतीकरञ्ज, *Putikaranja* in Sanskrit, and *Nātāka-*

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1. करञ्जबीजैर्दमजः सकुम्भी गोमूत्रपिष्टस्य वरः प्रदेहः ॥ चक्रदत्तः ।
 2. पृथ्वीसारतैलम् । श्वितकस्याथ निर्गुण्ड्या इयमारम्य मूलतः । नाडीचबीजादिषतः काञ्जिपिष्टं पलं पलम् ॥ करञ्जतैलाटपलं काञ्जिकस्य पलं पुनः । मिश्रितं सूर्यसन्तप्तं तैलं कुष्ठवशासजित् ॥ चक्रदत्तः ।
 3. तिक्ताद्यं घृतम् । तिक्ता सिक्थ निशा यष्टी नक्ताहफलपल्लवैः । पटोल माखती निम्बपत्रैर्ब्रह्मं घृतं पचेत् ॥ चक्रदत्तः ।

runja 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. *Lálehandan*, 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 saunders, large quantities of which are annually exported from India. Sanskrit writers describe several varieties of sandal or *chandana*. Of these *srikhanda* 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 sál*," Beng. by Roxburgh. The Sanskrit term *Pitasála* 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. तिलाः पत्रः चिता चीद्रं तैलं मधुक चन्दनम् । क्षेपेन शोषणम् दाह रक्तं
निर्वापयेद्भक्षान् ॥ चक्रदत्तः ।

CASSIA FISTULA, *Linn.*

Sans. चारुवध, *Arugbadha*. सुवर्णक, *Suvarnaka*.

Vern. Amultás, *Hind.* Southáli, *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 *Rójatara* 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.

Arugbadhádi.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*, *Picrorrhiza Kurroa* (*katuki*), chebulic myrobalans, long pepper root and the tubers of *Cyperus rotundus* (*mustaka*), about sixty-four grains each, water thirty-two tolás, and boil down to eight tolás. 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.* *Sans.* कासमर्दे, *Kásamarda*. *Vern.* Kólkisundá, *Beng.* Kásundá, *Hind.*

CASSIA TORA, *Linn.* *Sans.* चक्रमर्दे *Chakramarda*. *Vern.* Chákundia, *Beng.* Chakarand, *Hind.*

CASSIA ALATA, *Linn.* *Sans.* दद्रुघ्न, *Dadrughna*. *Vern.* Dádmardan, *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. *Kásamarda* 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. चारुवधादि । चारुवध कणामूल मुक्त तिलभयाकृतः । काथः शमयति क्षिप्रं
स्वरं वातकफोत्तरम् ॥ शाईधरः ।

The seeds of *Cassia Sophora*, *Raphanus sativus* (*mulaku*) 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 neriifolia*, 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* (*gulantha*) are rubbed together into a paste and applied in ringworm.³ *Dadrughna* or *Dādāmadana* signifies curer of ringworm. Its leaves are used in this disease.

BAUHINIA VARIEGATA, Linn.

Sans. काञ्चनार, *Kānchanāra*. कोविदार, *Kovidāra*.

Vern. Kachnār, Hind. Rakta Kānchan Berg.

Two species of *Bauhinia*, namely purple and white flowered (*Bauhinia variegata* and *acuminata*), are noticed in the *Bhāvaprakāsa* under the names of *Kovidāra* and *Kānchanāra* 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.⁴ Sārangadhara gives the following preparation for the same affection.

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1. कासमर्दकबीजानि मूलकानां तथैवच । मन्त्रपाषाणनिश्राणि सिन्धाना
परमौषधम् ॥ चक्रदत्तः ।
 2. चक्राह्वयं स, हौचौरभावितं मृतसंयुतम् । रवितप्तं हि विचित्रं लेपनात्
किटिमापहम् ॥ चक्रदत्तः ।
 3. चक्रमर्दकबीजानि करञ्जस्य समांशकम् । लोकां मुदशनामूलं दद्रुकुष्ठविनाशनम् ॥
चक्रदत्तः ।
 4. पिष्टा जगताम्बुना पेक्षाः काञ्चनारत्वचः सुभाः । विश्वभेषजसंयुक्ता मण्डमात्रापहाः
पराः ॥ चक्रदत्तः ।

Kānchanāra guggulu.¹ Take of the bark of *Bauhinia variegata*, eighty tolās, the three myrobalans sixty tolās, ginger, black pepper, long pepper and the bark of *Cratæva religiosa* (*varuna*), eight tolās each, cardamoms, cinnamon, and *tejpatra* leaves, each two tolās, powder them all and rub together with *guggulu*, equal in weight to all the other ingredients. Dose, half a tolā to be taken every morning with a decoction of *Sphœranthus mollis* (*mundi*) or of catechu. This medicine is said to be useful in scrofulous enlargements of glands, tumours, ulcers, skin diseases, etc.

TAMARINDUS INDICA, Linn.

Sans. तिलिही, *Tintidi*. अम्लिका, *Amlikā*.

Vern. Tentul, Beng. Imli, 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 *Tumare-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 *Abhayālarunu*, (see Alkaline ashes). The pulp of the ripe

1. काञ्चनारगुग्गुलु । काञ्चनारत्वचीयाह्यं पलानां दशकं बुधैः । त्रिफला षट्-
पला याद्या विकटु स्यात्पलत्रयम् ॥ पलेकी वङ्गः कार्य एलात्वक्पत्रकन्तथा । एकैकं कषे-
माकं स्यात् सर्वौष्णेकत्र चूर्णयेत् ॥ यावच्चूर्णनिर्दं सर्वं तावन्मादन्तु गुग्गुलु । कडुका
सर्वमेकत्र पिष्टं कृत्वाच धारयेत् । गुटिकाः शणिकाः कृत्वा प्रातयाद्या यथोचितम् ।
गण्डमाला जयतुराणपचीमर्मुदानि च ॥ यन्त्रि त्रणाणि गुल्यांश कुष्ठानि च भमन्दरम् । प्रदेय-
शानुपानार्थं काषी मुष्कितिकाभवः ॥ काषः सुदिरमारु पथ्याकाषोऽथ चोष्णकः ॥

शाङ्गधरः ।

fruit, as well as a poultice of the leaves, is recommended to be applied to inflammatory swellings.

*Amliká pánam.*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 tolá, pound them together, and make an emulsion with thirty-two tolás 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 Bhávaprakása mentions two varieties of catechu, namely, *khadira* or the ordinary dark brown catechu and *kadara* or pale catechu. This last is known as *pápri khaer*, or catechu having a laminated structure. Fluckiger 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. अम्लिकापानम् । अम्लिकाया फलं पकं मर्दितं वारिणा दृढम् । शकंरा मरिचो-
न्मिश्रं खड्गेन्दु सुवासितम् ॥ अम्लिकाफलसम्भूतं पानकं वातनाशनम् । पित्तश्लेष्मकरं
किञ्चित् सुख्यं वज्रिदीपकम् ॥ भावप्रकाशः ।

2. मयः खर्जूरमूलीका उवासास्त्रीकदाडिमैः । परुषकैः सामकैर्युक्ती सद्य-
विकारगत् ॥ चक्रदत्तः ।

3. Pharmacographia, page 250.

leaf sold in all the Indian bazars under the name of *golábi khili*, 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 Ratnávali*, called *Grahani kapáta rasa*, which contains catechu along with a large number of other drugs, but it is not regarded as an important medicine for these 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 *Svalpakhadira vatiká* 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 *kakkola*, 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 *khadirúshataka* is prescribed by several writers for internal use in boils, prurigo, measles and other

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1. तैलात् खरभेदे वा खदिरं धारयेन्मुखे ॥ चक्रदत्तः ।
 2. खल्पखदिरवटिका । खदिरस्य तुलां सम्यग् जलद्रोणे विपाचयेत् । शेषेऽष्ट भागे तत्रैव प्रतिवापं प्रदास्येत् ॥ जातीरूपं पूगानि ककौलक फलानि च । इत्येषा मण्डिका कार्य्या मुखसौभाग्यवर्द्धिनो ॥ दन्तौष्ठमुखरोगेषु निहातान्त्वामयेषु च ॥ चक्रदत्तः ।
 3. खदिरकषायी ब्रह्मशोधने द्वितः ॥ चक्रदत्तः ।

skin diseases.¹ Take of catechu, the three myrobalans, *nim* bark, leaves of *Trichosanthes dioica* (*patala*), *gulanča* 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 Deodara*, and some other ingredients in smaller proportions.²

ACACIA ARABICA, Willd. Sans. ववुल, *Vabbula*. 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. प्रलेपोद्धतं खान पान भोजन कर्मणि । शीघ्रितं खदिरं वारि सर्व्वत्वग्दीप-
नाशनम् ॥ चक्रदत्तः ।

2. खदिराटकः । खदिर त्रिफलादि पटोलामृत वासकैः । काषोऽष्टकाङ्गो जयति
रोमान्तिकमत्तुरिजाः । कुष्ठविषर्प विस्फोट कण्डूदीनपि 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 tolás 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 diarrhœa, costiveness, 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 *triphala* 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 *Pathyádi krátha* is also much used as a purgative. Take of chebulic myrobalans, pulp of *Cassia fistula* (*áragbatha*), root of *Plicorrhiza Kurroa* (*katuki*), root of *Ipomœa Turpethum* (*trivrit*) and emblic myrobalans, equal parts, in all two tolás, 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 पथ्यादिकाथः । पथ्यारग्ध्र तिक्ता चित्रदामलकैः शतपेयम् । पाचनसारक युक्तं नवबीर्जवरी समे ।

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 chebulic myrobalans are boiled in butter-milk, and their seeds are taken out. Four tolás each of long pepper, black pepper, ginger, cinnamon, plumbago root, root of *Piper Chaba* (*chaviká*), the five salts, *ájowan*, and the seeds of *Seseli Indicum*, (*vanayamáni*), *yavakshára*, *sarjikákshúra*, borax, assafoetida 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 *Baliospermum montanum*. The other preparations of chebulic myrobalans are not much in vogue at present.

TERMINALIA BELLERICA, Roxb.

Sans. विभीतकी, *Vibhitaki*. *Vern.* Baherá, *Hind.* Beng.

BELLERIC myrobalans are described as astringent and laxative and useful in cough, hoarseness, eye diseases, etc. As a constituent

1. गुदेन मधुना गुण्या कण्ठ्या लवणेन वा । देहे स्वादन् सदा पथ्ये कीवेद्वर्षतं सुखी । सिन्धुत्यक्करा शुष्ठीकणामधुगुडेः क्रमात् । वर्षादिष्वभया सेव्या रसायनगुणैश्चिषा ।

चक्रदत्तः ।

2. चसुतहरीतकी । हरीतक्याः कृतं याद्यं तक्रैः खिन्नं समुद्भूतम् । षडूषणं पञ्चपटु यमानोदयमेव च ॥ विदारं दिङ्गु दिव्यञ्च कर्षदयमितं पृथक् । श्लेष्मचूर्णोक्तं सर्वं चुक्रास्तेनापि भावयेत् । तिम्याकस्त्रसेनापि भावयेच्च दिनत्रयम् । स्वादयेदभयामेकां सर्व्वाजीर्णविनाशिनीम् ।

भेषज्यरवावली ।

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.* कुकुम, *Kukubha.*

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

1. विभीतफलसञ्चस्तु लेपो दाहार्तिनाशनः । शार्ङ्गधरः ।
2. कलितरुफलं सिन्धु कषाचूर्णं तक्रेण खीदमपहरति । स्वरमेदं गोपयसा पीतं वानसकचूर्णञ्च ॥ चक्रदत्तः ।
3. विभीतफलं किञ्चिद्घृतेनाभ्यज्य लेपयेत् । गोधूमपिष्टै रङ्गारैर्विपचेत् पुटपाकवत् । ततः पक्वं समुद्रुत्य त्वचन्तस्य मुखे चिपेत् । कासश्वास प्रतिश्याय स्वरभङ्गाश्चयेत्ततः । शार्ङ्गधरः ।
4. अक्षुण्णस्य त्ववा सिद्धं चीरं योज्यं हृदामथे । मितवा पञ्चमूल्यावा बलया मधुकेन वा । घृतेन दुग्धेन मुद्गाशसावा पिबन्ति चूर्णं कुकुमत्वचो ये । इद्रोयजीर्णश्वर रक्तपित्तं हत्वा भवेयुश्चिरजीविनस्तै ॥ चक्रदत्तः ।
5. अर्जुनघृतम् । पार्थस्य कल्क स्वरसेन सिद्धं शस्तं इतं सर्वं हृदामयेषु । चक्रदत्तः ।

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. जम्बु, Jambu. Vern. Kálajám, Beng. Jámun, 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 *Jámbara* 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

1. मधुः पिवेत्त्वक्पयसार्जुनस्य गोधूमचूर्णं सहृतेन वाप । चक्रदत्तः ।
2. विल्वशक्राम्बुमीचाब्द सिद्धमार्जं पयःशिशोः । समांसरक्तां यद्दृषीं पीतं इत्यात् विराजतः । तद्दन्वाचीरसमी जम्बुत्वग्द्वयो रसः ॥ चक्रदत्तः ।
3. जम्बुशक्राम्बुमीचानु पञ्चवानस्य कुट्टयेत् । संगृह्य स्वरसं तेषामजाचीरेण योजयेत् । तं पीवेन्मधुना युक्तं रक्तातिसारनाशनम् ॥ भावप्रकाशः ।

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 *Chatuhsama vati*, is commonly used in indigestion. Take of cloves, ginger, *újowan* and rock salt, equal parts, and make into eight-grain pills.

NAT. ORDER. LYTHRACEÆ.

WOODFORDIA FLORIBUNDA, *Salisb.*

Syn. Grisea tomentosa, Roxb.

Sans. धातकी, Dhátaki. अग्निज्वाला, Agnijvála.

Vern. Dháiphul, Beng. Dhái, 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 *Guchchhapushpi* 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* (*lodhra*), root of *Pavonia odorata* (*bálá*), and the fruits of *Pothos officinalis* (*gajapipul*), in equal parts, two tolas in all, and prepare a decoction in the usual way.³

1. विपासायाननुत्केशे लवङ्गसामु शस्यते ॥

चक्रः ।

2. धातकीवाचमात्रं वा आमलक्यामधुद्रवम् । पाण्डुप्रदरशान्तर्यं पिबेत्तण्डुलवारिणा ॥

चक्रदत्तः ।

3. धातकीविल्वलीघ्राणि बालकं गजपिप्पली । एभिः कृतं शतं शीतं त्रिगुण्यः शोदसंयुतम् । प्रदद्यादवहं हं वा सर्वातीसारशान्तर्ये ॥

शाङ्गधरः ।

The powdered flower is sprinkled over ulcers for diminishing their discharge and promoting granulation.¹

NAT. ORDER HAMAMELIDEÆ.

LIQUIDAMBAR ORIENTALE, *Miller. Sans. सिद्धक, Silhaka. Vern. Siláras, 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, *Linna.*

Sans. दाड़िम, Dádima. Vern. Anár, 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 notice of pomegranate root-bark in Sanskrit works.

*Dádimáshtaka.*² Take of pomegranate rind one seer, bamboo-manna two tolás, cardamom, cinnamon, *tejapátra*, and flowers of *Mesua ferrea* (*nágakesara*), each four tolás, *ájowan*, coriander, cumin seeds, long pepper root, long pepper, black pepper and ginger, each eight tolás, sugar one seer. Powder the ingredients and mix. Dose, about one drachm in chronic bowel complaints.

1. घातकोचूर्णलोध्रैर्वा तथा रोहन्ति ते व्रणाः । चक्रदत्तः ।

2. दाड़िमाटकः । कर्षोन्मिता तुगाक्षीरो चातुर्जातं द्विकार्षिकम् । यमानी घातकाजाजी यन्त्रि व्योषं पलाशिकम् ॥ पलाशि दाड़िमादष्टौ सितायाश्चैकतः कृतः । गुणैः कपित्वाटकवचूचीस्यं दाड़िमाटकः ॥ चक्रदत्तः ।

NAT ORDER CUCURBITACEÆ.

BENINCASA CERIFERA, *Savi.**Syn. Cucurbita Pepo, Roxb.**Sans. कुमाण्ड, Kushmānda. Vern. Kumrá, Beng. Pethá, 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 kushmāndaka,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 । कुमाण्डकात्पलशतं सुस्विन्नं निष्कृषीकृतम् । पचेत्तत्र वृत्तप्रस्थे शनैस्ताम्रमये दृढे ॥ यदा मधुनिभः पाकस्तदा खण्डशतं न्यसेत् । पिप्पली शङ्खवेराभ्यां च पले गौरकस्य च ॥ त्वगेत्वापवमरिच धान्यकानां पखार्द्रकम् । न्यसेद्दूर्णीकृतं तत्र द्रव्यासंघङ्गयेन्मुहुः ॥ तत् पकं स्थापयेद्वाण्डे दत्त्वा चौद्रं वृत्ताङ्कम् । तदायाप्रिषत्वं स्वादिद्रक्तपित्ती चतस्रथी ॥ कासत्रास तम श्कदिंष्टणाञ्चरनिपीडितः । वृष्यं पुनर्नैषकरं बलवर्णप्रसाधनम् ॥ उरः सम्भानकरणं वृंष्टयं स्वरशीघनम् । अन्निभ्यां निर्मितं सिद्धं कुमाण्डकरसाधनम् ॥ खण्डामलकमानानुसारात्कुमाण्डकद्रवात् । पाचं पाकाय दातव्यं दावान्वाव रसो भवेत् । अत्रापि मुद्रया पाकी निस्त्रयं निष्कृषीकृतम् ॥ चक्रदत्तः ।

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 tolás of the prepared pulp are fried in sixteen tolás of clarified butter, and again boiled in the juice of the fruit, till reduced to the consistence of honey. To this are added fifty tolás 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 tolás, cumin seeds, cardamoms, cinnamon, leaves called *tejapatra*, black pepper and coriander, each half a tolá in fine powder, are added to the syrup and stirred briskly with a ladle, till the mass is cool. Eight tolás 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 tolás, 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 kushmánda khanda.*¹ 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 tolás; fry it in thirty-two tolás of clarified butter; and boil in the decoction of *vásaka* till the whole is reduced to the consistence of honey. Add to it sugar, one hundred tolás, 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 *elabáluka*, cinnamon, cardamom, *tejapatra*, each quarter of a tolá,

1. वासाखण्डकभाण्डकः । पञ्चाशच्च पलं खिन्नं कुम्भाण्डात् प्रस्थमाज्यतः । ग्राह्यं पलशतं खण्डं वासाकाथादके पचेत् ॥ मुस्ता धात्री शमा भार्गी विसगन्धिश्च कार्षिकैः । ऐलेय विम्व-धन्याक मरिचैश्च पलाण्डिकैः ॥ पिप्पलीकुडवच्चैव मधुमानीं प्रदापयेत् । कामं शमं चयं हिक्कां रक्तपित्तं हलीमकम् । हृद्दीगमस्रपित्तञ्च पीनसञ्च व्यपीहति ॥

चक्रदत्तः ।

ginger, coriander, and black pepper each one tolá, long pepper, four tolás, stir well till the confection cools and lastly add eight tolás 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.

*Kushmándaka 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 tolás.

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. कुष्माण्डकघृतम् । कुष्माण्डकरसे सर्पिरष्टादशगुणे पचेत् । यथाहकल्कं तत्पान-
मपसारविनाशनम् ॥ चक्रदत्तः ।

2. दीपनं कफविच्छेदि वातपित्तानुलोमनम् । ज्वरघ्नं पाचनं भेदि शतं धान्यपटलयोः ॥

enter into the composition of several compound decoctions for fever. The following called *Patoládi kvátha* is an illustration. Take of *patola* leaves, red sandal wood, root of *Sansevieria Zeylanica* (*murvá*), *Picrorrhiza Kurroa* (*katuki*), *Stephania hernandifolia* (*páthá*) 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*, *mustaka*, *chiretá*, *nim* bark, *catechu*, root-bark of *Justicia Adhatoda* (*vásaka*), and *Oldenlandia herbacea* (*parpata*), equal parts, in all two tolás, 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 *Ipomœa Turpethum* and other adjuncts as a drastic purgative in jaundice, anasarca and ascites. The following called *Patoládyá churna* is an illustration. Take of the root of *Trichosanthes dioica* (*patola*), turmeric, *báberang* seeds, *kamalá* powder, and the three myrobalans, two tolás each, cinnamon, and the root of the indigo plant, three tolás each, *Ipomœa Turpethum* (*trivrit*) four tolás; 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

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1. पटीलं चन्दनं मूर्वा तित्ता पाठामृतागणः । पित्तश्लेष्माश्चिह्निर्द्वि ज्वरकण्डूविषापहः ॥
चक्रदत्तः ।
 2. पटीलामृतभूनिम्ब वासकारिष्टपर्पटैः । खदिराब्जयुतैः काथी विस्फोटार्तिज्वरापहः ॥
चक्रदत्तः ।
 3. पटीलाद्यं चूर्णम् । पटीलमूलं रजनी विडङ्गं विफलात्वचम् । कम्पिह्वकं नीलिनीञ्ज
विहताञ्चेति चूर्णयेत् ॥ षड्भयान् कार्ष्णिकानन्त्यास्त्रींश्च द्वित्रिचतुर्गुणान् । कृत्वा चूर्णं ततो मुष्टिं
गवां मूत्रेण नापिबेत् ॥ विरिक्तो जाङ्गलरसेर्भुञ्जीत मृदु मोदनम् । मण्डं पेयाञ्च पीत्वा च सव्योषं
पङ्कजं पयः ॥ अतं पिबेत्सु तद्भूयं पिबेदेवं पुनः पुनः । इन्ति सर्वोदरास्येतद्भूयं जातीदकाव्यपि ।
कामलां पाण्डुरीगञ्ज शयमुच्चापकर्षति ॥
चक्रदत्तः ।

The fresh juice of the leaves of *Trichosanthes dioica* is recommended by several writers, to be applied to the bald patches of alopecia.¹

CUCUMIS MELO, Linn.

Syn. *Cucumis utilissimus*, Roxb.

Sans. कर्कटी, *Karkati*. Vern. Kónkur, 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, *Tapusha*. Vern. *Khira*, Hind.) and of *Benincasa cerifera* (Sans. *Kushmánda*.) are also used as diuretics like those of *Cucumis utilissimus*.³

COCCINIA INDICA, W. & A. Syn. *Momordica monodelpha*, Roxb. 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 *Vangesvara* 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 tolá along with a pill, every morning.

1. रसस्निक्तपटोलस्य पत्राणां तद्विलिपनात् । इन्द्रजित्पापही लेपो मधुना बृहतीरसः ॥
भावप्रकाशः ।
2. कल्कमेव्वाह्वीजानामक्षमात्रं ससैन्धवम् । धान्यास्रयुक्तं पीत्वेव मूत्राघातादिमुच्यते ॥
चक्रदत्तः ।
3. कुष्माण्डस्य तु बीजानि बीजानि तपुषश्च । वस्तौ सन्धारयत् तेन प्रशास्येन्मूत्र-
नियतः ॥
भावप्रकाशः ।

CITRULLUS COLOCYNTHIS, *Schrad.**Syn. Cucumis Colocynthis, Linn.**Sans. इन्द्रवारुणी, Indravārūni. Vern. Indrāyan. 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 *indrāyan*. 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.

*Jvaraghni 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 *indravārūni* 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.

यमानी, *Yamāni. Ptychotis Ajowan,* DC. Vern. Ajowan Hind.*

वनयमानी, *Vanayamāni. Seseli Indicum, W. & A. Vern. Banjoán, B.*

1. ज्वरघ्नी गुटिका । भागैकः स्याद्रसान्द्रुद्वादैलेयः पिप्पली शिवा । आकारकरभी गन्धः कटुतेलेन शोधितः ॥ फलानि चन्द्रवारुण्याद्यन्तर्भागमिता अमी । एकत मर्दयेच्चूर्णमिन्द्रवारुणिका-रसैः ॥ मासोन्मितां वटीं कृत्वा दद्यात् सद्यज्वरे भिषक् । क्षिन्नारसानुपानेन ज्वरघ्नी गुटिका मता ।

शाङ्गधरः ।

2. इन्द्रवारुणिकाबीजतेलेनाभ्यङ्गमाचरेत् । प्रत्यहन्तेन कालाग्रिसन्निभा कुन्तला अलम् ॥

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.

सुषवी, *Sushavi.* *Carum Carui*, Linn. Vern. *Shiá jirá*, Hind.

मधुरिका, *Madhuriká.* *Foeniculum vulgare*, Goertn. *Mauri*, Beng. *Sonf*, Hind.

मिथेया, *Misreyá.* *Anethum Sowa*,* Roxb. Vern. *Sulphá*, B. *Sowá*, H.

धन्याक, *Dhanyáka.* *Coriandrum sativum*, Linn. Vern. *Dhaniá* 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, *sonchal* salt, *yavakshúra*, *assafoedita*, 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*) रंभुनी 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 *Argyreia speciosa*), etc.

CUMINUM CYMINUM. (जीरा) 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 सिन्धु चार मौवर्षलाभया । सुरामण्डेन पातव्या गुलाशूलनिवारणाः ॥

चक्रदत्तः ।

2. समुद्रं दीप्यकं यस्तु खार्दत् पथ्यान्नभुङ्क्ते । तस्य नश्यति सप्ताहादुदरः सर्वदेहजः ॥

चक्रदत्तः ।

* *Anethum* is reduced by Drs. Hooker and Bentham to *Peucedanum*.

in dyspepsia, diarrhoea, etc. A confection of cumin seeds is prepared as follows :

Jirakádi modaka. Take of the three myrobalans, tubers of *Cyperus rotundus* (*mustaka*), watery extract of *gulancha*, prepared talc, flowers of *Mesua ferrea* (*nágakesara*), leaves called *tejapatra*, cinamom, cardamoms, cloves, coriander, ginger, long pepper, *Oldenlandia herbacea* (*parpati*), root of *Andropogon muricatum* (*usira*), *Pavonia odorata* (*bálá*), 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.

*Jirakádyá taila.*¹ Take of powdered cumin seeds, eight tolás, minium or red lead, four tolás, 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 bálian*, and is used as a domestic carminative.

CARUM CARUI. The fruits called *shíá jírú* 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 सिन्दूरार्द्धपलं तथा । कटुतैलं पचेदाभ्यां सर्वपामाहरं परम् ॥
भावप्रकाशः ।

2. जीरकस्य कृतः कल्को घृतसैन्धवसंयुतः । मुखीणी मधुना लेपी वृश्चिकस्य विषं हरेत् ॥
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 *chátñi*, in the same way as the leaves of spearmint (*pudinó*).²

FERULA ASSAFCETIDA, 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, flatulence, colic, and diseases of the nervous system. It is fried before being used internally. Raw or unfried assafœtida is said to cause vomiting.

*Hingvashtako Churna.*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 मशकैरः पेयो हिमी धन्याकसम्भवः । अन्तर्दाहं तथा तृष्णां जयेच्छीतोविशीघनः ॥

भावप्रकाशः ।

2. धान्य नागर सिद्धन् तीर्थं दद्याद्विचक्षणः । आमजीर्णप्रशमनं दीपनं वन्निशीघनम् ॥

चक्रदत्तः ।

3. हिङ्गुष्टकं चूर्णम् । विकटुक मज्जमीदा सैम्भवं जीरके हे ममधरण घृतानामष्टमी हिङ्गुभागः । प्रथम कवडभक्तं सर्पिषा चूर्णमेतज्जनयति जठराग्निं वातरीगांश्च हन्तान् ॥

भेषज्यरत्नावली ।

* Not now found at Multan G. E.

In the flatulence of infants a powder composed of assafœtida, rock salt, cardamoms, ginger, and the root of *Clerodendron Siphonanthus* (*bhúrgi*), in equal parts, is prescribed by several writers.¹ In flatulent colic with costiveness, a suppository made of assafœtida, rock salt and honey, and smeared over with clarified butter, is introduced into the rectum.²

In hemiplegia, stiff-neck, facial palsy, sciatica and other diseases of the nervous system, fried assafœtida is given along with a compound decoction called *Máshabaládi*, (see *Phaseolus Roxburghii*). A bit of warm assafœtida, placed in the cavity of a carious tooth, is said to relieve pain.³

HYDROCOTYLE ASIATICA, *Linn. Sans.* मण्डुकपर्णं, *Man-dukaparni.* *Vern. Thalkuri, Beng. Bráhmamanduki, Hind.* The properties of this plant are said to resemble those of *Bráhmi* (*Herpestes Monniera*), both being regarded as alterative, tonic, and useful in diseases of the skin, nervous system and blood. The fresh juice of the leaves is given with milk and liquorice powder as an alterative tonic.⁴

NAT. ORDER RUBIACEÆ.

OLDENLANDIA HERBACEA, DO.

Syn. Oldenlandia biflora, Roxb.

Sans. पर्पट, Parpata. Vern. Khetpáprá. Beng.

THE *Oldenlandia herbacea* is a "small, weak, straggling delicate plant, appearing in the rainy season" in fields and low ground

1. घृतेत सिन्धु विश्वैला हिङ्गुभागीरजी लिहन् । आनाहं वातिकं शूलं जयेत्तीर्थेन वा शिशुः ॥ चक्रदत्तः ।
2. हिङ्गु माक्षिक सिन्धुत्यैः पश्चा वृत्तिं सुनिर्मिताम् । घृताभ्यक्तां गुदे दद्यादुदावर्त्त विनाशिनीम् ॥ चक्रदत्तः ।
3. हिङ्गु सीषन्तु मतिमान् क्रिमिदन्तेषु दापयेत् ॥ चक्रदत्तः ।
4. मण्डुकपर्ण्याः स्वरसः प्रयोज्यः क्षीरेण यष्टीमधुकस्य चूर्णम् । रसी गुडूष्णास्तु समूलपुष्पाः कल्काः प्रयोज्यः खलु शङ्खपुष्पाः ॥ आयुःप्रदान्नामयनाशनानि मेष्वा विश्लेषेण तु शङ्खपुष्पी ॥ चक्रदत्तः ।

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, diarrhœa, 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*), *gulanha*, *chireta* and ginger, equal parts, in all two tolás, 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. मदन, *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 kasháya.*³ Take of *Justicia Adhatoda* (*vásuka*), *Acorus Calamus* (*vachá*), *nim* bark, leaves of *Trichosanthes dioica* (*patola*), and bark of *Aglaia Roxburghiana* (*priyangu*), equal parts, half

1. एकः पर्यटकः श्रेष्ठः पित्तज्वरविनाशनः । किं पुनर्यदि युज्येत चन्दनीशीरबालकैः ॥
दर्पणः ।

2. पर्यटाब्दाभ्रताविश्रक्तिरातैः साधितं जलम् । पञ्चभद्रमिदं श्रेयं वातपित्तज्वरापहम् ॥
शाङ्गधरः ।

3. पञ्चकषायः । आटकषं वचा निम्बं पटीलं फलिनीलचम् । काथयित्वा पिबेत्तैयं
वास्तिकान्मदनान्वितम् ॥ काथ्यद्रव्यस्य कुडवं अपयित्वा जलादकैः । चतुर्भागावशिष्टम् वमनेष्वव-
चारयेत् ॥ चक्रदत्तः ।

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 Manjista*, Roxb.

Sans. मञ्जिष्ठा, *Manjishthá*, Vern. Manjit, 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

Manjishthádya ghrīta,² is prepared with clarified butter and a paste composed of equal parts of madder, red sandal wood, and the root of *Sansevieria Zeylanica* (*murvā*), and applied to ulcers from burns.

PÆDERIA FÆTIDA, Linn.

Sans. प्रसारणी, *Prasārani*.

Vern. Gandhabhāduli, Beng. Gandhāli, Hind.

THE *Pæderia fœtida* 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.

Prasārani leha, or electuary of *Pæderia fœtida*. Take of the leaves, root and stem of *Pæderia fœtida*, two seers, water thirty-

1. आलेपनार्थं मञ्जिष्ठा मधुकां चाम्रपेषितम् ॥

चक्रदत्तः ।

2. मञ्जिष्ठाद्यं घृतम् । मञ्जिष्ठां चन्दनं मूर्वां पिशा सर्पिर्विपाचयेत् । सर्वेषामग्निदग्धानामेतद्रीपणमिष्यते ॥

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 Chaba* (*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 Prasáraní 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.

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1. प्रसारणीलिहः । प्रसारणशार्दके क्राथे प्रस्थो गुडरसी मतः । पक्रः पञ्चीषणरजी
यश्च स्यादासवातहा ॥ भावप्रकाशः ।
2. कुञ्जप्रसारणीतिलम् । प्रसारणीशतं क्षुण्णं पचेत्तीयान्शरणं यम् । पादशिष्टे समं तैलं
दधि दद्यात् सकाञ्चिकम् ॥ द्विगुणञ्च पयो दत्त्वा कल्कान् द्विपलिकांस्तथा । चित्रकं पिप्पलीमूलं
मधुकं शैशवं वचाम् ॥ शतपुष्पां देवदारुं रासां वारणपिप्पलीम् । प्रसारणशार्दकं मूलानि मांसी
भङ्गातकानि च ॥ पचेन्मृदयिना तैलं वातश्लेष्माभयान् जयेत् । चशीतिं नरनारीस्थान् वात-
रोगानपीहति ॥ कुञ्जं लिमितपङ्क्तुत्वं गृध्रसीखञ्जकार्दितम् । हनुपृष्ठशिरोशीवास्तम् वापि
नियच्छति ॥ चक्रदत्तः ।

NAT. ORDER VALERIANACEÆ.

NARDOSTACHYS JATAMANSI, D C.

Syn. Valeriana Jatamansi, Jones.

Sans. जटामंसि, 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* (*kulattha*), 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. कुलत्थयवकीलानि शशावीजं पलङ्कान् । जटिलां पञ्चमूल्यौ वै पथ्यां चीत्काथ्य
यवतः । कस्तमूरयुतं सर्पिः पित्तदातिके हितम् ॥ सुश्रुतः ।

Agnimukha churna.¹ Take of assafoetida, one part *Acorus Calamus* (*vachá*) two parts, long pepper, three parts, ginger, four parts, *ajowan* five parts, obebulic 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*, *kánjika* 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 (*kánjika*), are rubbed on joints affected with chronic disease.³

WEDELIA CALENDULACEA, Less.

Syn. *Verbesina calendulacea*, Roxb.

Sans. भृङ्गराज, *Bhringarāja*. केशराज, *Kesarāja*.

Vern. *Kesarāja*, Beng *Bhángrá*, Hind.

THERE is some confusion between the Sanskrit and vernacular names of *Wedelia calendulacea*, and *Eclipta prostrata*. Both these plants are called *kesarāj* or *kesurāj* in Bengali, and the two Sanskrit names of *bhringarāja* and *kesarāja* are used as synonyms. The Hindustani term *bhángrá*, 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 । द्विद्भुभागी भवेदेकी वचा च त्रिगुणा भवेत् । पिप्पली त्रिगुणा चैव शङ्खवेरं चतुर्गुणम् ॥ यमानिका पञ्चगुणा षड्गुणा च हरीतकी । चिवकं सप्तगुणितं कुष्ठघ्राष्टगुणं भवेत् ॥ एतद्वातहरं चूर्णं पीतमात्रं प्रसन्नया । चूर्णमग्निमुखं नाम न क्वचित् प्रतिहन्यते ॥

चक्रदत्तः ।

2. कुष्ठमेरुशुद्धतैलेन लिपात् काञ्जिकपेषितम् । शिरीर्षिं वातजां हृन्वात् पुष्यं वा मुचुकुन्दजम् ॥

शाङ्गधरः ।

3. कुष्ठसैन्धवयोः कल्कशुक्रतैलसमन्वितः । सुखीणो मर्द्दने योज्यः खलीशूलनिवारणः ॥

भावप्रकाशः ।

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.

*Játipháládyá churna.*² Take of nutmeg, *baberang* seeds, plum-bago root, flowers of *Tabernœmontana coronaria* (*tagara*), sesamum seeds, leaves of *Pinus Webbiana* (*tálisa*), 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 useful in phthisis, cough and catarrh.

*Shadbindu taila.*³ Take of sesamum oil, four seers, goat's milk four seers, juice of *bhringarāja* leaves, sixteen seers and prepare an oil with a paste composed of the following substances, namely, root of castor oil plant, and of *Tabernœmontana coronaria*

1. भृङ्गराजरसः च्छागीचीरतुल्योऽर्कतापितः । सूर्यावर्त्तं निहन्त्याश्च नख्येनैव प्रयोगराट् ॥

भावप्रकाशः ।

2. जातीफलाद्यं चूर्णम् । जातीफलं विडङ्गानि चिवकं तगरं तिलाः । तालीशं चन्दनं शुण्ठी लवङ्गमुपकुञ्चिका ॥ कर्पूरश्चाभया धात्री मरिचं पिप्पली तुगा । एषा त्वचसमा भागाश्चातुर्जातकसंयुताः ॥ पलानि सप्त भृङ्गायाः सिता सर्व्वसमा मता । चूर्णमेतत् त्रयं काशं शसश्च यद्दृष्यीगदम् ॥ अरोचकं प्रतिश्यायं तथाचानलमन्दताम् । एतान् रोगान् निहन्त्येव वृक्षमिन्द्राशनिर्यथा ॥

भावप्रकाशः ।

3. षड्विन्दुतैलम् । एरण्डमूलं तगरं शताह्वा जीवन्ति रात्रा सह सैन्धवश्च । भृङ्गं विडङ्गं मधुयष्टिका च विशौषधं कृष्णतिलस्य तैलम् ॥ चाजं पयस्यैलविनिश्चितश्च चतुर्गुणे भृङ्गरसे विपकम् । षड्विन्दुवो नासिकया विधेयाः शीघ्रं निहन्तुः शिरसी विकारान् ॥ च्युतांश्च केशांशलितांश्च दन्तान् दुर्बलमूलांश्च दृढीकरोति । सुपर्णदृष्टिप्रतिमश्च चतुर्बाहोर्वलसाभ्यधिकं ददाति ॥

चक्रदत्तः ।

(*tagara*), dill seeds, *Cœlogyne ovalis* (*jivanti*), *Vanda Roxburghii* (*rásná*), 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* (*syāmalatá*), 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, Roxb.

Sans. सोमराजी, *Somarāji*. अवलगुज, *Avalguja*. वाकची, *Vákuchi*.

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 *vákuchi* seeds, and black sesamum, equal parts; powder and mix. Dose, about a drachm to be taken in the morning, with

1. भृङ्गराजतैलम् । भृङ्गराजरसेनैव लोहकिङ्कणलविकम् । सारिवा च पचेत्कल्कैर्जैतं दारुणनाशनम् । अकालपलितं कण्डं मिन्द्रलुप्तञ्च नाशयेत् ॥ शाकं धरः ।

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 catechu 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 (*kúnjika*), 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* (*aparájitá*), 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. अवलगुजाद्वीजकषेः पीत्वा कोष्णेन वारिणा । भोजनं सर्पिषः कार्यं सर्वकुष्ठ-
प्रणाशनम् । तीव्रेण कुष्ठेन परीतदेहो यः सोमराजीं नियमेन खादेत् ॥ संवत्सरं कृण्वत्सि-
द्धितीयां स सोमराजीं वपुषींतिशतम् । घर्मसेवी कदुष्णेन वारिणा वागुजीं पिबेत् ॥

चक्रदत्तः ।

2. अवलगुजं कामर्द्धं चक्रमर्द्धं निशायुतम् । माषिमन्थेन तुल्यांशं मस्तुकाञ्जिक-
पेषितम् ॥ कक्कं कण्डूं जयत्युगां सिद्धं एष प्रयोगराट् ॥

चक्रदत्तः ।

3. कुडवोऽवलगुजव्रीजाद्वरितालचतुर्थभागसंमिस्रः । मूत्रेषु मवां पिष्टः सुवर्णकरणः
परः शिचे ॥

चक्रदत्तः ।

Sophora (*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 *Sáran-gadhara* 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 *Akarádi churna* described under opium.

ENHYDRA HELONCHA, D. C. *Syn. Hingtsha repens, Roxb. Sans. हिलमीचिका, Hilamochiká. Vern. Hinchá, Beng. Harhuch, 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. चित्रक, Chitraku. Vern. Chitu, 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, diarrhoea, skin diseases, etc. It is much used as a stimulant adjunct to other preparations, in the form of a

1. इहसोमराजी तैलम् । सोमराजीतुलाकाथे दद्रुघ्नस्य तथैव च । विपचेत्पलिकै-
र्भागैः कटुतैलादके भिषक् ॥ चित्रकं लाङ्गली लोधं नागरं कुष्ठमेव च । हरिद्रा नक्तमालस
हरितालं मनःशिला ॥ आस्फोता कर्षवीरञ्च सप्तपर्णार्कं मीमथम् । खादिरं निम्बपत्रञ्च
मरिचं कासमर्दकम् ॥ गोमूत्रस्यादकं दत्त्वा शनैर्मुद्घिना पचेत् । इन्ति सर्वानि कुष्ठानि
काण्डूदुष्टव्रणानपि ॥ किटिमं दद्रुजातञ्च गावधैवर्णनाशनम् ॥ राठीयसारसंग्रहः ।

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 (*dadhi*) or *kánjika* is prepared in this pot, and taken by persons affected with hæmorrhoids and prurigo.

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 neriifolia* (*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. रक्तचित्रक, *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. सिन्धुत्यपथ्यमगधीद्भववङ्गिचूर्णमुष्णाम्बुना पिवति यः खलु नष्टवङ्गिः । तस्याभिवेष
सष्टतेन वरं नवान्नं भस्मीभवत्यशितमावमिह चणेन ॥ चक्रदत्तः ।

2. चित्रकेन्द्रयवाः पाठा कटुकातिविषाभयाः । महाव्याधिप्रशमनी योगः षडधरणः
सृतः ॥ चक्रदत्तः ।

3. दन्ती चित्रकमूलत्वक् सुधाकं पयसी गुडः । भस्मातकश्च काशीसं सैन्धवं दारुणि
सृतः ॥ शार्ङ्गधरः ।

action on the uterus.* The root of *Plumbago rosea* taken internally will expel the foetus from the womb, whether dead or alive.¹ This root is a more powerful vesicant than that of *P. Zelanica*, 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 drachm 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 *lálchitrá* 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 *lálchitrá* 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. गरीमदनदहनमूलं चिरजमपि गर्भं मृतममृतं वा निपातयति ॥

चक्रदत्तः ।

2. विडङ्गं शतपाणीयं विडङ्गेनावधतिलम् । पीतं कृमिहृगं दृष्टं कृमिजांश्च गदाञ्चयेत् ॥
निष्ठाविडङ्गचूर्णं वा मधुना कृमिनाशनम् ॥

भास्करकाशः ।

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, Roxb.

Sans. मधुक, *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 sára* in Sanskrit, is recommended to be applied to the head in cephalalgia.³

MIMUSOPS ELENGI, Linn.

Sans. वकुल, *Vakula*. *Vern.* Maulsaran, *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. विडङ्ग सैन्धव शिवा शशिरिखा सर्षप करञ्ज रजनीभिः । गोजलपिष्टी लेपः कुडहरी | |
| दिवसनाथसमः ॥ | चक्रदत्तः । |
| 2. मधुकपुष्पाभारी चन्दनीशीरधान्यकैः । द्राक्षायाश्च कृत फाण्टः शीतः शर्करया | |
| युतः ॥ तृणापित्तहरः प्रीती दाह मूर्च्छा भ्रमान् जयेत् ॥ | शाङ्गधरः । |
| 3. मधुकसारिण शिरः सिन्नञ्चास्य विरेचयेत् ॥ | 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, *Roeb.*

Sans. लोध्र, *Lodhra* तिल्लक, *Tillaka*. *Vern.* *Lodh*, *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 *Amritaságara* 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. शैफालिका, *Sepháliká*. रजनीहासा, *Rajanihása*.

Vern. *Siuli*, *Beng.* *Harsingár*, *Hind.*

THIS plant is cultivated in gardens for the sake of its flowers. These open at sunset, and before morning strew the ground

1. चलदन्तस्थिरकरं कार्यं वकुलचर्वणम् ॥ चक्रदत्तः ।

2. दन्तचाले तु गण्डूषी वकुलत्वक्कृतो हितः ॥ चक्रदत्तः ।

3. भिल्लोदककषायेण तथैवामलकस्य वा । प्रक्षालयेत् मुखं नेत्रे स्वस्थशीतोदकेन वा ।

नीलिकां मुखशोषञ्च पीडकां व्यङ्गमेव च । रक्तपित्तकृतान् रोगान् सद्यएव विनाशयेत् ॥

सुश्रुतः ।

4. शैशिरे हृतरक्ते च लोध्रभुम्बरमाचनैः । मन्त्रौटैः शम्यन्ते लिपी गण्डूषे चौरिणी

हिताः ॥

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.* Chámeli, *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 mouth, 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, *Vārshiki.* *Vern.* Bel, *Beng.* *Hind.* The properties of this plant are said to resemble those of *Jasminum grandiflorum*.

- | | |
|---|--------------|
| 1. मधुना सर्व्वज्वरनुक्केफालीदलजो रसः ॥ | चक्रदत्तः । |
| 2. शेफालिकादलैः काथो मृदग्निपरिसाधितः । दुर्व्वारं गृध्रसौरीगं पीतमात्रं समुद्धरित् ॥ | चक्रदत्तः । |
| 3. जातीपत्रञ्च संमर्द्य दद्यादलसके भिषक् ॥ | चक्रदत्तः । |
| 4. मुखपाके सिराबंधः शिरः कायविरचनम् । कार्य्यञ्च बहुधा नित्यं जातीपत्रस्य चर्व्वनम् ॥ | भावप्रकाशः । |
| 5. जातिपत्ररसे तैलं विपक्वं पूतिकर्णजित् ॥ | चक्रदत्तः । |

NAT. ORDER APOCYNÆÆ.

NERIUM ODORUM, *Solander.*

Sans. करवीर, *Karavira.* अश्वमारक, *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.

*Karavirādya 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.* विशालत्वक्, *Visálatvak.*

Vern. Chhátim, *Beng.* Chhátán, *Hind.*

THE bark of *Alstonia scholaris* is very thick and spongy, hence the tree has received the names of *Visálatvak*, *Vrihattvak*, etc.

1. करवीराद्यं तैलम् । श्वेतकरवीरसो गौमूत्रं चित्तकं विडङ्गश्च । कुष्ठेषु तैलयोगः सिद्धोऽयं सम्यक्ती भिषजाम् ॥ चक्रदत्तः ।
2. करवीरस्य मूर्त्नेन परिपिष्टेन वारिणा । असाभ्यापि व्रजत्यस्तं निङ्गीत्या रुक् प्रलेपनात् ॥ शार्ङ्गधरः ।
3. करवीरतण्डुलकिशलयच्छेदीद्रवमहुनसलिलसंपूर्णम् । नयनयुगं भवति दृढं सहसैव तत्क्षणात् 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*), *Calumus Rotang* (*vetra*), catechu and *nim* leaves, and prepare a decoction in the usual way.

HOLARRHENA ANTIDYSENTERICA, R. Br.

Sans. कुटज, *Kutaja*, कालिङ्ग, *Kálinga*.

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 *átis*.³ A compound decoction called *Kutajáshtaka* is

1. सप्तच्छदं गुडूचीञ्च निम्बं स्फूर्थकमेव च । काथयित्वा पिबेत् काथं सचौद्रं वाफजे ज्वरे ॥ सुशुतः ।
2. स्थूलवबूलिकापवरसः पानाद्ग्रपोद्धति । सर्व्वतिसारान् श्योनाककुटजत्वग्रसोऽथवा ॥ शार्ङ्गधरः ।
3. कुटजत्वक्कृतः काथी घनीमूतः सुशीतलः । लेह्नितीऽतिविषायुक्तः सर्व्वती- सारनुद्भवेत् ॥ चक्रदत्तः ।

thus prepared. Take of *kutaja* bark, *átis*, root of *Stephania hernandifolia* (*páthá*), 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 tola each, water thirty-two tolas, 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 cumin seeds, each sixteen tolas, 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 *Ægle 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* (*dárví*), *chiretá*, 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 धातकी लोघ्न मुस्तकैः । क्लीबैर दाडिमयुतैः कृतः काथः समाचिकः ॥ पेयो मोचरसेनैव कुटजाष्टकसंज्ञकः । अतिसारान् जयेद्दाह रक्तशूलामदुस्तरान् ॥
शार्ङ्गधरः ।

2. कुटजलेहः । शतं कुटजमूलस्य चूर्णं तीयार्मणे पचेत् । काथे पादावशेषेऽस्मिन् लेहं पूते पुनः पचेत् ॥ सौवर्चल यवचार विड सैन्धव पिप्पली । धातकीन्द्रयवाजाजीचूर्णं दत्त्वा पलद्वयम् ॥ लिङ्गाददरमात्रं तत् शीतं क्षौद्रेण संयुतम् । पक्वापक्वमतीसारं नानावर्णं सवेदनम् ॥ दुर्बलं ग्रहणीरोगं जयेच्चैव प्रवाहिकाम् ॥
चक्रदत्तः ।

3. पाठाद्यं चूर्णम् । पाठा विखानल व्योष जम्बू दाडिम धातकी । कटुकातिविषा मुस्तं दार्वी भूनिम्ब वत्सकैः ॥ सर्व्वरेतैः समं चूर्णं कौटजं तण्डुलाम्बुना । सक्षौद्रञ्च पिवेच्छर्द्धिज्वरातिसारशूलवान् ॥ तड्दाहग्रहणीदोषारोचकानलसादजित् ॥
चक्रदत्तः ।

rice-water and honey. Another compound powder called *Gangádhara churna*, is of similar composition to the above, with a few additional substances.

Kutajárishta,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* (*gambhári*), eighty tolás 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* (*dhútaki*), 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.

Pradarári lauha.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*, (*páthá*), bela fruit, tubers of *Cyperus rotundus* (*mustaka*), flowers of *Woodfordia floribunda* (*dhútaki*), átis, prepared talc and iron, each eight tolás, 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 । तुलां कुटजमूलस्य मृद्धीकाईतुलां तथा । मधूकपुष्प काश्मर्यो-
र्भागान् दश पलोन्मितान् ॥ चतुर्द्रोणिसम्भसः पक्त्वा काथयेद्दीर्घशेषिते । धातक्या विंशतिपलं
गुडस्य च तुलां चिपेत् ॥ मासमात्रं स्थितौ भाण्डे कुटजारिष्टसंज्ञकः । ज्वरान् प्रशमयेत्
सर्वान् कुर्यात् तीक्ष्णं धनञ्जयम् ॥ शाङ्गधरः ।

2. प्रदरारिलौहः । वत्सकस्य तुलां सम्यक् जलद्रोणे विपाचयेत् । अष्टभागावशिष्टानु
कषायमवतारयेत् ॥ वस्त्रपूते घनीभूते द्रव्याणीमानि दापयेत् । समङ्गा शाल्मलं पाठा विल्वं
मुस्तञ्च धातकी ॥ अरुणातिविषा व्योम लौहं सर्वं पलं पलम् । कोलमात्रं प्रयुञ्जीत कुशमूलं
पयो ह्यनु ॥ श्वेतं रक्तं तथा नीलं पीतं प्रदरदुस्तरम् । कुक्षिशूलं कटीशूलं देहशूलञ्च
सर्व्वगम् ॥ प्रदरारिरयं लौही हन्ति रोगान् सुदुस्तरान् । आयुःपुष्टिकरश्चैव बलवर्णाग्नि
वर्धनः ॥ भैषज्यरत्नावली ।

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 gangádharma churna.³ Take of *indrayava* seeds, tubers of *Cyperus rotundus*, (*mustaka*), *bela* fruit, bark of *Symplocos 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. *Shyámalatá*. 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 *Sárivádvaya*, (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 द्विपलीन्मिता । सुशीता मधुसंयुक्ता रक्तातीसारनाशिनी ॥
शार्ङ्गधरः ।
2. शक्रकायः सविशो वा किंवा विन्नशलाटवः । योज्या रक्ताशसैस्तद्वत् ज्योत्स्निका-
मूललेपतः ॥
3. लघुगङ्गाधरचूर्णम् । मुस्तमिन्द्रयवै विन्नं लोघ्रं मीचरसं तथा । घातकीं चूर्णयेत्तक्र-
गुडाभ्यां पाषयेत् सुधीः ॥ सर्वातीसारशमनं निरुणद्धि प्रवाहिकाम् । लघुगङ्गाधरं नाम चूर्णं
शियाहकं परम् ॥
शार्ङ्गधरः ।

of *sárivádvaya* 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* (*bálá*), 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* (*parparta*), 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.

Sans. अर्क, Arka, अलर्क, Alarka.

Vern. Akanda, Beng. Mádár, Hind.

Calotropis procera and *C. gigantea*, both pass by the native name of *mádár*. "*C. procera* the smaller of the two, prefers the drier climate of the Deccan, the Upper Provinces of Bengal, the Punjab and Scinde; *C. gigantea*, lower Bengal, the Madras

1. अनन्ता बालकं मुलं नागरं कटुरीहिणी । पिष्टा सुखाम्बुना कल्कं पाययेदन्न-
सन्धितम् ॥ कल्कः स्वल्पेन कालेन हन्यात् सर्वज्वरामयम् । विदध्यात् कीष्ठसंशुद्धिं
दीपयेच्च हुताशनम् ॥ भेषज्यरवावली ।

2. इन्द्रवारुणिकामन्ता शारिवा पर्पटैः समैः । एभिः कृतं पिबेत् काथं कणागगुलु-
संयुतम् ॥ अष्टादशसु कुष्ठेषु वातरक्तार्दिते तथा । उपदंशे श्लीपदे च प्रशुभे चक्षुषातके ॥
शाङ्गधरः ।

and Malayan Peninsulas, 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, anasarca, 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. Bougies 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 दहेत्ततः । मस्तुना तत् पिबेत् चारं गुलाभीहोदरापहम् ॥

चक्रदत्तः ।

2. मरिच शीलाकक्षीरैर्वाकीं लवमाशु भावितां शुष्काम् । कृत्वा विधिना धूमं पिबतः
कासाः समं यान्ति ॥

चक्रदत्तः ।

3. निष्पिटमारणालेन रुपिकामूलवल्कलम् । प्रलीपात् शीपदं हन्ति बद्धमूलमपि हृणात् ॥

चक्रदत्तः ।

4. सुहृकदुग्ध दाब्बीभिर्वृत्तिं कृत्वा विचक्षणः । भगन्दरगतिं ज्ञात्वा पूरयेत्तां प्रयत्नतः ॥

चक्रदत्तः ।

5. सप्तच्छदा र्कदुग्धाभ्यां पूरणं क्रिनिदन्तनुत् ॥

चक्रदत्तः ।

*Arka taila.*¹ Take of prepared sesamum oil, four seers, juice of *arka* leaves, sixteen seers, and turmeric reduced to a paste, one seer; boil them together in the usual way. This oil is said to be useful in eczema, and other eruptive skin diseases. Sometimes orpiment 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 *Bhávaprakása* 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. अर्कतैलम् । अर्कपत्रसे पक्वं कटुतैलं निशायुतम् । मनःशिलायुतं वापि पामा-
कच्छाद्रिनाशनम् ॥ चक्रदत्तः ।

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*, assafoetida, 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 diarrhoea. *Sarangadhara* 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, *sarjikakshara* (impure carbonate of soda), *yarakshara* (impure carbonate of potash), rock salt, plumbago root, cumin seeds, *sachal* salt, seasalt, *baberang*, black pepper, long pepper and ginger, equal parts, *vishamushti* (*nux vomica* seeds) equal in 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 हिड्डु गन्धकम् । सैन्धवञ्च समं सर्व्वं वटीः कुर्यात् सुखावहाः ॥ लघुकीलप्रमाणास्ता शस्यन्ते प्रातरेव च । एकैका वटिका याह्या गुन्धशूलनिवारिणी ॥ ग्रहण्यामतिसारे च साजीर्णे मन्दपावके । यीजयेदुष्णपयसा सुखमाप्नोति तत्त्वणात् ॥

रसेन्द्रसारसंग्रहः ।

2. शुद्धसूतं विषं गन्धमजमीदा फलत्रयम् । सर्जिचारं यवचारं वडि सैन्धव जीरकम् । सौवर्चलं विडङ्गानि सामुद्रं वूषणं समम् । विषमुष्टि सर्व्वतुल्यं जम्बीराम्बेन मर्दयेत् । मरिचामां वटीं खादेद्विमान्यप्रशान्तये ॥

शार्ङ्गधरः ।

STRYCHNOS POTATORUM, *Linn fil.*

Sans. कतक, *Kataka*, अम्बुप्रसाद, *Ambuprasáda*. *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. किराततिक्त, *Kirátatikta*, भूनिम्ब, *Bhunimba*.

Vern. *Chiretá*, *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 *kirátatikta*, means "the bitter plant of the Kirátas, an outcast race of mountaineers in the north of India." It is also called *Anáryatikta* or the bitter plant of the Non-Aryans. The *Bhavaprakása* mentions a variety of *chiretá*, under the name of *Naipála*, that is, produced in Nepál, and describes it as a febrifuge.

Chiretá 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 *chiretá*, *gulanča*, raisins, emblic myrobalan and zedoary root, equal parts and prepare a

1. शङ्खः चोद्रेण संयुक्तः कतकः सैन्धवेन वा । सितयार्थवफिनी वा पृथगङ्गनमजुनि ॥

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.

Kirátádi 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* (*dáruharidrá*), madder, root of *Citrullus Colocynthis* (*indraváruni*), *páchak* root, root of *Pavonia odorata* (*bálá*), 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* (*vásaka*), *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, Roeb.

Sans. शङ्खपुष्पी, Sankhapushpi.

Vern. Dánkuni, 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. किराततिक्रमवृत्तां द्राक्षां आमलकीं शटीम् । निष्पीड्या सततं काथं वातपित्तज्वरे पिवेत् ॥
भेषज्वरबावली ।

2. किरातादि तैलम् । मूर्त्वां लाक्षा हरिद्रे दे मञ्जिष्ठा सेन्द्रवारणी । जीवीरं पुष्करं राक्षा कपिवह्नी कटुवयम् ॥ पाठा चन्द्रयवश्चैव लवणवयसंयुतम् । श्यामा दाह वासकाकं महाकाष्ठफलं तथा ॥ दक्षिणान्धारभालेन कौरातेन च सन्धयेत् । प्रस्थं प्रस्थं समादाय तैलप्रस्थे विपाचयेत् ॥ क्षिप्तं भुक्तं ज्वरश्चैव सन्ततं सततं तथा । धातुस्थं अस्थिमज्जस्थं सर्वज्वरमपीहति ॥

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 nervine and alterative tonic.² The following compound powder is used in similar cases. Take of *gulancha*, *Achyranthes aspera* (*apámárga*), *báberang*, *páchak* root, root of *Asparagus racemosus* (*satamuli*), *Acorus Calamus* (*vachá*), chebulic myrobalan, and *Oanscora 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. श्योनाक, Syonáka. अरु, 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 ग्रहणीञ्चैव अतिसारं हलीमकम् । श्लेहानं पाण्डुं श्वयं नाशयेत् नात्र संशयः ॥
नासि तैलवरञ्चैव ज्वरदर्पकुलान्तकम् ॥ भैषज्यरत्नावली ।

1. ब्राह्मी कुमाण्ड वङ्ग्या शक्तिनीस्वरसः पृथक् । मधु कुष्ठ युतः पीतः सर्वान्मादा-
पहारकः ॥ चक्रदत्तः ।

2. रसी गुडूच्यास्तु समूलपुष्पाः कल्कः प्रयोज्यः खलु शङ्खपुष्पाः । आयुःप्रदान्या-
भयनाशनानि क्लृप्तवर्णस्वरवर्णानि ॥ मेध्यानि चैतानि रसायनानि मेध्या विशेषेण तु
शङ्खपुष्पी ॥ चक्रदत्तः ।

3. गुडूचपामार्गं विडङ्गं शक्तिनीं वचाभया कुष्ठशतावरीं च । धृतेन लोदा प्रकरोति
भाववं त्रिभिर्दिनेः श्लोकसहस्रधारिणम् ॥ 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 otorrhœa, Sârangadhara recommends the use of an oil prepared by boiling, over a gentle fire, sesamum oil with a paste made of the root-bark of *Calosanthos Indica*.²

STEREOSPERMUM SUAVEOLENS, D. C.

Syn. Bignonia suaveolens, Roxb.

Sans. पाटला, Pátalá. Vern. Páru, 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.

IPOMŒA TURPETHUM, R. Br.

Syn. Convolvulus, Turpethum, Roxb.

Sans. त्रिदत्, Trivrit. त्रिपुटा, Triputá.

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. अरुलुत्वक्कृतयेव पुटपाकीऽग्निदीपनः । मधु मोचरसाम्ब्याश्च युक्तः सर्वाति-
सारजित् ॥

2. तेषु श्वीनाकमूलेन मन्दापौ परिपाचितम् । इरेदायु निदीपीत्यं कर्षणं
प्रपूरणात् ॥

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 *Nárácha-churna*,¹ is thus prepared. Take of *Trivrit* root eight tolás, long pepper two tolás, sugar eight tolás; powder and mix. About a scruple of the powder is recommended to be taken before meals in constipation with hard fæces.

Tumburbádyá churna.² Take of the fruits of *Xanthoxylum hostile* (*tumburu*), rock, vit and sochal salts, ajowan, páchak root, yavakshára, chebulic myrobalan, assafœtida and *baberang* 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*, *gulancha*, and the three myrobalans is recommended to be taken. Milk diet should be prescribed along with this medicine.³

1. नाराचचूर्णम् । खण्डपलं त्रिवृतासममुपकुल्या कर्षचूर्णितं श्लक्ष्णम् । प्राम्भोजने च समधु विडालपदकं लिहेत् प्राज्ञः ॥ एतद्गाढपुरीषे पित्ते कफे च विनियोज्यम् । सुखादुर्नृपयोग्योऽयं चूर्णो नाराचकी नाम्ना ॥ भावप्रकाशः ।

2. तुम्बूर्वाद्यं चूर्णम् । तुम्बुरुषि त्रिलवणं यमानी पुष्कराह्वयम् । यवचाराभया द्विदु विडङ्गानि समानि च ॥ त्रिवृत् त्रिभागिका त्रेया सूक्ष्मचूर्णानि कारयेत् । पिवेदुष्णेन तीयेन यवकाथेन वा पिवेत् ॥ जयेत् सर्वाणि शूलानि गुल्माभ्यानीदराणि च ॥

3. चौरासनः पित्तकृतेऽथ शीथे त्रिवृद्गुडुची त्रिफलाकषायम् ॥

चक्रदत्तः ।

BATATAS PANICULATUS, Choisy.*Syn. Convolvulus paniculatus, Roxb.**Sans. विदारी, Vidári, भूमिकुमारु, Bhumikushmánda.**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 *káládáná* in the vernacular and now commonly used as a purgative

1. विदारीकन्दं सुरया पिवेद्वा सन्यवडंमम् ॥ चक्रदत्तः ।
2. यदा तु दुर्बली बालः खादन्नपि च वक्रिमान् । विदारीकन्दं गोधूमं यवचूर्णं घृतप्लुतम् ॥ खादयेत्तदनु चीरं शतं समधुशर्करम् ॥ भावप्रकाशः ।
3. चूर्णं विदार्याः सुकृतं खरसेनेव भावितम् । सर्पिः चीरयुतं लीढ्वा शतं गन्धे वराङ्गनाः ॥ सुशुतः ।
4. मूत्रकृच्छान्तकरसः । विदारीं नीचुरं यष्टीं केशरञ्च समं पचेत् । तत्कषायं पिवेत् चीद्रे रसभङ्गयुतं पुनः ॥ मूत्रकृच्छरं ख्यातं सप्ताहात् पित्तसम्भवम् ॥

रसेन्द्रसारसंस्कृतः ।

all over India, were unknown to the ancient Hindus. There is no name for them in Sanskrit.

ARGYREIA SPECIOSA, Sweet.

Syn. Lettsomia nervosa, Roeb.

Sans. वृद्धदारक, Vriddhádaraká. Vern. Bijtaraká, 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* (*satamuli*) 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

*Ajamodádi churna.*³ Take of ajowán, báberang, rock salt, plum-bago root, *Cedrus deodara*, long pepper root, long pepper, black pepper and dill seeds each two tolás, chebulic myrobalan ten tolás, root of *Argyreia speciosa* twenty tolás, ginger twenty tolás; powder and mix. Dose, about two drachms with treacle. This preparation is said to be useful in rheumatic affections and hemiplegia.

1. वृद्धदारकमूलानि श्लक्ष्णचूर्णानि कारयेत् । शतावर्ष्या रसेनैव सप्तरात्राणि भावयेत् ॥
अधमावन्तु तच्चूर्णं सर्पिषा सह सेवनात् । मासमावीपयोगेन मतिमान् जायते नरः ॥
मेधावी श्रुतिमाश्रैव बलिपलितवर्जितः ॥ चक्रदत्तः ।

2. गुग्गुलुं क्रोष्टुशीर्षं तु गुडूचीविफलान्भसा । शीरेशैरुद्धतैलं वा पिवेद्वा वृद्धदारकम् ॥
भावप्रकाशः ।

3. अजमोदायं चूर्णम् । अजमोदा विडङ्गानि सैन्धवं देवदारु च । चित्रकं पिप्पलीमूलं
शतपुष्पा च पिप्पली ॥ मरिचचेति कर्षांशं प्रत्येकं कारयेद् दुधः । कर्षास्तु पञ्च पथ्याया
दग्गं शुर्वृद्धदारकात् ॥ नागराञ्च दग्गैव सुः सर्वाण्येकत्र चूर्षयेत् । पिवेत् कीणजलेनैव
चूर्णञ्च गुडसन्मितम् ॥ भक्षयेदधवा सम्यक् परं श्रयधुनाश्रमम् । आमवातरुजं हन्ति
सार्वपीडां च गृध्रसीम् ॥ कटिपृष्ठगुदस्याञ्च जडयोश्च रुजां जयेत् । तूनीं प्रतूनं विशाचीं
कफवातामयान् जयेत् ॥ शार्ङ्गधरः ।

NAT. ORDER SOLANACEÆ.

DATURA ALBA, Rumph. and *FASTUOSA*, Linn.

Sans. धुतूर, *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 । दिभागं धूर्तवीजञ्च विकटु त्वर्धभागिकम् ॥
जम्बीराणां रसैर्मर्द्यं वटी गुञ्जादयप्रभा । कणाचूर्णं पिबेदाय वातश्लेष्मज्वरं जयेत् ॥

रसेन्द्रसारसंयुतः ।

2. श्वेतोन्मत्तीत्तरदिघ्नूलसिद्धञ्च पायसः । गुञ्जाज्यसंयुतो हन्ति सर्वोन्मादांस्तु
दोषजान् ॥

चक्रदत्तः ।

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 Jacquini, Linn.

Sans. कण्टकारी, Kantakári, निदिग्धिका, Nidigdhiká.

Vern. Kantakári, Beng. Kateli, Katai, Hind.

THE root of *Solanum Jacquini* 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.

1. निशाकमकफलाभ्यां लेपश्चापि स्नानार्तिहा ॥ चक्रदत्तः ।
2. धुसूरपत्रकस्केन तद्रसेनैव पाचितम् । तैलमभ्यङ्गमात्रेण यूकां नाशयति चषात् ॥
भावप्रकाशः ।
3. उन्नतकस्य बीजेन माणकदारवारिणा । कटुतेलं विपत्तय्यं शीघ्रं हन्याद्विपा-
दिकाम् ॥ 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 assafoetida 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* (*vásaka*), pulse of *Dolichos uniflorus* (*kulattha*) 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

*Kantakáryavaleha*³ or electuary of *Solanum Jacquini*. 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, *gulanča*, *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

1. कण्टकारीकृतः काथः सकृणः सर्वकासहा ॥

चक्रदत्तः ।

2. चूद्रा कुलत्थ वासाभिर्नागरेण च साधितः । काथः पौष्करचूर्णाब्जः आसकासौ निवारयेत् ॥

शार्ङ्गधरः ।

3. कण्टकार्यवलेहः । कण्टकारीतुला नीरद्रीणे पक्वा कषायकम् । पादशेषं गृहीत्वा च तत्र चूर्णाणि दापयेत् ॥ पृथक्पलाशान्येतानि गुडूची चव्यचित्रकी । मुस्तं कर्कटशर्ङ्गी च त्रूषणं धन्वयासकः ॥ भार्गी रास्ना श्टी चैव शर्करापलविंशतिः । प्रत्येकं च पलान्यष्टौ प्रदद्याद् दृढतैलधीः ॥ पक्वा लिहत्वमानीय शीते मधु पलायकम् । चतुर्भावं तुमाचीर्थाः पिप्पली च चतुःपलम् ॥ चिघा निदध्यात् सुदृढे स्रग्गये भाजने शुभे । लिहोऽयं इति हिक्कात्तिकासत्रासानशेषतः ॥

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.

*Kantakári ghrita.*¹ This is prepared in the usual proportions with the fresh juice of *kantakári*, clarified butter and the following substances in the form of a paste, namely, *Vanda Roxburghii* (*rásná*), *Sida cordifoliá*, (*bálá*) 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. काकमाची, *Kákamáchi*, Vern. *Kákmáchi*, 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 *Hridayárnava rasa*, (page 66).

SOLANUM INDICUM, *Linn.*

Sans. ब्रह्मी, *Vrihati*. भण्टाकी, *Bhantáki*.

Vern. *Byákura*, Beng. *Barhantá*, 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* (*kantakári*), *Sida cordifoliá* (*bálá*), *Justicia Adhatoda* (*rásaka*) and raisins, equal parts and prepare a decoction in the usual way. This decoction is given in bronchitis with fever.²

WITHANIA SOMNIFERA, *Don.*

Syn. *Physalis flexuosa*, *Roeb.*

Sans. अश्वगन्धा, *Asvagandhá*. Vern. *Asvagandhá*, 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. कण्टकारीघृतम् । घृतं रासा बला व्योष श्वदंष्ट्रा कल्कपाचितम् । कण्टकारीरसे सर्पिः पञ्चकासनिसूदनम् ॥ चक्रदत्तः ।

2. बला द्विब्रह्मी वासा द्राक्षाभिः कथितं जलम् । पित्तकासापहं पेयं शर्करा मधु- योजितम् ॥ चक्रदत्तः ।

that the root smells like a horse whence the Sanskrit name *asvanguardhri*. 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 *asvagandhá* root and long pepper is given with the addition of clarified butter and honey.¹ 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

Asvagandhá ghríta.³ Take of the decoction of *asvagandhá* root one part, milk ten parts, clarified butter one part; boil them together and prepare a *ghrita*. It is said to promote the nutrition and strength of children.

In rheumatism, a *ghrita* 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 *asvagandhá* root, taken with milk or clarified butter is said to act as an aphrodisiac and restorative to old men. *Asvagandhá* 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 *khorásániyamíni*. They are considered stimulant or heating, narcotic, astringent and digestive, and are used in combination with other

-
1. कृष्णाद्राक्षसितालीङ्गः क्षयहा चौरतैलवान् । मधुसर्पिर्युती वाश्वगन्धाकृष्णासितोद्भवः ॥
चक्रदत्तः ।
 2. पीताश्वगन्धापयसाईमासं घृतेन तैलेन सुम्बाम्बुना वा । कृषस्य पुष्टिं वयसी विधत्ते
बालस्य शसस्य यथाम्बु इष्टिः ॥
चक्रदत्तः ।
 3. अश्वगन्धाघृतम् । पादकल्केऽश्वगन्धायाः क्षीरे दशगुणे पचेत् । घृतं पीतं कुमारानां
पुष्टिकृद्बलवर्द्धनम् ॥
चक्रदत्तः ।
 4. अश्वगन्धादिचूर्णम् । अश्वगन्धा दशपला तम्बाची इडदारकः । चूर्णीकृत्योभयं
विद्वान् घृतभाण्डे निघापयेत् ॥ कर्षकं पयसा पीत्वा नारीभिर्नैव हृष्यति । अगत्वा प्रमदां
भूयादलीपलितवर्जितः ॥
शाङ्गधरः ।

medicines of their class. The seeds of *Hyoscyamus Niger* are used as anthelmintics.¹

NICOTIANA TABACUM, *Linn.* 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 *Bhāvaprakāsa* or *Rāja Vallava*. The *Sabdakalpadruma* mentions it under the name of ताम्रकूट, *Tāmtrakuta*, and quotes as authority for the use of the word, a passage from the *Kulárnava Tantra* where it is stated to be one of eight intoxicating agents.

CAPSICUM FRUTESCENS, *Linn.* 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.

PICRORRHIZA KURROA, *Royle.*

Sans. कटुका, *Katuká*, 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 वारिणा प्रातः । गुडपूर्वा क्रिमिजातं कौष्ठगतं पातयत्यायु । गुडपूर्वा प्रयमती गुडं मनाक् भक्षित्वा विलम्बं कृत्वा पातय्या ॥

भैषज्यरत्नावली ।

2. सशकरामचमारां कटुकामुष्णवारिणा । पीत्वा ज्वरं जयेज्जन्तुः कफपित्तसमुद्भवम् ॥

चक्रदत्तः ।

3. मृदीका मधुकं निम्बं कटुका रोहिणी सना । अवस्थायस्थितं पाकमेतत् पित्त-ज्वरापहम् ॥

चक्रदत्तः ।

a powder containing *katuki* root, used in dyspepsia. Take of *katuki*, *Acorus Calamus* (*vachá*), chebulic 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. ब्रह्मी, *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 tolá 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 *Justicia 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 ghrita.*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 tolás, in the form of a paste and boil them together till the watery portion is evaporated.

1. See note I page 203.

2. ब्राह्मी वचाभया वासा पिप्पली मधु संयुता । अस्य प्रयोगात् सामाहात्किन्नरैः सह गीयते ॥

भावप्रकाशः ।

3. ब्रह्मीघृतम् । ब्रह्मीरसे वचा कुष्ठ शङ्खपुष्पीभिरेव च । पुराणं मेहमुन्नादयहा-
पकारणद घृतम् ॥

चक्रदत्तः ।

NAT. ORDER ACANTHACEÆ.

JUSTICIA ADHATODA, Roxb.

Syn. *Adhatoda Vasica*, Nees.Sans. वासक, *Vásaka*, चटरुष, *Atarusha*. Vern. *Bákas*, B. *Arushá*, 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 *vásaka* 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 *vásaka* 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 *vásaka* root, *gulanča*, and the root of *Solanum Jacquini* (*kantakári*) 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.

*Vásavaleha*² or electuary of *vásaka*. Take of the juice of *vásaka* 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 वासकजाथः पीतः चौद्रेण नाशयेत् । वासकस्वरसः पेयो मधुना रक्तपित्तजित् ॥ वासा द्राक्षाभया जाथः पीतः सचौद्रेणकरः । निहन्ति रक्तपित्ताग्निं वासकासश्च दारुणम् ॥ वासा चद्रासता जाथः चौद्रेण ज्वरकासहा ॥

शाङ्गधरः ।

2. वासावलेहः । वासकस्य रसप्रस्थं माषिका सितशर्करा । पिप्पल्या द्विपलं तावत् सर्पिषश्च शनैः पचेत् ॥ तस्मिन् लेहत्वमायाते शीते चौद्रेणलाटकम् । दन्तावतारयिष्येद्यौ लीदी लेहोऽयमुत्तमः ॥ इत्येव राजयक्ष्माणं कासं वासश्च दारुणम् । पार्श्वशूलं च हृष्कूलं रक्तपित्तं ज्वरं तथा ॥

भावाप्रकाशः ।

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, *gulanha*, root of *Clerodendron Siphonanthus* (*brahmayashti*), the ten drugs called *dasamula* and *Solanum Jacquini* (*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* (*astagandhá*), *Poederia 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. *Kuliákhara*, Beng. *Tálmakhána* Hind. This little annual is met with in low places all over the country.

1. इक्षुत् वासाचन्दनादि तैलम् । चन्दनं रेशुका पूतिर्हयगन्धा प्रसारणी । तिसृगन्धिका मूलं नागकेशरमेव च ॥ मेदि हे च विकटुकं रास्ना मधुकशैलजम् । शटी कुष्ठं देवदारु वनिता च विभीतकम् ॥ एतेषां पलिकैर्भागैः पचेत्तेलादकं भिषक् । वासकश्च तुलाकाष्ठं जलद्रीणे विपाचयेत् ॥ लाचारसादकञ्चैव तथैव दधिमस्तुकम् । चन्दनचाम्पता भागीं दशमूलं निदिग्धिका ॥ एतेषां विंशतिपलं जलद्रीणे विपाचयेत् । पादशेषे स्थिते काथं तैलं तेनैव साधयेत् ॥ कासान् ज्वरान् रक्तपित्तं पाण्डुरोगं हलीमकम् । कामलाच चतसृषुं राजयक्षाद्यमेव च ॥ श्रसान् पञ्चविधं हन्ति क्लवर्णाग्निपुटिकत् । तैलं वासाचन्दनादि इक्षुदितत् प्रकीर्तितम् ॥

भेषज्यरत्नावली ।

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

ANDROGRAPHIS PANICULATA, *Nees*. This bitter shrub is well-known in Bengal under the name of *kálmeg* and is the principal ingredient of a domestic medicine for infants called *Álui*. 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 *yavatikta* 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 *álui* 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.*

Sans. तिल, *Tila*, स्नेहफल, *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. शोधनुत् कोकिलाचस्य भस्म मूत्रेण वाग्भसा ॥

वक्रदत्तः ।

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 *homadhánya* 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, *Linm.*

Sans. निर्गुन्डी, *Nirgundi*, सिन्धुवारः, *Sindhuvāra*.

Vern. Nisinda, *Beng.* Nisindá, *Sámbhalu*, *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. नवनीततिलैः कल्को जैता रक्तार्णसां चृतः ॥

शार्ङ्गधरः ।

2. कल्कः संरोपणः कार्यस्त्रिन्नानां मधुकन्वितः ॥

चक्रदत्तः ।

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.

Sans. गाम्भारी, *Gambhāri*, श्रीपर्णी, *Sriparni*, काश्मरी, *Kāsmāri*.

Vern. Gāmāri, Beng. Gūmbhār, Hind.

THE root of this plant is described as bitter, tonic, stomachic, 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* (*parushaka*), 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 कणाक्षं कफजे ज्वरे । जङ्घयौश्च बले क्षीणे कर्णे च पिहिते
पिबेत् ॥ भावप्रकाशः ।

2. निर्गुण्डीतेलम् । समूलपत्रां निर्गुण्डीं पीडयित्वा रसेन तु । तेन सिद्धं समं तैले
नाडीदुष्टव्रणापहम् ॥ हितं पामापचीनान्तु पामाभ्यञ्जन नावनैः । विविधेषु च स्फीटेषु
तथा सर्व्वत्रयेषु च ॥ चक्रदत्तः ।

3. काश्मर्यं शर्करायुक्तं पिबेत् दृष्टार्दितो नरः । श्रीपर्णीचन्दनीशीरसमधूक परुषकम् ॥
पानं पित्तज्वरं हन्यात् शारिवाद्यं सुशर्करम् ॥ चक्रदत्तः ।

CLERODENDRON SIPHONANTHUS, R. Br. Syn.
Siphonanthus Indica, Lam. Sans. ब्रह्मयष्टिकां, Brahmayashtiká, भार्गी, Bhárgi. Vern. Bámanháti, Beng. Bhárangí, 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 *Bhárgiguda* 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, Ganikáriká, अग्निमन्थ, Agnimantha. Vern. Ganiári, 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, पर्णास, Parnása. 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. द्विक्राशासी पित्रेहार्गी सविशामुष्णवारिणा । नागरं वा सिता भार्गी सौवर्णकं समन्वितम् ॥ चक्रदत्तः ।

2. अग्निमन्थमर्षं मूलं पिष्ट्वा पीतञ्च सर्पिषा । शीतपित्तोदरंकीठान् सप्ताहादेव 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*, *gulanča*, ginger, root of *Olerodendron Siphonanthus*, (*bhārgi*) and *Solanum Jacquini* (*kantakīri*), 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* (*kantakīri*), *Baliospermum montanum* (*danti*), *Acoris Calamus* (*vachā*), *Moringa pterygosperma* (*sigru*), long pepper, black pepper, and ginger.³

OCIMUM BASILICUM, Linn. Syn. *Ocimum pilosum*, Willd. Sans. वव्वर, *Varvara*. Vern. *Bābui tulsī*. 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.

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1. पीतौ मरिचचूर्णेन तुलसीपत्रजो रसः । द्रोणपुष्परसीऽप्येवं निहन्ति विषमज्वरान् ॥
शार्ङ्गधरः ।
 2. अष्टता वागरं फञ्जी पर्णाश साधितः काथः । पीतः सकणचूर्णः कासशासौ
जयन्त्याद्यु ॥ चक्रदत्तः ।
 3. व्याघ्रीदन्तीवचाशिशुमुसव्योषसैन्धवेः । पाचितं नावनं तैलं 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 ghríta*.

ACHYRANTHES ASPERA, *Linn.**

Sans. अपामार्ग, Apámárga. खरमञ्जरी, Kharamanjari.

Vern. Apáng, Beng. Latjirá, chirchirá, 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.

*Apámárga 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, शोधघ्नी, Sothaghni.

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. रसात्रनं तण्डुलकस्य मूलं क्षीटान्वितं तण्डुलतीयपीतम् । असृग्दरं सर्वभवं निहन्ति
वासञ्च भार्गी सङ्घ नामरेण ॥ भावप्रकाशः ।

* The closely allied species *A. bidentata*, Bl. is probably used as frequently as this. G. K.

2. अपामार्गचारतेलम् । अपामार्गचारजले तत्कृतकस्केन साधितं तिलजम् । अप-
हरति कर्णनादं वाधिर्यञ्चापि पूरयति ॥ चक्रादत्तः ।

regarded as laxative, diuretic and stomachic; it is used in jaundice, ascites, anasarca, scanty urine and internal inflammations. One of its Sanskrit synonyms, namely, *sothagni* means cure for dropsy. A decoction of *punarnavá* root is recommended to be given with the addition of powdered *chiretá* and ginger in anasarca.¹ A compound decoction much used in this disease is prepared as follows.

Punarnaváshtaka.² Take of *Punarnavá* root, nim bark, leaves of *Trichosanthes dioica* (*patola*), ginger, *Picrorrhiza Kurroa* (*katuki*), chebulic myrobalan, *gulanchara*, and the wood of *Berberis Asiatica* (*dáruharidra*), quarter of a tolá each, water thirty-two tolás; 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 taila*.³

The *Bhávaprakása* 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.*

Two varieties of camphor are mentioned by Sanskrit writers, namely, *pakva* and *apakva*, that is prepared with the aid of heat

1. भूनिम्ब विश्वकल्कं जम्घ्ना पेयः पुनर्नवाक्कायः। अपहरति नियतमायु शीघ्रं सर्वाङ्गं नृणाम् ॥

2. पुनर्नवाष्टकः। पुनर्नवानिम्बपटोलशुक्लीतिक्तामृतादाव्यभयाकषायः। सर्वाङ्ग-
शोथोदर कासशूलशासान्वितं पाण्डुगदं निहन्ति ॥ चक्रदत्तः।

3. पुनर्नवातैलम्। पुनर्नवशतपलं जलद्रोणे विपाचयेत्। तेन पादावशेषेषु तैल-
प्रस्थं विपाचयेत् ॥ विकटु विफला शङ्गी धन्याकं कट्फलं तथा। शटी दाह प्रियङ्गुश्च
देवदारु हरिणभिः ॥ कुष्ठं पुनर्नवाधान्यं यमानी कारवी तथा। एला त्वचं पद्मकक्ष 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 *Rájanirghantu* 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*), *indrajaya* 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 ॥ एषाच्च कार्षिकेः कल्केः पेषयित्वा विनक्षिपेत् । कामलापाण्डुरीमच्च
हलीमकमथापि वा ॥ प्रीहादमुदरञ्चैव जीर्णज्वरमपीहति । तैल पुनर्नवानाम मल-
व्याधीन्नियच्छति ॥ सारकौमुदी ।

1. कर्पूररसः । हिङ्गुलमहिफेनञ्च मुस्तकेन्द्रयवं तथा । जातीफलञ्च कर्पूरं सर्वं
संमर्द्य यवतः ॥ जलेन वटिका कार्या हिङ्गुजापरिमाणतः । ज्वरातीसारिणे चैव तथाती-
साररीणिणे ॥ ग्रहणीषट्प्रकारे च रक्तातीसारउन्वणे । अत्र केचित् टङ्गनमप्येकभाग-
मिच्छन्ति ॥ रसरत्नावली ।

2. वटक्षीरेण संयुक्तं श्लक्ष्णं कर्पूरगं रजः । क्षिप्रमञ्जनती हन्ति शुक्रहापि घनीद्रवम् ॥
चक्रदत्तः ।

with camphor is introduced into the urethra for the relief of irritability of the bladder and frequent micturition.¹

CINNAMOMUM ZEYLANICUM, *Breyn.* *Sans.* गुडेलक, *Gudatvak.* Cinnamon is largely used as an aromatic adjunct in compound prescriptions. A combination of cinnamon, cardamoms and *tejapatra* leaves, passes by the name of *trijataka*, these three aromatics being often used together.

CINNAMOMUM TAMALA, *Nees.* and other species, furnish the leaves called *tejapatra* in Sanskrit, and *tejpát* 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, *Linn.* 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, *Linn.*

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 *Coesalpinia Sappan* (*pattanga*) under this common denomination. Excluding these last, two varieties of sandal wood are generally recognised, namely, *srikhandā* or white sandal wood

1. मेहनस्याथ योनिर्वा मुखस्याभ्यन्तरे शनैः । घनसारयुतां वृत्तिं धारयेन्मूत्रनिग्रहे ॥
भावप्रकाशः ।

2. पिपासायामनुत्क्षेत्रे लवङ्गस्याम्बु शस्यते । जातीफलस्य वा शीतं शृतं भद्रघनस्य वा ।
चक्रदत्तः ।

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 *chandan* (*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, धात्री, 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. पित्तकृते विसर्पे लेपा विधेयाः सद्यताः सुशीताः । प्रदेहाः परिषेकाश्च चन्दनेर्वा
प्रशस्यते ॥ चक्रदत्तः ।

2. पीतं मधुसितायुक्तं चन्दनं तण्डुलायुना । रक्तातीसारनिद्रक्तपित्तवृद्धाहमेहशुत् ॥

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 tolás 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 a diuretic.³ A paste of the fruits is applied over the pubic region in irritability of the bladder.⁴

Khandámalaki,⁵ or confection of emblic myrobalan. Take of the pulp of an old gourd of *Benincasa cerifera*, (*kushmánda*) four

1. धात्रीफलमिथ्यासी नव दृक्कोपं निहन्ति पूरणतः। तरुस्थविडामलकरसः सर्वाच्चि-
रोगनुत् ॥ चक्रदत्तः ।
2. पिशा धात्रीफलं द्राक्षां शर्कराञ्च पलीन्मिताम् । दत्त्वा मधुपलञ्चात्र कुडुवं सलि-
लस्य च । वाससा गलितं पीतं हन्ति च्छर्दिं विदोषजाम् ॥ चक्रदत्तः ।
3. धात्रीरसेन सक्षौद्रं सर्वमेहहरं परम् ॥ चक्रदत्तः ।
4. आमलक्याश्च कल्केन वस्त्रभागं प्रलेपयेत् । तेन प्रशान्तिं क्षिप्रं नियमान्मूत्र-
नियहः ॥ भावप्रकाशः ।
5. खड्गामलकी । खिन्नपीडितकुष्माण्डात्तुलाद्भिः भृष्टमाज्यतः । प्रस्थात्रैः खड्गनुत्पलानु
पचेदामलकौरसात् ॥ प्रस्ये सुखिन्नकुष्माण्डरसप्रस्ये विघटयन् । दर्व्यां पाकं गते तन्निघ्नूर्ध्वीकृत्य

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* (*nágakesara*), tubers of *Cyperus rotundus* (*mustaka*), and the leaves of *Pinus Webbiana* (*tálisha*), 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.

*Dhatri 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 *gulanchara* for seven times successively. This preparation is given in doses of twenty to forty grains in anæmia, jaundice and dyspepsia.

विनिश्चिपेत् ॥ द्वे द्वे पले कणाजाजीशुण्ठीनां मरिचस्य च । पलं तालीश घन्याक
चातुर्जातक मुस्तकम् ॥ कर्षप्रमाणं प्रत्येकं प्रस्थाईं मार्त्तिकस्य च । पक्तिशूलं निहन्त्येतद्दीष-
त्वयभवञ्च यत् ॥ कर्षप्रमाणं प्रत्येकं प्रस्थाईं मार्त्तिकस्य च । पक्तिशूलं निहन्त्येतद्दीष-
त्वयभवञ्च यत् ॥ कर्षप्रमाणं प्रत्येकं प्रस्थाईं मार्त्तिकस्य च । पक्तिशूलं निहन्त्येतद्दीष-
त्वयभवञ्च यत् ॥ रसायनमिदं श्रेष्ठं खण्डामलकसंज्ञितम् ॥ चक्रदत्तः ॥

1. धात्रीलोहम् । धात्रीचूर्णस्याष्टौ पलानि चत्वारि लोहचूर्णस्य । यष्टौमधुकरजश्च
द्विपलं दद्यादुपले घृष्टम् ॥ अमृताकाशेनैतच्चूर्णं भाव्यञ्च सप्ताहम् । चण्डातपेषु सुपक्वं
भूयः पिशा नवे घटे स्थाप्यम् ॥ घृतमधुना सह युक्तं भुक्तादौ मध्यतोऽन्ते च । त्रीनपि
वारान् खादित् पथ्यं दीषानुवन्धेन ॥ भक्तस्यादौ नाशयति व्याधीन् पित्तानिलीङ्गवान् ।
मध्येऽद्रविष्टम् जयति नृणां विदहते नात्रम् ॥ पानान्नक्तान् दीषान् भुक्तान् शीघ्रितं
प्रयति । एवं जीर्यति चात्रे शूलं नृणां मुकष्टमपि ॥

*Dhātri arishṭa*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.*

Sans. जयपाल, *Jayapála.* कनकफल, *Kanakaphala.*

Vern. *Jaypál,* *Beng.* *Jamálgotá,* *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.

*Ichchhāvedivatīkā.*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.

*Rukkesa rasa.*³ Take of chebulic myrobalan five parts, croton

1. धात्ररिष्टः । धात्रीफलसहस्रे द्वे पीडयित्वा रसं भिषक् । चौद्राष्टभागं पिपल्याश्चूर्णाईकुडवान्वितम् ॥ शर्कराईतुलीन्मिश्रं पक्वं सिग्धघटे स्थितम् । प्रपिवेत् पाण्डुरोगार्तो जीर्णं हितमिताशनः ॥ कामला पाण्डु हृद्रोगवातासृक्विषमज्वरान् । कासहिक्का-रुचिश्चासानेषोऽरिष्टः प्रणाशयेत् ॥ चक्रदत्तः ।

2. इच्छामेदी रसः । शुद्धं पारदटङ्गणं समरिचं तुल्यांशगन्धा तथा विश्वा च विगुणा ततो नवगुणं जेपालचूर्णं लिपेत् । गुञ्जैकप्रमितो रसो हिमजलैः संसेविते रेचयेद्यावन्नीण-जलं पिबेदपि नरः पथ्यञ्च दध्यौदनम् ॥ रसेन्द्रसारसंग्रहः ।

3. रुक्मेशोरसः । अभयाचूर्णमादाय नूतनैर्जयपालजैः । पञ्चमांशेन मिलितैः सुही-दुग्धेर्विपाचितम् ॥ गुडिकामस्य कर्तव्या वर्तुलाशयकप्रभाः । विष्टम्भे गुडिका देया चोदरे दारुणात्मके ॥ रसेन्द्रसारसंग्रहः ।

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.

Mahánárácha rasa.¹ Take chebulic myrobalan, pulp of *Cassia Fistula*, emblic myrobalan, root of *Baliospermum montanum* (*danti*), *Picrorrhiza Kurroa* (*tiktá*) milky juice of *Euphorbia neriifolia* (*snuhi*), root of *Ipomœa Turpethum* (*trivrit*) and the tubers of *Cyperus rotundus* (*mustaka*), each one tolá; pound them to a coarse powder and boil in four seers of water till the latter is reduced to one-eighth. Then take a tolá 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.*

Saus. 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. महानाराचरसः । अभयारम्बधी धात्री दन्ती तिक्ता सुही विहत् । मुस्ता प्रलेक-
मेतानि यद्वाणि पलमात्रया ॥ तानि सुदुह्य सर्वाणि जलाढकयुगे पचेत् । तत्र
तीयेऽष्टमं भागं कषायमवशेषयेत् ॥ निस्तुक्जैपालबीजानि नवानि पलमात्रया । गतु-
वस्त्रधृताख्येव तस्मिन् काये शनैः पचेत् ॥ ज्वालयेदनसं मन्दं यावत्कायो घनी भवेत् ।
ततः खले क्षिपेद्भागानष्टौ जैपालबीजतः ॥ भागान् बीजं नागरात् द्वौ च नरिषाद्वौ

*Nárdcha 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 enlose 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 । गन्धकादहौ च तानीह यावद्यामं विमर्हयेत् ॥ रसौ नाराचनामायं
भक्षितो रक्तिकामितः । जलेन शीतलेनैव रोगानेतान् विनाशयेत् ॥ आभानं शूलमानाहं
प्रत्याभानं तथैव च । उदावर्त्तं तथा गुलामुदराणि हरत्यसौ ॥ वेगे शान्ते तु भुञ्जीत
शकं तस्यदितं दधि । ततस्तत् सैश्ववेनापि ततो दध्योदनं मनाक् ॥

भावप्रकाशः ।

1. नाराचरसः । सूतं टङ्गणकं तुल्यं मरिचं समतुल्यकम् । गन्धकं पिप्पली शुष्ठी
हो हौ भागौ विष्णुयेत् ॥ सर्वतुल्यं चिपेहन्तीबीजं निस्तुषितम्भवेत् । गुञ्जेकं रेचनं
सिद्धं नाराचोऽयं महारसः ॥ आभानमजविष्टम्मुदावर्त्तञ्च नाशयेत् ॥

शार्ङ्गधरः ।

2. दन्तीहरीतकी । जलद्रोणे विपक्तव्या विंशतिः पञ्च चाभयाः । दन्त्याः पञ्चानि
तावन्नि चित्रकस्य तथैव च ॥ तेनाष्टभागशेषेण पचेदन्तीसमं गुडम् । ताश्रभया
विष्णुर्णात्तैलाच्चापि चतुःपलम् ॥ पलमेकं कणाशुष्ठीः सिद्धे लेहे च शीतले । चीद्रं
तेलसमं दद्यात्तुर्जातपलन्तया ॥ ततो लेहपलं चीद्रा जग्ध्वा चैकां हरीतकीम् । सुखं
विरिचते सिन्धो दीषनाशी चानामयः ॥ श्लेष्मण्यधुगुल्मार्शौ हृत्पाण्डुयङ्गीगदाः ।
शाम्यन्तात्केशविषमज्वरकुष्ठान्धरोचकाः ॥ चक्रदत्तः ।

(*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.

Gudáshtaka.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*. रुक्क, *Ruruka*.

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. गुडाष्टकम् । व्योषं दन्ती विवृष्टिं कृष्णामूलं विचूर्णितम् । तन्नूर्णं गुडसन्निभं
भक्षयेत् प्रातरुत्थितः ॥ एतद्गुडाष्टकं नाम बलवर्णाश्विबुधेनम् । शीथीदावर्तः शुभ्रं
श्रीहृपाङ्कामयापहम् ॥ सर्व्वभूर्णंभमी गुडी देयः ॥ भावप्रकाशः ।

2. दशमूलौकषायेण पिबेद्वा नागरान्धसा । कटिशूलेषु सर्व्वेषु तैलमेरण्डसम्भवम् ॥

चक्रदत्तः ।

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 *yavakshāra*, (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

MALLOWUS PHILIPPENSIS, Mull.

Syn. Rottlera tinctoria, Roxb.

Sans. कम्पिल्ल, Kampilla, रेचनक, Rechanaka.

Vern. Kamilá, Beng. Kambilá, Kamalá, Hind.

ROXBURGH and Brandis give *Punnāga* as the Sanskrit for this plant. As far as my information goes, *Punnāga* 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 *Mallowus Philippensis*. It is described as cathartic and anthelmintic and is chiefly used to expel intestinal worms. *Kampilla* powder given in doses of one tolá with treacle, is said to kill and expel all intestinal worms.⁴ It enters into the

1. विशोधेरच्छवीजानि पिष्टा चीरे विपाचयेत् । तत्पायसं कटीयले गृध्रसां
परमौषधम् ॥ भावप्रकाशः ।
2. परशुमूलं दिपलं जलेऽष्टगुणतो पचेत् । तत्काषी यावश्काञ्चः पार्श्वदत्-
कफशूलहा ॥ शार्ङ्गधरः ।
3. परशुपत्रवे मूले त्वचि चाजं पयः शतम् । कण्टकार्याश्च मूलेषु सुखीषं सेवने
हितम् ॥ चक्रदत्तः ।
4. कम्पिल्लचूर्णकपर्पार्श्वे गुदेन सह भवितम् । पातयेच्च किनीन् सर्वानुदरस्थान्
संशयः ॥ भावप्रकाशः ।

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 butter-milk.¹

EUPHORBIA NERIIFOLIA, Linn.

Syn. *Euphorbia ligularia*, Roxb.

Sans. सुही, *Snuhi*, वज्री, *Vajri*, सेहुण्ड, *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 lightning 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 *Croton Tiglium*, and *Vindu ghríta* a preparation with clarified butter, of similar composition.

Turmeric powder mixed with the milky juice of *Euphorbia*

1. विडङ्गसैन्धवधारकाम्पिहकहरीतकी । पिवेतक्रेण संपिष्टाः सर्वक्रिमिनिहन्तये ॥

चक्रदत्तः ।

2. तिष्ठदरीतकी म्लानाः सुहीचीरेण भावयेत् । वटिका मूत्रपीतासः श्रेष्ठाशानाह-
नेदिकाः ॥

चक्रदत्तः ।

neriifolia 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* (*dáruhari-drá*) is steeped in the milky juice of *snuhi* 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. कट्फल, *Katphala Vern. Káephal, 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.

*Katphalúdi Churna.*⁴ Take of the bark of *Myrica sapida*, tubers of *Cyperus rotundus* (*mustaka*), root of *Picrorrhiza Kurroa* (*katuki*), *Curcuma Zedoaria* (*sati*), *Rhus succedanea* (*karkarja sringi*), 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. सुह्रीरं रजनीयुक्तं लेपाद्दुर्नामनाशनम् ॥ चक्रदत्तः ।
2. भावितं रजनीचूर्णं सुह्रीरी पुनः पुनः । बन्धनात् सुदृढं मूत्रं भिनत्यशी भगन्दरम् ॥ चक्रदत्तः ।
3. सुह्रीरं दुग्ध दाष्णीभिर्यत्ति कृत्वा विचक्षणः । भगन्दरगतिं शाला पूरयेत्तां प्रयवतः । एषा सर्वशरीरस्थां नाडीं हन्त्यान्न संशयः ॥ चक्रदत्तः ।
4. कट्फलादिचूर्णम् । कट्फलं मुसकं तिक्ता शटी शङ्खी च पुष्करम् । चूर्णमेधाश्च मधुना शङ्खवेरसेन च ॥ लिहेत् ज्वरहरं कण्ठं कासशासाहचीन् जयेत् । वायुच्छर्दिं तथा मूलं चयज्ञेव व्यपीडति ॥ शार्ङ्गधरः ।

NAT. ORDER URTICEÆ.

FICUS RELIGIOSA, Linn. Sans. अश्वत्थ, *Asvattha*. Vern. Pipal,
Hind.

FICUS BENGALENSIS, Linn. Sans. बट, *Vata*. Vern. Bar. Hind.

FICUS GLOMERATA, Willd. Sans. उडुम्बर, *Udumbara*. Vern.
Jagnoḷumar, Beng. *Gular*, Hind.

FICUS INFECTORIA, Roxb. Sans. पर्कटि, *Parkati*. Vern. Pàkur,
Beng. Pákri, Hind.

THE root-barks of these four species of *Ficus* together with that of *Azadarachta Indica* pass by the name of *Panchavalkala* or the five barks, and are used in combination. A decoction of these barks, called *Pancha valkala kasháya* is much used as a gargle in salivation, as a wash for ulcers, and as an injection in leucorrhœa.¹ The powdered root-bark of *Ficus religiosa* rubbed with honey is applied to aphthous sores of children.² It is also sprinkled over unhealthy ulcers to improve their condition and promote granulation.³

The figs of *Ficus glomerata* are considered astringent, stomachic and carminative and are given in menorrhagia and hæmoptysis in doses of one tolá of the dried fruits with sugar and honey.⁴ The fresh juice of the ripe fruit is given as an adjunct to a metallic medicine for diabetes and other urinary complaints, called *Vrihat vangesvara rasa*, (see Tin).

CANNABIS SATIVA, Linn. VAR. INDICA.

Sans. विजया, *Vijayá*, भङ्गा, *Bhangá*, गङ्गा, *Ganjá*, इन्द्रासन, *Indrásana*.
Vern. *Siddhi*, *Bháng*, Beng. *Bháng*. Hind.

THE *Cannabis sativa* has been used from a very remote period both in medicine and as an intoxicating agent. A mythological

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| 1. प्रदेहाः परिवेकाय शसन्ते पञ्चवल्कलैः ॥ | चक्रदत्तः । |
| 2. अश्वत्थत्वन्दलश्रीद्रैमुंखपाके प्रलेपनम् ॥ | चक्रदत्तः । |
| 3. अन्तर्दग्धकुठारको दहनजं लेपान्निहन्ति व्रणान् । अश्वत्थस्य विद्युन्मवल्कलकृतं चूर्णं तयो गुणनात् ॥ | चक्रदत्तः । |
| 4. समाचिकः फला फलीद्वी वा पीती रसः शीघ्रितमायु इति । शीघ्रयुक्तं फलरसं कोशीडुम्बरजं पिबेत् ॥ असुन्दरविनाशाय सञ्जकर्पशीडुम्बुक् ॥ | चक्रदत्तः । |

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 Mandára. It is the favourite drink of Indra, the king of gods, and is called *vijayá*, 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 *bháng* 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 *bháng* 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 *bháng* 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 *bháng*. 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 *bháng* 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, *Gánjá*, the dried flowering tops of the female

1. जाता मन्दरमन्थनाञ्जलिधौ पीयूषरूपा पुरा वैलीक्ये विजयप्रदिति विजया श्रीदेव-
रात्रप्रिया । लोकानां हितकाम्यया क्वितिले प्राप्ता नरैः कामदा सर्वगतइविनाशहर्षजमनी येः
श्रेयिता सर्वदा ॥

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 tolás' 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 Hindus 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 cheerful 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. Four or five persons usually join in this debauch. The *hookáh* 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 *bháng*. 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 áttar 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. Ameer states that sometimes by special order of customers he introduces stramonium seeds, but never nux vomica ; that all classes of persons including the lower Portugese or Kala 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 appetite and intense aphrodisiac desire."*

The leaves of *Cannabis sativa* are purified by being boiled in milk before use. They are regarded as heating, digestive, astringent 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

*Játiphalaádyá churna.*² Take of nutmeg, cloves, cinnamon, cardamon, *tejapatra* leaves, flowers of *Mesua ferrea* (*nágakesara*), camphor, sandal wood, sesamum seeds, bamboo manna, flowers of

* Bengal Dispensatory, p. 582.

1. अष्टनु विजयाचूर्णे मधुना निम्नि भक्षयेत् । निद्रानाशेऽतिसारे च यदृष्टी
पावकचये ॥ दर्पणः ।

2. जातीफलाद्यं चूर्णम् । जातीफललवङ्गैलापवेसुङ्गनागकेशरैः । कर्पूरचन्दनतिलै-
मुक्चीरौ तगरामलैः ॥ तालीश पिप्पली पृथ्वा चिवक खलजीरकैः । गुण्ठी विडङ्ग मरिचैः
समभागानि चूर्णितैः ॥ यावन्वेतानि सर्वाणि कार्या भङ्गा च तावती । सर्वचूर्णसमा देवा
शर्करा च भिषग्वरैः ॥ कर्पमात्रं तथा खादेन्मधुना प्राकृतं सुधीः । अस्य प्रभावाद्बह्वी-
कासश्यासारुचिचयान् ॥ वातश्लेष्मप्रतीश्यायः प्रशमं याति वेगतः ॥

Tabernæmontana coronaria (*tagara*), chebulic and emblic myrobalans, long pepper, black pepper, ginger, leaves of *Pinus Webbiana* (*tálisha*), plumbago root, cumin seeds and the seeds of *Embelia Ribes* (*viranga*), equal parts, purified *bháng* equal in weight to all the above ingredients, and sugar twice as much as the *bháng*. Powder and mix. Dose, about twenty to forty grains. This preparation is given in diarrhoea, indigestion and loss of appetite.

Jválnála rasa.¹ Take of *yavakshára*, and *sarjikákshára*, (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 *bháng*; 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* (*bhringarája*), Dose, about half a drachm with honey. This medicine is given in indigestion and loss of appetite with nausea and vomiting.

Numerous confections of *bháng*, such as *Kámesvara modaka*, *Madana modaka*, *Bályasakrásana modaka*, etc., are described in books. These, as their names imply, are considered aphrodisiac 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 *bháng* equal in weight to all the other ingredients, together with sugar, honey and the usual aromatics. *Májoon*, the preparation

1. ज्वालानली रसः । चारवयं सूतगन्धौ पञ्चकीलनिदं समम् । सर्वस्तुत्या जया
भृष्टा तदर्द्धा शिशुजा जटा ॥ एतत् सर्वं जया शिशु वज्रीनां केवलैर्द्वैः । भावयेत् विदिनं
घर्षे ततो लघुपुटे पचेत् ॥ माह्वस इवैर्घृष्टो रसो ज्वालानली भवेत् । निष्कीडस्य नपुना
लीडोऽनुपानं मुडनागरम् ॥ हन्यजीर्णमतीसारं ग्रहबीमप्रिमार्दवम् । श्लेष्महन्नासवमन-
मालस्यमरुचिं जयेत् ॥

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 succedanea* (*sringi*), *Páchak* root, coriander, rock salt, zedoary root, leaves of *Pinus Webbiana* (*tálisa*), bark of *Myrica sapida* (*katphala*) flowers of *Mesua ferrea* (*nágakesara*), ajowan, seeds of *Seseli Indicum* (*vanayamáni*), liquorice root, seeds of *Trigonella foenum-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 tolás, 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*, उषण, *Ushana*.

Vern. *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 । वैलोक्यविजयापत्रं सवीजं घृतभर्जितम् । विकटु विफला शङ्खी कुष्ठं धन्याक सैश्वम् ॥ शटी तालीशपत्रञ्च कट्फलं नागकेशरम् । अजमीदा यमानी च यष्टीमधुकमेव च ॥ मेथी जीरकयुग्मञ्च गृहीत्वा श्लक्ष्णचूर्णितम् । यावन्मेतानि चूर्णानि तावदेव तदौषधम् ॥ तावदेव सिता देया यावदायाति बन्धनम् । घृतेन मधुना नित्यं मोदकं परिकल्पयेत् ॥ भर्जितं तिलचूर्णञ्च मोदकोपरि विन्यसेत् । त्रिसुगन्धसमायुक्तं कर्पूरेणाधिवासितम् ॥ स्थापयेत् घृतभाण्डे तु श्रीमन्नमदनमोदकम् । सर्वरोगहरं शोतत्संग्रह्यदृष्योहरम् ॥ एतस्य सतताभ्यासाद् इहोऽपि तरुणायते । एतत् कामप्रवृत्तार्थं नारदेन प्रभाषितम् ॥

सारकौमुदी ।

combination with long pepper and ginger, under the name of *trikatu* 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 guliká.*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*, (*nágakesara*) four tolás, long pepper root sixteen tolás, leaves called *tejapatra* 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. पीती मरिचत्रूरेण तुलसीपत्रजी रसः । द्रोणपुष्पीरसी वापि निहन्ति विषम-
ज्वरान् ॥ भावप्रकाशः ।

2. प्राणदा गुड़िका । विपलं शङ्खेरेस्य चतुर्थं मरिचस्य च । पिप्पल्याः कुडुवाइड
चव्यायाः पलमेव च ॥ तालीशपत्रस्य पलं पलाइं केशरस्य च । हे पले पिप्पलीमूला-
दईकर्षणं पत्रकान् ॥ सूक्ष्मैलाकर्षमेकान् कर्षे त्वगन्धनालयीः । गुडान् पलानि तु त्रिंशत्
पूर्णमेकत्र कारयेत् ॥ अक्षप्रमाणा गुड़िका प्राणदिति च सा श्रुता । पूर्वं भक्षेत्तु पश्चात्
भोजनस्य यथावत्तम् ॥ नद्यं मांसरसं युषं चौरं तीर्यं पिबेत् तथा । इत्यादर्शांसि सर्वाणि
सहजात्यसजानि च ॥ वातपित्तकफोत्थानि सन्निपातीभवानि च ॥

with some rough leaves as of *Streblus asper* (*sákhota*) and then sprinkled over with powdered black pepper.¹

PIPER LONGUM, *Linn.*

Syn. Chavica Roxburghii, Miq.

Sans. पिप्पली, Pippali. कणा, Kaná, कृष्णा, Krishná.

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 acrids (*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. वृष्टस्य कर्कशैः पत्रैरिन्द्रलुप्तस्य गुण्डमम् । त्रुणितैर्मरिचैः कार्यमिन्द्रलुप्तनिवारणम् ॥

चक्रदत्तः ।

2. मधुना पिप्पलीचूर्णं लिहेत् कासज्वरापहम् । हिकान्नासिहरं कण्ठां श्लेष्मं
मालकीवितम् ॥

भावप्रकाशः ।

3. पिप्पली पिप्पलीमूलं मरिचं विन्मिषजम् । पिबेत् सूत्रेण मतिमान् कफजे सर-
संघये ॥

भावप्रकाशः ।

4. पिप्पलीवर्द्धमानानि । कमठद्वया दशादानि दशपिप्पलिकं दिनम् । वर्द्धयित्
पयसा सार्द्धं तद्यथापनयेत् पुनः ॥ जीर्णं जीर्णं च भुञ्जीत यद्विकं क्षीरसर्पिषा । पिप्पलीका

Long pepper and black pepper enter into the composition of several irritating snuffs. The following is an example. Take of black pepper, long pepper, seeds of *Moringa pterygosperma* (*sveta 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.

Ashtakatvara taila.¹ Take of ginger and long pepper each sixteen tolás, 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, *Chaviká. 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. ताडूल, *Támbula. Vern. Pán, 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

प्रयोगोऽयं सहस्रस्य रसायनः ॥ दशपिप्पलिकः श्रेष्ठो मध्यमः षट्प्रकीर्तितः । यस्त्रिपिप्पली-
पर्यन्तः प्रयोगः सोऽवरः स्मृतः ॥ बृंहणं वृध्यमायुष्यं प्रीहीदरविनाशनम् । क्यसः स्थापनं
मेधं पिप्पलीनां रसायनम् ॥ पञ्चपिप्पलिकश्चापि दृश्यते बह्वमानकः । पिष्टास्ता वलिभिः
पेया श्रुता मध्यबलेर्नरैः ॥ शीतक्रिया ऋस्वबलेर्देहदोषामयान् प्रति ॥

चक्रदत्तः ।

1. षट्कट्टूरं तेलम् । पलाभ्यां पिप्पलीमूलनागराश्च षट्कट्टूरः । तैलप्रसवः सभी दधा
गुप्रसूयहापहः ॥ षट्कट्टूरतेलेऽयं तैलं सार्षपमिथ्यते ॥ चक्रदत्तः ।

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, *pán* 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. *Pán* leaves are used as a ready dressing for foul ulcers which seem to improve under them.

NAT. ORDER CONIFERÆ.

PINUS WEBBIANA, Wall.

Syn. Abies Webbiana, Lindl.

Sans. तालीपत्र, *Tálisapatra*, *Vern. Tálispatra* Beng. *Hindl.*

THE dried leaves used by Kavirajas under the name of *tálisapatra*, were identified at the herbarium of the Royal Botanic Garden to be the leaves of *Pinus Webbiana*. They are single, spirally arranged all round the branchlets, flat, narrow, linear, one to three inches long, one line broad, narrowed into a short terete petiole, under side with two longitudinal furrows on either side of the raised midrib, upper side shining. The Sanskrit term *tálisapatra* has been hitherto translated by most writers on Botany and Materia Medica, as *Flacourtia cataphracta*. The error originated probably in Wilson's Sanskrit-English dictionary and has since been repeated by subsequent writers. This medicine is regarded as carminative, expectorant and useful in phthisis, cough and asthma.

The powdered leaves are given with the juice of *Justicia Adhatoda* (*vásaka*) and honey in cough, asthma and hæmoptysis.¹ A confection called *Tálisádyá churna* is prepared with *tálisapatra*, 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*, *srivása* and *kshira* in Sanskrit. In the vernacular it is called *ganlhabirozá*. 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 पेयः क्षीद्रेण वासकस्वरसः । कफपित्त तमकशास स्वरभेद रक्तपित्त हरः ॥ चक्रदत्तः ।

2. तालीशाद्यं चूर्णम् । तालीशं मरिचं शुण्ठी पिप्पली वंशलोचना । एक द्वित्रिचतुःपञ्चकर्षमाणान् प्रकल्पयेत् ॥ एलावचीऽस्तु कर्षार्द्धं प्रत्येकं भागमावहेत् । द्वात्रिंशत्-कर्षतुलिता प्रदेया शर्करां बुधैः ॥ तालीशाद्यमिदं चूर्णं पाचनं रोचनं कृतम् । काशशास-ज्वरहरं कर्षतीसारनाशनम् ॥ शीशाभानहरं शीह महती पाण्डुरोगजित् । पद्मा वा शर्करा चूर्णं चिपेत् स्वादमुटिका ततः ॥ शार्ङ्गधरः ।

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.

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 nourishing, cooling and diuretic. The pulp of the ripe fruit is hard and indigestible but is used

1. श्रीवासुगुण्युक्तगुरुशालनिर्व्यासभूषिताः । कठिनत्वं वशा यान्ति नशान्नुयाववेदनाः ॥

चक्रदत्तः ।

2. देवदुर्मं शिशुनयूरकञ्च गोमूत्रं पिष्टामषवाग्मन्त्राम् । पीत्वायु हन्वाद्दुदरं प्रकृतं

क्रिमीन् सुशीघानुदरञ्च दृष्यम् ॥

चक्रदत्तः ।

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 *Máthághasú*. The ashes of the leaves are used in medicine. 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.

Narikelakhanda.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* (*nágakesara*) 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*, तणराज, *Trinarája*. *Vern.* *Tál*, *Beng.* *Hind.*

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. नारिकेलखण्डः । कुड्वन्तितमिह स्यान्नारिकेलं सुषिष्टं पलपरिमितसर्पिःपाचितं खण्डतुल्यम् । निजपयसि तदेतत् प्रस्थमात्रे विपक्तं गुटवदय सुशीते शाणभागान् चिपेच्च ॥
 वनाकपिप्लवीपयोदतुगाडिजीरान् शाणं विजातमिभकेशरवद्विचूर्णम् । इन्तस्यपित्तमक्षिं
 त्रयमक्षपित्तं शूलं वमिं सकलपौरुषकारि हरि ॥ 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 *tál* 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 *patsálas* 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* पूग, *Puga*, कसुक, *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 *Bhávaprakasa* gives a preparation called

1. तालपुष्पमदः चीरः सुगुडः प्रोहनामनः ॥

Rativallava pugapúka. 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 *Kámesvara modaka*.

Betel-nuts are also used as vermifuge. Dose, one-fourth tola rubbed into a paste with 2 tolas of fresh lemon juice.¹

PHOENIX SYLVESTRIS, *Roeb. Sans.* खर्जूर, *Kharjura*. *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 *jagari*. The imported fruits of *Phoenix dactylifera* are used medicinally as demulcents and expectorants.

NAT. ORDER HYPOXIDEÆ.

HYPOXIS ORCHIOIDES.

Syn. Curculigo orchioides, Gaertn.

Sans. मुषली, *Mushali*, तालमूली, *Tálamuli*. *Vern.* Tállura, *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* (*satávari*), *Sphaeranthus mollis* (*munlitiká*), *gulanchara*, 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 *Rája 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*. *Hom.*

1. अपक्वं क्लमुकं पिष्टं पीतं जम्बीरजे रसैः । निहन्ति विडम्बवं कीटं रसः खर्जूर
जम्बयोः ॥ भेषज्यरत्नावली ।

2. शतावरी मुखितिका गुडूची सहस्रिकर्णा सह तालमूली । एतानि कृत्वा समभाग-
युक्तान्याज्येन किंवा मधुनावलिच्छात् ॥ जराजामृत्युवियुक्तर्दहो भवेन्नरी वीर्यबलादियुक्तः ।
विभाति देवप्रतिमः स नित्यं प्रभासयो भूरिविबुद्धिः ॥ भावप्रकाशः ।

(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 Rája nirghantu.¹ The tubers of *Curculigo orchoides* 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.

Sans. वचा, *Vachá*, षड्ग्रन्था, *Shadgrantha*. Vern. Bach, 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, assafœtida, *átis*, long pepper, black pepper, ginger, chebulic 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 CĀMPANULATUS, Blume.

Syn. *Arum campanulatum*, Roxb.

Sans. शूरण, *Surana*, ओल्ल, *Olla*. Vern. ol, Beng. Hind.

THE *Amorphophallus cāmpanulatus* 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 द्विधा प्रोक्ता श्वेता चापरसंज्ञका । श्वेता स्वल्पगुणीपेता अपरा च रसायनी ॥ राजनिर्घण्टः ।

2. वचा लवणतोयेन वान्तिगमे प्रशस्यते ॥ चक्रदत्तः ।

3. मूली विवृद्धकीर्णोऽङ्गिरसाभियुक्तिताः पिबेत् । हिङ्गु प्रतिविषा व्योष वचा सौवर्ष लाभयाः ॥ चक्रदत्तः ।

got rid off by thorough boiling and washing, otherwise the vegetable is apt to cause troublesome irritation in the mouth and fauces. Medicinally, *surana* is considered serviceable in hæmorrhoids; in fact one of its Sanskrit synonyms is *arsoghna* or the curer 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 modoka*, *Surana pindi*, *Kámkáyana modaka*, etc. These are all confections made of the tubers of *Amorphophallus campanulatus* with the addition of treacle and various aromatics and acrids.

*Svalpa 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 tolá 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, *Mánaka*, Vern. *Mánkachu*, Beng. *Mánkanla*, Hind.

THE underground stems of *Alocasia Indica* constitute a valuable and important vegetable of native dietary. The stems

1. सौरणं कन्दमादाय पुटपाकेन पाचयेत् । सतेल लवणं दयं सद्यस्वर्शोविकारणत् ॥

शार्ङ्गधरः ।

2. स्वल्पशूरणमोदकः । मरिचमहौषधचित्तकम् शूरणभागा यथोत्तरं द्विगुणाः ।

सर्वसमी गुडभागः सेव्योऽयं मोदकः प्रसिद्धफलः ॥ ज्वलनं ज्वलयति जाडरमुन्मूलयति

यस्यगुणगदान् । निःशेषयति श्लैष्मदमशोसि नाशयत्याशु ॥

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 *Mánamanāla*, 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. आर्द्रक, *Ardraka*, गङ्गवेर, *Sringavera*.

Vern. Ailú, *Beng.* Adrak, *Hindl.*

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*, *Sunti* 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.

*Samasarkara churna.*² Take of cardamoms one part, cinnamon

1. पुराणं माणकं पिष्टा विगुणीकृततण्डुलम् । साधितं चीरतीयामग्रामभ्यसेत् पायसं ततः ॥ हन्ति वातीदरं शीघ्रं ग्रहणीं पाण्डुतामपि । सिद्धी भिषग्विराग्यातः प्रथीगीश्वं निरत्ययः ॥

चक्रदत्तः ।

2. समशकरं चूर्णम् । गुच्छीकणामरिचनागदलत्वर्गलं चूर्णीकृतं क्रमविनिर्दिष्टमूर्ध-

two parts, flowers of *Mesua ferrea* (*nágakesara*) 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.

Saubhágya sunti.¹ Take of clarified butter, sixteen tolás, 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 tolás, fennel seeds forty tolás, *báberang* seeds, cumin seeds, nigella seeds, long pepper, black pepper, ginger, tubers of *Cyperus rotundus*, leaves called *tejapatra*, flowers of *Mesua ferrea* (*nágakesara*), cinnamon and cardamoms each eight tolás 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.

Sunti ghríta.² This is a preparation of ginger made with a decoction and paste of the root, clarified butter and *kánjika* in the usual proportions. It is said to be useful in rheumatism.

Ardraka khañña. 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

मन्थात् । खादेदिदं समसितं गुदजाग्निमान्द्यकासारुचिश्चसनकण्ठहृदामयेषु ॥

भावप्रकाशः ।

1. मौभाग्यगुण्ठी । आज्यं स्यात् पलयुग्ममत्र पयसः प्रस्थद्वयं खण्डतः पञ्चाशत् पल-
मत्र चूर्णितमथो प्रक्षिप्यते नागरम् । प्रस्थार्द्धं गुडवद्विपाच्य विधिना मुष्टिवयं धान्बकात्
मिश्राः पञ्चपलं पलं क्रिमिरिपीः साजाजिजौरादपि ॥ व्यीषाम्भीददलीरसेन्द्रसुमनस्तम्-
दाविडीनां पलं पकं नागरखण्डसंश्लक्ष्मिदं तत् सूतिकारोगहृत् । तट्कृदिज्वरदाहशीष-
शमनं सन्नासकासापहम् ॥ श्रीहव्याधिविनाशनं कृमिहरं मन्दाग्निसन्दीपनम् ॥

भावप्रकाशः ।

2. सर्पिर्नागरकल्केन सौवीरं तत्रतुर्गुणम् । सिद्धमग्निकरं श्रेष्ठमामवातहरं 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

*Saindhavādya taila.*³ Take of dry ginger forty tolás, rock-salt, long pepper root and plumbago root, sixteen tolás 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.* स्थूलग्रन्थि, *Sthula-granthi*, *Vern. Mahá bari bach*, *Hind. Beng.*

ZINGIBER CASSUMUNAR, *Roxb. Sans.* वनाद्रक, *Vanádraka*, *Vern. Banáda*, *Beng.*

ALPINIA GALANGA, *Linn. Sans.* कुलिञ्जान, *Kulinjána*. *Vern. Kulinján*, *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 religions

1. नागरकल्कमिश्रं क्षीरं नखेन धीजितं पंसाम् । नानादोषोद्धृतां शिरीरुजां हनि
तीव्रतराम् ॥ चक्रदत्तः ।

2. आद्रकस्वरसः क्षौद्रयुक्ती हृषणवातनुत् । श्वासकासारुचिं हनि प्रतिश्यायं
व्यपीडति ॥ शार्ङ्गधरः ।

3. सैन्धवायं तैलम् । द्वे पले सैन्धवात् पञ्च गुण्या शयिक चित्रकात् । द्वे द्वे भङ्गात्
कास्थीनि विंशतिर्द्वे तथादके ॥ शारनासात्यचेत् प्रस्थं तैलमेतेरपस्यदम् । मधुसूक्तमहा-
शीर्त्तिसर्व्ववातविकारघ्नुत् ॥ चक्रदत्तः ।

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

*Haridrākhandā.*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, *tejapatra*, *báberang* seeds, root of *Ipomœa Turpethum* (*trivrit*), the three myrobalans, flowers of *Mesua ferrea* (*nágakesara*) tubers of *Cyperus 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 *haridrādvē*, 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.

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1. कमलं सिंहासदलं सनिशं सुरभिजलेन संपिष्टम् । दिवसवरीष नियतं चपयति विलेपनतः ॥ चक्रदत्तः ।
 2. हरिद्राकल्कसंयुक्तं गोमूत्रेण पलद्वयम् । पिवेत्ररः काकमाची कच्छुपानाविनाशनम् ॥ चक्रदत्तः ।
 3. हरिद्राखण्डः । हरिद्रायाः पलान्वष्टौ षट्पलं हविषां तथा । चीरादकेन संयुक्तं खण्डस्यार्धपलं तथा ॥ पचेन्मृदग्निना वैद्यो भाजने मृक्षये दृढे । त्रिकटु विजातकश्चैव क्रिमिघ्नं त्रिहता तथा ॥ त्रिफलं केशरं मूस्तं लौहं प्रति पलं पलम् । संचूर्णं प्रधिपेत्तत्र कर्षमेकानु भक्षयेत् ॥ कण्डू विस्फोट दद्रुणां नाशनं परमौषधम् । प्रतप्तकाचनामासी देही भवति नान्यथा ॥ शीतपित्तोदरंकीठान् सप्ताहादेव नाशयेत् । हरिद्रानामतः खण्डः कण्डूनां परमौषधम् ॥ भेषज्यरत्नावली ।

CURCUMA ZEDOARIA, *Roscoe.*

Syn. O. Zerumbet, Roxb.

Sans. ऋटी, 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 *Coesalpinia Sappan* makes the red powder called *ábir* by the Hindustanie, and *phág* by the Bengalis. It is copiously thrown about by the natives during the *Huli* or Hindu holidays in the month of March."

CURCUMA AROMATICA, *Salisb. Syn. C. Zedoaria, Roxb.*

Sans. वनहरिद्रा, Vanaharidrá. Vern. Banhalud, Beng. Jedwar, Hind.

The rhizomes of this plant are of a pale yellow colour and have an agreeable fragrant smell. The *Bhávaprakása* describes them as useful in skin diseases and disorders of the blood. They are sometimes used in combination with other medicines in these diseases.

CURCUMA ÁMÁDÁ, *Roxb. Sans. कर्पूरहरिद्रा, Karpura-*

haridá. Vern. Ámádá, Beng. The *Bhávaprakása* mentions this plant under the name of *karpuraharidrá*, 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.

ELETTARIA CARDAMOMUM, *White et Maton. Also*

Amomum subulatum, Roxb. Sans. एला, Elá. Vern. Eláchi, Hind. Gujráti 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, रण, 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 *mochaka* in Sanskrit, is considered cooling and astringent; it is much used in diabetes in the form of a *ghrita* prepared as follows :—

Kadalyádi 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*), *jatímánsi* root, the three myrobalans, *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 tolás.

NAT. ORDER ORCHIDACEÆ.

VANDA ROXBURGHII, R. Br.

Syn. *Cymbidium tessaloides*, Roxb.

Sans. रासना, *Rásná*, गन्धनाकुली, *Gandhanákuli*. Vern. *Rásná*, B. H.

UNDER the name of *rásná*, the roots of *Vanda Roxburghii* and *Acampe papillosa*, are both indiscriminately used by native

1. कदल्यादि घृतम् । कदलीकन्दनिर्यासे तत्प्रसूनतुला पचेत् । चतुर्भागावशेषेऽग्निं घृतप्रसूनं विपाचयेत् ॥ चन्दनं सरलं मांसौ कदलीमूलकं तथा । ऐला लवङ्गं त्रिफलाकपिल-

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 *rásná*; 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.

Rásná root is said to be fragrant, bitter and useful in rheumatism and allied disorders, in which it is prescribed in a variety of forms.

Rásnápanchaka.¹ Take of *rásná*, *gulanča*, *devadáru*, 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.

Rásná guggulu.² Eight parts of *rásná* and ten of bdellium are beaten into a uniform mass with clarified butter. Dose, about a drachm, in sciatica.

Rásná enters into the composition of several medicated oils for external application in rheumatism and diseases of the nervous system, such as the *Mahámásha taila*, *Madhyama Naráyana taila*, etc.

NAT. ORDER LILIACEÆ.

ALOE INDICA, Royle.

Sans. घृतकुमारी, *Ghritakumári*, कन्या, *Kanyá*.

Vern. *Ghritakumári*, Beng. *Ghikumári*, Hind.

ALOES (called *mushabbar* in the vernacular), though now used in native medicine, was unknown to the Sanskrit writers. They

फलमेव च ॥ कल्केनाग्नेन संसिद्धं सीमरीमनिवारणम् । मूत्ररोगानशेषांश्च प्रभृतान्
शुक्रपिच्छिलान् ॥ प्रमेहान् विंशतिश्लेव मूत्राघातांस्त्रयीदश । बहुमूत्रं विशेषेण मूत्रकृच्छ्रं
तथाग्नीम् ॥ कदल्यादि इतं नाम विष्णुना परिकीर्तितम् ॥

राष्ट्रीयसारसंग्रहः ।

1. रासापचकम् । रासान्ता महादाह नागरेरखुर्जं प्रतम् । सप्तधातुगते वाते
सामे वाहार्कजे पिवेत् ॥

2. रासायास्तु पलश्लेकं कर्षाण् पच च गुग्गुलीः । सर्पिषा वटिकां कृत्वा खादिषा
मृध्रसीहराम् ॥

चक्रदत्तः ।

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 jvarári 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, *Satávari*, शतमूली, *Satamuli*.

Vern. *Satamuli*, *Beng.* *Satávari*, *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 :—

Satávari 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.

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- | | |
|---|--------------|
| 1. निशाचूर्णयुतः कन्यारसः प्रीहापचीहरः ॥ | शार्ङ्गधरः । |
| 2. शतावरीयाश्च मधुना पित्तशूलहरी रसः ॥ | शार्ङ्गधरः । |
| 3. शतावरीघृतम् । घृतं शतावरीगर्भं क्षीरे दशगुणे पचेत् । शर्करापिप्पलीक्षौद्रयुक्तं ताप्यमुच्यते ॥ | चक्रदत्तः । |

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* (*kása*), *Poa cynosuroides* (*kusa*), *Oryza sativa* (variety called *sálidhānya*) and *Saccharum officinarum* (*ikshu*), *Batatus paniculatus* (*vidári*), *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.

Náráyana taila,³ popularly known as *Madhyama náráyana taila* is made by taking of the bark of *Ægle Marmelos* (*vilva*), *Premna spinosa* (*agnimantha*), *Calosanthus Indica* (*syonáka*), *Stereospermum suaveolens* (*pátalá*), *Erythrina Indica* (*páribhadra*) *Pœderia foetida* (*prasáraní*), *Withania somnifera* (*asvagandhá*), *Solanum Jacquini* (*kantakári*), *Solanum Indicum* (*vrihati*), *Sida cordifolia* (*bala*), *Sida rhombifolia* (*atibalá*), *Tribulus terrestris* (*danshtrá*) and *Boerhaavia diffusa* (*punarnavá*), each twenty tolás, water sixty-four seers, and boiling down till reduced to one-fourth and straining. To the

1. शतावरी काश कुश शर्दशा विदारी शालीच कशेरुकाणाम् । काशं सुशीतं मधुशर्कराक्तं पिवन् जयेत् पैत्तिकमूत्रकृच्छम् ॥ चक्रदत्तः ।

2. शतावर्ष्या रसं नीत्वा क्षीरेण सह यः पिबेत् । प्रमेहा विंशतिस्तस्य चयं यान्ति न संशयः ॥

3. नारायण तैलम् । विल्लाशिमन्थशीलाकपाटलापारिभद्रकः । प्रसारणशुभन्वा च वृद्धतीक्ष्णकारिका ॥ बला चातिबला चैव शर्दशा सपुनर्नवा । एषा दशपलान् भागान् चतुर्दशोऽम्बुः पचेत् ॥ पादशेषं परिस्नाय तैलपात्रं प्रदापयेत् । शतपुष्पा देवदारु मांसी शैलियकं वचा ॥ चन्दनं तगरं कुठमेलापर्णीचतुष्टयम् । रास्वा तुरगेगन्धा च सैन्धवं सपुनर्नवम् ॥ एषा द्विपलिकान् भागान् पेपयित्वा विनिचिपेत् । शरावरीरसश्चैव तैलतुल्यं प्रदापयेत् ॥ आजं वा यदि वा मय्यं क्षीरं दत्त्वा चतुर्गुणम् । पाने वस्ती तथाभ्यङ्गे भोज्ये चैव प्रशस्यते ॥ अन्वी वा वातसंभयो गजो वा यदि वा नरः । पङ्गुलः पीठसर्पी च तैलेनानेन सिध्यति ॥ अधोभागे च ये वाताः शिरोमध्यगताश्च ये । दन्तशूले हनुस्तम्भे मन्यास्तम्भे गलघहे ॥ यस्य शुष्यति चेकाङ्गं मतिर्यथा च विह्वला । एतत्तैलवरं तेषां नाम्ना नारायणं च्युतम् ॥ तगरं नतमत्र स्यादभावे शीयलिक्रीपङ्कः ॥ चक्रदत्तः ।

ALLIUM SATIVUM.

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*), *jatámānsi* root, liquid storax, *Acorus Calamus* (*váchá*), sandal wood, *Limnanthes um cristatum* (*tagarapáduká*), *Aplotaxis auriculata* (*kushtha*) cardamoms, *Desmodium gangeticum* (*sālaparni*), *Uraria lagopodioides* (*prishniparni*), *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.

Prameha 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. साधयेच्छुद्धशुक्लस्य लसुनस्य चतुःपलम् । चीरोदकेऽष्टगुणिते चीरशेषे च पाययेत् ॥
वातगन्धमुदावर्त्तं गृध्रसीं विषमज्वरम् । हृद्रोगं विद्रधिं शोषं शमयत्याशु तत्पयः ॥ एवमु
साधिते चीरे लोकमप्यत्र दीयते ॥ चक्रदत्तः ।

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 pinda.¹ Take of garlic twelve tolás, assafœtida, cumin 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.³

GLORIOSA SUPERBA, *Linn.*

Sans. लाङ्गलिका, *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. स्वल्परसीनपिष्टः । पलमर्द्धं पलत्रैव रसीनस्य सुकुट्टितम् । हिङ्गुजीरकसिन्धुस्यैः
सौवर्चलकटुत्रयः ॥ चूर्णितैर्माषकीन्धानैरवचूर्ण्य विलीडितम् । यथादिभक्षितं प्रातारु-
रुकाद्यानुपानतः ॥ दिने दिने प्रयोक्तव्यं माषमेकं निरन्तरम् । वातरोगं निहन्त्यायु चर्दितं
सापतन्त्रकम् ॥ एकाङ्गरीगिणे चैव तथा सर्वाङ्गरीगिणे । उरुलम्बे च गृध्रस्यां क्रिमिकीष्ठे
विशेषतः ॥ कटीपृष्ठामयं हन्यादुदरञ्च विशेषतः ॥ चक्रदत्तः ।

2. लघुनाद्रकशियूणां स्वरसः श्रेष्ठः कटुणः कर्णपूरणे ॥ चक्रदत्तः ।

3. पाठा लाङ्गलिसिंहाद्य मयूरकजटैः पृथक् । नामिवस्तिभगलिपात् सुखं नारी-
प्रसवते ॥ चक्रदत्तः ॥

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 gutiká* described in the *Bhávaprakása*.

NAT. ORDER. SMILACEÆ

SMILAX CHINA, Linn.

Sans. चोवचिनि, *Chobachini*. *Vern.* Ohobchini. *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

1. मूलेन खाङ्गलिक्याः प्रलिप्ते पाणिपादे च । अमरापातनं मद्यैः पिप्पल्यादिरजः
पिबेत् ॥ च्छदतः ।

2. चोवचीनी । द्वीपान्तरगता किञ्चित् तिक्तौष्णा वङ्गिदीप्तिक्तत् । विबन्धाभान-
शूलत्री शक्नुतविशोधनी ॥ वातव्याधिमपस्मारमुष्मादं तनुवेदनाम् । व्यपीडति विशेषेण
फिरङ्गामयनाशिनी ॥ 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* (*bálá*) 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. इक्षु, 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 । सुसुपपटकीश्रीर चन्दनीदीचनागरेः । शतशीतं जलं दद्यात्
पिपासाञ्चरशान्तये ॥ चक्रः ।

* In the Pharmacographia by Fluckiger and Hanbury it is stated: "Candy as sugar in large crystals is called, is derived from the Arabic *kand* or *kandat* 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 a crystalline state is due to the inhabitants of Bengal." The Arabic *kand* is apparently derived from the Sanskrit *khandā*, 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 shew 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. इक्षुरस, *Ikshu rasa* or sugar-cane juice.
2. फाणित, *Phanita* or sugar-cane juice boiled down to one-fourth. It can be drawn out in threads.
3. गुड़, *Guda* or sugar-cane juice boiled to a thick consistence, that is treacle.
4. मत्स्यखंडिका, *Matsyandika* is sugar-cane juice boiled down to a solid consistence but which still exudes a little fluid on drawing.
5. खण्ड, *Khandā* 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, *Gaudi* or fermented liquor obtained from treacle.
9. सीधु, *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. काश, *Kāsa*. *Saccharum spontaneum*, Linn.
4. कुश, *Kusa*. *Poa cynosuroides*, Linn.
5. दर्म, *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. दणपञ्चमूलम् । कुशः काशः शरी दर्म इक्षुश्चेति दणोद्भवम् । नूतनकच्छरं पञ्चमूलं
वृत्तिविघ्नोपशानम् ॥ भावप्रकाशः ।

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* (*núgakesara*), 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. Genhu, 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 कुधान्य, *Kudhánya* or inferior grains and चुद्रधान्य, *Kshudra dhánya* or minor grains.

यावनाल *Yávanála*. *Holchus Sorghum*, Linn. Joár, Janiri, Hind. Joi, Beng.

कङ्गु, *Kangu*. *Letaria Italica*, Millet, E. Kunth. Vern. Kángni, Kawan, B. Korá, H.

चीन, *China*. *Panicum miliaceum*, Linn. Chiná ghás, B.

श्यामाक, *Syámáka*. *Panicum frumentaceum*, Roxb. Shyámádhán, B.

कोद्रव, *Kodrava*, *Paspalum scrobiculatum*, Linn. Kodoádhán, Beng.

नीवार, *Nivára*. Wild variety of *Oryza sativa*, Linn. Uridhán, B.

बज्रा, *Penicellaria Spicata*. *Panicum Spicatus*, Roxb. Bajra Beng. Hind.

1. कुशावलेहः । कुशः काशी वीरणश्च कृष्णोक्षुः खग्गइस्तथा । पर्षा दश पलान् भामान् जलद्रीणे विपाचयेत् ॥ अष्टभागावशिष्टन्तु कषायमवतारयेत् । खरुडप्रस्थं समादाय क्षिप्तवत् साधु साधयेत् ॥ अवतार्ये ततः पश्चात् चूर्णानीमानि दापयेत् । मधुकं कर्कटीबीजं कर्कारु त्रपुषं तथा ॥ शुभामलकपत्राणि त्वगेला नागकेशरम् । वरुणामृता प्रियङ्गुस्य प्रलेक-मधुसम्मितम् ॥ प्रमेहान् विंशतिं हन्ति मूत्राघातास्तथाश्रमरीः । वातिकान् पैत्तिकान् चैव श्लेष्मिकान् साम्निपातिकान् ॥ इत्यरोचकमत्युयं वर्षापुष्टिकरं परम् । भेषज्यरत्नावली ।

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.
 चारुक, *Cháruka*. Seeds of *Saccharum Sara*, 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. *Rakta 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 Sanskrit medical works are as follows:—

यवागू, *Yavágu* 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 *Manja*. Sometimes, instead of water, a decoction of medicinal herbs is used in preparing *yavágu*.

1. पीषे च दशमी शस्ता चैत्रके पञ्चमी तथा । नभस्ये पूर्णिमा ज्ञेया गुरुवारी विशेषतः ॥
 चादकं धान्यसम्पूर्णं नानाभरणभूषितम् । सुगन्धि युक्तपुष्पेण युक्तपक्षे प्रपूजयेत् ॥
 कलवन्दिका ।

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 tolá 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.

लाजा, *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.

भ्रष्टतण्डुल, *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.

प्रथुक, *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, *Tandulámbu* 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 *Bhāvaprakása* namely *Mahágedhuma* or large grained, *Madhuli* or small grained¹ and *Nihzuki* 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 parched

1. मधूलकः स्वल्पगोधूमः इति सटीकद्रव्यगुणः ॥ ११७ ॥

grains. Gruel prepared with *saktu* is said to be easily digested and to be useful in painful dyspepsia.

ZEA MAYS, Linn. called *makkái* 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*, वीरुष, *Virana*.

Vern. *Bená*, Beng. *Khas*, Hind.

The root of this plant is well known as the *khas khas* root of which *tátis* 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 *Shalanga pániya*, (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. Kálidássa in his drama called *Sakuntalá* alludes to it as will appear from the passage quoted below.² An

1. तलेन सर्पिषा वापि ताभ्यां वा शक्तुपिण्डिका । सुखीणः शीथपाकार्यमुपनाहः
प्रवसते ॥ चक्रः ।

2. स्तनन्वसोशीरं प्रश्रियिलमृणालैकबलयम् । पियाषाः सावाधं 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* (*bálá*), red sandal wood, and a fragrant wood called *padma káshtha*.¹ The same medicines are reduced to a thin emulsion with water and applied to the skin.²

ANDROPOGON SCHCENANTHUS, *Linn. Sans. भूस्तुष,*
Bhustrina, Vern. Gandha bendá, Beng.

ANDROPOGON IWARANCUSA, *Roxb. Sans. लामज्जक,*
Lámajjaka. Vern. Lámjak, Hind. Karankusú, Beng.

These two fragrant grasses are occasionally used as aromatics and refrigerants like the roots of *Andropogon muricatus*. *A. schoenanthus* 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. वंश, Vansa. Vern. Báns, Beng. Hind.

THE siliceous concretion found in the joints of the female bamboo is called वंश रोचन, *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.

Sitopaládi churna.³ Take of bamboo-manna eight parts, long

1. क्रीरेर पञ्चकोशीर चन्दनचीदवारिणा । संपूर्णामवगाहेत द्रोणीं दाहार्दिती नरा ॥
चक्रदत्तः ।
2. प्रदेहाः परिषेकाश्च शस्यन्ते पञ्चवत्कलैः । पञ्चकोशीर मधुक चन्दनेवां प्रशस्यते ॥
चक्रदत्तः ।
3. सितीपलादिचूर्णम् । सितीपला षोडश स्यादष्टौ स्यादंशलोचना । पिप्पली स्यात्तुः
कर्षां चुट्टेला स्याद् द्विकार्षिकी ॥ एककर्षस्त्वचः कार्यश्चूर्णयेत् सर्वमेकतः । सितीपलादिकं
चूर्णं मधुसर्पिर्युक्तं लिहेत् ॥ श्वासकासचयहरं हस्तपादाङ्गदाहजित् । मन्दाग्रिं सुप्तजिह्वाच्च
पार्श्वशूलमरोचकम् ॥ ज्वरमूर्च्छगतं रक्तपित्तमायु व्यपीडति ॥

शाङ्गधरः ।

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 दूर्वा, Durvá. Vern. Durvá, 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.
खार्जूरं, <i>Khárjura</i> ,	do. do. dates.
गौड़ौ, <i>Gauḍi</i> ,	do. do. treacle.
शीघ्र, <i>Sidhu</i> ,	do. do. sugar-cane juice.
सुरा, <i>Surá</i> ,	do. do. rice.
कीहलं, <i>Kohala</i> ,	do. do. barley. (यवशक्तुकिष्ठवत् ।)
मधूलिका, <i>Madhuliká</i> ,	do. do. wheat.
पैष्टी, <i>Paishti</i> ,	do. do. from different sorts of grain.
मधुकपुष्पोत्थं, <i>Madhuka pushpottha</i> ,	do. do. the flowers of <i>Bassia latifolia</i> and treacle.
जाम्बवं, <i>Jámbava</i> ,	do. do. ripe fruits of <i>Eugenia Jambolana</i> .
कादम्बरी, <i>Kádambari</i> ,	* do. do. flowers of <i>Anthocephalus</i> <i>Cadamba</i> .
मालकी, <i>Valkali</i> ,	do. do. belleric myrobalan and treacle.
वारुणी, <i>Váruni</i>	is the fermented juice of the palm and date trees.
आक्षिकी, <i>Akshiki</i>	or spirit from rice with addition of the bark of <i>Terminalis Bellerica</i> .

¹ नखं दाहिमपुष्पोत्थी रसो दूर्वाशबोऽथवा । आभासिजः पलाशोर्वा नासिका-
सुतरसजित् ।

श्वेता, *Sveta* means liquor from rice of white colour. सुरा, *Sura* being red.

मेरेय, *Moireya* or a sort of spirituous liquor from the blossoms of *Lythrum frutescens* with sugar, etc.

अरिष्ट, *Arishta*, Vinous spirit or more properly Tincture of drugs.

आसव, *Ashaba*, Vinous or fermented liquor from sugar or molasses Rum.

प्रसन्ना, *Prasanna*, is the clear upper portion of *surá*. 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 *prasanná*; that below it, is called *kádambari*; *jagala* is a thicker fluid than *kádambari*; *medaka* is 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, cummin seeds, treacle, wine and warm water is given in ague with prolonged cold stage.¹ In chronic

1 गुच्छाजाजी गुडं पिष्टं पीतमुच्यते वारिष्ठा । जीर्णमद्येन तत्रैव पीतं शीतज्वरं जयति ॥
भावप्रकाशः ।

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 surá.*² Take of new treacle eight hundred tolás 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 tolás, 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, cumin seeds, *ájowan*, black pepper, ginger, nutmegs, cardamoms, cinnamon, *tejapatra* leaves, fennel seeds, nigella seeds, the fragrant substances called *elaváluka*, *padma-káshtha* and *granthiparni*, *devadáru* wood, *khas khas* root, zedoary root, *jatámánsi* root and the tubers of *Oyperus rotundus* (*mustaka*), each eight tolás, in coarse powder, and distil. This distilled liquor is used as a tonic, astringent and invigorating drink.

1 सुरा समस्तां पानार्थं भक्षार्थं चरणायुधान् । तित्तिरीञ्च मयूराञ्च प्रयुञ्जाद्विषम-
ज्वरे ॥ चक्रः ।

2 मृतसञ्जीवनी सुधा । नूतनं गुडमादाय शतमेकं पलं तथा । जलमष्टगुणं दत्त्वा
स्थापयेत् मृण्मये घटे ॥ वावरीत्वचमादाय बदरीत्वचमेव च । प्रस्थं प्रस्थं प्रदातव्यं
पूगं देयं यथोचितम् ॥ लोध्रञ्च कुडवं दत्त्वा चार्द्रकञ्च पलद्वयम् । गुडं सङ्गोलकीं कृत्वा दापयेत्
बुद्धिमान् भिषक् ॥ प्रथमे चार्द्रकं देयं द्वितीये वावरीत्वचं । तृतीये बदरीं दत्त्वा त्रीलङ्गिता
भिषग्वरः ॥ मुखे शरावकं दत्त्वा यवे कृत्वा च बन्धनम् । मुखसंबन्धनं कृत्वा स्थापयेद्द्वि-
विंशतिम् ॥ मृण्मये मोचिकापात्रे मयूराख्ये च यन्त्रके । यथाविधि प्रकारेण मन्दमन्देन
बहिना ॥ चुम्बोमध्ये विधातव्यं मृत्तिकादृढभाजने । तदौषधञ्च तन्मध्ये उद्धरित्वा विनिक्षिपेत् ॥
कुम्भमध्ये निधातव्यं पूगञ्च संलवालुकम् । देवदारु लवङ्गञ्च पद्मकोशीर चन्दनं ॥ शतपुष्पा
यमागौ च मरिचं जीरकद्वयम् । शटी नांसी त्वगीला च जातीफलसमुत्तकम् ॥ यन्त्रिपथी
तथा शुष्ठी मेथी मेथी च चन्दनम् । एषां चार्द्रपत्रान् भागान् कुट्टयित्वा विनिक्षिपेत् ॥
यथाविधि प्रकारेण चानलं दापयेत् सुधीः । बुद्धिमान् शोधनं कृत्वा उद्धरेत् विधिवत् सुधाम् ॥
एतद्व्यं पिबेन्नित्यं यथाधातु यथावयः । आरोग्यं देहदार्व्यं त्वं बलपुष्टिकरं सदा ॥

उद्धृतः 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 has also furnished a note on the subject for publication in the Bengal Dispensary. 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

are 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. *Lákh*, Hind. *Gálá*, 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 *Alakta*. 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 *Alá* 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-tolá, 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 *Lākshádi taila*, *Chandanádi taila*, *Angáraka taila*, etc.

Laksháditaila.² Take of shell-lac two seers, water sixteen seers,

1 लाक्षाचूर्णं सुकृतं दौद्राज्यसमन्वितं सकञ्जीरम् । शमयति सोद्धतवमनं सरक्त-
पित्तस्य सिद्धमिदम् ॥

2 लाक्षादि तेलम् । लाक्षारससमं तैलं तंलाक्षस्तु चतुर्गुणम् । अश्वगन्धा निशा दाह
कौन्ती कुष्ठान्द चन्दनैः ॥ समूर्त्वा रोहिणी राखा शताहा मधुकैः समैः । सिद्धं लाक्षादिकं
नाम तैलमभ्यञ्जनादिना ॥ सर्वज्वरचयोन्नाद आसापञ्जार वातनुत् । यच्च राक्षस भूतघ्नं
मर्भिणीनां च शस्यते ॥ 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 tolás each of the following substances, namely, *Withania somnifera* (*asvagandhá*), turmeric, *devadáru* wood, root of *Sansevieria Zeylanica* (*murvá*), *Pandanus odoratissimus* (*ketaki*), *Vanda Roxburghii* (*rásna*), dill seeds and liquorice root in the form of a paste and prepare an oil in the usual way; lastly add four tolás 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, *Mákshika*.

Vern. *Madhu*, Beng. *Shahad*, Hind.

Eight sorts of Honey are described by *Susruta*, namely :

1. *Mákshika* or the honey collected by the common bee called *madhumakshiká*.
2. *Bhrámara*, or the honey collected by a large black bee called *bhramara*.
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 *bhramara*.
7. *Audálaka* is a bitter and acrid substance like honey found in the nests of white ants.
8. *Dála* 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*, *Sārkaṅmudi*, etc.

The poison of the black cobra (*Naga tripudians*. Vern. *Keutsáp*, 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.

Suchiká 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 *rohitaka* 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 । रसमन्त्रं नामस्य विषं स्थावरजङ्गमम् । नाख्यवाराह-
मायूरकागपित्तेश्च भावयेत् ॥ सूचिकाभरणी नाम भेरविष प्रकीर्तितः । सूचिकायेषु
दातव्यः सुन्निपातकुष्ठान्नकः ॥ मेघनरवावली ।

that can be taken up by the point of a needle, hence it is called *suchikábharaṇa*. It is given in remittent fever with cerebral complications.

*Kálánala 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, *Mriṅganábhī*, कस्तूरी, *Kasturi*.

THE *Bhāvaprākāśa* describes three varieties of musk, namely, *Kámrupa*, *Nepála* and *Káshmira* musk. *Kámrupa* musk is said to be of black colour and superior to the others. It is probably China or Thibet musk brought via Kamroop. *Nepála* musk is described as of bluish colour and intermediate quality. *Káshmira* 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 *Makaradhwaṇa* 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 parts

1 कालानखरसः । अमृतं गरलं शङ्खं लोहं ताम्रञ्च टङ्गणम् । रसं गन्धं वृषणञ्च पञ्चपित्तैर्विभावयेत् ॥ मातुलुङ्गद्रवेर्भाष्यं वटिका यवमानतः । चौद्रार्द्रकरसञ्चानु दापयेत् सन्निपातिके ॥ अतितीव्रं ज्वरं हन्ति सर्वोपद्रवसंयुतम् । हरिद्रा तेल संमिश्रं महयेत् तीव्रतापिनम् ॥ तथा स्नानान्तरे गाढं लेपयेत् गन्धचन्दनम् । दध्यन्नं दापयेत् पथ्यं द्राक्षादि चासुर्दाडिमम् ॥ कालानखरसो नाम्ना गोप्यः परमदुर्लभः ॥ रसरत्नाकरः ।

2 स्वल्पकस्तूरीभेरवरसः । हिङ्गुलञ्च विषं टङ्गं जातिकीषफलं तथा । मरिचं पिपली चैव कस्तूरी च समाश्रिका ॥ रक्तिकर्यं ततः खादेत् सन्निपाते सुदारणे ॥

रसेन्द्रसारसंघः ।

and make into four-grain pills. These are given in remittent fever of low type.

Mrigandavyādyaśāleha 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. गन्धमार्जार, *Gandha mārjāra*. *Vern.* Khātāsi, Beng.

The pouch of the civet cat (*Viverra Zibetha*, Linn.) contains an unctuous odorous secretion which is extracted and used in

1 मृगनाम्बादिरवलिहः । मृगनाभि सन्ध्रंशो लवङ्गकुसुमानि च । लक्ष्मीरो विति
वेदीयं मधुसपिःसमायुत ॥ वाक्शब्दमुच्यं जयति स्वरभंससमन्वितम् ॥
भाषप्रकाशः ।

2 वसन्ततिलकरसः । इतो मञ्जकमञ्जकं त्रिगुणितं लीलाञ्जवः पारदाः चत्वारो
नियतान् वङ्गयुगलं चैकीकृतं मह्यंयेत् । मुक्ताविडुमयो रसेन समता गोचुर वलिहवा
सर्वे कन्दकरीष तेन सुदृढं कृतम् पचेत् शतधा ॥ कसूरी वनसारमदितरसः पचात्
सुषिही भवेत् । काशबाह सपित वात कफजित् पाण्डुसमादीन् हरिम् । यथादिवह्यो
विषादिहरणं मेहाशरी विप्रति । हृदीनापहरी ज्वरादिहरी उच्यो वदीकरीषः श्रेष्ठः
पुटिकरी वसन्ततिलको वसुचयीनीदितः ॥ चवनपि माराञ्जकपरीनि प्रविष्टः ॥
रहीन्धारकवहः ।

perfumery. The pouch together with the secretion contained in it, are used by native physicians in scenting medicated oils.

HARTSHORN. *Sans.* मृगशृङ्ग, *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 phosphate 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 अरावसंपुटे दग्धं शृङ्गं हरिषर्षं पिबेत् । तन्व्येन सर्पिषा पितृ इच्छुर्षं मय्यति
भुवम् ॥ शार्ङ्गशरः ॥ दग्धमनिर्गतधूमं मज्जशृङ्गं गोघृतेन सह पीतम् । हृदयनिताम्बु-
शृङ्गं हृषति त्रिखी दाहनिवहमिव ॥ चक्रः ।

dyspepsia, diarrhœa, 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 vaṭi*, *Svnaparpati* or *Mána maṇḍa*, 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, *udasi* or that mixed with half its bulk of water, and *chhachchhiká* 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 diarrhœa, 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, diarrhœa, dysentery, urinary disorders and disinclination for food.

मस्तु *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.

किलटक *Kilátaka* or curd of milk (*Vern. chhená, Beng.*) is hard of digestion, but is nourishing, tonic and suited to persons with strong digestive powers.

सन्तानिका *Santániká* or cream is also hard of digestion but nourishing, agreeable and demulcent.

नवनीत *Navanita* or butter is tonic, astringent, invigorating, stomachic and useful in phthisis, piles, facial paralysis, etc. It agrees best with the old and young.

वृत्त *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).

पुराण्युत *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 अन्नादहृती हृताः वा पुराणं वैकृतं हृतम् । अथनन्तं पुराणं साहस्रवर्षं हृतं ॥ वाचस्पतिनिर्भं शीतं प्रपुराणमतः परम् ॥ चक्रः ।

2 अदधीतं हृतान्मद्यः शीतवासादिसेवनम् । शीतस्यर्थाच्च संसेव्याः सदा दाहार्थि-
मान्त्रये ॥ चक्रः ।

water. He should then enter a tepid bath for a short while. His bedding should be made of the leaves of *Nelumbium speciosum* (*kamala*).¹

BILE.

Sans. पित्त, *Pitta*.

THE bile of the buffalo, wild boar, goat, peacock and *rohitaka* 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.

Udukamanjari rasa.² Take of mercury, sulphur, calcined borax, and black pepper each one part; sugar and the bile of *rohitaka* 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.

गीरोचना *Gorochani*, 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 शीताभ्यः सानुशतशश्च विलीङ्गितेन गव्येन चन्दनयुतेन घनेन दिग्धा । दाहज्वरी
सकमलोत्पलमाक्षधारी क्षिप्रं विशेत् सुखिलकोष्मनस्यकालम् ॥ कार्मिकाद्रिपटेनावगुच्छनं
दाहनाशनम् ॥ दर्पणः ।

२ उदकमञ्जरीरसः । मूत्रं मन्वदङ्गुलः शीतलस्य सुखिसुखाः शर्करा मत्स्यपित्तः ।
भूयोभूयो महयेत् तत् त्रिरात्रं क्लीं देवः शङ्खवेरद्वेष ॥ तीर्थं शीतं बीजनसकमलमाकाशं
पश्यमितत् प्रदिष्टम् । चङ्गे बीजं हति सुखोज्वरान् पित्ताधिकं मुक्तिं तीर्थस्य दद्यात् ॥
रत्नप्रदीपः ।

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.

Punurnavā mandūra.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.

Marichādya 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*), colocynth root, *Aplotaxis auriculata* (*kushṭha*), 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

1 पुनर्नवामण्डूरम् । पुनर्नवा त्रिवृत्कुण्ठी पिप्पली भरिचानि च । विद्वद् देवकाष्ठश्च
विषकं पुष्कराद्भयम् ॥ विफला वै हरिद्रे च दन्तीश्च चरिक्तवा । कुटजस्य फलं तिला
पिप्पलीमूलं मुस्तकम् ॥ एतानि समभागानि मण्डूरं त्रिगुणं ततः । गोमूत्रेऽष्टगुणे पक्वा
स्यापयेत् सिग्धभाजने ॥ पाण्डुश्रीवीदरानाह शूलार्थः क्रिमिमुञ्चनुत् ॥

be useful in leucoderma, chronic prurigo and other obstinate skin diseases.¹

ANIMAL FLESH.

IN describing the properties of the flesh of various animals, Sanskrit writers divide them into two classes, namely **जङ्गल** *Jāngala* or land, and **अनुप** *Anupa* or water animals: Animals living on land are sub-divided into eight orders as follows:—
जङ्गला *Jāngalā* or animals living in the wilderness as deers, antelopes, etc.

विलस्था: *Vilasthá*, or animals living in holes under ground, as serpents, lizards, porcupines, etc.

गुहाशया:, *Guhāsayá* or animals living in caverns, as tigers lions, bears, etc.

पर्णश्रमा:, *Parnamrigá* or animals living on trees, as monkeys squirrels, etc.

विक्षिरा:, *Vishkirá* or birds which take their food after tearing or scattering it, as peacocks, quails, partridges, etc.

प्रतदा:, *Pratudá* or birds which strike with their beaks, as pigeons, wag-tails, cuckoos, etc.

प्रसहा:, *Prasahá* or birds of prey, as the hawk, falcon etc.

ग्राम्या:, *Grāmyá* or domestic animals, as ox, goat, horse, sheep, etc. Animals living in water or marshy lands are sub-divided into five classes as follows:—

कुलेचरा:, *Kulechará*, or animals grazing in marshes, as buffalos, yak, rhinoceros, etc.

उषा:, *Plává*, or birds which swim in water, as geese, ducks cranes, etc.

कोशस्था:, *Kosasthá*, or animals enclosed in shells, as conch-shells, bivalve-shells, etc.

पादिन:, *Pádina*, or footed aquatic animals as tortoise, crocodile, porpoise, etc.

1 मरिचायं तेलम् । मरिचालक्षितान्नाकारं पयोऽशरिजटा त्रिवन् । ब्रह्मद्रवविद्याया
रक्ष्मिप्रायुम् दाहचन्दने ॥ कटुतेजात्पवित्रत्वं द्राघेर्बिभ्रत् पतान्विते । ह्यमोर्ध्वं तदम्-
शाद्दु चिन्नविनाशमम् ॥ हर्षेष्वपि च कुष्ठेषु तेलमेतत् प्रशस्यते ॥ चन्द्रिका ।

मत्स्य, *Matsya*, or fishes.

Of these classes, *Jāngalā* or animals living in the wilderness, and *Vishkīra* 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.

Chhāgalādi ghrita, prepared with goat's meat, and used in nervous diseases.

Sāmbukāditaila is an oil prepared with the flesh of snails and used externally in ear diseases.

Nakulādyā ghrita is prepared with the flesh of the mungoose and used in nervous diseases.

The following are two illustrations of preparations with animal flesh.

Chhāgalādyā ghrita.¹ Take of goat's meat six seers and a quarter, the ten drugs called *dasamula* six seers and a quarter in

1 कृष्णलार्घ्यं घृतम् । आर्षं चर्मविनिर्मुक्तं त्यक्तप्रकृत्यादिकम् । पञ्चमूलोदकस्यैव
जलद्रोणे विपाचयेत् ॥ तेन पादावशेषेषु घृतप्रस्यं विपाचयेत् । जीवनीयेः सद्यस्याहोः
बीरसेव प्रतापरी ॥ कावलायनिर्दं नाम्ना सर्व्ववातविकारहृत् । अर्द्धिते कर्कशले च
नाशिये मूकमिन्द्रिणे ॥ अज्जङ्गमं पङ्कजां स्वसे यत्प्रसिद्धमयोः । अपतानेऽपताने च
वपिरीतम् अज्जङ्गमे ॥ अथ अर्द्धिमदु आकलयमिति त्रिविदाहः ॥

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*), *Cœlogyne 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 Jacquini*, (*kantakári*), *Tribulus terrestris* (*gokshura*), bark of *Calosanthus Indica* (*syonáka*), *jatámánsi* root, seeds of *Mucuna pruriens* (*kapikvachchhu*), each one seer, water sixty-four seers; boil down to sixteen seers. Take of cotton seeds, seeds of *Crotolaria 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 *Bærhoavia diffusa* (*punarnavá*), *Pæderia fœtida* (*prasáraní*), *Vanda Roxburghii* (*rásná*), *Sida cordifolia* (*berelá*), *Tinospora cordifolia* (*gulanha*) 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 माषतैलम् । माषातसौ ब्रह्मरुह्यस्य कष्टकारी मोक्षस्य दुग्धस्य चटा कपिकवचु-
तोयैः । कार्पासकाष्ठि शशबीज कुबजकोबहाधेन वसपिशितस्य रसेन चापि । उच्छ्रा-
समानधिकया शतपुषपा च शैरस्यमूल सपुनर्मन्वा सरसा । एतावत्तयावत्त चटा
कटुकैर्विषहं माषाव्यनेतदववाहुहस्य तैलम् । अशाहश्रीधमपतानक माषातमाषेपकं
समुजकम्यभिरः प्रकम्यम् । मद्येन वसिभिदिना परिवेषनेन उन्वात् कटोममनं मातुह्यः
वमीरात् ॥

A
GLOSSARY
 OF
INDIAN PLANTS
MENTIONED IN SANSKRIT MEDICAL WORKS
 WITH BENGALI, HINDI AND LATIN
 SYNONYMS.



SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Áshohhuka आशुक्	Ásh, B. Ál, H.	Morinda citrifolia, Linn. and Morinda tinctoria, Roxb.
Ádhaki आढको	Arhar, B. Tor, H.	Cajanus indicus, Spreng. Syn. <i>Oytisus Cajan</i> , Linn.
Ádityabhaktá आदित्यभक्ता	Hurhuriá, B. Hurhur, H.	Cleome viscosa, Linn. Syn. <i>Polanisia icosandra</i> , W. & A.
Agasti अगस्ति	... ..	See Vaka.
Agnimantha अग्निमन्थ	Ganiári, B. Arni, Agetha, H.	Premna integrifolia, Linn. Syn. <i>Premna spinosa</i> , Roxb.
Agniáikhá अग्निआिखा	... ..	See Lángaliká.
Aguru अगुरु	Agar, B. Agar, H.	Aquilaria Agallocha, Roxb.
Álinsrá अलिंसा	Kán:águrkámái, B.	Capparis sepriaria, Linn.
Ahiphena अहिफेन	Áphim, B. Áphim, H.	Papaver somniferum, Linn. Opium poppy.
Ajamodá अजमोदा	Ajmad, H. Rándhani, B.	Carum Roxburghianum, Benth. Syn. <i>Apium involucratum</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Akarákarabha आकारकरम	Ákarkará, B. H.	Anacyolus Pyrethrum, DC. Pellitory root.
Ákásamánsi आकाशमांसौ	... ..	A small variety of Jatámánsi said to be produced in the Kedár mountain.
Ákásavalli आकाशवल्ली	Ákásbel, B. Amarbeli, H.	Cassytha filiformis, Linn.
Ákhukarni आखुकर्णी	... ..	See Mushikaparni.
Ákshoṭa आखोट	Ákhrot, H. B.	Juglans regia, Linn.
Alábu अलाबु	Láu, B. Lauká, H. Mithi tumbi, H.	Lagenaria vulgaris, Sering. Syn. Cucurbita lagenaria, Willd.
Alarka अलर्क	Svetákand, B. Mádár, H.	Calotropis gigantea, or procera, R. Br. The varieties with white flowers.
Ámalaki आमलकी	Ámlá, B. Ápolá, H.	Phyllanthus Emblica, Linn. Syn. Emblica officinalis, Gaert.
Ambashthá अम्बडा	... ..	See Páthá.
Ambuvestasa अम्बुवेतस	Barabet, B.	Calamus fasciculatus, Roxb. *
Amlaloniká अम्ललोणिका	Ámrul sák, B. H.	Oxalis corniculata, Linn.
Amlána अम्लान	Lálgulmakhmal, 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 आम [haridrā Ámragandhi- आमगन्धिहरिद्रा Ámrātaka आमातक Amritaphala अमृतफल Anantā अनन्ता Anjira अजीर Ankoṭa अङ्कोट Apámarga अपामार्ग Aparājita अपराजिता Áragbadha आरग्वध Aralu, अरलु Árdraka आर्द्रक Arimeda अरिमिद Arjuna अर्जुन Arkamulā अर्कमुला Arka अर्क	Ám, B. Ám, H. Ámbahaldi, H. Ámra, B. Ámbrá, H. Náshpāti, H. Nák, Punj. Anantamul, B. H. Ánjir, H. Dhalákura, B. Dherá, H. Ápāng, B. Latjirá, H. Aparājita, B. Visnukránti, H. Sondháli, B. Ámaltás, H. ... Ádá B. Adrak, H. Guábáblá, B. Gandbábul, H. Arjun, B. Kahú, H. Ishermul, B. Ákand, B. Mádar, H.	Mangifera Indica, Linn. The Mango tree. Curcuma reclinata, Roxb. Spondias mangifera, Willd. Hog plum. Pyrus communis, Linn. The pear-tree. Hemidesmus indicus, R. Br. <i>Syn. Asclepias pseudosarsa, Roxb.</i> Ficus Carica, Linn. in Bengal, Psidium pomiferum, Linn. is called Anjira in Sanskrit. Alangium Lamarkii, Thwaites. <i>Syn. A. Hexapetalum, Roxb.</i> Achyranthes aspera, Linn. Also A. bidentata, Bl. Clitoria Ternatea, Linn. Cassia Fistula Linn. <i>Syn. Oathartocarpus fistula, Pers.</i> See Syonaka. Zingiber officinale, Rose. Common ginger. Acacia Farnesiana, Willd. <i>Syn. Mimosa Farnesiana, Roxb.</i> Terminalia Arjuna, Bedd. <i>Syn. Pentaptera Arjuna, Roxb.</i> Aristolochia indica, Linn. Calatropiegigantea or procera, B. Br. <i>Syn. Asclepias gigantea, Willd.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Arkpushpikā अर्कपुष्पिका	Arkahuli, B. Sádáhurhuriá, B.	Gynandropsis pentaphylla, DC. Syn. <i>Cleome pentaphylla</i> , Linn.
Arushkara अरुष्कार	...	See Bhallátaka.
Asana असन	Piásál, B. Asan, H.	Terminalia tomentosa, W. and A. Syn. <i>Pentaptera tomentosa</i> , Roxb.
Ashtavarga* अष्टवर्ग	...	...
Asoka अशोक	Asok, B. H.	Saraca indica, Linn. Syn. <i>Jonesia Asoka</i> , Roxb.
Asthisanhāra अस्थिसंहार	Hárjorá, B. Harsankari H.	Vitis quadrangularis, Wall. Syn. <i>Cissus quadrangularis</i> , Linn.
Asvagandhá अश्वगन्धा	Asvagandhá, B. Asgandh, H.	Withania somnifera, Dunal.
Asvakarna अश्वकर्ण	Sál, B. H.	Shorea robusta, Gaertn.
Asvattha अश्वत्थ	Asvattha, B. Pipal, H.	Ficus religiosa, Linn. Syn. <i>Urostigma religiosum</i> , Gasp.
Atasi अतसी	Masiná, B. Tisi, H.	Linum usitatissimum, Linn.
Atibalá अतिबला	Pitbalá, B.	Sida rhombifolia, 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 :—

Medá, मेदा Asvagandhá is used instead.

Mahámedá, महामेदा Sárivá, "

Jivaka, जीवक Guduchi, "

Rishabhaka, रीषभक Vansalochana, "

Riddhi, रद्धि Balá, "

Vriddhi, वृद्धि Mahábalá, "

Kákoli, काकोली See under this name.

Kahirakákoli, कीरकाकोली Do. Do.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Ativisha अतिविषा	Átis, H. B.	<i>Aconitum heterophyllum</i> , Wall.
Átmaguptá आत्मगुप्ता	Álkusi, B. Kiwano, H.	<i>Mucuna pruriens</i> , DC. <i>Syn. Carpopogon pruriens</i> , Roxb.
Avalguja अवलगुज	... ..	See somaráji.
Ávartani आवर्तनी	Átmorá, B. Mararphali, H.	<i>Helicteres Isora</i> , Linn. <i>Syn. Isora corylifolia</i> , Schott et End.
Bádáma बादाम	Bádám, H. B.	<i>Prunus Amygdalus</i> , Baill. <i>Syn. Amygdalus communis</i> , Linn. The almond tree.
Badara बदर	... ..	See kola.
Bahuvára बहुवार	Bahuári, B. Lasorá, H.	<i>Cordia Myxa</i> , Linn. <i>Cordia latifolia</i> , Roxb. <i>Bara Lasorá</i> .
Balá बला	Berelá, B. Khareti, Bariár, H.	<i>Sida cordifolia</i> , Linn.
Bálá बाला	Bálá, H. Sugandha Bálá, H.	<i>Pavonia odorata</i> , Willd.
Bandhuka बन्धुक	Bándhuli, B. Dopohoriá, H.	<i>Pentapetes phœnicea</i> , Linn. [Roxb.]
Bhadrāmunjá भद्रमुञ्जा	Rámsar, B. H.	A variety of <i>Saccharum Munja</i> ,
Bhadravalli भद्रवल्ली	Háparmáli, B.	<i>Vallaris Heynei</i> , Spreng. <i>Syn. Echites dichotoma</i> , Roxb.
Bhallátaka भल्लतक	Bholá, B. Bhiláwá, H.	<i>Semecarpus Anacardium</i> , Linn. The marking nut tree. [Gaertn.]
Bhándira भण्डीर	Bhánt, B. H.	<i>Clerodendron infortunatum</i> , <i>Syn. Volkameria infortunata</i> , Roxb.
Bhangá भङ्गा	Siddhi, B. Bháng, H.	<i>Cannabis sativa</i> , Linn. Var. <i>Indica</i> . Indian hemp.
Bhantáki भण्टाकी	... ..	See Vártáku.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Bháradváji भारवाजी	... ..	See Vanakárpási. [R. Br.
Bhárgi भार्गी	Bámanháṭi, B. Bhárangi, H.	Clerodendron Siphonanthus, <i>Syn. Siphonanthus Indica, Lamk.</i>
Bhavya भव्य	Cháltá, B.	Dillenia indica, Linn. <i>Syn. Dillenia speciosa, Thunb.</i>
Bhringarája भृङ्गराज	Bhimráj, B. Bhánrá, H.	Wedelia calendulacea, Less. <i>Syn. Verbesina calendulacea, Willd.</i>
Bhumicham- paka] भूमिचम्पक	Bhuichámpá, B.	Kæmpferia rotunda, Linn.
Bhumijambu भूमिजम्बू [mánda	Bhuijáṃ, B.	Premna herbacea, Roxb.
Bhumikush- भूमिकुशाण्ड [ki	Bhuikumrá, B.	Ipomœa digitata, Linn. <i>Syn. Batatas paniculata, Chois</i>
Bhumyámala- भूम्यामलकी	Bhuiámala, B. Jarámala, H.	Phyllanthus Niruri, Linn.
Bhunimba भूनिम्ब	... ..	See Kirátatikta.
Bhurjapatra भूर्जपत्र	Bhurjapatra, B. Bhujpatar, H.	Betula Bhojpattra, Wall.
Bhustrina भूस्त्र	Gandhabená, B.	Andropogon Schœnanthus, Linn.
Bhutakesi भूतकीषी [ṭika	Bhutkesi, B. H.	Corydalis Govaniana, Wall. [R. Br.
Bráhmanayas- ब्राह्मणयष्टिका	Bámanháṭi, B. Bhárangi, H.	Clerodendron Siphonanthus, <i>Syn. Siphonanthus Indica, Lamk.</i>
Brahmi ब्राह्मी [ka	Brihmi sak, B. Barambhi, H.	Herpestes Monnieria, H. B. K. <i>Syn. Gratiola Monnieria, Linn.</i>
Chakramarda- चक्रमर्दक	Chákundiá, B. [H. Panwar, ohakaund,	Caesia Tora, Linn. <i>Syn. Senna Tora, Roxb.</i>
Champaka चम्पक	Champá, B. H.	Michelia Champaca, Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Chanaka चणक	Chholá, B. Chaná, H.	Cicer arietinum, Linn. Gram or chick-pea
Chandana चन्दन	Chandan, B. Safed Chandan, H.	Santalum album, Linn. White sandal-wood.
Chandriká चन्द्रिका	... ..	See Chandrasura.
Chandrasura चन्द्रसुर	Hálim, H	Lepidium sativum, Linn.
Chángerí चाङ्गेरी	Ámrul sák, B. H.	Oxalis corniculata, Linn.
Chaviká चविका	Chai, B. Chavi, H.	Piper Chaba, Hunter. <i>Syn. Chavica officinarum, Miq.</i>
Chhikkani छिक्की	Nákehnikni, B. H.	Centipeda orbiculata, Lour. <i>Syn. C. Minuta, Benth.</i>
Chiehinda चिचिण्ड	Chiehingá, B. Cháchenda, H.	Trichosanthes anguina, Linn.
China चीन	Chiná ghás, B. Chena, Chin, H.	Panicum miliaceum, Linn.
Chitraka चित्रक	Chitá, B. H.	Plumbago zeylanica, Linn.
Chobachini चोबचिनि	Chobchini, H.	Smilax China, Linn.
Chorapushpi चोरपुष्पी	Chorkántá, B.	Chrysopogon acicularis Retz. <i>Syn. Andropogon aciculatus, Roxb.</i>
Chukra चुक	Chukapálang, B. Chukoká sák, H.	Rumex vesicarius, Linn. Country sorrel.
Dádima दादिम	Dálim, B. Ánar, H.	Punica Granatum, Linn. Pomegranate tree.
Dadrughna दद्रुघ्न	Dádmardan, B. H.	Cassia alata, Linn.
Dahu दह	Mádár, B. Dahu, H.	Artocarpus Lakucha, Roxb.

SANSKRIT.	VERNAICULAR.	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 दर्भ	Ulu, B. Dábh, H.	<i>Imperata arundinacea</i> , Cyrill. <i>Syn. I. Cylindrica</i> , Beauv.
Dáruharidrâ दारुहरिद्रा	Dáruharidrâ, B. Dáruhaldi, H.	<i>Berberis asiatica</i> , Roxb. Also <i>B. aristata</i> , DC.
Dárvi दार्वी	...	See <i>Dáruharidrâ</i> .
Devadâru देवदारु	Debdâru, B. Deodâr, H.	<i>Cedrus Deodara</i> , Loud. <i>Syn. Pinus Deodara</i> , Roxb.
Devadhânya देवधान्य	Deodhân, B. H.	<i>Sorghum saccharatum</i> , Pers. <i>Syn. Andropogon saccharatus</i> , Roxb.
Devatâda देवताड़	Detâra, H. B.	<i>Andropogon serratus</i> , Retz.
Dhanvana धन्वन	Dhâmani, B. H.	See <i>Dharmana</i> .
Dhânya धान्य	Dhân, B. H.	<i>Oryza sativa</i> , Linn. Common rice plant.
Dhânyaka धन्याक [ba	Dhane, B. Dhaniâ, H.	<i>Coriandrum sativum</i> , Linn. Coriander plant.
Dhârákadamb- धाराकदम्ब	Kelikadamba, B. Haldu, H.	<i>Adina cordifolia</i> , Benth & Hook. <i>Syn. Nauclea cordifolia</i> , Roxb.
Dharmana धर्मन	Dhâmani, H. B.	<i>Grewia asiatica</i> var. <i>vestita</i> , Wall. <i>Syn. G. Elastica</i> , Boyle.
Dhâtaki धातकी	Dhâiphul, B. Dhai, H.	<i>Woodfordia floribunda</i> , Salisb. <i>Syn. Grisea tomentosa</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Dhava धव [driká	Dháoyá, B. H.	<i>Anogeissus latifolia</i> , Wall. <i>Syn. Conocarpus latifolia</i> , Roxb.
Dholasamu- दोलसमुद्रिका	Dholsamundra, B.	<i>Leea macrophylla</i> , Roxb.
Dhnstura धन्तर [ka	Dhnutá, B. Dhaturá, H.	<i>Datura Metel</i> , Linn. Also <i>Datura fastuosa</i> , Linn.
Dirghapaṭoli- दीर्घपटोलिका	Dhundul, B. Ghiátorai, H.	<i>Luffa aegyptiaca</i> , Mill. <i>Syn. L. Cylindrica</i> , Roem.
Drákshá द्राक्षा	Angur, B. H.	<i>Vitis vinifera</i> , Linn. Dried fruits called Kismis.
Dronapushpi द्रोणपुष्पी	Halkasá, B. Gumá, H.	<i>Leucas linifolia</i> , Spreng. <i>Syn. Phlomis Zeylanica</i> , Roxb.
Dugdhiká दुग्धिका	Khirai, B. Dudhiálatá, B. H.	<i>Oxystelma esculentum</i> , R. Br. <i>Syn. Asclepias rosea</i> , Roxb.
Durálabhá दुरालभा	Duralabhá, B. Jawásá, H.	Alhagi Maruorum, Desv. <i>Syn. Hedysarum Alhagi</i> , Linn.
Durvá दूर्वा	Durbá, B. Dub, H.	<i>Cynodon Dactylon</i> , Pers. <i>Syn. Panicum Dactylon</i> , Linn.
Elásukshma एलासुकश	Gujráti eláchi, B. Chhota eláchi, B.	<i>Elettaria cardamomum</i> , Maton. Also <i>Amomum subulatum</i> , Roxb.
Elabáluka एलाबालुक	Láluká, B. Eluá, H.	A red powder sold under these names; the seed of some plant.
Eraká एरका	Hoglá, B. Pater, H.	<i>Typha angustifolia</i> , Linn. <i>Syn. Typha elephantina</i> , Roxb.
Eranda एरण्ड	Bherendá, B. Eranda, H.	<i>Ricinus communis</i> , Linn. Castor oil plant. [disc.
Erváru एरवांड	Phuti, B. Phoot, H.	<i>Cucumis Melo</i> , Linn. var <i>Momor-</i> <i>Syn. Cucumis Momordica</i> , Roxb.
Gajapippali गजपिप्पली	Gajapipal, B. H.	<i>Scindapsus officinalis</i> , Schott. <i>Syn. Pothos officinalis</i> , Roxb.
Gambhári गम्भारी	Gámári, H. Kambhári, H.	<i>Gmelina arborea</i> , Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Gandogátra गन्धगात्र	Átá, B. [H. Sharifá, Sitáphal,	Anona squamosa, Linn. Custard apple.
Gandharája गन्धराज	Gandharaj, B.	Gardenia florida, Linn.
Gandhatrina गन्धतट्ट	...	See Bhustrina.
Ganikáriká गणिकारिका	Ganiári, B. Arni, H.	Premna integrifolia, Linn. Syn. P. spinosa, Roxb.
Gardhabbánda गर्दभाण्ड	Patespipal, B. Gajahanda, H.	Thespesia populnea, Corr. Syn. Hibiscus populneoides, Roxb.
Garjara गर्जर	Gájar, H.	Daucus Carota, Linn.
Gavedhuká गवेधुका	Gargaredhán, B.	Some species of Coix.
Ghantápatáli घण्टापाटली	Ghantáparul, B. H.	Schrebera swietenioides, Roxb.
Ghantáravá घण्टारवा	Jhanjhanía, B.	Crotalaria sericea, Retz. [sp. Forsk.
Ghritakumári घृतकुमारी	Ghritakumári, B. Ghikumár, H.	Aloe Vera, Linn. Var. officinalis Syn. A. Indica, Royle.
Godhápadi गोधापदी	Goálilatá, B.	Vitis pedata, Vahl. Syn. Cissus pedatus, Lamk.
Godhuma गोधूम	Gam, B. Genhu H.	Triticum vulgare, Linn. Common wheat.
Godumbá गोडुम्बा	Gomuk, B.	Cucumis Melo, Linn. [Roxb. Syn. Cucumis madraspatanus,
Gojihbá गोजिम्बा	Gojiálatá, B. Gobhi, H.	Elephantopus scaber, Linn.
Gokshura गोक्षुर	Gokshura, B. Gokhura, H.	Tribulus terrestris, Linn. Syn. T. lanuginosus, Linn.
Granthiparna ग्रन्थिपर्ण	Gántiálá, B. Thivan, H.	A sort of gall caused by an in- sect on some tree.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Grishmasun शेषमुन्दर [dara Gudatvaka गुडत्वक्	Gimásák, B.	Mollugo cerviana Seringe. Syn. <i>Pharnaceum Mollugo</i> , Linn. See Tvacha.
Guduohi गुडुची	Gulancha, B. Guraoh, H.	<i>Tinospora cordifolia</i> , Miers. [Willd. Syn. <i>Menispermum Cordifolium</i> .
Guggulu गुग्गुलु	Guggul, B. H.	<i>Balsamodendron Mukul</i> , Hooker. Also B, pubescens, Stocks.
Gundra गुन्द्र	Gand pater, H.	<i>Panicum uliginosum</i> , Roxb.
Gunjá गुञ्जा	Kunch, B. Ohirmiti, Ganj, H.	<i>Abrus precatorius</i> , Linn.
Guváka गुवाक	Supári, H. Guá, B.	<i>Areca Catechu</i> , Linn. The betle-nut tree.
Hallaka हलक	Raktakambal, B.	<i>Nymphaea Lotus</i> , Linn. Syn. <i>N. rubra</i> , Roxb.
Hapushá हवुषा	Habush, H.	Black stalks like those of black pepper; aromatic.
Harichandana हरिचन्दन	Pitchandan, B.	Yellow variety of sandal wood.
Haridrá हरिद्रा	Halud, B. Haldi, H.	<i>Curcuma longa</i> , Roxb.
Haritaki हरीतकी [lása	Haritaki, B. Har, H.	<i>Terminalia Chebula</i> , Retz. <i>Chebulio myrobalan</i> .
Hastikarnapa- हस्तिकर्णपत्रा	... ..	<i>Butea superba</i> , Roxb.
Hastisundá हस्तिसुन्दा [ka	Hátisurá, B.	<i>Heliotropium indicum</i> , Linn. Syn. <i>Heliohytum Indicum</i> , Dc.
Hemapusbpi- हेमपुष्पिका	... ..	See Savarnajuthiká.
Hijjala हिज्जल	Hijjal, B. H.	<i>Barringtonia acutangula</i> , Gaertn. Syn. <i>Eugenia acutangula</i> , Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Hilamochiká हिलमोचिका	Hinchá, B. Harhuch, H.	<i>Enhydra fluctuans</i> , Lour. <i>Syn. Hingtsha repens</i> , Roxb.
Hingu हिङ्गु	Hing, H. B.	<i>Ferula Assafoetida</i> , Linn. <i>F. Alliacea</i> , Boiss.
Hingupatri हिङ्गुपत्री	...	The subacid leaves of <i>Balanites Roxburghii</i> , Planchon, are so called.
Hintála हिन्ताल	Hentál, H. B.	<i>Phœnix paludosa</i> , Roxb.
Hriversa ह्रीर्वर	Bála <i>Sugandha bála</i> , H.	<i>Pavonia odorata</i> , Willd.
Iksu इक्षु	Uk, H. Ák, B.	<i>Saccharum officinarum</i> , Linn.
Indraváruni इन्द्रवारुणी	Indráyan, B. Mákál, H.	<i>Citrullus Colocynthis</i> , Schrad. <i>Syn. Cucumis Colocynthis</i> , Linn.
Indrayava इन्द्रयव	Indrajab, H. B.	Seeds of <i>Holarrhena antidysenterica</i> , Wall.
Ingudi इङ्गुदी	Hingan, H. Inguá, H.	<i>Balanites Roxburghii</i> , Planchon. <i>Syn. Ximenia Ægyptiaca</i> , Roxb.
Jalapippali जलपिप्पली	Pánikánchirá, B. Jalpipari, H.	<i>Commelyna salicifolia</i> , Roxb.
Jambira जम्बीर	Goránebu, B. Jambir nebu, H.	<i>Citrus medica</i> , Linn. <i>Citrus acida</i> , Var. 3. of Roxb.
Jambu जम्बु	Kála jam, B. Jáman, H.	<i>Eugenia Jambolana</i> , Lamk, [A. <i>Syn. Sycygium Jambolanum</i> , W. &
Jatámánsi जटामांसी	Jatámánsi, B. H. Báluehar, H.	<i>Nardostachys Jatamansi</i> , D. C. <i>Syn. Valeriana Jatamansi</i> , Jones.
Játi जाती	Chameli, H. Játi, B.	<i>Jasminum grandiflorum</i> , Linn.
Játiphala जातिफल	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. Jámalgotá, H.	<i>Croton Tiglium</i> , Linn. Croton oil plant.
Jhávuka भाबुक	Jháu, B. H.	<i>Tamarix gallica</i> , Linn. <i>Syn. T. Indica</i> , Willd.
Jhingáka झिङ्गाक	Jhingá, B. Torái, H.	<i>Luffa acutangula</i> , Roxb. <i>Syn. Cucumis acutangulus</i> , Linn.
Jhinti झिण्टी	Jhánti, B.	<i>Barleria cristata</i> , Linn.
Jingini जिङ्गिनी	Jiol, B. Jingan, H.	<i>Odina Wodier</i> , Roxb.
Jiraka जीरक	Jirá, B. H.	<i>Cuminum Cyminum</i> , Linn. Cummin seeds.
Jivanti जीवन्ती	Jibai, B. Jiba ság, H.	<i>Cælogyne ovalis</i> , Lindl.
Jyotishmati ज्योतिषमती	Nayáphaṭki, B.	<i>Cardiospermum Halimolobos</i> , Linn.
Kachchi कचची	Kachṭ, B. H.	<i>Colocasia antiquorum</i> , Schott. <i>Syn. Arum Colocasia</i> , Roxb.
Kadali कदली	Kalá, B. Kelá, H.	<i>Musa sapientum</i> , Linn. Var. <i>Musa Paradisiaca</i> , Linn.
Kadamba कदम्ब	Kadam, B. H.	<i>Anthocephalus Cadamba</i> , Benth. and Hook. <i>Syn. Nauclea Cadamba</i> , Roxb.
Kairáta कैरात	...	See Bhunimba.
Kákádani काकादानी	Káliakará, B. Kántágurkámái, B.	<i>Capparis sepiaria</i> , Linn.
Kákadumbar काकादुम्बर	Totmilá, H. Kákḍumar, B. H.	<i>Ficus hispida</i> , Linn. fil. <i>Syn. Ficus oppositifolia</i> , Roxb.
Kákajanghá काकजङ्गा	Kákjanghá, H. B.	<i>Leuca hirta</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kákali काकली	Kákoli, H. B.	A root said to be brought from Nepal or Morung.
Kákamāchi काकमाची	Gurkámái, B. Mako, H.	<i>Solanum nigrum</i> , Linn.
Kákatinduka काकतिन्दुक	Mákrá kendu, B.	<i>Diospyros melanoxylon</i> , Roxb. Also <i>Diospyros tomentosa</i> , Roxb.
Kákatundi काकतुण्डी	Kowádodi, H.	<i>Aselepias ourassavica</i> , Linn.
Kakkolaka काकलक	Kákalá, B. H. Sitalohini, H.	Berries containing a black aromatic waxy substance.
Kálakuta काककुट	...	A sort of Aconite.
Kalambi कालम्बी	Kalmi sák, B.	<i>Ipomæa aquatica</i> Forsk. <i>Syn. I. Reptans</i> , Poir. [Griseb.
Kálanusárivá कालानुसारिवा	Shiulichhop, B. Tagarmul, H. B.	<i>Limnanthemum cristatum</i> , <i>Syn. Menyanthes cristata</i> , Rob.
Kálasáka कालसाक	Narohá, B. Ghinalitá, B.	<i>Corchorus capsularis</i> , Linn. Jute plant.
Kaláya कलाय	Maṭar, B. H.	<i>Pisum sativum</i> , Linn. Common pea.
Kamala कमल	Padma, B. Kamal, H.	<i>Nelumbium speciosum</i> , Willd. The sacred Lotus.
Kámalata कामलता	Parulatá, B.	<i>Ipomæa Quamoolit</i> , Linn. <i>Syn. Quamoclit vulgaris</i> , Choisy.
Kampillaka कम्पिलक [da	Kamaláguri, B. Kamilá, Kambilá, H.	<i>Mallotus Philippensis</i> Mull. Arg. <i>Syn. Rottlera tinctoria</i> , Roxb.
Kánana oran. काननऐरख	Pábári, oran, H. Bágbherendá, B.	<i>Jatropha Curcas</i> , Linn. The physic nut tree.
Kánshana कानशन	Kochnar, H. Kánshan, B.	<i>Bauhinia acuminata</i> , Linn.
Kánshanáda कानशनाड	Rakta Kánshan, B. Kochnár, H.	<i>Bauhinia variegata</i> , Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kanohata कचट	Káohrádám, 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. Katái, Kateli, H.	<i>Solanum xanthocarpum</i> , Sohrad, & Wendl. <i>Syn. Solanum Jacquini</i> , Willd.
Kapikachobu कपिकच्छु	Ákusi, B. Kiwach, H.	<i>Mucuna pruriens</i> , D. C. <i>Syn. Carpopogon pruriens</i> , Roxb.
Kapittha कपित्थ	Kathbel, B. Kaith, H.	<i>Feronia elephantum</i> , Corr. The wood apple tree.
Karamardaka करमदंका	Karamohá, 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 कारवेल्ल	Karalá, B. Karoli, H.	<i>Momordica Charantia</i> , Linn. <i>Syn. M. muricata</i> , Willd.
Karavira करवीर	Karabi, B. Kanor, 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 ककटका	Kákrol, B, H.	<i>Momordica mixta</i> Roxb. <i>Syn. M. Oochinchinensis</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. Utilis. <i>Syn. Cucumis utilissimus</i> , Roxb.
Karmaranga कर्मरङ्ग	Kámrangá, B. Kamarakh, H.	<i>Averrhoa Carambola</i> , Linn. Carambola tree.
Karnikára कर्णिकार	Kanakohampá, B. Kaniár, H.	<i>Pterospermum acerifolium</i> , Willd.
Kárpási कार्पासी	Kárpás, B. Kápás, H.	<i>Gossypium herbaceum</i> , Linn. Cotton plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Karpura कर्पूर [drá	Karpur, B. Kápur, H.	Cinnamomum Camphora, Nees. Camphor.
Karpurahari- कर्पूरहरिद्रा	Karpurhaldi, H. Amádá, B.	Curcuma 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. Kásaundá, H.	Cassia Sophora, Linn. <i>Syn. Senna Sophora, Roxb.</i>
Kaseruka कशेरुक	Kesur, B. Kasuru, H.	Scirpus Kysoor, Roxb.
Kásmari काश्मरी	...	See Gambhári.
Kataka, कतक	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	Kaṭki, 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.
Kesarája केशराज	Kesuria, B.	Eolipta alba, Haesk. <i>Syn. E. Prostrata & erecta, Linn.</i>
Ketaki केतकी	Kèyá, 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 खगार	Khágrá, B.	A large variety of <i>Saccharum spontaneum</i> , Linn.
Kharjura खजूर	Khejur, B. Khajur, H.	<i>Phoenix sylvestris</i> , Roxb. Wild date palm.
Kharvujá खर्बुजा	Kharbujá, H.	<i>Cucumis Melo</i> , Linn.
Kinsuka किंशुक	... ..	See Palása.
Kirátatikta किराततिक्त	... ..	A name for <i>chireyta</i> . See <i>Bhanimba</i> .
Kodrava कोद्रव	Kodoá dhán, B. Kodo, H.	<i>Paspalum serobiculatum</i> , Linn.
Kokanada कोकनद	Rakta kamal, B.	<i>Nelumbium speciosum</i> , Willd. Red variety.
Kokiláksha कोकिलका	Kantakulika, B. Kuliákhára, B Tálmakhána, H.	<i>Hygrophila spinosa</i> , T. Ander. <i>Syn. Ruellia longifolia</i> , Roxb.
Kola कोल	Kul, B. Baer, H	<i>Zizyphus Jujuba</i> , Lamk.
Kosámra कोशाम	Koshám,	<i>Mangifera sylvatica</i> , Roxb.
Koshátaki कोशातकी	Ghoshálatá, B. Karwitarui, H.	<i>Luffa acutangula</i> Roxb. <i>Syn. Luffa amara</i> , Roxb.
Kovidára कोविदार	... ..	See Kánchanada.
Krishnachudá कृष्णचूडा	Krishna chura, B	<i>Cæsalpinia pulcherrima</i> , Sw. <i>Syn. Poinciana pulcherrima</i> , Linn.
Krisnajiraka कृष्णजीरक	Kálájirá, B. H. Magrelá, H.	<i>Nigella sativa</i> , Linn.
Krisnakeli कृष्णकली [paṭi]	Kriṣṇnakeli, B.	<i>Mirabilis Jalapa</i> , Linn.
Kshetrapar. क्षेत्रपपट्टी	Khatpáprá, B. Daman papar, H.	<i>Oldenlandia herbacea</i> , DC. <i>Syn. Oldenlandia Corymbosa</i> Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kshirakākoli शिरकाकोली		A bulb of the onion tribe brought from the Himalaya.
Kubjaka कुजक	Kujá, B. Kujái, H.	Rosa moschata, Mill. (variety of.) Syn. Rosa pubescens, Roxb.
Kuchilá कुचिला	... ..	See Vishamushti
Kukubha कुकुभ	... ..	See Arjuna.
Kukuradru कुकुरद्रु	Kukursungá, B. Kukkurbandá, H.	Blumea lacera, DC. Syn. Conyza lacera, Burm.
Kuláhala कुलाहल	Koksimá, B.	Celsia coromandeliana, Vahl.
Kulanjana कुलजान	Mahábarivach, B. Kulinján, H.	Alpinia Galanga, Willd. Syn. Galanga major, Rumph.
Kulattha कुलत्थ	Kulthi, B. H.	Dolichos uniflorus, Lamk. Dolichos biflorus, Linn.
Kulika कुलिक	... ..	See Kokiláksha.
Kumbhiká कुम्भिका	Tákápána, B. H. Jalkumbhi, H.	Pistia Stratiotes, Linn.
Kumkuma कुङ्कुम	Jáfrán, B. H.	Crocus sativus, Linn. Saffron.
Kumuda कुमुद	Sáluk, B. Koi, H.	Nymphæa Lotus, Linn.
Kunda कुन्द	Kundphul, B. H.	Jasminum pubescens, Willd. [Colebr.
Kanduru कुन्दुरु	Kundarkhati, H.	Boswellia serrata. Roxb ex Syn. B. Thurifera, Colebr.
Kupilu कुपीलु	Kuchilá, B. H.	Strychnos Nux-vomica, Linn.
Kurunṭaka कुरुण्टक	Kanṭájati, B. Kaṭsareyá, H.	Barleria prionitis, Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kurvaka कुरुवक	Raktajhinṭi, H.	Barleria cristata, Linn. Red variety.
Kusa कुस	Kus, B. H.	Poa cynosuroides, Linn. <i>Syn. Eragrostis cynosuroides, Retz.</i>
Kushmānda कुशमण्ड	Kumrá, B. Peṭhā, H.	Benincasa cerifera, Savi. <i>Syn. Cucurbita Pepo, Roxb.</i>
Kusumbha कुसुम्भ	Kusamphul, B. Kusum, H.	Carthamus tinctorius, Linn. Safflower.
Kueṭha कुह	Kur, B. Páchak, Kuṭ H.	Saussurea Lappa C. B. Clarke. <i>Syn. Aplotaxis auriculata, DC.</i>
Kuṭaja कुटज	Kurchi, B. H. Kureyá, H.	Holarrhena antidysenterica, Wall. <i>Syn. Echites antidysenterica, Roxb.</i>
Lajjálu लज्जालु	Lájak, B. Lajjávati, H.	Mimosa pudica, Linn. The sensitive plant.
Lakucha लकुच	Mádár, H. Barhal, Dahu, H.	Artocarpus Lakoocha, Roxb.
Lámajjaka लामज्जक	Lámjak, H.	Andropogon Iwaranceua, Linn. <i>Syn. Andropogon laniger Desp.</i>
Lāngaliká लाङ्गलिका	Bishalānguli, B. Karihári, H.	Gloriosa superba, Linn.
Latákasturiká लताकस्तुरिका	Latákasturi, B. Muehkdána, H.	Hibiscus Abelmoschus, Linn. <i>Syn. Abelmoschus moschatus, Mæench.</i>
Lavali लवली	Loná, B.	Anona reticulata, Linn.
Lavanga लवङ्ग	Lang, H. Langa, B.	Caryophyllus aromaticus, Linn. Cloves.
Lavāngalatá लवङ्गलता	Langphul, B.	Luvunga scandens, Ham. <i>Syn. Limonia scandens, Roxb.</i>
Lavani लवणी	Noári, B. Harfarauri, H.	Phyllanthus distichus, Mull. Arg. <i>Syn. P. longifolius, Roxb.</i>
Limpáka लिम्पाक	Pátinebu, B.	Variety of Citrus acida, Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Lodhra 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.
Mádhavi माधवी	Mádhavilatá, B. H.	<i>Hiptage Madhablota</i> , Gaertn. <i>Syn. Gaertnera racemosa</i> , Roxb.
Madhuka मधुक	Maná, B. H.	<i>Bassia latifolia</i> , Roxb.
Madhuriká मधुरिका	Mauri, B. Sonf, H.	<i>Fœniculum vulgare</i> , Gaertn. Fennel seeds.
Madhválu मध्वालु	Mauálu, B.	<i>Dioscorea aculeata</i> , Roxb.
Mahábalá महाबला	Svet berelá, B. Sahadebi, H.	<i>Sida rhomboidea</i> , Roxb.
Mahákála महाकाल	Mákál, B. Indráyan, H.	<i>Trichosanthes palmata</i> , Roxb.
Mahánimba महानिम्ब	Ghoránim, B. Bakáin, H.	<i>Melia Azedarach</i> , Linn. <i>Syn. Melia sempervirens</i> , Sw.
Makhánna मखान	Makháná, B. H.	<i>Euryale ferox</i> , Salisb. <i>Syn. Anneslea spinosa</i> , Roxb.
Mukushṭaka मुकुष्टक	Mat, H. Banmudga, B.	<i>Phaseolus aconitifolius</i> , Jacq.
Malati मालती	Málati, H. B.	<i>Aganósma caryophyllata</i> , G. Don. <i>Syn. Echites caryophyllata</i> , Roxb.
Malliká मल्लिका	Mallika, B. Bel, H. B.	<i>Jasminum Sambac</i> , Ait.
Mánaka मानक	Mán kaobu, B. Mán kand, H.	<i>Alocasia indica</i> , Schott. <i>Syn. Arum Indicum</i> , Roxb.
Mandara मन्दार	...	See Párijáta.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Mandukaparni मण्डुकपर्णी	Thulkuri, B. [B. Brahmamanduki,	Hydrocotyle asiatica, Linn.
Manjishta मञ्जिष्ठा	Manjishtá, B. Manjit, H.	Rubia cordifolia, Linn. <i>Syn. R. Munjista, Roxb.</i>
Marioba मरिच	Golmarich, B. Kálimarich, H.	Piper nigrum, Linn. Black pepper.
Márisa मारिष	Natiyá ság, B. Marsá, H.	Amarantus oleraceus, Linn.
Másha माष	Máshkalái, B. Urid, H.	Phaseolus Mungo Linn. Var. radiatus Linn, <i>Syn. Phaseolus Roxburghii, W. A.</i>
Máshaparni माषपर्णी	Másháni, B. Máshoni, H.	Teramnus labialis, Spreng. <i>Syn. Glycine debilis, Roxb.</i>
Masura मसूर	Masur, B. H.	Lens esculenta Moench. <i>Syn. Cicer lens, Roxb.</i>
Mátulunga मातुलुङ्ग	Chholanga nebu, B.	Citrus medica, Linn. var. acida.
Mayurasikhá मयूरशिखा	Lal murgá, B. Kokan, H.	Celosia, cristata, Linn.
Mendiká मेदिक्का	Mendi, B. Hená, H.	Lawsonia alba, Lamk. <i>Syn. L. inermis, Linn.</i>
Meshasringi मेषशर्णी	Merásingi, B. H.	Gymnema sylvestre, R. Br. <i>Syn. Asclepias geminata, Roxb.</i>
Methiká मेथिका	Methi, B. H.	Trigonella foenum-græcum, Linn.
Misreyá मिश्येया	Sulpha, B. Sowá, H.	Peucedaniam graveolens Benth. <i>Syn. Peucedanum Sowa,</i> <i>Bth. & Hf.</i> Dill seeds.
Muchukunda मुचुकुन्द	Muchkand, B. H.	Pterospermum suberifolium, Lamk.
Mudga मुद्ग	Moong, B. H.	Phaseolus Mungo, Linn.
Mudgaparni मुद्गपर्णी	Mugáni, B. H.	Phaseolus trilobus, Ait.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Mulaka भूलक	Mulá, B. Muli, H.	Raphanus sativus, Linn. Garden radish.
Munditiká मुण्डितिका	Murmuria, B. Gorak mundi H.	Sphœranthus indicus, Linn. <i>Syn. S. mollis, Roxb.</i>
Munja मुञ्ज	Munj, B. H.	Saccharum Munja, Roxb.
Murvá मूर्वा	Goráchakra, B. Murvá, B.	Sansevieria zeylanica, Willd. <i>Syn. S. Roxburghiana, Schult.</i>
Mushikaparni मुषिकपर्णी	Índurkáni, B.	Salvinia cucullata, Roxb.
Mushkaka मुष्कक	Ghanta páru, B. Banpalás, H.	Schrebera swietenioides, Roxb.
Mustaka मुस्तक	Muthá, B. Mothá, H.	Cyperus rotundus, Linn.
Nágabalá नागबला	Gorakoháuliá, B. Guleakari, H.	Sida spinosa, Linn. <i>Syn. S. alba, Linn.</i>
Nágadamani नागदमनी	Nágdoná, B. Nágdoni, H.	Artemisia vulgaris, Linn. <i>Syn. A. Indica, Willd.</i>
Nágakesara नागकेसर	Nágkesar, B. H.	Mesua ferrea, Linn.
Naganá नगना [taka	...	See Jantishmati.
Nágara mus- नायरमुस्तक	Nágarmuthá, B. H.	Cyperus pertennis, Roxb. <i>Syn. Cyperus scariosus R. Br.</i>
Nágaranga नागरङ्ग	Kamlá nebu, B. Nárangí, H.	Citrus Aurantium, Linn. The sweet orange.
Nágavalli नागवली	Pán, B. H.	Piper Betle, Linn. <i>Syn. Chavica Betle, Miq.</i>
Náktamála नक्तमाला	...	See Karanja.
Nakuli नाकुली	Nái, B. H.	This is said to be a variety of Rásná (Vanda Roxburghii) which is substituted for it in prescriptions.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Nala जल	Nal, B. Narkul, H.	Phragmites Karka, Trin. <i>Syn. Arundo Karka, Retz.</i>
Náli नाली	Mestápát, B. Nálitá, H.	Hibiscus cannabinus, Linn.
Naliká गलिका	Nalipatári, H.	A red bark used in scenting medicinal oils.
Nandi vriksha नन्दोवृक्ष	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 नवमालिका	Nabamalliká, B. Motiá, H.	Jasminum Sambac, Linn. Double flowered Jasmine.
Nidigdhiká निदिग्धिका	...	See Kantakári,
Nilá नील	Nil, B. H.	Indigofera tinctoria, Linn. Indigo plant.
Nilakamala नीलकमल	...	Blue Lotus ?
Nilotpala नीलोत्पल	Nilsáplá, 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.
Nirvishá निर्विषा	Nirbishi, B. H.	Kyllingia monocepala, Linn.
Nisá निषा	Halud, B. Haldi, H.	Curcuma longa, Linn. Turmeric plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Nishpáva निष्पाव	Barbaṭi, B. Lobia, H.	Vigna catiang, Endl. <i>Syn. Dolichos sinensis, Linn.</i>
Nivára निवार	Uridhán, B.	Wild variety of <i>Oryza sativa</i> , Linn.
Nyagrodha न्यग्रोध	...	See Vata. [Blume.
Olla ओल्ल	Oi, B. H. Jimikand, H.	<i>Amorphophallus campanulatus</i> , <i>Syn. Arum campanulatum, Roxb.</i>
Padma पद्म	Padma, B. H.	<i>Nelumbium speciosum, Linn.</i>
Padmaohárinī पद्मचारिणी	...	See Sthala padma.
Padmakáshṭa पद्मकाष्ठ	Padmakáshṭa, B. H.	A fragrant wood resembling toon brought from Malwa or Southern India.
Paláṇḍu पलाण्डु	Piáj, B. H.	<i>Allium Ceba, Linn.</i> Common onion.
Pálanki पालङ्की	Pálang ság, B. Pálanki, H.	<i>Beta maritima, Linn.</i> <i>Syn. B. Bengalensis, Roxb.</i>
Palása पलाश	Palás, B. Dhák, H.	<i>Butea frondosa, Roxb.</i>
Panasa पनस [máni	Kántál, B. Kathar, H. [H.	<i>Artocarpus integrifolia, Linn.</i> Indian jack-tree. [Linn.
Párasikaya- पारसिकयमानी	Khurásáni jamáni,	Seeds of <i>Hyoseyamus niger</i> ,
Párijáta पारिजात	Pálitá mandár, B. Pharhad, Pangrá, H.	<i>Erythrina indica, Linn.</i> Coral tree.
Párisa पारिष	Palás pipal, B. Pares pipal, H.	<i>Thespesia populnea, Corr.</i> <i>Syn. Hibiscus populneoides, Roxb.</i>
Parkāṭi पर्कटी	Pákar, B. Pakhar, H.	<i>Ficus infectoria, Roxb.</i>
Parpata पर्पट	...	See Kshetraparpati.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Parusha परुष [dara]	Phalsá, B. Pharsá, H.	<i>Grewia asiatica</i> , Linn.
Páshán abhe- पाषाणभेदन	Háthájori, B. H.	<i>Selaginella imbricata</i> , Spring. <i>Syn. Lycopodium imbricatum</i> , Roxb.
Páshánabhedí पाषाणभेदी	Páthor chur, B. H.	<i>Coleus aromaticus</i> , Benth. <i>Syn. C. Amboinicus</i> , Lour.
Pátala पाटला	Páru, B. Pár, H.	<i>Stereospermum suaveolens</i> , DC. <i>Syn. Bignonia suaveolens</i> , Roxb.
Pátha पाठा	Akanádi, B. Nemuká, B.	<i>Stephania hernandifolia</i> , Walp. <i>Syn. Cissampelos hernandifolia</i> , Linn.
Pathyá पथा	...	See Haritaki.
Pátola पटोल	Patol, B. Palwal, H.	<i>Trichosanthes dioica</i> , Roxb.
Pattanga पतङ्ग	Bakam, B. Pattang, B.	<i>Cæsalpinia Sappan</i> , Linn.
Phenila फेणिला	Rithá, H. B.	<i>Sapindus trifoliatus</i> , Linn. <i>Syn. S. Emarginatus</i> , Vahl.
Pilu पिलु [ra]	Pilu, B. H.	<i>Salvadora persica</i> , Linn. <i>Syn. Salvadora Indica</i> , Wight.
Pindakharju- पिण्डखर्जूर	Pindakhejur, H. B.	<i>Phoenix dactylifera</i> , Linn. The date palm.
Pindálu पिण्डालु	Chupriálu, B.	<i>Dioscorea globosa</i> , Roxb.
Pindára पिण्डार	Pindára, H. Pitáli, B.	<i>Trewia nudiflora</i> , Linn.
Pippali पिप्पली	Pipal, B. Pipal, H.	<i>Piper longum</i> , Linn. <i>Syn. Ohavica Roxburghii</i> , Miq.
Piyála पिषाल	Piyál, B.	<i>Buchanania latifolia</i> , Roxb. The nuts are called Cheraunji.
Plaksha प्लक्ष	...	See Parkati.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Prāchināmala- ka] प्राचीनामलक	Paniālá, B. Pániāmlak, H.	Flacourtia Cataphracta, Roxb.
Prapaundari- ka] प्रपोखरीक	Panderiá, H.	Root-stock of Nymphaea Lotus, Willd.
Prasārani प्रसारणी	Gandhabāduliá, B. Khip, Gandbāli, H.	Pæderia foetida, Linn.
Prikká पृक्का	Piring sák, B. Chini, H.	See Sprikká.
Prisniparni पृत्रिपर्णी	Pitvan, H. Chákulia, B.	Uraria lagopoides, DC. Syn. Doodia lagopodioides, Roxb.
Priyangu प्रियङ्गु	Priangu, B. H.	Aglaia Roxburghiana, Miq.
Puga पूग	...	See Guváka.
Punarnavá पुनर्नवा	Punarnabá, B. Sant, H.	Boerhaavia diffusa, Linn. Syn. B. procumbens and erecta.
Pandarika पुष्करीक	Svetpadma, B. H.	Nelumbium speciosum, Willd. white variety.
Punnága पुन्नाग [la	Punnág, B. Poláng, Oorya, Pohokarmaly, H.	Calophyllum inophyllum, Linn.
Pushkaramu- पुष्करमूल		This root is not available; the root, of Aplotaxis auriculata is substituted for it.
Putiká पूतिका	Puisák, B. Poi, H.	Basella rubra, Linn.
Putikarāja पूतिकारज	Natá, B. Katkaraunj, H.	Caesalpinia Bonducella, Fleming.
Putranjiva पुत्रञ्जीव	Jiápata, H. B.	Putranjiva Roxburghii, Wall. Syn. Nageia Putranjiva, Roxb.
Rāgi रामी	Marná, B. Mandúá, Ragi, H.	Eleusine Coracana, Geartn.
Rājádani राजादनी	Khirkhejur, B. Kshiri, H.	Mimusops hexandra, Roxb. Syn. Mimusops Indica, DC.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Rájakoshátaki राजकोषातकी	Dhundul, B. Ghiátarui, H.	Luffa aegyptiaca, Mill. <i>Syn. Luffa pentandra, Roxb.</i>
Rája másha राजमाष	Barbaṭi, B. Lobiá, H.	Vigna Catiang, Endl. <i>Syn. Dolichos sinensis, Linn.</i>
Rajanigandhá राजनीगन्धा	Rajanigandha, B. Gulshabbá, H.	Polyanthes tuberosa, Linn. Tube rose.
Rájasarsapa राजसर्षप [na	Ráisarísá, B. Rái, H.	Brassica juncea, Hf. and T. <i>Syn. Sinapis ramosa, Roxb.</i>
Raktachanda- रक्तचन्दन	Raktachandán, B. Lálchandán, H.	Pterocarpus santalinus, Linn. Red sandal wood.
Raktachitraka रक्तचित्रक	Lálohítá, B. H.	Plumbago rosea, Linn.
Raktálu रक्तालु	Rángálu, B. Ratálu, H.	Ipomoea Batatus, Lamk.
Raktotpala रक्तोत्पल	Raktakambala, B.	Nymphaea Lotus, Linn. <i>Syn. N. rubra, Roxb.</i>
Randá रन्दा	...	See Mushikaparni,
Rásná रासना	Rásná, B. H.	Vanda Roxburghii, R. Br. <i>Syn. Cymbidium tessaloides, Roxb.</i>
Rasonaka रसोन्नक	Rasun, B. Lahasun, H.	Allium sativum, Linn. Garlic. [bably.
Renuká रिणुका	Renuká, B.	Piperaurantiacum, Wall. ; pro-
Rohitaka रोहितक	Tiktaráj, B. Harinhará, H.	Amoora Rohituka, W. and A. <i>Syn. Andersonia Rohituka, Roxb.</i>
Rudráksha रुद्राक्ष [ya	Rudráksha, B. Rudrákh, H.	Elæocarpus Ganitrus, Roxb.
Sailaja, Saile- शैलज शैल्य	Chharilá, H.	A species of Lichen.
Saivála शैवाल	Seyála, B. Sivál, H.	Vallisneria spiralis, Linn. <i>Syn. Blyxa octandra, Rich,</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sáka शाक	Segun, B. H.	<i>Tectona grandis</i> , Linn. fl. Teak tree.
Sákhotaka शाखोटक	Syáorá, B. H. Siorá, H.	<i>Streblus asper</i> , Lour. <i>Syn. Trophis aspera</i> , retz.
Sála शाल	Sál, B. H. Sákhu, H.	<i>Shorea robusta</i> , Gaertn.
Sálaparni शालपर्णी	Sálpáni, B. Sarivan, H.	<i>Desmodium gangeticum</i> , De. <i>Syn. Hedysarum gangeticum</i> , Linn.
Sálincha शालिन्ध	Sánchi, B.	<i>Alternanthera sessilis</i> , R. Br. <i>Syn. Acheranthes triandra</i> , Roxb.
Sallaki शल्लकी	Salái, B. H.	<i>Boswellia serrata</i> , Roxb. ex. Colebr.
Sálmali शल्लली	Simul, B. Semal, H.	<i>Bombax Malabaricum</i> , DC. <i>Syn. B. heptaphylla</i> , Cav.
Sáluka शल्लुक	Sáluk, B.	Roots of different species of <i>Nymphaea</i> .
Sami शमी	Sáin, 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.
Sankhálu शङ्खालु	Sáñkálu, B.	<i>Pachyrhizus angulatus</i> , Rich. <i>Syn. Dolichos bulbosus</i> , Linn.
Sankhapushpi शङ्खपुष्पी	Dánkuni, B. Sankhahuli, H.	<i>Canscora decussata</i> , R. et. Sch. <i>Syn. Pladara decussata</i> , Roxb.
Saptachhada सप्तच्छद	Chhátin, B. Chhátían, H.	<i>Alstonia scholaris</i> , R. Br. <i>Syn. Echites scholaris</i> , Roxb.
Sara शर	Sar, B. Rámsar, 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	Sarphonká, B. H.	Tephrosia purpurea, Pers. <i>Syn. Galega purpurea, Linn.</i>
Sarivá शारिवा	Syámlatá, B.	Ichnocarpus frutescens, R. Br. <i>Syn. Echites frutescens, Roeb.</i>
Sarpagandhá सर्पगन्धा	Chandrá, B.	Rauwolfia serpentina, Benth.
Sarpakshi सर्पाक्षि	Gandhanákuli, B. Sarahati, H.	Ophiorrhiza Mungos, Linn.
Sarshapa सर्षप	Sarisá, B. Sareon, H.	A common name for mustard seeds.
Sarvajayá सर्वजया	Sarvajayá, B.	Canna indica, Linn. Indian shot.
Satamuli शतमूली	Satábari, B. Satávar, H.	Asparagus racemosus, Willd.
Satapatri शतपत्री	Seuti, H. B.	Rosa moschata, Mill. <i>Syn. R. glandulifera, Roeb.</i>
Satapushpi शतपुष्पी	...	See Misreya.
Sati शटी	Karehur, H. Sati, B.	Curcuma Zerumbet, Roxb.
Satila शतीला	Maṭar, B. H.	Pisum sativum, Linn.
Sanreya शौर्य	Suklahinti, B.	See Jhinṭi.
Selu शेलु	Bahubára, B. Lasora, H.	Cordia Myra, Linn.
Sephalika शेषालिका	Senli, B. Harsingar, H.	Nyctanthes Arbor tristis, Linn.
Seva सेव	Seb, B. Sev, H.	Pyrus Malus, Linn. The apple tree.
Sevati सेवती	...	See Satapatri.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sigru शिशु	...	See Sobhānjana.
Silhaka सिलहक	Silha, Silāras, B. Nāgorigond, H.	Liquidambar orientalis, Miller. Liquid storax.
Simbi शिवी	Sim, B.	A name for several species of Dolichos.
Sindhuvāra सिन्धुवार	Nishindā, B. Sambhāl, H.	Vitex Negundo, Linn.
Sinsapā शिशपा	Sisu, B. H.	Dalbergia Sissoo, Roxb.
Sirisa शिरिष	Siris, B. H.	Albizzia Lebbek, Benth. Syn. Mimosa sirissa, Roxb.
Sitalapatrikā शीतलपत्रिका	Muktāpāṭi, B. Sitalpāṭir gāch, B.	Maranta dichotoma, Wall. Syn. Phrynium dichotomum, Roxb.
Sitali शीतली	...	See Kālānusāriyā.
Snuhi सुही	Mansā sij, B. Thohar, H.	Euphorbia nerifolia, Linn. Syn. E. ligularia, Roxb.
Sobhānjana श्रीभाजन	Sajinā, B. H. Sahinjan, H.	Moringa pterygosperma, Gaertn. Syn. Hyperanthera moringa, Willd.
Somalatā सोमलता	Somlatā, B. H.	Sarcostemma brevistigma, W. A. Syn. Asclepias acida, Roxb.
Somarāji सोमराजि	Somraj, B. Bāknehi, H.	Vernonia anthelmintica, Willd. Syn. Serratula anthelmintica, Roxb.
Sprikkā स्पृक्का	Piring sāk, B. Lankāyikā, H.	Trigonella corniculata, Linn.
Sribāsa श्रीबास	Gandhabiraja, H. B.	Resin of Pinus longifolia, Roxb.
Srigālakanta श्रीगालकण्ठक	Siāl kāptā, B.	Argemone mexicana, Linn.
Srigālakoli श्रीगालकोलि	Sītkul, B.	Zizyphus Onoplia, Mill.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sringátaka शृङ्गाटक	Pániphal, B. Singhárá, H.	Trapa bispinosa, Roxb,
Sringi शृङ्गी	... ..	See Karkatasingi.
Sriphala श्रीफल	... ..	See Vilva.
Sthalapadma स्थलपद्म	Sthalpadma, B. Sthalkamal, H.	Hibiscus mutabilis, Linn.
Sthauneya स्थोनिय	... ..	See Granthiparni.
Sthulailá स्थूलेला	Bara eláchi, B. H.	Amomum subulatum, Roxb.
Sudarsana सुदर्शन	Padma gulancha, B.	Tinospora tomentosa, Miers. [Roxb. Syn. <i>Menispermum tomentosum</i> ,
Sunandá सुनन्दा	Ishermul, B.	Aristolochia Indica, Linn.
Sunisannaka सुनिषसक	Sunsuniá, B. Chaupatte, H.	Marsilea guardrifolia, Linn. [Blume.
Surana सूरस	Ol, B. H. Jimikand, H	Amorphophallus campanulatus, Syn. <i>Arum campanulatum</i> , Roxb.
Surjamani सूर्यमणि	Surjamani, B.	Hibiscus phœniceus, Willd.
Surjávarta सूर्यावर्त	Hurhuriá, B. Hul hul, H.	Gynandropsis pentaphylla, DC. Syn. <i>Cleome pentaphylla</i> , Linn.
Sushavi सुषवी	Shiá jirá, H.	Caram Carui, Linn.
Sushavi सुषवी	Uchohhe, B. Karelá, H.	Momordica Charantia, Linn. Syn. <i>Momordica muricata</i> , Willd.
Svarnajuthiká स्वर्णयुधिक्का	Svarnajui, B.	Jasminum humile, Linn. Syn. <i>J. chrysanthemum</i> , Roxb.
Svarnakshiri स्वर्णक्षीरी	Chos, Chok, H.	Cleome felina, Linn. f. Syn. <i>Polanisia felina</i> , DC.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Syámáka श्यामाक	Syámá dhán, B. Samak, H.	<i>Panicum frumentaceum</i> , Roxb.
Syámálatá श्यामलता	Syámálatá, B.	<i>Ichnocarpus frutescens</i> , R. Br. <i>Syn. Echites frutescens</i> , Roxb.
Syonáka श्योमाक	Soná, B. Arlu, H.	<i>Oroxylum indicum</i> , Vent. <i>Syn. Bignonia Indica</i> , Linn.
Tagara तगर	Tagar, B. Chándni, H.	<i>Tabernæmontana coronaria</i> Br.
Tála ताल	Tál, H. B.	<i>Borassus flabelliformis</i> , Linn.
Tálamuli तालमूली	Mushali, H. Tál muli, B.	<i>Curculigo orchioides</i> , Gaertn.
Tálisapatra तालीशपत्र	Tálisapatra, B.	<i>Pinus Webbiana</i> , Lindl. <i>Syn. Abies Webbiana</i> , Lindl.
Tamála तमाल	Tamál, B. H.	<i>Garcinia Xanthochymus</i> , Hook. f. Also a name for <i>Cinnamomum Tamala</i> , Nees.
Támbula ताम्बूल	Pán, B. H. Támbula, H.	<i>Piper Betle</i> , Linn. <i>Syn. Ohavica Betle</i> , Miq.
Támrakuṭa तामकुट	Támák, B. Támbáku, H.	<i>Nicotiana Tabacum</i> , Linn. Tobacco plant.
Tanduliya* तण्डुलीय	Chámpá naṭiá, B. Cholái, H.	<i>Amaranthus polygamus</i> , Linn.
Tankári टङ्करी	Tekári, B. Tepuriá, B.	<i>Physalis peruviana</i> , Linn. <i>Syn. P. edulis</i> , Sims.
Tarambuja तरबुज	Tarmuj, B. Tarbuz, H.	<i>Citrullus vulgaris</i> , Schrad. <i>Syn. Cucurbita Citrullus</i> , Roxb.
Taruni तरुणी	Senti, B. Svet Goláb, B.	<i>Rosa alba</i> , Linn. The Indian white rose,
Tejapatra तेजपत्र	Tejpát, H. B.	<i>Cinnamomum Tamala</i> , Nees. <i>Syn. Laurus Cassia</i> , Roxb.

* Some Bengali physicians use the name of *Amaranthus spinosus*, Linn. under the name of Tandulia.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Tila तिल	Til, B. H.	<i>Sesamum indicum</i> , DC. <i>Syn. S. orientale</i> , Linn.
Tindisa टिण्डिस	Dheras, B. Rámtarni, 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> , Kœniq.
Tinisa तिनिश	Sandan, H. Tinís, B.	<i>Ougenia dalbergioides</i> , Benth. <i>Syn. Dalbergia ozeinensis</i> , Roxb.
Tinitiri तिन्तिरी	Tentul, B. Imli, Amli, H.	<i>Tamarindus indica</i> , Linn. Tamarind tree.
Trapusa त्रपुषा	Khirá, H. Sasá, B.	<i>Cucumis sativus</i> , Linn.
Tráyamáná त्रायमाणा	Balábahulá, B. Baladumur, B.	<i>Ficus heterophylla</i> , Linn. fil.
Tripuṭi त्रिपुटी	Khesári, H. B.	<i>Lathyrus sativus</i> , Linn.
Trivrit त्रिवृत्	Teori, B. Nisoṭh, Turbud, H.	<i>Ipomœa Turpethum</i> , R. Br. <i>Syn. Convolvulus Turpethum</i> , Linn.
Tuda, Tula तूद, तूल	Tut, B. H. Tutri, H.	<i>Morus indica</i> , Linn. <i>Syn. M. parvifolia</i> , Royle.
Talasi तुलसी	Talsi, B. H.	<i>Ocimum sanctum</i> , Linn.
Tamburu तम्बुरु	Tamru, H. Nepálidhaniá, B	<i>Zanthoxylum alatum</i> , Roxb. <i>Syn. Z. hostile</i> , Wall.
Tunna तुन्न	Tun, B. H.	<i>Cedrela Toona</i> , Roxb.
Tvacha त्वचा	Dálchini B. H. Tvach, H.	<i>Cinnamomum zeylanicum</i> , Breyn.
Udumbara उदुम्बर	Jagna dumar, B. Gular, H.	<i>Ficus glomerata</i> , Roxb. <i>Syn. Covellia glomerata</i> , Miq.
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.
Vachá वचा	Bach, H. B.	Acorus Calamus, Linn.
Vajri वज्री	Tekátásij, B.	Euphorbia antiquorum, Linn.
Vaka वक	Bak, B. H. Agasti, H.	Sesbania grandiflora Pers. [Roxb. Syn. Aeschynomene grandiflora,
Vákuchi वाकुची	.....	See Somaráji.
Vakula वकुल	Bakul, B. Maulari, H.	Mimusops Elengi, Linn,
Vanaharidrá वनहरिद्रा	Banbalud, B.	Curcuma aromatica, Salisb. Syn. Curcuma Zedoaria, Roxb.
Vanakárpása वनकार्पास	Bankápás, B.	Hibiscus vitifolius, Linn.
Vanamalliká वनमल्लिका	Banmalliká, B. H.	Jasminum Sambac, Ait. The single flowered variety.
Vanamethiká वनमेथिका	Banmethi, B. H.	Melilotus parviflora, Desf. Syn. Trifolium Indicum, Willd.
Vanádraka वनार्द्रक	Banádá, B. H.	Zingiber Cassumunar, Roxb.
Vanayamáni वनशमानी	Bonjoán, B.	Seseli indicum, W. A. Syn. Cnidium diffusum, DC.
Vandáka वन्दाक	.....	See Rásná.
Vansa वंश	Báps, B. H.	Bambusa arundinacea, Retz.
Vansarochaná वंशरोचना	Bansa lochan, B. Tabá sir, H.	Bamboo manna.
Varáhkrántá वराहक्रान्ता	Lájk, B. Lajjá vati, H.	Mimosa pudica, Linn. The sensitive plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Vársiki वाषिकी	Bel, H. B.	Jasminum Sambac, Ait. [see Also a name for Triyamána, which
Vártáku वार्ताकु	Begun, B. Bhantá, H.	Solanum Melongena, Linn.
Varuna वरुण	Barun, B. Barná, H.	Crataeva religiosa, Forst. <i>Syn. Capparis trifoliata, Roxb.</i>
Varvara ववर	Bábuitulei, B. Bábul, H.	Ocimum Basilicum, Linn, <i>Syn. O. pilosum, Willd.</i>
Vavvula ववुल	Báblá, B. Bábul H.	Acacia arabica, Willd.
Vásaka वासक	Bákas, B. Arushá, H.	Adhatoda Vasica, Nees. <i>Syn. Justicia Adhatoda, Roxb.</i>
Vásphiká वाष्पिका	Rándhuni, B.	Carum Roxburghianum, Benth.
Vástuka वास्तुक	Bethuá sák, B. H.	Chenopodium album, Linn.
Vata वट	Bar, H. B.	Ficus bengalensis, Linn. <i>Syn. F. Indica, Roxb.</i>
Vetasa, Vetra वेतस, वेव	Bet, B. H.	Calamus Rotang, Linn. <i>Syn. C. Roxburghii, Griff.</i>
Vibhitaka विभीतक	Bahera, H. B.	Terminalia bellerica, Roxb.
Vidanga विडङ्ग	Biranga, B. Báberang, H.	Embelia Ribes, Burm. <i>Syn. E. glandulifera, Wight.</i>
Vidári विदारि	Bhumi kumra, B. Bilái kand, H.	Ipomoea digitata, Linn. <i>Syn. Batatus paniculatus, Chois.</i>
Vijapuraka वीजपुरक	Tábá nebu, B.	Citrus Medica, Linn. var.
Vijayá विजया	...	See Bhangá.
Vikankata विकङ्कत	Bainch, B. Kantái, H.	Flacourtia Ramontehi, L'Herit. <i>Syn. Flacourtia sapida, Roxb.</i>

SANSKRIT	VERNACULAR.	SCIENTIFIC NAMES.
Vilva विल्व	Bel H. B.	<i>Ægle Marmelos</i> , Corr.
Vimbi विम्बी	Telákucha, B. Kunduri, H.	<i>Cephalandia indica</i> , Naud. <i>Syn. Momordica monadelpha</i> , Roxb.
Virana वीरण	Bená, B. Khas khas, H.	<i>Andropogon muricatus</i> , Retz.
Visha विष	Sringi bish, B. Dagrá bish, H.	<i>Aconitum ferox</i> , Wall.
Visalyakrit विमल्यकृत	Hápar máli, B.	<i>Vallaris Heynei</i> , Spreng. <i>Syn. Echites dichotoma</i> , Roxb.
Visamushti विषमुष्टि	...	<i>Strychnos Nux-vomica</i> , Linn.
Vitkhadira विटखदिर	Guá báblá, B.	<i>Acacia Farnesiana</i> , Willd. <i>Syn. Mimosa Farnesiana</i> , Linn.
Vridhadáraka वृद्धदारक	Bijtarká, B.	<i>Argyrea speciosa</i> , Swt. <i>Syn. Lettsomia nervosa</i> , Roxb.
Vrihati वृद्धती	Byákur, B. Gurkámái, B.	<i>Solanum indicum</i> , Linn.
Vriechikáli वृश्चिकाली	Barhatá, H. Biehati, B.	<i>Tragia involucrata</i> , Linn.
Yajnadumbur यज्ञदुम्बुर	...	See Udumbara.
Yamáni यमानौ	Joán, B. Ajwán, H.	<i>Carum Copticum</i> , Benth. <i>Syn. Ptychotis Ajowan</i> , DC.
Yashtimadhu यष्टिमधु	Jasl timadhu, B. Jeti madhu, H. Mulhatti, H.	<i>Glycyrrhiza glabra</i> , Boiss.
Yava यव	Jab, B. Jav, H.	<i>Hordeum vulgare</i> , Linn.
Yávanála यावनाल	Joár, H.	<i>Sorghum vulgare</i> , Pers. <i>Syn. Holchus Sorghum</i> , Linn.
Yuthiká युथिका	Joín, B. Juthi, H.	<i>Jasminum auriculatum</i> , Vahl.

INDEX.

The Sanskrit terms in the glossary have not been included in this index as they are already in alphabetical order.

Abelmoschus moschatus	308	Æschynomene grandiflora	323
Abhyá	161	A. sesban	302
Abhayálavana	92	Aganosma caryophyllata	309
Abhra	76	Agar	290
Abies Webbiana	246 321	Agasti	323
Abrus precatorius	152, 300	Agasti haritaki	163
Acacia arabica	161, 324	Agetha	290
A. Catechu	159, 305	Aglaia Roxburghiana	315
A. Farneeciana	262, 325	Agnijvála	166
A. Suma	317	Agnikumára rasa	83, 77
Acampe papillosa	259	Agnimantha	220
Acanthaceæ	215	Agnimukha oburna	182
Ách	290	Agnimukha lauha	49
Achyranthes aspera	222, 292	Agnishikhá	264
A. bidentata	222, 292	Ahiphena	112
A. triandra	317	Ajamodá	174
Aconitum ferox	98, 325	Ajamodádi churna	207
A. heterophyllum	102, 294	Ájmad	174, 290
A. Napellus	98	Ajwan	173, 325
Acorus Calamus	252, 323	Ak	266, 301
Ádá	254, 292	Ákanádi	104, 314
Ádhaki	150	Ákanda	197
Adhatoda Vasica	215, 324	Ákand	292
Adina cordifolia	297	Akarádi churna	114
Ádityapáka guggula	135	Ákarákará	136, 291
Ádityapáka taila	27	Ákásbel	291
Ádrak	292, 254	Ákhort	291
Ægle Marmelos	325, 130	Ál	290

Alangium Htelexapetalum	292	Amoora Rohituka	316
A. Lamarkii	292	Amorphophallus	
Alarka	197	campanulatus	252 313, 320
Albizzia Lebbek	319	Ampelideæ	139
Alhagi Maurorum	146, 298	Ámra	141, 292
Alkaline ashes	90	Amrita	106
Álkusi	148, 294, 304	Amritabhallátaki	143
Allium Cepa	263, 316	Amrita haritaki	163
A. sativum	263, 316	Amrita kalparasa	81
Alocasia indica	253, 309	Amritáshtaka	137, 193
Aloe Indica	260, 299	Amrita vati	83
A. vera	260, 299	Ámrul sák	125, 291, 296
Aloes	260	Amaltás	156, 292
Alpinia Galanga	256, 307	Amygdalus communis	294
Alstonia scholaris	192, 317	Anacardiaceæ	141
Alternanthera sessilis	317	Anacyclus Pyrethrum	186, 291
Alum	80	Ánanda bhairavarasa	100
Ám	141, 292	Anantamula	196, 292
Amádá	258, 305	Ánár	167, 296
Ámalakádyá lauha	50	Andersonia Rohituka	316
Ámalaki	226	Andrographis paniculata	217
Ámarákshasi	112	Andropogon aciculatus	296
Amarantaceæ	222	A. Iwarancusa	272, 308
Amarbeli	291	A. laniger	308
Amarantus oleraceus	310	A. muricatus	271, 322
A. polygamus	321	A. saccharatus	269, 297
A. spinosus	222, 321	A. serratus	297
Ámbahaldi	292	A. Schoenanthus	272, 295
Ambashthá	104	Anethum Sowa	174
Ámbrá	292	Angáraka taila	277
Ambaprasáda	201	Ángur	139, 298
Ámlá	291	Animal Materia Medica	276
Ámalaki	226		73
Amlaloniká	125	Anjana	292
Ámli	322	Ánjir	309
Amliká	158	Anneslea spinosa	298
Amliká pánam	159	Anogeissus latifolia	308
Amomum subulatum	253 298, 320	Anona reticulata	299
		Anona squamosa	

Anthocephalus Cadamba	302	Arumcampanulatum	252, 313, 320
Áonlá	226, 291	A Colocasia	302
Apámárga	222	A Indicum	253, 309
Apámárga taila	222	Arunda Kaika	312
Apáng	222, 292	Arushá	215, 324
Aparájitá	148, 292	Arushkara	142
Áphim	112, 290	Asan	293
Apium involucreatum	290	Aselepiadæ	196
Aplotaxis auriculata	181, 308	Aselepias acica	319
Apocynæ	192	A. curassavica	303
Aquilaria Agallocha	290	A gigantea	197, 292, 310
Aralu	203	A. pseudosarsa	292
Áragbadha	156	A. rosea	298
Áragbadhadi	156	Asgandh	211, 293
Arar	150	Ashtadasanga páchana	147
Árdraka	254	Ashtakattara taila	245
Árdraka khanda	255	Ashtavakra rasa	61
Areca Catechu	250, 300	Asmarighna,	116
Argemone mexicana	319	Asoka	144, 293
Argyrea speciosa	207, 325	Asoka ghrita	144
Arhar	290	Asparagus racemosus	261, 318
Aristolochia indica	292, 320	Asteracantha longifolia	216
Arjun	164, 292	Asvagandhá	211, 293
Arjuna	164	Asvagandhá ghrita	212
Arjunábhra	78	Asvakara	121
Arjuna ghrita	164	Asvamáraka	192
Arka	197	Asvattha	293, 236
Arkahuli	293	Áta	299
Arkataila	199	Átaicha	102
Arlu	203, 321	Aṭarusha	215
Aroidæ	252	Atibalá	121
Arni	220, 290, 299	Átis	102, 294
Arsári lauha	49	Ativishá	102
Arsenic	38	Átmaguptá	143
Artemisia indica	311	Átmorá	294
A. vulgaris	297	Audbhid	84
Artocarpus integrifolia	313	Avalguja	184
A Lakoocha	296, 308	Averrhea Carambola	125, 304

Áyurveda	vi	Banjoán	173, 323
Azadirachta Indica	137, 312	Bankápás	323
Báberang	188, 324	Ban methi	323
Báblá	324	Ban malliká	323
Bábui tulsí	221	Ban mudag	309
Bábul	161, 324	Banpalás	311
Bach	252, 323	Báns	272, 323
Bádám	294	Bansalochana	323
Baer	306	Bansanui	317
Bágbherendá	303	Bar	236, 324
Bahera	163, 324	Barabet	291
Bahuári	294	Bata eláchi	320
Bahubára	318	Barambhi	295
Bainch	324	Barbaṭi	150, 313, 316
Bak	323	Barhanṭá	211, 326
Bakáin	309	Barhal	308
Bakam	314	Bariár	294
Bákas	215, 324	Barleria cristata	302, 308
Bákuohi	184, 319	B. Prionites	307
Bakul	323	Barringtonia acutangula	300
Balá	121	Barun	116, 324
Balá	124, 294, 301	Basella rubra	315
Balábahulá	322	Bassia latifolia	189, 309
Bála chaturbhadra	103	Beṭ	324
Baládumur	322	Batatus paniculata	206, 324, 295
Balá taila	122	Bátávi nebu	128
Balanites Roxburghii	301	Bátyálaka	121
Baliospermum Montanum	230, 297	Bauhinia acuminata	157, 303
Balsamodendron Agallocha	133	B. variegata	157, 303
B. Mukul	133, 300	Begun	324
B. pubescens	300	Bel	130, 191, 309, 324, 325
Báluohar	181, 301	Bellerio myrobalan	163
Bálya sakrásana	241	Bell metal	75
Bambusa arundinacea	269, 272, 323	Bená	271, 325
Bámanháṭi	220, 295	Bená mul	322
Banáda	256, 323	Benincassa cerifera	168, 308
Bándhuli	294	Berberidæ	108
Banhalud	258, 323	Berberis Asiatica	108, 297

B. aristata	297	Bignoniaceæ	203
Berelá	121, 294	Bignonia Indica	203, 321
Bet	324	Bignonia suaveolens	204, 314
Beta Bengalensis,	313	Bijtarká	207, 326
B. maritima	313	Biláikand	206, 324
Bechuá ság	324	Bile	285
Betula Bhojpattra	295	Biranga	324
Bhairava rasa	101	Bishalánguli	264, 308
Bhallátaka	142	BInmea lacera	307
Bháng	236, 294	Blyxa octandra	316
Bhárgá	236	Boerhaavia diffusa	315, 222
Bhánrá	182, 295	Bombax Malabaricum	123, 317
Bhant	294	B. heptaphylla	317
Bhantá	324	Bonjoán	323
Bhantáki	211	Borax	81
Bhárange	220, 295	Borassus flabelliformis	249, 321
Bhárgi	220	Boswellia serrata	307, 317
Bhárgi guda	220	B. Thurifera	137, 307, 317
Bháshkara lavana	87	Brahmamanduki	177, 310
Bhkvaprakása	xi	Brahmayastiká	220
Bhelá	142, 294	Brahmi	214
Bherendá	232, 298	Brahmi ghrita	214
Bhiláwá	294	Brass	75
Bhimráj	295	Brassica campestris	115
Bhriguharitaki	163	Brassica juncea	115, 316
Bhringarája	182	Brimhi sák	295
Bhringarája taila	184	Buchanania latifolia	314
Bhuiámlá	295	Burra lunia	309
Bhuichámpá	295	Burseraceæ	133
Bhuijám	295	Buř	150
Bhuikumrá	206, 295, 324	Butea frondosa	149, 277, 313
Bhunnimba	201	B. superba	300
Bhumikushmánda	206	Byákur	211, 326
Bhurjapatra	295	Cælogyne ovalis	302
Bhustrina	272	Cæsalpinia Bonducella	315
Bhutkesi	295	C. pulcherrima	306
B. chñti	325	C. Sappan	225, 314
B. danga	188	Cajanus indicus	150, 290

<i>Calamus fasciculatus</i>	291	<i>Celosia cristata</i>	310
<i>C. Rotang</i>	324	<i>Celsia Coromandelina</i>	307
<i>C. Roxburghii</i>	324	<i>Centipeda minima</i>	296
<i>Calophyllum inophyllum</i>	233, 315	<i>C. orbiculata</i>	296
<i>Calosanthus Indica</i>	203, 321	<i>Cephalandra indica</i>	325
<i>Calotropis gigantea</i>	197, 291, 292	<i>Cháb</i>	245
<i>C. procera</i>	197, 291	<i>Chachenda</i>	296
<i>Canna Indica</i>	318	<i>Chai</i>	245, 296
<i>Cannabis sativa</i>	236, 294	<i>Chakaund</i>	156, 295
<i>Canscora decussata</i>	202, 297, 317	<i>Chakradatta</i>	xi
<i>Capparidaceæ</i>	116	<i>Chakramarda</i>	156
<i>Capparis aphylla</i>	304	<i>Chákuliá</i>	148, 315
<i>C. Sodada</i>	304	<i>Chákundiá</i>	156, 295
<i>C. sepiaria</i>	290, 302	<i>Cháltá</i>	295
<i>C. trifoliata</i>	116, 324	<i>Chámeli</i>	191, 301
<i>Capsicum frutescens</i>	213	<i>Champá</i>	295
<i>C. minimum</i>	213	<i>Champá natiá</i>	321
<i>Carbonate of potash</i>	88	<i>Chaná</i>	296
<i>Carbonate of soda</i>	88	<i>Chanaka</i>	150
<i>Cordia Myxa</i>	294	<i>Chanakámla</i>	151
<i>C. latifolia</i>	294, 302	<i>Chandana</i>	225, 296
<i>Cardiospermum Halicacabum</i>	194	<i>Chandanádi taila</i>	277
<i>Carissa Carandas</i>	304	<i>Chandanádyá lauha</i>	48
<i>C. congesta</i>	304	<i>Chandesvara rasa</i>	40, 44
<i>Carpopogon pruriens</i>	294, 304		321
<i>Carthamus tinctorius</i>	308	<i>Chándni</i>	318
<i>Carum Carui</i>	174, 320	<i>Chandra</i>	223
<i>C. Roxburghianum</i>	174, 290, 324	<i>Chandráhba</i>	81
<i>Caryophyllus aromaticus</i>	165, 308	<i>Chandrámrita rasa</i>	45
<i>Cassia alata</i>	156, 296	<i>Chandraprabhá varti</i>	116
<i>C. Fistula</i>	155, 292	<i>Chandrasura</i>	60
<i>C. Sophora</i>	156, 305	<i>Chandrodaya makaradhvaja</i>	125
<i>C. Tora</i>	156, 295	<i>Chángerí</i>	125
<i>Cassytha filiformis</i>	291	<i>Chángerí ghrita</i>	vi
<i>Cathartocarpus fistula</i>	292	<i>Charaka</i>	269
<i>Caustics, preparation of</i>	21	<i>Cháruka</i>	165
<i>Cdrela Toona</i>	312, 322	<i>Chatuhsama vati</i>	35
<i>Cedrus Deodara</i>	248, 297	<i>Chaturmukha rasa</i>	67
		<i>Chaturthakári</i>	

Chaupatte	320	Chukapálang	296
Chavi	296	Chukeká sák	296
Chavica Betle	311, 321	Chupriálu	314
Chavica officinarum	296	Churá	270
Chavica Roxburghii	244, 314	Churna	82
Chaviká	245	Cicer arietinum	150, 296
Chena	150, 296	Cicer lens	310
Chenopodium album	324	Cinnamomum (Camphora)	223, 305
Chhágaládi ghrita	288	C. Tamála	225, 321
Chharilá	316	C. zeylanicum	225, 322
Chhátiána	317	Cissampelos hernandifolia	104, 314
Chhátin	192, 317	Cissampelos hexandra	104
Chhikura	317	Cissus pedatus	299
Chholá	296	Citrullus Colocynthis	173, 301
Chholanga nebu	310	Citrullus vulgaris	321
Chhoṭa eláchi	291	Citrus	127
Chhoṭaluniá	309	Citrusacida	127, 301
Chichingá	296	Citrus Aurantianum	127, 311
Chin	296	Citrus decumana	128
China	268	Citrus medica	127, 310, 312, 327
Chinághás	268, 296	Civet cat	231
Chini	315	Cleome pentaphylla	293, 320
Chintámani chaturmukha	35	C. felina	320
Chir	247, 317	C. viscosa	290
Chirchirá	222	Clerodendron infortunatum	294
Chiretá	201	C. Siphonanthus	220, 295
Chirmiṭi	152, 300	Clitorea Ternatea	148, 292
Chitá	136, 296	Cnidium diffusum	323
Chitraka	186	Coccinia Indica	172, 325
Chloride of ammonium	91	Coccus lacca	277
Chloride sodium	84	Cocos nucifera	312, 248
Chobebini	265, 296	Coleus Amboinicus	314
Chok	320	C. aromaticus	314
Cholái	222, 321	Colocasia antiquorum	302
Chondodendron tomentosum	105	Colocasia Indica	309
Chorkántá	296	Combretaceæ	161
Chos	320	Commelina bengalensis	304
Chrysopogon Acicularis	296	Commelina salicifolia	301

Compositæ	181	C aromatica	258, 323
Coniferae	246	C. longa	300, 256, 312
Conocarpus latifolia	298	C. reclinata	293
Convolvulaceæ	204	C. Zedoaria	258, 318, 323
Convolvulus paniculatus	206	C. Zerumbet	253
C. Turpethum	204, 322	Cymbidium tessaloides	259, 316
Conyza lacera	307	Cynodon Dactylon	273, 298
Copper	62	Cyperaceæ	265
Coral	93	Cyperus pertenuis	265, 311
Corchorus capsularis	303	C. rotundus	265, 311
Corchorus olitorius	312	Cyperus scariosus	311
Cordia Myxa	318	Cytisus Cajan	290
Coriandrum sativum	174, 297	Dábh	297
Corydalis Govaniana	295	Dádima	167
Costus speciosus	305	Dádimáshtaka	167
Covelia glomerata	322	Dádmardan	296, 156
Cratæva religiosa	116, 324	Dadrughna	156
Crocus sativus	307	Dagrá	98, 325
Crotolaria juncea	317	Dabar karanja	304
Crotolaria sericea	299	Dahu	296
Crotolaria verrucosa	317	Dalbergia oojeinensis	322
Oroton polyandrum	297	Dalbergia Sisoo	319
C. Tiglium	302, 229	Dálobini	322
Cruciferae	115	Dálim	296
Cucumis acutangula	302	Damanpapar	306
C. Colocynthis	173, 301	Dánkuni	202, 297, 317
C. Melo	172, 298, 299, 306	Danti	230, 297
C. Madraspatanus	299	Danti haritaki	231
C. Momordica	298	Daoná	297
C. sativus	172, 322	Darkaranja	154
C. utilissimus	172, 304	Dárubrahma rasa	40
Cucurbitaceae	168	Dárubaldi	108, 297
Cucurbita Citrullus	321	Dárubaridra	108, 297
C. lagenaria	291	Dárumuch	39
C. Pepo	168, 308	Darbha	267
Cuminum Cyminum	174, 302	Dárvi	108
Cureuligo orboides	251, 321	Dárvyádi kvátka	109
Curcuma Amada	258, 305	Dasamula	146

Dasamula haritaki	163	Dillenia indica	295
Dasamula taila	147	D. speciosa	295
Dastá	71	Dioscorea	297
Datura alba	208	D. aculeata	309
D. fastuosa	208, 298	D. embryopteris	322
D. Metel	298	D. globosa	314
Daucus carota	299	D. glutinosa	322
Debdáru	248, 297	D. purpurea	316
Deodár	248, 297	Diospyros melanoxylon	303
Deodhán	269, 297	D. tomentosa	303
Desmodium gangeticum	146, 317	Dipterocarpeæ	121
Detára	297	Dolichos biflorus	307
Devadhánya	269	D. bulbosus	317
Dháí	166, 297	D. sinensis	313
Dhalákurá	292	D. uniflorus	150, 307
Dháiphul	166, 297	Doná	297
Dhák	149, 313	Doodia lagopodioideæ	148, 315
Dhámani	297	Dopohoriá	294
Dhán	268, 297	Dráksbá	139
Dhane	297	Draksbá arishta	139
Dhaniá	174, 297	Dryobalanops aromatica	224
Dhánya	268	Dub	273, 298
Dhanyák	174	Dudhiálatá	298
Dháoyá	298	Dugdha vati	113
Dhátaki	166	Daralabhá	146, 298
Dhátri	226	Durbá	298
Dhátri arishta	229	Durvá, Durbá	273
Dhátri lauha	228	Ecliptá alba	305
Dhátri modaka	106	E. prostrata	182, 305
Dhaturá	298	E. erecta	305
Dherá	292	Echites antidysenterica	308
Dheras	322	E. caryophyllata	309
Dholsamudra	298	E. dichotoma	294, 325
Dhuná	121	E. frutescens	318, 321
Dhundul	298, 316	E. scholaris	317
Dhustara	208	Ela	258
Dhuturá	208, 298	Eláchi	258
Diamond	92	Eelocarpus Ganitrus	316

Elephantopus scaber	299	Gajahanda	299
Elettaria cardamomum	258, 298	Gajapipal	253, 298
Eleusine corocana	269, 315	Gaja pippuli	253
Eluá	298	Gájar	299
Embelia Ribes	138, 324	Gálá	277
Embelia glandulifera	324	Galanga major	307
Emblica officinalis	226, 291	Galedupa Indica	304
Enhydra fluctuans	301	Galega purpurea	318
E. Heloncha	186	Galena	73
Erand, Eranda	298, 232	Galitakushtári rasa	80
Erend	232, 298	Gam	268, 299
Erythrina Indica	313	Gámári	219, 298
Eugenia acutangula	300	Gambhár	219
E. Jambolana	165, 301	Gambhári	219
Euphorbiaceæ	226	Gandhaka	26
Euphorbia antiquorum	234, 323	Gandhabená	272, 295
E. ligularia	234, 319	Gandhabirajá	247, 319
E. Neriifolia	234, 319	Gand bábul	292
Euryale ferox	111, 309	Gandhabhádulia	179, 315
Ferula alliacea	301	Gandháli	179, 315
Ferula Assafoetida	176, 301	Gandha márjára	281
Feronia elephantum	132, 304	Gandhanákuli	259, 318
Ficus Bengalensis	236, 324	Gandharáj	299
F. Carica	292	Gandha taila	26
F. glomerata	236, 322	Gandpater	300
F. heterophylla	322	Gangádhara churna	195
F. hispida	302	Gánjá	236, 238
F. Indica	324	Ganiári	220, 290, 299
F. infectoria	236, 313	Ganikáriká	220
F. oppositifolia	302	Gántiálá	299
F. religiosa	236, 293	Garbhavilása rasa	68
Flacourtia cataphracta	315	Garbhavinoda rasa	56
F. Ramontobi	324	Gardenia florida	299
F. sapida	324	Gargaredhán	269, 299
Foeniculum vulgare	174, 309	Garlic	263
Gáb	322	Gavedhuká	269
Gaertnera racemosa	309	Genhu	268, 299
Gairika	96	Gentianaceæ	201

Gentiana Chirayta	201	Grapes	139
Geraniaceæ	125	Gratiola Monniera	214, 295
Ghantáparul	299, 311	Grewia Asiatica	314
Ghiátorai	298, 316	G. elastica	297
Ghikumár	299	Ghrita	284
Ghikumári	260	Grislea tomentosa	166, 297
Ghinálitá	303	Guá	250, 300
Ghoránim	309	Guábáblá	292, 325
Ghoshálatá	306	Guda mandura	50
Ghritakumári	260, 299	Gudatvak	225
Gimásák	300	Gudhal	301
Gloriosa superba	264, 308	Guduchi	106
Glycine labialis	151	Guduchyádi taila	52, 107
Glycine debilis	310	Guggul	300
Glycyrrhiza glabra	144, 325	Guggulu	133
Gmelina arborea	219, 298	Guilandina Bonducella	154, 315
Goálilatá	299	Gujráti eláchi	298
Gobhi	299	Gulancha	106, 300
Godhuma	268	Gular	236, 322
Gojiálatá	299	Gulma kálánala rasa	65
Gokshura	299	Gulsakari	311
Gokshurádyavaleha	126	Gulshabbá	316
Gokshuri	126	Gumá	298
Gokshuru	126, 299	Gadáshtaka	232
Gold	57	Gunj	300
Golmarich	242, 310	Gunjá	152
Gomphrena globosa	291	Gunjábhadrá rasa	153
Gomuk	299	Gunjádyá taila	153
Goráchakra	311	Gutiká	86
Gorakcháuliá	311	Gurach	106, 300
Gorakmundi	311	Gurkámái	303, 325
Gorá nebu	127, 301	Guttiferæ	120
Gorochohá	285	Guváka	250
Gossypium herbaceum	304	Gymnema sylvestre	310
Grahanikapáta rasa	67, 113	Gynandropsis pentaphylla	293, 320
Grahanimihira taila	195	Habush	300
Gramineæ	266	Hákuch	184
Granateæ	167	Haldi	256, 300, 312

Hálim	116, 296	Hijjai	300
Halkasá	298	Hilamochiká	186
Halud	256, 297, 300, 312	Hinchá	186, 301
Hamamelidæ	167	Hing	176, 301
Hansádi ghrita	283	Hingan	301
Háparmáli	294, 325	Hingtsha repens	186, 301
Har	300	Hingu	176
Harfarauri	308	Hingulesvara	31
Harhuch	186, 301	Hingvástaka churna	176
Haridrá	256	Hiptage Madhablota	309
Haridrá khandá	257	Hiraka	92
Haritaki	161, 300	Hoglá	298
Haritála	41	Holarrhena antidysen- terica	193, 308
Harinhará	316	Holchus sorghum	268, 325
Harisankara rasa	78	Honey	278
Hárjorá	293	Hordeum hexastichum	268, 325
Harsankari	293	Hrasvapanchamula	147
Harsingár	190, 318	Hridayárnava rasa	66
Hartshorn	282	Hrivera	124
Háthájori	314	Hriverádi	103
Hátisusrá	300	Hulhul	320
Hedysarum Alhagi	298	Hurhur	290
Hedysarum gangeticum	146, 317	Hurhuriá	290, 320
Helicteres Isora	294	Hutásana rasa	101
Heliotropium Indicum	300	Hydrocotyle Asiatica	177, 310
Hemidesmus indicus	196, 292	Hygrophila spinosa	216, 306
Hená	310	Hyoseyamus niger	212, 313
Hentál	301	Hyperanthera moringa	319
Herpestis Monniera	214, 295	Hypoxidæ	251
Hibiscus cannabinus	312	Hypoxis orchioides	251, 321
H. esculentus	322	Ichchhávedi vaticá	229
H. longifolia	322	Ichnocarpus fru- tescens	196, 318, 321
H. moschatus	124	Ikshu	266, 267
H. mutabilis	320	Ikshugandhá	126, 216
H. phœniceus	320	Imli	158, 322
H. Populneoides	299, 313	Imperata arundinacea cyrill	297
H. Rosa-sinensis	301	I. cylindrica	267, 297
H. vitifolius	323	Indigofera tinctoria	312

Indrajab	301	J. humile	320
Indrásana	236	J. Sambac	191, 309, 312, 323
Indraváruni	173	Jatámánsi	181, 301
Indráyan	173, 301, 309	Játi	191, 301
Indrayava	193	Játiphaládi churna	183, 240
Indurkáni	311	Jatropa curcas	303
Inguá	301	Jaw	268, 325
Ipomœa digitata	295, 324	Jawásá	298
I. Quamoclit	303	Jayamangala rasa	58
I. reptans	303	Jayanti	302
I. Turpethum	204, 322	Jayapál	229, 302
Iron	46	Jayphal	301
Iron pyrites	56	Jedwár	258
Ishermul	292, 320	Jetimadhu	325
Isora corylifolia	294	Jháu	302
Jab	268, 325	Jhanjbaniá	299
Jabá	301	Jhánti	302
Jáfrán	307	Jhingá	302
Jagnadumar	236, 322	Jiáputá	315
Jalkumbhi	307	Jibai	302
Jalpipali	301	Jiba ság	302
Jamálgotá	229, 302	Jimikand	313, 320
Jáman	301	Jingan	302
Jámbava	165	Jiol	302
Jambira	127	Jirá	174, 302
Jambir nebu	301	Jiraka	174
Jambu	165	Jirakádi modaka	175
Jámun	165	Jirakádi taila	175
Jangi haritaki	161	Joán	325
Jáarak nebu	128	Joár	268, 325
Jarámlá	295	Jonesia Asoka	144, 293
Jashtimadhu	325	Juglans regia	291
Jasminaceæ	190	Juin	325
Jasminum auriculatum	325	Justicia Adhatoda	215, 324
J. chrysanthemum	320	Juthi	325
J. grandiflorum	191, 301	Jválánala rasa	241
J. pubescens	307	Jvarabrahmásra	39
J. hirsutum	307	Jvaraghni gutiká	173

Jvarakunjara páribhadrarasa	97	Kálimarich	242, 310
Jvaramurári rasa	100	Kálinga	193
Jvaránkusa	208	Kálkásundá	156, 305
Jvarásani rasa	77	Kálmeg	217
Jyantishmati	140	Kalmi sák	303
Kachnár	157, 303	Kamal	303
Káohródám	304	Kamala	233
Kachu	302	Kamala	110
Kachur	258	Kamaláguri	303
Kadali	258	Kamarakh	304
Kadalyádi ghrita	259	Kambilá	233, 303
Kadam	302	Kámesvara modaka	241, 251
Kæmferia rotunda	295	Kamilá	233, 303
Káephal	235, 305	Kamlá nebu	127, 311
Káguji nebu	127, 312	Kampilla	233
Kahu	164, 292	Kámrángá	125, 304
Kaisara guggulu	135	Kaná	244
Kaith	304	Kanak champá	304
Kajjali	31	Kanakphala	229
Kakalá	303	Kánohan	303
Kakamáchi	211	Kánohanára	157
Kákar sing	141, 304	Kánchanára guggulu	158
Kakdumar	302	Kánchará	304
Kakjanghá	302	Kandarpakumarábhra	78
Kákali	303	Kaner	192, 304
Kákráringi	141, 304	Kángni	268, 304
Kákri	172, 304	Kangu	268, 304
Kákrol	304	Kaniár	304
Kákur	304	Kankáyana modaka	253
Kalá	258, 302	Kánkur	172
Kálágnirudra rasa	53	Kánsa	75
Kálajám	165, 301	Kantái	324
Kálájira	103, 306	Kántágurkámái	290, 302
Kálánala rasa	280	Kántajáti	307
Kála nimak	85	Kantakári	209, 304
Kálári rasa	208	Kantakári ghrita	211
Káliakará	302	Kantakáryavaleha	210
Kalikári	264	Kantakulika	306

Kántál	313	Kásamarda	156
Kántá natiá	222	Kasaundá	156, 305
Kapardaka vasma	82	Kásisa	55
Kápás	304	Kásisádyá taila	55
Kaphaketu rasa	101	Kásmari	219
Kapikachohhu	148	Kasuru	305
Kapittha	132	Kasturi	280
Kapittháshtaka churna	133	Kat	159, 305
Kápur	223, 305	Katái	209, 304
Karabi	192, 304	Kataka	201
Karalá	304	Kateli	209, 304
Karamohá	304	Kathar	313
Karanja	154	Kathbel	132, 304
Karaundá	304	Katkaraunj	315
Karankusa	272	Katki	305
Karavira	192	Katphala	235
Karavirádyá taila	192	Katphaládi churna	235
Karchur	318	Katsareyá	307
Karelá	320	Katuka	213
Kareli	304	Katurohini	213
Karihári	264, 308	Káyaphal	305
Karil	304	Kelá	302
Karkach salt	85	Kelikadamba	297
Karkatasringi	141	Keorá	305
Karkati	172	Kesarája	182
Karmaranga	125	Kesur	305
Kárpás	304	Kesuriá	182, 305
Karpur	223, 305	Ken	305
Karpura	223	Kená	305
Karpura haridrá	258	Kento sáp	279
Karpura rasa	224	Keyá	305
Karpura taila	224	Khadira	159
Karpurhaldi	305	Khádiráshtaka	160
Karuná	127	Khaer	159
Karuná nebu	305	Khágrá	306
Karwitarui	306	Khai	270
Kás	305	Khajur	306
Kása	267	Khámálu	297

Khambhári	298	Koshám	306
Khandakushmándaka	168	Kososthá	287
Khandakádyá lauha	50	Kovidára	157
Khandámalaki	227	Kowádodi	303
Kharamanjari	222	Kramuka	250
Kharbujá	306	Kravyádi churna	129
Khareti	121, 294	Krisnabhasma	29
Khári lavana	90	Krishnábhra	76
Khári noon	90	Krishnachurá	306
Kharjura	251	Krisna jiraka	103
Kharpara	71	Krishnakeli	306
Kharpara varti	72	Krishna surmá	73
Khas	271	Kshára	90
Khas khas	322, 325	Kshiri	315
Khátási	281	Kubjaprásárani taila	180
Khayer	305	Kuch	152
Khejur	251, 306	Kuchilá	199, 307
Khesári	151, 322	Kujá	307
Khetpáprá	177, 306	Kujái	307
Khip	315	Kukkurbandá	307
Khirá	172, 322	Kukkutádi ghrita	288
Khirai	298	Kukubha	164
Khirkhejur	315	Kukursungá	307
Khorásáni yamáni	212, 313	Kul	306
Kinsuka	149	Kulaka	199
Kiramál	154, 304	Kulattha	150
Kirátádi taila	202	Kuliákhará	216, 306
Kirátatikta	201	Kulinján	256, 307
Kismis	139	Kulthi	150, 307
Kiwanch	148, 294, 304	Kumrá	168, 308
Kodo	306	Kunch	300
Kodoá dhán	268, 306	Kundarkhati	307
Kodrava	268	Kundphul	307
Koi	110, 307	Kunduri	325
Kokan	310	Kundururu	137
Kokiláksha	216	Kumuda	110
Koksima	307	Kupilu	199
Korá	268, 304	Kur	181, 308

Kurchi	193, 308	Langphul	308
Kureyá	193, 308	Lankáyiká	319
Kus	308	Lasorá	294, 318
Kusa	267	Lasuna	263
Kusamphul	308	Latá kasturi	124, 308
Kusávaleha	268	Latá kasturiká	124
Kushmánda	168	Latáphatkari	140
Kushmándaka ghrita	170	Lathyrus sativus	151, 322
Kustha	181	Latjirá	222, 292
Kusum	308	Láu	291
Kut	308	Lauha	46
Kutaja	193	Lauhásava	49
Kutajaleha	194	Lauká	291
Kutajárishta	195	Lauraceæ	223
Kutajáshtaka	193	Laurus Cæsia	321
Kutki	305	Lavana	84
Kyllingia monocephala	312	Lavanga	165
Labiatae	220	Lawsonia alba	310
Lao	277	Lead	72
Lagenaria vulgaris	291, 305	Leea hirta	302
Laghu gangádhara churna	196	Leea macrophylla	298
Laghu surana modaka	253	Leeches	276
Lahasun	316	Leguminosæ	144
Lájá	270	Lepidium sativum	116, 296
Lájak	308, 323	Lettsomia nervosa	207
Lajjávati	308, 323	Leucas linifolia	298
Lákshá, lákh	277	Liqdidambar orientale	167, 319
Láksháditaila	277	Ligusticum Ajowan	325
Lálchandan	155, 316	Liliaceæ	260
Lálchitá	187, 316	Lime	82
Lálgulmakhma	291	Limonia scandens	308
Lálmurgá	310	Limnanthemum cristatum	303
Láluká	298	Limpáka	127
Lámajjaka	272	Linum usitatissimum	293
Lámjak	272, 308	Litharge	73
Lang	308	Lobia	313, 316
Langa	308	Lodh	190, 309
Lángaliká	264	Lodhra	190

Loganiaceæ	199	Málati	309
Loná	308	Malliká	309
Luffa acutangula	306	Mallotus Philippensis	233, 303
Luffa aegyptiaca	298, 316	Malvaceæ	121
Luffa amara	306	Manashilá	44
Luffa cylindrica	298	Mánaka	253
Luffa pentandra	316	Manakká	139
Luvunga scandens	308	Mánamanda	254
Lycopodium imbricatum	314	Mána suranádya lauha	49
Lythraceæ	166	Manda	269
Madana	178, 309	Manduá	315
Madana modaka	241, 242	Mandukaparni	177
Mádár	197, 291, 292, 296, 308	Manduki	214
Mádhavilatá	309	Mangifera Indica	141, 292
Madhu	278	M. sylvatica	306
Madhuka	189	Mango	141
Madhukarkatiká	127, 128	Manjishtá	310
Madhuriká	174	Manjistádyá ghrita	179
Madhyama náráyana taila	262	Manjit	179, 310
Magrelá	103, 306	Mánkachu	253, 309
Májoon	239	Mánkand	253, 309
Mahábalá	121	Manmathábhra rasa	80
Mahábari bach	256, 307	Mansásij	234, 319
Mahágandha rasa	33	Maranta dichotoma	319
Mahálakshibilás rasa	79	Mararphali	294
Mahámritunjaya lauha	64	Maricha	242
Mahánároh rasa	230	Marichádyá taila	286
Mahásvásári lauha	52	Marsá	310
Mahátálesvara	43	Marsilea quadrifolia	320
Mákál	301, 309	Maruá	269, 315
Makaradhvaja	59	Madar	296
Makhána	111, 309	Másha	150
Makkai	271	Máshabaládi kvátha	122
Mako	303	Másháni	151, 310
Makoy	211	Máshaparni	151
Mákrákendu	303	Másha taila	289
Mákshika	278	Máshkalái	310
Makushtha	150	Máshoni	310

Masina	293	M. Faanesiana	292
Masur	150, 310	M. pudica	308, 323
Masura	150	M. Sirisa	319
Mat	309	M. Suma	317
Matar	150, 303, 318	Mimusops Elengi	189, 323
Material objects, classification of	1	M. hexandra	315
Mátulunga	127	M. Indica	315
Mauá	189, 309	Mineral acids	12
Mauálu	309	Minerals, classification of	21, 23
Maulsarau	189, 323	Mirabilis Jalapa	306
Mauri	174, 309	Misreyá	174
Mayin	178, 309	Mithábish	98
Medicated oils, preparation of	13	Mithá nebu	128
Medicines, action of	5	Mithi tumbi	291
————, administration of	9	Mochá	123
————, classification of	2	Mocharasa	123
————, forms of	9, 17	Mollugo Cerviana	300
Mehamudgara rasa	53	Momordica Charantia	304, 320
Melia Azadirachta	309, 312	M. Cochinchinensis	304
Melia sempervirens	309	M. mixta	304
Meliaceæ	137	M. muricata	304, 320
Melilotus parvifolia	323	M. monodelpha	172, 325
Mendi	310	Moong	310
Menispermaceæ	104	Morinda citrifolia	290
Menispermum cordifolium	300	M. tinctoria	290
M. tomentosum	320	Moringaceæ	118
Menyanthes cristata	303	Moringa pterygosperma	118, 319
Merásingi	310	Morus Indica	322
Mercury	27	M. parvifolia	322
Mestápát	312	Mot	150
Mesua ferrea	120, 311	Mothá	311
Metals, calcination of	24	Motiá	312
Methi	145, 310	Mridviká	139
Methi modaka	145	Mriganábhi	280
Mica	76	Mriganábhyadyavaleha	281
Michelia Champaca	295	Mrigánka rasa	58
Milk and its preparations	282	Mrigá sringa	282
Mimosa Catechu	305		

Mrinála	110	Nabamaliká	312
Mritasanjivani surá	275	Nágabala	121
Mritunjaya rasa	99	Nágara mustaka	265
Muchkand	310	Nágar muthá	265, 311
Muchukunda	124	Nágaranga	127
Mucuna pruriens	294, 304	Naga tripudians	279
Mudga	150	Nágdoná	311
Mudgaparni	150	Nágdoni	311
Mug	150	Nagia Putranjiva	315
Mugáni	150, 310	Nágkesar	120, 311
Muktá	93	Nágorigond	319
Muktápáti	319	Násona	203
Mulá	311	Náshpáti	292
Mulhatti	144, 325	Nái	311
Muli	311	Nák	292
Munj	311	Nákohhikni	296
Murdásang	72	Nakhi	15
Murmuriá	311	Naotamála	154
Murvá	311	Nakuládyá ghrita	288
Musa Paradisiaca	253, 302	Nal	312
Musa sapientum	302	Nalipatári	312
Musaceæ	258	Nálitá	312
Mushabbar	260	Narácha churna	205
Mushali	321	Narácha rasa	231
Musk	280	Nárange	311
Mushkdáná	308	Narasára	90
Mustaka	265	Naráyana taila	262
Mutrakriehohántaka rasa	206	Narchá	303
Muthá	311	Nardostaehys Jatamansi	181, 301
Myrica Nagi	305	Nárial	248, 312
Myrica sapida	235, 305	Nárikela	312
Myricæ	235	Nárikela khanda	249
Myristicæ	225	Nárikela khára	87
Myristica fragrans	301	Narkul	312
Myristica officinalis	301	Nátá	315
Myrrh	137	Nátákaranja	154
Myrsinæ	188	Nátiyá ság	310
Myrtacæ	165	Nanolea Cadamba	302

<i>N. cordifolia</i>	297	<i>N. stellata</i>	312
Nausádar	90	<i>Ocimum Basilicum</i>	221, 324
Nava jvaránkusa	208	<i>O. pilosum</i>	221, 324
Naváyasa lauha	51	<i>O. sanctum</i>	220, 322
Nayáphatki	140, 302	Odina Wodier	302
<i>Nelumbium speciosum</i>	110, 303	OI	252, 320
Nemuka	104	<i>Oldenlandia corymbosa</i>	306
Nepáli dhániá	133	<i>O. biflora</i>	177
<i>Nerium odorum</i>	304	<i>O. herbacea</i>	177
<i>Nicotiana Tabacum</i>	213, 321	Olibanum	137
Nidána	xii	Olla	252
Nidigdhiká	209	<i>Ophelia Chirata</i>	201
<i>Nigella sativa</i>	103, 306	<i>Ophioxylon</i> or <i>Rauwolfia</i>	318
Nihsuki	280	Orchidaceæ	259
Nil	312	Orpiment	41
Nilofar	312	<i>Oryza sativa</i>	268, 297
Nilotpala	110	<i>Ougenia dalbergioides</i>	322
Nilsáplá	312	<i>Oxalis cooniculata</i>	125, 296
Nim	137	<i>Oxystelma esculentum</i>	298
Nim oil	137	Páchak	181
Nimba	137	<i>Paohyrhizus angulatus</i>	317
Nimbuka]	127	Pád	204
Nirbishi	312	Padma	110, 313
Nirgundi	218	Padma gulancha	320
Nirmali	201	Padmakáshta	313
Nisá	256	<i>Pæderia foetida</i>	179
Nisindá	218, 319	Páhári erand	303
Nisoth	204, 322	Pákhar	313
Nitrate of potash	90	Pákri	236
Nityánanda rasa	75	Pákur	236, 313
Nivára	268	Palás	313
Noári	308	Palása	149
Nyctaginaceæ	222	Palás pipal	313
<i>Nyctanthes arbor tristis</i>	318	Pálanki	313
Nymphæaceæ	110	Pálitámandár	313
<i>Nyphæa Lotus</i>	110, 316	Palmaceæ	248
<i>N. rubra</i>	110, 300	Pálong ság	313
		Palwal	170, 314

Pán	245, 321	Páthá	104
Panchabhadra	178	Pathádyá churna	194
Pancha jiraká páka	104	Páthor ohur	314
Pancha kasáya	138	Pathyá	161
Panchámrita parpati	33	Pathyádi kvátha	162
Pancha nimba gudiká	138	Pátinebu	127
Pancha pitta	285	Patol	314
Panchatikta ghrita	138	Patola	170
Panchavalkala kasáya	236	Patoládi kvátha	171
Panchavaktra rasa	100	Patoládyá churna	171
Pandanus odoratissimus	305	Pattanga	225, 314
Panderiá	315	Pavonia odorata	124, 301
Pándusudana rasa	34	Páyasa	270
Palasa	313	Pearls	93
Paniálá	315	Pelitory root	186
Pániámlak	315	Pentapetes phoenicea	294
Panicum frumentaceum	268	Pentaptera Arjuna	292
P. Italicum	304	P. tomentosa	293
P. miliaceum	268	Pethá	168, 308
P. uliginosum	300	Peucedanum Sowa	310
Pánikánchirá	301	Peyá	269
Pániphál	320	Phalaghrita	261
Pánsuja	86	Phalsá	314
Panwar	295	Pharbitis Nil	206
Papaveraceæ	112	Pharhad	313
Papaver somniferum	112, 290	Pharnaceum Mollugo	300
Pár	314	Phársá	314
Párada	27	Phaseolus aconitifolius	150, 309
Pareira Brava	105	P. Mungo	150, 310
Parespipal	299, 313	P. Roxburghii	150, 310
Parkati	236	P. radiatus	150, 310
Parnása	220	P. trilobus	150, 310
Parpata	177	Phlomis Zeylanica	298
Páruí	204	Phoenix dactylifera	251, 314
Paspalum scrobiculatum	268	P. paludosa	301
Pát	312	P. sylvestris	251, 306
Pátalá	204	Phoot	298
Pater	293	Phragmites Karka	312

Phuti	298	Pittántaka rasa	94
Phyllanthus distichus	308	Pitvan	148, 315
P. Emblica	226	Piyál	314
P. longifolia	308	Pladera decussata	202, 317
P. Niruri	295	Pliha panchánana rasa	63
Physalis flexuosa	211	Plumbaginaceæ	186
P. Peruviana	321	Plumbago rosea	187
P. edulis	321	Plumbago zeylanica	186, 296
Piáj	313	Poa cynosuroides	267, 308
Piásál	293	Pohokarmuly	315
Piororrhiza Kurroa	213, 305	Poi	315
Pilu	314	Poisons	7
Pimpinella involuoratum or c. Roxburghianum	324	Poláng	315
Pindakhejur	314	Polanisia felina	320
Pindára	314	P. icosandra	290
Pinus Deodara	248	Polyanthes tuberosa	316
P. longifolia	247	Pongamia glabra	154, 304
P. Webbiana	246, 321	Portulaca oleracea	309
Pipal	236, 314	P. quadrifida	309
Piperaceæ	242	Posoqueria dumetorum	309
Piper aurantiacum	316	Pothos officinalis	253, 298
P. Betle	245, 321	Pottali hemagarbha	58
P. Chaba	245, 296	Pradarári lauha	195
P. longum	244, 314	Pramehamihira taila	263
P. nigrum	242, 310	Pránadá gudiká	243
Pippali	244	Prasárani	179
Pipul	244	Prasárani leha	179
Pippuládi lauha	52	Pravála	93
Piring sák	315, 319	Precious stones	23
Pistia Stratiotes	307	Premna herbacea	295
Pisum sativum	150, 318	P. integrifolia	290
Pita bhasma	30	P. spinosa	220, 299
Pita chandana	226	Priangu	315
Pitáli	314	Prisniparni	148
Pitasála	155	Prithisára taila	154
Pitbalá	293	Prithuká	270
Pitohandan	300	Prunus amygdalus	294
Pittala	75	Psidium pomiferum	292

<i>Pterocarpus marsupium</i>	155	Rakta káchan	157
<i>P. santalinus</i>	155	Rakta simul	123
<i>Pterospermum acerifolium</i>	304	Raktotpala	110
<i>P. suberifolium</i>	124	Rála	121
<i>P. Heyneanum</i>	310	Rámavána rasa	101
<i>Ptychotis Ajowan</i>	173	Rambhá	258
Puga	250	Rámkrpura	305
Puisák	315	Rámsar	294
Punarnabá	315	Ramtarni	322
Punarnavá	222	Rándhuni	174, 324
Punarnavá mandura	286	Randia dumetorum	309
Punarnaváshtaka	223	Ráng	68
Punarnavá taila	223	Rángálu	316
Punarnavávaleha	223	Ranunculaceæ	98
<i>Punica Granatum</i>	166	Raphanus sativus	311
Punnág	315	Rasa	27
Punnága	233	Rasakarpura	29, 37
Parána ghrita	284	Rasánjana	74, 108
Pushpánjana	74	Rasánjanádi churna	108
Putikaranja	154	Rasaparpati	31, 32
Putranjiva Roxburghii	315	Rasasindura	30
<i>Pyrus communis</i>	292	Rasáyanámrita lauha	129
<i>P. Malus</i>	318	Rasendra gudiká	34
<i>Quamoclit vulgaris</i>	303	Rásná	259, 316
Rági	269, 315	Rásná guggulu	260
Rái	316	Rásná panchaka	260
Rái sarisá	115, 316	Rasot	108
Rája másha	150	Rasun	316
Rája mrigánka rasa	34	Rasuna	263
Rajanigandha	316	Rátalu	316
Rajanihásá	190	Rativallava pugapáka	251
Rájiká	115	Ratnagarbha pottali rasa	58
Rájanirghantu	xi	Ratnagiri rasa	93
Rakta chandana	155, 316	Realgar	44
Raktachitraka	187	Rechanaka	233
Raktajhinti	308	Red ochre	96
Rakta kamal	306	Renuká	316
Rakta kambal	110, 316	<i>Rhus acuminata</i>	304

<i>R. succedanea</i>	141, 304	Sajiná	319
<i>Ricinis communis</i>	232, 298	Sajnábij	321
Rithá	314	Sákambari	86
Rohish	305	Sákhu	317
Rohitaka lauha	52	Saktu	270
Romaka	84	Sál	293
<i>Rosa alba</i>	321	Salái	317
<i>Rosa glandulifera</i>	318	Sála	121
<i>Rosa moschata</i>	307	Sálmali	123
<i>Rosa pubescens</i>	307	Sálpáni	146
<i>Rottlera tinctoria</i>	233	Sálaparni	146
Rubiaceæ	177	Salts	23
<i>Rubia cordifolia</i>	179	Sáluk	307
<i>Rubia Munjista</i>	179	Sáluka	110
Rudrákh	316	Salvadora Indica	314
Rudráksha	316	S. Persica	314
<i>Ruellia longifolia</i>	306	Salvinia cucullata	311
Rukkesa rasa	229	Samak	321
<i>Rumex vesicarius</i>	296	Samasarkara churna	254
Rupya	61	Sambalakhára	39
Rutaceæ	127	Sambhal	319
Ruvuka	232	Sambhálu	218
S. Munja	311	Sambhunáth rasa	113
S. officinarum	266, 301	Sambukádi taila	238
S. Sara	267, 317	Sambuka vasma	82
S. spontaneum	267	Samira gajakesari	200
Sádá hurhuriá	293	Sámudra	84
Sadangan guggulu	136	San	317
Saffedá	73	Sánchi	317
Safed chandan	225, 296	Sandan	322
Sufed sambal	39	Sanhuly	317
Sahadebi	309	Sánkálu	317
Sahinjan	319	Sankha drávak	13
Sáin	317	Sankhahuli	202
Saindhava	84	Sankhapushpi	202
Saindhavádyá taila	256	Sankha vashma	82
Sájji	88	Sankha vish	39
Sájimáti	89	Sansevierá Zeylanica	311

S. Roxburghiana	311	Saurástra mritiká	97
Sánt	222	Saussurea auriculata	181
Santaleæ	225	Sauvarchala	86
Santalum album	225, 296	Sauviránjana	73
Sapindaceæ	140	Schrebera swietenoides	299
Sapindus emarginatus	314	Scindapsus officinalis	253
S. trifolius	314	Scirpus Kyscor	305
Sapotaceæ	189	Scitamineæ	254
Saptaparna	192	Scrophulariaceæ	213
Saptasáli vati	36	Seb	318
Sar	317	Segun	317
Sara	267	Sehund	234
Saraca indica	144	Sehunda	234
Saral	247	Selaginella imbricata	314
Sarala	247	Semal	317
Sarala drava	247	Semicarpus Anacardium	142
Sarahati	318	Senna Sophora	305
Sásangadhara	xii	Senna Tora	295
Sarbajayá	318	Siorá	317
Sarcostemna brevistigma	319	Sepháliká	190
Sarisá	115, 318	Serpent poison	279
Sárivá	196	Serratula anthelmintica	184
Sarivan	146, 317	Sesameæ	217
Sarjikádyá ohurna	89	Sesamum Indicum	217
Sarjikákshára	89	Sesbania aculeata	302
Sarphonká	318	S. grandiflora	323
Sarson	318	Sesili Indicum	173, 323
Sarvángasundara rasa	93	Setaria italica	304
Sasá	322	Seuli	318
Satamuli	261	Senti	318
Satábari	318	Sev	318
Satávári	261	Seyálá	316
Satávar	318	Shadanga pániya	266
Satávári ghríta	261	Shadbindu taila	183
Sati	258	Shaddharana yoga	187
Satílá	150	Shadgranthá	252
Saubhágya sunti	255	Shadguna balijárita rasa	28
Saubhágýá vatiká	100	Shahad	278

Sharifá	299	Sitabhaniji	63
Shiájirá	174, 320	Sital ohini	303
Shiulichhop	303	Sitalpátir gach	319
Shorea camphorifera	224	Sitáphal	299
Shorea robusta	121, 317	Sitopaládi churna	272
Shyamádhán	268	Siuli	190
Siákul	319	Sivá ghrita	288
Siál kántá	319	Sival	316
Sida alba	121, 311	Smilaceæ	265
S. cordifolia	121, 294	Smilax China	265
S. rhombifolia	121, 293	Snehaphala	217
S. rhomboidea	121, 309	Snuhi	234
S. spinosa	311	Sobhánjana	118
Siddhártha	115	Sohága	81
Siddhi	236, 294	Solanaceæ	208
Sigru	118	Solanum Indicum	211, 325
Siktha	279	S. Jacquinii	209, 304
Silájatu	96	S. Melongena	324
Siláras	167, 319	S. nigrum	211, 303
Silha	319	S. xanthocarpum	209, 304
Silhaka	167	Somaráji taila	185
Silver	61	Somesvara rasa	54
Sim	319	Somlatá	319
Simbi	150	Somráj	319
Simul	123, 317	Somráji	184
Sinapis	115	Soná	321
Sinapis glauca	115	Sondháli	156, 292
Sinapis racemosa	316	Sonf	174, 309
Sindhuvára	218	Sorá	90
Sindura	73	Soraka	90
Sindurádyá taila	73	Sorghum saccharatum	297
Sinhanáda guggulu	27	Sothaghni	222
Singhára	320	Sowá	174, 310
Siphonanthus Indica	295	Sphatikári	80
Siris	319	Sphœranthus indicus	311
Sisá	72	Sphœranthus mollis	311
Sisaka	72	Spirituons liquors	273
Sieu	319	Spondias mangifera	292

Sringárábhra	79	Surjamani	320
Sringavera	254	Surmá	72
Sringibish	325	Surana pindi	253
Sringyádi churna	141	Suryávarta rasa	65
Srikhanda	225	Sushavi	174
Sriparni	219	Susruta	ix
Srivása	247	Sutikávinoda	68
Srotánjana	74	Suvarna	57
Sterculiaceæ	124	Suvarnaka	156
Stereospermum suaveo- lens	204, 314	Svachobhanda bhairava rasa	63
Stephania hernandifolia	104, 314	Svalpa drávaka	13
Sthalkamal	320	Svalpa jvaránkusa	208
Sthalpadma	320	Svalpa kasturi bhairava	280
Sthulagranthi	256	Svalpa khadira vaticá	160
Storax	167	Svalpa másha taila	152
Streblus asper	317	Svalpa rasuna pinda	264
Styracæ	190	Svarnajui	320
Strychnos potatorum	201	Svarna mákshika	56
Strychnos nux vomica	199	Svarna parpati	59
Suchiká bharana rasa	279	Svarna sindura	36
Sudhá	161	Svarna vanga	70
Sudhánidhi rasa	50	Svása kuthára rasa	45
Sufied musli	252	Svetákand	291
Sugandha bálá	124, 301	Sveta punarnavá	222
Sugar	266	Svet berelá	309
Suklajhinti	313	Svet goláb	321
Sukti vashma	82	Svetpadma	315
Sulachanamritábhra	78	Syámá dhán	321
Sulharana yoga	200	Syámáka	268
Sulpha	310	Syámalatá	197, 321
Sulphate of copper	66	Syonáka	203
Sulphate of iron	55	Seyala	316
Sulphur	26	Symplocos racemosa	190
Sunsuniá	320	Syzygium Jambolanum	165, 301
Sunti	254	Tábá nebu	187, 324
Sunti ghrita	255	Tábásir	323
Supári	250	Tabernæmontana coronaria	321
Surana	252	Tagar	321

Tagarmul	303	Tentul	322
Tákápáná	307	Teori	204, 322
Tál	249, 321	Tephrosia purpurea	318
Tálá	249	Tepuria	321
Tálakesari rasa	43	Teramnus labialis	310
Talc	76	Terminalia Arjuna	164, 292
Tálisapatra	246, 321	T. Bellerica	163, 324
Talishádyá churna	247	T. Chebula	161, 300
Tálmakháná	216, 306	T. tomentosa	293
Tál muli	251, 321	Thalkuri	177, 310
Támál	321	Thespesia populnea	299
Tamála	321	Thivan	299
Tamarindus Indica	158, 322	Thohar	234, 319
Tamarix gallica	302	Tikta láu	305
T. Indica	302	Tiktádyá ghrita	154
Tambáku	321	Tiktaráj	316
Támbula	245	Til	217, 322
Talamuli	321	Tila	217
Támra	62	Tillaka	190
Támrakuta	213	Tin	68
Támresvara	66	Tinis	322
Tandulámbu	270	Tinospora cordifolia	106, 300
Tandulia	222	Tinospora tomentosa	320
Tankana	81	Tisi	293
Tankanádi vati	182	Tintiri	158
Tára	61	Tor	151, 290
Tára mákshika	56	Torái	302
Tarbud	204	Totmilá	302
Tarbuz	321	Tragia involucrata	325
Tarmuj	321	Trailakya chintámani rasa	93
Tarulatá	303	Trapa bispinosa	320
Taruna jvarári	32	Trapusha	172
Tectona grandis	317	Trayadasánga guggulu	134
Tejpát	225, 321	Treacle	267
Tejapatra	321	Trewia nudiflora	314
Tekári	321	Tribulus terrestris	126
Tekátásij	323	T. lanuginosus	299
Telákuchá	325	Trichosanthes anguina	296

T. dioica	170, 314	Unmádankura rasa	208
T. palmata	309	Unmatta	208
Trifolium Indicum	323	Usira	271
Trigonella corniculata	319	Utpaládi sritam	111
T. foenum græcum	145, 310	Uraria lagopodioides	148
Trijátaka	225	Urid	150, 310
Trikatu	254	Uridhán	268, 313
Trinarája	249	Urine	285
Trinetra rasa	69	Urostigma religiosum	293
Triphalá	162	Uriticeæ	236
Triputa	204	Vabbula	161
Triputi	151	Vachá	252
Triticum vulgare	268, 299	Vágbhatta	ix
Trivrit	204	Vaisvánara kshára	91
Trophis aspera	317	Vajrakapáta rasa	32
Tryushanádi lauha	53	Vajri	234
Tulasi	220	Vákuchi	184
Tulsi	220, 322	Vakula	189
Tuttha	66	Valeriana Jatamansi	181, 301
Tumbi	305	Valerianaceæ	131
Tumburádyá churna	205	Vallaris Heynei	294, 325
Tumburu	133	Vallisneria spiralis	316
Tumri	133	Vanaharidrá	258
Tumru	322	Vanádraka	256
Tun	312, 322	Vánari	148
Turbud	321	Vánari vati	149
Turpentine	247	Vanayamáni	173
Tut	322	Vanda Roxburghii	259
Tutri	322	Vanga	68
Tvach	322	Vangesvara rasa	69
Typha augustifolia	298	Vansa	272
T. elephantina	298	Vansarochona	272
Uchobhe	320	Várshiki	191
Udakamanjari rasa	285	Varuna	116
Udumbara	236	Varunádyá churna	117
Uk	301	V. ghrita	117
Ulu	297	V. guda	117
Umbelliferae	173	V. taila	118

Varvara	221	Vishnu taila	263
Vásáohandanáni taila	216	Vitex Negundo	218, 319
Vásaka	215	V. trifolia	218
Vásákushmánda khandá	169	Vit lavana	85
Vasanta kusumákara rasa	94	Vitis quadrangularis	293
V. málati	71	V. pedata	299
V. tilaka rasa	281	V. vinifera	139, 298
Vásávaleha	215	Viverra Zibetha	231
Vátari rasa	135	Vridhdhárak	207
Vatsanáva	98	Vrihat panchamula	147
Venuja	269	V. sarbajvarahara lauha	47
Verbenaceæ	218	V. somanátha rasa	54
Verbesina calendulaceæ	182	V. surana modaka	253
Vernonia anthelmintica	184	Vrihat váta gajánkusa	62
Vetála rasa	43	Vrihat vangesvara rasa	70
Vibhitaki	163	Vrihati	211
Vicia lens	150	Volkameria infortunata	294
Vidári	206	Wax	278
Vidyádharábhra	50	Wedelia calendulacea	295
Vidyádhara rasa	43	Weights measures	7
Vigna catiang	313	Withania somnifera	211, 293
Vigna sinensis	150	Woodfordia floribunda	166, 297
Vijapura	127	Yakridári lauha	52
Vijayá	236	Yamáni	173
Vijayaparpati	59	Yasada	71
Vilepi	269	Yashtimadhu	144
Vilva	130	Yava	268
Vilva taila	132	Yavakshára	88
Vimba	172	Zanthoxylum alatum	322
Vindu ghrita	234	Z. hostile	322
Virana	271	Zea Mays	271
Visálatvak	192	Zingiber Cassumunar	256, 323
Visha	98	Z. officinale	254, 292
Vishamushti	199	Z. zernmbet	256
Visha taila	102	Zizyphus Jujuba	306
Vishama jvarántaka lauha	48	Z. œnopia	319
Vishnukrántá	292		

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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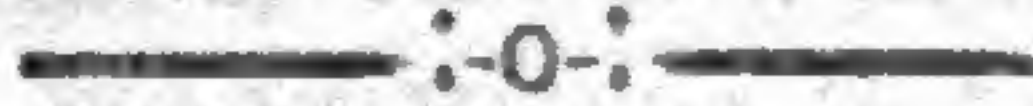
It is a very valuable work and I am delighted to see a Hindu scholar throwing so much light on a most important but little known branch of Sanskrit learning.

Professor E. B. Cowell.



Fills up a gap in the English Medical literature of India.

Indian Medical Gazette.



The work forms a valuable contribution to the history of drugs and will be found both useful and interesting by every student of medicine. Nor is it without interest to the general reader to whom the descriptions will be perfectly intelligible.

* * *

The glossary of Indian plants that concludes the volume affords one more illustration of the valuable results that must always follow in a combination of skilled European and native labour on such subjects. There are many similar publications in existence, but they are for the most part defective and obsolete. The combined work of Dr. Dutt and Dr. King has produced a most valuable contribution to the botanical science of the world.

Calcutia Review, July, 1877.



If Babu Udoy Chand Dutt is disappointed in the circulation of his work it will not be for want of a worthy design or of any of the qualities necessary to its successful accomplishment, but of a class of appreciative readers, sufficiently large to give his labours usefulness of the high order at which he aims.

Englishman.



* * * We have no hesitation in declaring his "Hindu Materia Medica" to be one of the most valuable contributions to Indian medical literature, added during the present age. His work will be considered as a glorious example of what a well educated doctor with long experience and a disinterested love for his fellow beings and with a true appreciation of what was good in olden times, can do for his own country. Our acknowledgements are due to him for his eminent services to the cause of the Hindu system of medicine, which will, we hope, continue to receive fresh exposition from him. * * * Now that the value of the Hindu system of treatment and of indigenous drugs in chronic diseases is beginning to be more and more appreciated, it will be well for all medical practitioners in India to secure a copy of Babu Udoy Chand Dutt's "Hindu Materia Medica." The knowledge of the Hindu System of Medicine so long considered difficult to attain, has by the present work been made much easier of acquisition.

The Indian Mirror, April 27, 1877.

