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THE

MATERIA MEDICA

OF THE HINDUS,

COMPILED FROM SANSKRIT MEDICAL WORKS,

BY

UDOY CHAND DUTT,

Civil Medical Officer.

WITH A GLOSSARY OF INDIAN PLANTS,

BY

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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 A'yurveda are the oldest and most celebrated treatises on Hindu medicine now extant. An older work called A'yurveda 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. *Vájikaruna*, or aphrodisiacs.

The A'yurveda with a hundred thousand *slokas* is probably a myth, but the abridged A'yurveda 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 the 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 A'treya, a learned devotee, taught the holy A'yurveda to six pupils ; namely, Agnivesa, Bhela, Játukarna, Parásara, Hárta 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 this *tantra* or scientific treatise was composed by Agnivesa and corrected by Charaka. A later writer Vāgbhatta in his introduction to his *Ashtānga-hridaya-sanhitā* says, that that work had been compiled from the treatises of Agnivesa, Hārīta, Bhela, Sāsvata, Susruta, Kavala, and others. From this it would seem that the six disciples of A'treya, mentioned in Charaka, were not mythical beings, but authors of books, for two of them, namely, Agnivesa and Bhela are mentioned by Vāgbhatta. It would appear also that at the time Vāgbhatta lived, Agnivesa's work was not called by the name of Charaka, and Susruta had also been written. Hence it follows that Charaka's edition of Agnivesa, that is the work now called Charaka, was probably edited after Susruta had been written. A'treya 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 Dridhabala, 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 दृढबलो जातः पञ्चनदे पुरे । क्त्वा बह्व्यस्तन्त्रभ्यो विशेषज्ञ
बलोऽयम् । सप्तदशौषधाध्यायैः सिद्धिकल्पैरपूरयत् ।

शेषाध्यायचरक सिद्धिस्थान ।

† कुञ्जिकांश्च किलाटांश्च शौकरं मथमहिषे । मत्स्थान् दधि च माषांश्च
यवकांश्च न शीलयेत् ।
चरकसूत्रस्थान आत्माश्रितायाध्यायः ।

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 a more advanced state of knowledge, both of general principles and of details of treatment.

The origin of the Susruta A'yurveda is thus described in the introduction to that work. Dhanvantari, the surgeon of heaven, descended upon earth in the person of Diva dása, 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 A'yurveda, 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 Brajendrakumar 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

* बीजं चिकित्सितस्यै तत्समासेन प्रकीर्तितं । सविंश मध्याय शतसख
व्याख्या भविष्यति । तच्च सविंशमध्याय शतंपञ्चसु स्थानेषु । तत्र सूत्रस्थान
निदान शारीर चिकित्सित कल्पेष्वर्थ वशात् सविभज्योत्तरे तन्त्रे शेषानर्थान्
व्याख्यास्याम । सुश्रुतः प्रथमाध्यायः ।

† तत्र धन्वन्तरीयानामधिकाः क्रियाविधौ वैद्यनां कृतयोग्याणां व्यधशोधन
रोपणे । चरकचिकित्सितस्थान गुल्माधिकारः ।

in ancient times. Their comprehensive character and superior merit probably led, in course of time, to the extinction of the 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 sampradáya is a phenomenon unknown in Hindustan.

The next compilation on Hindu Medicine is said to be the *Ashtānga-hridaya-sanhitá* by Sinha Gupta Sena Vágbhatta. 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 Vágbhatta 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 *Nidána* by Mádhava Kara and *Chakradatta-sangraha* by Chakrapáni 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 *Nidána* 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-sangraha, describes in detail the treatment of diseases arranged in the order in which they are described in the Nidána of Mádhava 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 Nidána, 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 Bhávaprakása, compiled by Bháva 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 writers; in short Hindu pathology and therapeutics had reached their acme. Dr. Wise says that the Bhávaprakása was composed about three hundred years ago. It cannot, at any rate, be a much older work. China root, called Chob-chini in the vernacular, is described in it. According to Fluckiger and Hanbury 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 Bhávaprakása 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 Rájanirghantu. It is generally

ascribed to Dhanvantari, but Pundit Madhusudan Gupta estimated the age of this work at 600 years. As both mercury and opium are mentioned in this treatise, it cannot be older. Some later compilations on this subject are in general use at the present day. In the North-West Provinces, the Nirghantu, compiled by Madanapála, 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 Rasendra-sárasangraha. As observed on page 54, most of the mineral medicinal 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 Yunáni 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.

1. Taleef Shareef, translated by George Playfair, page 99.
 2. Idem, page 26.
 3. Idem, page 146.

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 in the *Bhávaprakása*; the *Amrita-ságar*, a Hindi translation of a treatise on Sanskrit medicine; and the *Kesava-binoda-bhásá Nirghantu*, a Hindi treatise on therapeutics translated from the Sanskrit by Pandit Kesava-prasáda 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 Panjab 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.

Dr. Norman Chevers kindly corrected for me some of the forms, and put me in the proper way of doing this work. Rai Kánái Lál Dey Bahadur has, at considerable sacrifice of his valuable time, analyzed the mineral substances and preparations, the chemical composition of which has been described in the first part of this work. Most of these preparations have now for the first time been analyzed by him. To Dr. Rájendralála Mitra, I am indebted for valuable advice regarding the plan of getting up this work, and for explanations of some obscure questions regarding the history of Indian medical works.

To Kaviráj Binod Lál Sen, my grateful acknowledgments are due for the very liberal manner in which he has furnished me with lists of medicines generally used in practice, supplied me with specimens of native medicines, and practically shewn and explained to me the processes by which metallic medicines are prepared in the dispensary under his charge. His cordial assistance has enabled me to bring out this work with greater confidence than if I had had to depend upon my knowledge of Sanskrit books alone.

Kaviráj Brajendra Kumár Sen Gupta, son of the late learned Hárádhan Sen Gupta, the leading native physician of his time in Calcutta, and latterly physician to his Highness the Maharaja of Kashmere, has interpreted for me the meanings of many obscure passages in Sanskrit, furnished me with specimens of drugs from his dispensary, supplied me with a list of the preparations ordinarily used by him in practice, and cordially rendered me such other assistance as I had occasion to seek from him.

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, are called *Virudh*, *Pratánavatya* or *Valli*. Lastly, those grasses, etc., which die after maturing their fruits, are called *Oshadhi*. Animals are divided into four classes, namely, *Jaráyuja* or mammalia, *Andaja* or oviparous, *Svedaja* or those produced from animal excretions, as parasites, etc., and *Udbhijja* or those produced under ground or from vegetable matter, as for example *Indragopa*, a sort of red insect.

All parts of vegetables may be used in medicine, namely,
Root, as of *Chitraka* (*Plumbago Zeylanica*).

Underground stem, as of *Surana* (*Amorphophallus campanulatus*).

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

Fruits, as the three Myrobalans.

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

Extract, as Catechu, Opium, etc.

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

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

Gum, as Myrrh, Assafoetida, etc.

Sometimes the entire plant is used as *Kantakári* (*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, *Páarthiva* or material and *Kálakrita* 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 disease. These classes are as follows :—

1. जीवनीय *Jivántya*—Medicines which prolong life.
2. वृंहणीय *Vrinhántya*—Medicines which promote nutrition and increase corpulency.
3. लेखनीय *Lekhántya*—Medicines which thin the tissues, or reduce corpulency.
4. भेदनीय *Bhedántya*—Promote excretions.
5. सन्धानीय *Sandhántya*—Promote the union of fractured or divided parts. [power.
6. दीपनीय *Dipántya*—Increase the appetite and digestive
7. बल्य *Balya*—Increase strength. Tonics.
8. वर्य *Varnya*—Improve the complexion.
9. कण्ठ्य *Kanthyá*—Improve the voice, or cure hoarseness.
10. हृद्य *Hridya*—Promote cheerfulness or relish.
11. तृप्तिघ्न *Triptighna*—Remove a supposed phlegm which causes a sense of satiety.
12. अर्शोघ्न *Arsoghna*—Cure piles.
13. कुष्ठघ्न *Kushthayghna*—Cure skin diseases.
14. कण्डुघ्न *Kandughna*—Cure pruritus.

15. कृमिघ्न *Krimighna*—Cure worms.
16. विषघ्न *Vishaghna*—Act as antidotes to poisons.
17. स्तन्यजनन *Stanyajanana*—Promote secretion of milk.
18. स्तन्यशोधन *Stanyasodhana*—Improve the quality of milk.
19. शुक्रजनन *Sukrajanana*—Increase the secretion of semen.
20. शुक्रशोधन *Sukrasodhana*—Purify the semen.
21. स्नेहोपयोग *Snehopayoga*—Emollients.
22. स्वेदोपयोग *Svedopayoga*—Diaphoretics.
23. वमनोपयोग *Vamanopayoga*—Emetics.
24. विरेचनोपयोग *Virechanopayoga*—Purgatives. [enemas.
25. आस्थापनोपयोग *A'sthápanopayoga*—Medicines for use in
26. अनुवासनोपयोग *Anuvásanopayoga*—Medicines for oily
enemas. [from the nose.
27. शिरोविरेचनोपयोग *Sirovirechanopayoga*—Promote discharge
28. कर्हनिग्रहण *Chhardinigrahana*—Relieve vomiting.
29. तृष्णानिग्रहण *Trishnánigrahana*—Relieve thirst.
30. हिक्कानिग्रहण *Hikkánigrahana*—Relieve hiccup.
31. पुरीषसंग्रहणीय *Purishasangrahaníya*—Render the fæces con-
sistent. [fæces.
32. पुरीषविरजनीय *Purishavirajaníya*—Alter the colour of the
33. मूत्रसंग्रहणीय *Mutrasangrahaní'ya*—Reduce secretion of
urine.
34. मूत्रविरजनीय *Mutravirajaníya*—Alter colour of urine.
35. मूत्रविरेचनीय *Mutravirechaníya*—Increase secretion of
36. काशहर *Kásahara*—Cure cough. [urine.
37. श्वासहर *Svásahara*—Cure difficult breathing or asthma.
38. शोथहर *Sothahara*—Cure anasarca or swellings.
39. ज्वरहर *Jvarahara*—Febrifuges.
40. श्रमहर *Sramahara*—Remove fatigue. [body.
41. दाहप्रशमन *Dáhaprasamana*—Relieve burning or heat of
42. शीतप्रशमन *Sítaprasamana*—Relieve sense of coldness.
43. जदूर्द्धप्रशमन *U'darddhaprasamana*—Cure urticaria. [limbs.
44. अङ्गमर्द्दप्रशमन *Angamarddaprasamana*—Relieve pain in the
45. मूलप्रशमन *Sulaprasamana*—Cure pain in the bowels.
46. शोषितस्थापन *Sonitasthápana*—Styptics.
47. वेदनास्थापन *Vedanásthápana*—Anodynes.
48. संज्ञास्थापन *Sanjñásthápana*—Restore consciousness.

49. प्रजास्यापन *Prajásthápana*—Cure sterility.

50. वयःस्यापन *Vayahsthápana*—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. Fruit-bearing 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 shews 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. This 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. Sárangadhara 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, **श्वेदन** *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 *Vacha* (*Acorus Calamus*).

घ्राहि *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 *Váji'karana* or aphrodisiacs are medicines which increase the sexual powers.

विष *Visha* or poisons are said to be endowed with the following qualities, namely, व्याधयो *Vyavádyi'*, that is affecting the entire system, as for example, opium and hemp. सूक्ष्म *Sukshma* that is, penetrating into the minutest pores of the body. विकृति *Vikási*, that is drying the humours, depressing the system and causing relaxation of the joints, as for example betel-nuts. आग्नेय *A'gneya*, that is, heating or stimulant. मदावह *Madávaha*, 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*, *sauráshṭrika sringi*, *kálakūṭa*, *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*), *datura*, roots of *Nerium odorum* (*karavirá*), and *Gloriosa superba lánguli* and the milky juices of *Calotropis gigantea* (*arka*) and *Euphorbia neriiifolia* (*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 two⁷ 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* माषा.
- 8 *Máshás* or 16 *ánás* make one *tolá* तोलक.
- 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* आदक.
- 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 *tolás*, 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 *tolás* 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.

स्वरास *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.

काय *Kvátha* 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.

फ़ाण्ट *Phánṭa* 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 *Páni'ya* 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 *Pramathyá* 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.

मन्य *Mantha* is an emulsion of medicines in fine powder with four parts of cold water.

क्षीरपाक *Kshi'rapáka* 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*.

अवलेह *Avaleha* or extract. To prepare it, decoctions, after being strained, are again boiled down to the consistence of a thick extract. This extract, when properly made, does not readily dissolve in water, can be drawn out into wires, and will receive

impressions of coins on its surface. Extracts are administered with the addition of sugar, decoctions, or powders.

वटिका *Vaṭiká* and गुड़िका *Guḍiká* 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.

खण्डपाक *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 *Bhávana* 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 *vaṭapaṭra* (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 *Sandhánavarga* or products of acetous fermentation. काञ्जिक *Kánjika*. This is a sour liquid produced from the acetous fermentation of powdered paddy. Two seers of powdered *ás 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 *Dhánýámla*, 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 *Tushámvu*. *A'rnála* 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.

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

शङ्खद्रावक *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 *arishṭa* or medicated spirituous liquors. These are prepared from honey and treacle, with the addition of various medicinal substances. They are all steeped in water and aid 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 *A'sava*. When the decoction of drugs only is added, the fermented liquor is called *Arishṭa*. These preparations combine the properties of spirituous drinks and those of the drugs used in preparing them. They are heating, stimulant, easily digested and stomachic. The preparation called *Drākshārisṭa* 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 exceeds four, each of the fluids ordered is taken in quantity equal to the oil or *ghrita*, and the whole boiled together.

वृत्तपाक *Ghritapáka* 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.

तैलपाक *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 *Pavonia 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,

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

musk, *Permelia perlata* (*saileya*), root of *Aplotaxis auriculata* (*kushṭa*), seeds of *Abelmoschus moschatus* (*latākasturi*), etc.

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*), root-bark 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* (*vaṭasunga*), turmeric, wood of *Berberis Asiatica* (*dāruharidrā*), the bark called *naliká*, ginger and the shoots of *Pandanus odoratissimus* (*ketaki*), each half a tola for four seers of oil. Castor oil should be boiled with equal parts of whey and *kánjika* (fermented paddy water) along with the above ingredients.*

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

ON THE DIFFERENT MODES IN WHICH MEDICINES
ARE APPLIED.

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

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

फलवर्ती *Phalavarti* or suppositories were recommended to be made of the size of the patient's thumb. They were smeared with clarified butter and introduced into the rectum. The following is an example of a suppository. Take of 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 *Avapiḍa* and the latter, *Pradhmana*. 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 **प्रतिचारण** *Pratisārana*.

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 the pulse called *māshakalāya* and then filling the cavity thus formed on the top of the head with lukewarm oil. The oil is directed to be retained till relief of pain, or till there is discharge from the eyes and nose. It should then be removed and the head washed with warm water. This sort of medication is said to be useful in severe headache and shaking of the head. In the second form, oil or other fluid is poured in a stream on the head. This is called *Parisheka*. In the third form, called *Pichu*, cotton soaked in oil is applied to the scalp; and in the fourth, called *Avyanga*, 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 *A'shotana*. A poultice enclosed within a piece of cloth and applied over the lids is called *Pinda*. A paste applied to the lids is called *Viddlaka*. 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* *Ushmasveda* or the application of hot steam. This is effected in various ways. The part to be heated is covered with wet cloth. Bricks, stones or iron plates are made red hot and sprinkled over with *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. **द्रवस्नेह** *Dravasveda*. This means the hot hip-bath and hot bath with warm water or decoctions. Milk, broth, oil, *kánjika* 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 *Dhumapána* 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 are 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.

चारकम् *Kshárakarma* 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 *Kuṭaja*.—*Holarrhena antidysenterica*.

पलाश *Palása*.—*Butea frondosa*.

अश्वकथ *Asvakarna*.—*Shorea robusta*.

पारिभद्र *Páribhadra*.—*Erythrina Indica*.

विभितक *Vibhitaka*.—*Terminalia Bellerica*.

आरग्वध *A'ragvadha*.—*Cassia fistula*.

लोध्र *Lodhra*.—*Symplocos racemosa*.

अर्क *Arka*.—*Calotropis gigantea*.

सुहि *Snuhi*.—*Euphorbia neriifolia*.

अपामार्ग *Apámárga*.—*Achyranthes aspera*.

करञ्ज *Karanja*.—*Pongamia glabra*.

वासक *Vásaka*.—*Justicia Adhatoda*.

कदलि *Kadali*.—*Musa sapientum*.

चित्तक *Chitraka*.—*Plumbago Zeylanica*.

पूतिक *Putika*.—*Cesalpinia Bonducella*.

देवदारु *Devadāru*.—*Cedrus Deodara*.

व्यास्फोता *A'sphotā*.—*Vallaris dichotoma*.

करवीर *Karavira*.—*Nerium odorum*.

सप्तपर्ण *Saptaparni*.—*Alstonia scholaris*.

गम्भारि *Gambhāri*.—*Gmelina arborea*.

गुञ्जा *Gunjā*.—*Abrus precatorius*.

कोषातकी *Koshātaki*.—*Luffa pentandra*.

The roots, stems and leaves of these plants or of such of them as are available, are cut into pieces and burnt in a pit. The ashes are then collected and boiled in six times their weight of water till the solution becomes transparent, red, pungent and soapy to the feel. It should then be strained and again put on fire and the following substances added, namely, ashes of *Euphorbia neriifolia* (*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 *kānjika* should be applied. Caustics are applied to external piles, sinuses, fistulæ 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 *Svarnamákshika* and *Táramákshika*, loadstone, orpiment, realgar, sulphate of copper, sulphate of iron, cinnabar, minium or red lead, sulphuret of lead, calamine (*kharpara*), *Silájatu* (a bituminous substance containing iron), alum, borax, chalk, calcined cowries and conch shells, *Gairika* a sort of red mountain earth or ochre, *Kankushta* a sort of mountain earth, *Sauráshtri* a fragrant earth from Surat, sand, clay, etc.

The precious stones described are, 1 *Hiraka*, diamond; 2 *Gárutmat*, emerald; 3 *Pushparága*, topaz; 4 *Mánikya*, ruby; *Indrani*, 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 *Navaratna* or the nine gems. *Rájavarta*, an inferior kind of diamond from Virat, and *Vaikránta*, 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; *Sámbara*, Sambar lake salt; *Saurarchala*, sonchal salt; *Bit*, black salt; *Sámudra*, sun-dried sea salt, commonly known as *Karkach*; *Audbhida*, a saline efflorescence on *reh* lands; *Pánsuja* or salt obtained from saline earth; *Yavakshára*, impure carbonate of potash; *Sarjikákshára*, impure carbonate

of soda; *Sarvakshára*, mixed ashes of several plants; *Narasára* 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 *márana*, 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.

सुषायन्त्र. *Musháyántra* 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 common 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.

वातुकायन्त्र. 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** *Urdhha-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 *ámula-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 । तज्जातदधिजं सर्पिर्गन्धतैलं वदन्ति हि । गन्धतैलं गलत्कुष्ठं हन्ति लेपाच्च भक्षणात् ॥ सन्देह-भञ्जनी ।

2. गन्धपाषाणचूर्णेन यवचारेण पेषितम् । शिध्नागं ब्रजत्यागु कटुतैल-युतेन वा ॥ चक्रः ।

Ādityapāka 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 *Rasa*.

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

1. आदित्यपाकं तैलम् । मञ्जिष्ठा त्रिफला लाक्षा निशा शिलाजम्बुकैः ।
चूर्णितैस्त्रैलमादित्यपाकं पामाहरं परम् ॥ चक्रः ।

2. सिंहनादगुग्गुलुः । पलत्रयं कषायस्य त्रिफलायाः मुचूर्णितम् । सौगन्धिक
पलञ्चैकं कौशिकस्य पलन्तथा ॥ कुडवं चित्रतैलस्य सर्व्वमादाय यत्नतः । पाचयेत्
पाकविद्वैद्यः पात्रे लौहमध्ये दृढे ॥ हन्ति वातं तथा पित्तं श्लेष्मानं खञ्ज-
पङ्कताम् । श्वासं सुदुर्जयं हन्ति काशं पञ्चविधं तथा ॥ कुष्ठानि वातरक्तञ्च गुल्म-
शूलोदराणि च । आमवातं जयेदेतदपि वैद्यविवर्जितम् ॥ चक्रः ।

* There is a passage in Charaka in the chapter on *Kushtā* or skin diseases which some physicians construe into a recommendation for the use of mercury. It is this सर्व्व व्याधिविनाशनं मद्ग्रात कुष्ठी रसञ्च 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 *pārada*, 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 *Kavirájas*. Mercury is first rubbed with brick-dust and garlie, then tied in four folds of cloth and boiled in water over a gentle fire for three-hours in an apparatus called *Dolá 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 *Urddhapátana 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 *Shadguna bali jarita rasa*² is thus prepared. A little sulphur is placed in an earthen pot, and over it some mercury. The pot is heated in a sand-bath, and, as the sulphur begins to melt, cautiously and gradually more of it is added to or placed over the mercury, altogether to the extent of six times the weight of the

1. हिङ्गुलोत्तरसः । जम्बीरनिम्बुनीरेण मर्दितं हिङ्गुलं दिनम् । जङ्घपातन-
यन्त्रेण याद्यः स्यान्निस्रलो रसः । कञ्चुकैर्नागवङ्गाद्यैर्निर्घृतो रसकर्म्मणि ॥
रसेन्द्रसारसंग्रहः ।

2. षड्गुणं गन्धकं तत्र क्षिपेदल्पाल्पकं शूनैः । तैलरूपो यदा गन्धस्ततोऽवतारयेत्
द्रुतं । स्थाङ्ग शीते दृढे गन्धे स्फोटयित्वा रसं नयेत् । सर्घ्वरोगेषु दातव्यो रसो
व्याधिनिसूदनः ॥ रसेन्द्रसारसंग्रहः ।

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 *pánsu* (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 *Bhāvaprakāśa* gives the following process for its preparation.³ Take of purified

1. कृष्णभस्म । लौहपात्रेऽथवा ताम्ब्रे पलैकं शुद्धगन्धकम् । सृष्टग्निना द्रुते तस्मिन् शुद्धसूतं पलत्रयम् ॥ क्षिप्त्वा चालयेत् किञ्चित् सौहदार्व्या पुनः पुनः । गोमये कदलीपत्रं तस्योपरि च चालयेत् ॥ रसेन्द्रसारसं ग्रहः ।

2. श्वेतभस्म । पिष्टं पांशुपटु प्रगाढममलं वज्रप्रस्वनानैकशः सूतं धातुगतं खटीकवलितं तत् संपुटे रोधयेत् । अन्तःस्थं लवणस्य तस्य च तले प्रज्वाल्य वज्रं हटात् घञ्जं याह्यमथेन्दुकुन्दधवलं भस्मोपरिस्थं शनैः ॥ रसेन्द्रसारसं ग्रहः ।

3. अथ कर्पूररसस्य विधिः । तत्र पारदस्य संचिप्रशोधनं कर्त्तव्यम् । शुद्धसूतसमं कुर्यात् प्रत्येकं गैरिकं सुधीः । इष्टिकां खटिकां तद्वत् स्फटिकां सिग्धुजन्म च । बल्ल्मीकं चारुलवणं भाण्डरञ्जकसृष्टिकाम् । सर्वाण्येतानि संचूर्ण्य वाससा चापि शोधयेत् । एभिश्चूर्णैर्युतं सूतं यावद्यामं विमर्द्दयेत् । तच्चूर्णसहितं सूतं स्वालीमध्ये परिक्षिपेत् । तस्या स्वाली सुखे स्वालीमपरां धारयेत् समाप्तम् ।

mercury, *gairika* (red-ochre), brick dust, chalk, alum, rock salt, earth from ant-hill, *kshári lavana* (impure sulphate of soda) and *bhándaranjaka*, 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 *Pita bhasma*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 *bhūmyámalaki* (*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 adhere below

सवस्त्रकुट्टितमृदा सुद्वयेदनयोर्मुखम् । संशोष्य सुद्वयेद्भयो भूयः संशोष्य सुद्वयेत् ।
सम्यक् विशोष्य सुद्रां तां स्थालीं चुल्यां विधारयेत् । अग्निं निरन्तरं दद्यात् याव-
द्दिनचतुष्टयम् । अङ्गारोपरितदन्तं रक्षेद्यत्नादहर्निशम् । शनैरुद्धाटयेद् यन्त्र
सूर्जं स्थालीगतं रसम् । कर्पूरवत् सुविमलं गृह्णीयाद् गुणवत्तरम् ॥ भावप्रकाशः ।

1 पीतमस्रम् । रसगन्धौ समौ कृत्वा हस्तिशुण्डीद्रवैर्दृढम् । सूषात्तिकरसैः पिष्ट्वा
पर्यन्तं दिनसप्तकम् । विष्टब्धं वालुकायन्त्रे सूषायां सन्निवेश्य तत् । दिनमेकं
ददेदग्निं मन्दं मन्दं निशावधि । एवं निष्पाद्यते पीतः शीतः सूतस्तु गृह्यते ॥

रसेन्द्र सारसंघः ।

2 रक्तमस्रं वा रससिन्दूरः । पलमात्रं रसं शुद्धं तावन् मातन्तु गन्धकम् ।
विधिवत् कज्जलीं कृत्वा न्ययोधाङ्गरवारिभिः ॥ भावनं त्रितयं दत्त्वा स्थाली-
मध्ये निधापयेत् । विरच्य क्वची यन्त्रं वालुकाभिः प्रपूरयेत् ॥ दत्त्वा तदन्ते
मन्दाग्निं पचेद्ग्रासचतुष्टयम् । जायते रससिन्दूरं तरुणारुणसन्निभम् ॥ अलु-
पानविशेषेण करोति विविधान् गुणान् ॥ रसेन्द्रसारसंघः ।

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 disease 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 खल्ले तावद्विसृजेत् । सूतं न दृश्यते यावत्
किन्तु कज्जलवद्भवेत् ॥ एषा कज्जलिका ख्याता वृंहणी वीर्यवर्द्धिनी । नानानु-
पानयोगेन सर्व्वव्याधिविनाशिनी ॥ रसेन्द्रसारसंग्रहः ।

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

*Vajrakapâta rasa.*³ Take of mercury, sulphur, opium, *mocharasa*, (gum of *Bombax 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* (*Vijayâ*) and *Verbesina calendulacea* (*bhringarâja*) seven times and make into six grain pills. This medicine is administered with honey in obstinate chronic diarrhœa. 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 then pressed

1 हिङ्गुलेखरः । त्वल्यांशं मर्दयेत् खल्ले पिप्पलीहिङ्गुलं विषम् । द्विगुञ्जं मधुना देयं वातज्वरविस्तृते ॥ भैषज्यरत्नावली ।

2 तरुणज्वरारिः । जयपाल गन्धं विप्र पारदञ्च त्वल्यं कुमारीखरसेन पिष्टम् । अस्य द्विगुञ्जा हि सितोदकेन ख्यातो रसोऽयं तरुणज्वरारिः । दातव्य एषोऽहनि पञ्चमे वा षष्ठेऽथवा सप्तमे एव वापि । जाते विरेके विजितज्वरः स्यात् पटोलसुजाम्बुनिषेवनेन ॥ भैषज्यरत्नावली ।

3 वज्रकपाटरसः । पारदं गन्धकं चैवाहिफेन सह भोजकम् । त्रिकटुं त्रिफलाञ्चैव समभेकत्कारयेत् । भङ्ग भङ्ग द्रव्यैश्चैतत् भावयेच्च पुनः पुनः । रक्तित्वयं ततश्चैव मधुना सह भक्षयेत् । असाध्यां महर्षीं हन्ति रसो वज्रकपाटकः ॥ भैषज्यरत्नावली ।

4 रसपर्पटी । पूर्वोक्तौ द्विविधशुद्धौ समानौ रसगन्धकौ । सम्मर्दा कज्जलाभन्तु चूर्णं कुर्याद्द्विदशये ॥ ततो वदरवङ्गिष्ये लौहपाले द्रवीकृतम् । गोमयोपरि सन्नप्रस्तकदलीपलपातनात् । कुर्याच्च पर्पटाकारं तखरक्तीद्वयं क्रमात् ॥ द्वादश-रक्तिका यावत् प्रयोगः प्रहरार्हतः ॥ चिकित्सारत्नः ।

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.

Mahágandha 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 cool, extract

1 पञ्चाशत्पर्यटी । अथै गन्धकतोलका रसदलं लौहं तदङ्गं शुभम् ।
लौहार्द्धञ्च वराभक्तं सुविमलं ताम्रं तदभ्रार्द्धिकम् ॥ पात्रे लौहमध्ये च मर्द्दन-
विधौ चूर्णीकृतञ्चैकतः । द्रव्यां वादर वङ्गिनातिश्टदुना पाकं विदित्वा दधे ॥
रन्माया लघु ढालयेत् पटुरियं पञ्चाशत्ता पर्यटी । श्याता क्षौद्रहतान्विता प्रति-
दिनं युञ्जाद्वयं दृढितः ॥ लौहे मर्द्दनयोगतः सुविमलं भक्त क्रिया लौहवत् ।
युञ्जादावथवा त्रिकं त्रिगुणितं सप्ताहमेवं भजेत् ॥ भैषज्यरत्नावली ।

2 महागन्धकम् । रसगन्धकयोर्पाञ्च कर्षमेकं सुधोषितम् । ततः कज्ज-
लिकां कृत्वा श्टदुपाकेन शोधयेत् ॥ जातीफलं तथाकोषं लवङ्गारिष्टपत्रके ।
एतेषां कर्षमात्रेण चूर्णेन सह मर्द्दयेत् ॥ सक्ता गृहे पुनः स्थाप्यं पुटपाकेन
साधयेत् । युञ्जाद्वयप्रमाणेन वटिकां कारयेद्दुषः ॥ एतत् प्रोक्तं कुमारारण्यं
रक्षणाय महौषधम् । अर्शोन्नं दीपनञ्चैव बलवर्णप्रसादनम् ॥ दुर्वारमहृणीरोगं
जयेच्चैव प्रवाहिकाम् । सूतिकाख्यं जयेदेतदपि वैद्यविदर्जितम् ॥ रसेन्द्रसह-
रसं सहः ।

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 Ægyptica*) 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 *Verbesina calendulacea* (*bkringarája*). When dry, mix the sulphur with the mercury, and rub together with sixteen tolás of goat-milk till the mass is fit for being made into pills. Dose about four grains, to be taken with goat-milk and juice of ginger. This pill is useful in bronchitis and cough generally.

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

1 पाण्डुसूदनरसः । रसं गन्धं मृतं ताम्रं जयपालञ्च गुग्गुलुम् । समांश-
माज्यसंयुक्तां गुडिकां कारयेद्भिषक् ॥ एकैकां खादयेन्नित्यं पाण्डुशोथोप-
शान्तये । शीतलञ्च जलं चास्त्रं वर्जयेत् पाण्डुसूदने ॥ रसेन्द्रसारसंपहः ।

2 रसेन्द्रगुडिका । कषेण शुद्धरसेन्द्रस्य स्वरसेन जयार्द्रयोः । शिलायां खल्व-
येत्तावद्यावत् पिण्डं घनं ततः ॥ जलकर्णां काकमाची रसाभ्यां भावयेत् पुनः ।
सौगन्धिकपलं मृद्गस्वरसेन विभायितम् ॥ चूर्णितं रससंयुक्तमजाचीरपलद्वये ।
खल्लितं घनपिण्डन्तु गुडिं स्निग्धकलायवत् ॥ कृत्वादौ शिवमभ्यर्च्य द्विजातीन्
परितोष्य च । जीर्णान्नोभक्षयेदेकां चीरमांसरसाशनः ॥ सर्वरूपं क्षयं
काशं रक्तपित्तमरोचकम् । अपि वैद्यशतैस्त्र्यक्तमस्त्रुपित्तं नियच्छति ॥ चक्रः ।

3 राजमृगाङ्गरसः । रसमस्त्रतयो भागा भागैकं हेमभस्मकम् । मृतताम्रस्य

two parts each and mix. Introduce the mixture into the cavities of *couries*, close their openings with borax reduced to a paste with goat-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*, *Chintámani chaturmukha*, *Yogendra rasa* etc. They are all similar in composition, with but slight variation in the proportions of the active ingredients and their adjuncts.

*Chintámani 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 *Rasa-sindura* already described, is much used in a variety of diseases.

भागैकं शिलागन्धकतालकम् ॥ प्रतिभागद्वयं शुद्धमेकीकृत्य विमर्द्दयेत् । वराटीं
 पूरयेत्तेन अजच्चीरेण टङ्गणम् ॥ पिद्वा तेन सुखं रुद्ध्वा ऋद्गाण्डे तत् निधापयेत् ।
 शुष्कं गजपुटे पाच्यं चूर्णयेत् स्वाङ्गशीतलम् ॥ रसो राजऋगाङ्कोऽयं चतुर्गुञ्जः
 क्षयापहः । दशपिप्पलिकं चौद्रैर्मरिचैकोनविंशतिम् ॥ सद्यैर्द्वापयेद् वैदेया
 वातक्षेप्यभवे क्षये ॥
 भैषजप्रत्नावली ।

1 चिन्तामणिवत्सुखः । कर्पैकं रससिन्दूरं तत्समं ऋतमभ्रकम् । तदर्द्धं
 ऋतलौहञ्च स्वर्णशाणं क्षिपेद्बुधः ॥ कन्यारसेन सम्मिष्य गुञ्जामानां त्रीञ्चरेत् ।
 अनुपानादिकं दद्यात् उद्ध्वा दोषबलाबलम् ॥ हन्ति पित्तात्मकं वायुं केवलं पित्त-
 संयुतम् । हृक्लासमरुचिं दाहं वान्तिभ्रान्तिं शिरोमूहम् ॥ प्रमेहं कर्णनादञ्च
 जङ्गद्वन्द्वकृताम् । वाधीर्यं गर्भिणीरोगमश्वरीसूतिकाभयम् ॥ प्रदरं सोम-
 रोगञ्च यच्छाणं ज्वरकाशकं । बलवर्णाग्निदः सस्यकृ कान्तिपुष्टिप्रदायकः ॥
 चिन्तामणिरसश्चायं चिन्तामणिरिवापरः ॥ रमेन्द्रसारमंघहः ।

Two other forms of this medicine in common use are called *Shad-guna balijáríta rasa sindura* and *Svarna sindura* respectively.

Shadguna balijáríta 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 tolá, purified mercury eight tolás, mix together by rubbing in a mortar, add twelve tolás 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 *Bhavaprakása*. The following are a few illustrations of its use in this disease.

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

1. स्वर्णसिन्दूरः । सूक्ष्मपत्रं सुवर्णस्य सुशुद्धं कोलसन्मितम् । शुद्धसूतपत्रे केन मेलयेद्यत्नतो भिषक् ॥ सर्द्धं पत्रं गन्धकञ्च कृत्वा कज्जलिकां ततः । निवेश्य काचकूष्याञ्च दृढायां परिवेषयेत् ॥ तां कर्पटैर्नृदा चैव खटिकाभिः समन्ततः । सम्यक्निरुध्य बलेन संपूज्येशं सहोमया ॥ वालुकायन्त्रमधेऽत्र तां सन्निरुध्य समाहितः । पचेद्वादशयामांस्तु निःसम्पाते सुनिर्ज्जने ॥ एकाकी पाकविद्द्वैद्यः स्नाङ्गशीतं ससुद्धरेत् ॥ स्वर्णसिन्दूरमित्येतत् सर्व्व रोगनिःसूदनम् ॥ संचिप्रसारः ॥

2. सप्तशालिवटी । पारदपटङ्कमानः स्यात् खदिरपटङ्कसंमितः । अकराकरभस्त्रापि व्याघ्र पटङ्कदयोन्मितः । टङ्कतयोन्मितं चौद्रं खल्ले सर्व्वञ्च निक्षिपेत् । संमर्द्ये तस्य सर्व्वस्य कुर्यात् सप्तवटीर्भिषक् । स रोगी भक्षयेत् प्रातः एकैकां अम्बुना वटीम् । वर्ज्येदस्त्रलवणं फिरङ्गस्तस्य नश्यति ॥ भावप्रकाशः ॥

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

Rasa karpura 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* (*bátyálaka*) 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. रसकूर्पूरप्राशनेविधिः । फिरङ्ग संज्ञकं रोगं रसः कर्पूर संज्ञकः । अवश्यं नाशयेदेतदुचुः पूर्वचिकित्सकाः ॥ लिख्यते रसकूर्पूरप्राशनेविधिरुत्तमः । अनेन विधिना खादेन्मुखे शोधं न विन्दति ॥ गोधूमचूर्णं सन्नोय विदध्यात् सूक्ष्म-कूपिकाम् । तन्मध्ये निक्षिपेत्सूतं चतुर्गुञ्जमितं भिषक् ॥ ततस्तु गुटिकां कुर्यादप्रथा न दृश्यते वहिः । सूक्ष्म चूर्णं लवङ्गस्य तां वटीमवधूलयेत् ॥ दन्तस्पर्शा यथा न स्यात् तथा तामम्भसा गिलेत् । ताम्बूलं भक्षयेत् पञ्चाच्छाकान् लवणान् त्यजेत् । अममातपमध्वानं विशेषात् स्त्रीनिषेवनम् ॥ भावप्रकाशः ।

2. पीत पुष्प बलापत्ररसैर्द्वयमितं रसम् । हस्ताभ्यां मर्दयेत्तावद्प्रावत्सूतो न दृश्यते । ततः संखेदयेद्दस्तावेवं वासरसप्रकम् । त्यजेत्त्वणमम्भञ्च 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 tola, realgar half a tola, powder and mix. About fifteen grains of this is used at a time. Powders for fumigation are heated over a fire of jujube tree wood, and the vapour is applied to the skin under cover in a closed room.

Mercury enters into the composition of several applications for skin diseases, as in the following. Take of cinnabar, sulphur, red oxide of lead, rock salt, seeds of *Cassia tora* (*chakramarda*), *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, eczema, prurigo, psoriasis etc.²

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

ARSENIC.

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

1. घूमप्रयोगः । पारदः कर्षमात्रः स्यात्तावानेव हि गन्धकः । तण्डुला-
श्चाक्षमात्राः सुरिषाः कुर्वति कर्ज्जलीम् । । तस्याः सप्तवटोः कुर्यात्ताभिर्धूमं
प्रयोजयेत् । दिनानि सप्त तेन स्यात् फिरङ्गान्तो न संशयः ॥ भावप्रकाशः ।

2. हेमचौरी विडङ्गानि दरदङ्गन्धकं तथा । दद्रुङ्गः कुष्ठसिन्दूरं सर्वान्येकत्र
मर्दयेत् । घत्तुरनिम्बताम्बूलीपत्नानाम् स्वरसैः पृथक् । अस्य प्रलेपमात्रेण
यामाद्द्रुविचर्चिकाः । कण्डूस्वरकसञ्चैव प्रशमं यान्ति वेगतः ॥ शार्ङ्गधरः ।

3. रसेन्द्रेण समासुक्तो रसो धुस्तूरपत्रजः । ताम्बूलपत्रजो वापि लेपो
यूकविनाशनः ॥ चक्रः ।

the Persian gulf. It is not mentioned in the more ancient Sanskrit works, neither in the list of metallic ores, where orpiment, realgar etc. are described, nor in any prescription for the treatment of diseases. In compilations of a later date, however, such as the Bhāvaprakāsa, and the Tantras, it is recommended as a powerful medicine for fever, and is now much used as such.

In these later works white arsenic is called by several names, such as शङ्खविष *Sankha visha*, साम्बलक्षार *Sámbala kshára*, फेनाश्लसम्भ *Phenásma bhasma*, and दारुमुच *Dárumuch*. None of these terms, however, is to be found in standard lexicons, such as Wilson's Sanskrit-English Dictionary, or Sir Rájá Rádhákanta 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 *sambalakshára*, *dárumuch*, and *sankha visha*.

WHITE ARSENIC.

Sans. शङ्खविष *Sankha visha*. दारुमुच *Dárumuch*. साम्बलक्षार
Sámbala kshára.

WHITE Arsenic is sold in the bazars under the names of *Sunka bish*, *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

* फेनाश्लसम्भ हरितालञ्च द्वेषात् विषे । Susruta. kalpasthána. chapter II.

1 ज्वरत्रह्यास्त्रः । विपनीञ्च समागम्य शुभ्रवर्णं सुशोभनम् । खानीय सम्बलं

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.

Dārūbrahma 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 nigundo* (*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.

देवि तोलक द्वय सम्मितम् ॥ स्वच्छगोमूत्रमानीय शरावेस्यापयेद्दुषः सम्बलं तत्र
संक्षिप्य दिवसत्रयमेव च ॥ तत उद्धृत्य देवेशि कुकशिम्वारसेषु च । स्थापयेद्दिन-
मेकन्तु ततः स्वच्छजलेन च । संशोध्य स्थापयेद्देवि निर्मलेकाचपात्रके । एकसप्तप
मानं तत् ज्वरागमनपूर्वतः ॥ फेषीमध्यगतं क्त्वा भक्षेच्चस्थिरमानसः । अथवा
शर्कराद्रात्रैः पीत्वारोगी सुखीभवेत् । एवं दिनत्रयं भुक्त्वासुच्यतेज्वरसङ्कटात्
जीर्णं ज्वरे तथावाते कम्पज्वरे विशेषतः निश्चितं ज्वरसुक्तः स्यात् सत्यं सत्यं न
संशयः ।

तन्त्रोक्तः ।

1 दारुब्रह्म वा कर्णिकरसः । रसजं शङ्खविषञ्चैव कृष्णा धुस्तूरवीजकैः । जम्बी-
राणां द्रवैर्मर्द्दं द्विगुञ्जं परिमाणतः । गन्धपत्रानुपानेन कर्णिकाणां कुलान्तकतः ॥

संक्षिप्तसारः ।

2 चण्डेश्वररसः रसं गन्धं विषं ताम्रं वास्बलं क्षारमेव च । आर्द्रैकस्य रसे नैव

ORPIMENT.

Sans. हरिताल, *Haritāla*.

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

मर्द्दयेद् याममात्रकम् ॥ रसेनापि च तेनास्य भावयेत् सप्तवारकम् । निर्गूण्डीखर-
सेनापि भावयेत् सप्तधा पुनः ॥ गुञ्जाईमाना वटिका शुद्धाईकरसेनवै ।
मूलादेव ज्वरं हन्ति तैलाभ्यङ्गं समाचरेत् ॥ सुशीतलजले स्नानं तैलमत्स्यादि
भोजनम् । चण्डेश्वरो रसो नाम सर्व्व रोगकुलान्कृत ॥ संचिप्तसारः ॥

* Babu Rájendralāla 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 near 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

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 myrobalsans, for three hours in each fluid. Some physicians, probably to save time, mix all these fluids together, and boil the orpiment in the mixture for three hours only. The dose of orpiment thus purified is from two to four grains.

Several methods of roasting orpiment are described. The *Bhávaprakása* recommends that orpiment should be powdered and made into a ball with the juice of *Boerhaavia diffusa* (*punarnavá*) 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 a 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.

have seen many MSS. in private collections which are much older, and still quite as fresh. This fact would suggest the propriety of 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.

*Vidyādhara 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.

*Tālakēsari 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*.

1. वेतालरसः । रसं गन्धं विषं तालं मरिचञ्च समांशिकम् । शिलायां मर्द्दयेत्तावत् यावत् कज्जलसन्निभम् ॥ गुञ्जामालं प्रयोक्तव्यं हरेद्द्वादशसंज्ञकम् । साध्यासाध्यं निहन्त्याशु सन्निपातं सुदारुणम् ॥ श्लानेषु लिप्पदेहेषु मोह्यस्तेषु देहिषु । दातुमर्हति वेतालं यमदूतनिवारणम् ॥ भैषज्यरत्नावली ।

2. विद्याधररसः । गन्धकं तालकं ताप्यं मृतं ताम्रं मनःशिला । शुद्धमृतस्य तल्ल्यांशं मर्द्दयेत् भावयेद्दिनम् ॥ पिप्पल्याः स्वकषायेण वज्जीचीरेण भावयेत् । निष्काहं भक्षयेत् चौद्रैः श्लिहशुल्कादिकं जयेत् ॥ रसेन्द्रसार संप्रहः ।

3. तालकेशरी । तालताप्यशिला सूतटङ्कणाः सिन्धुसंयुताः । गन्धको द्विगुणः सूतात् शङ्खचूर्णञ्च तत्समम् ॥ जम्बीराङ्गिर्दिनं षट्धा त्रिंशदंशं विषं क्षिपेत् । अथ माषद्वयं खादेन्माहिषीघृतसंयुतम् ॥ मध्वाज्यैर्वाकुचीवीजकर्षं लिङ्घ्यात् ततः परम् । तालकेशरनामायं सर्व्वकुष्ठहरो रसः ॥ भावप्रकाशः ।

Orpiment forms an ingredient of several external applications for skin diseases. Thus, take of orpiment, wood of *Berberis lycium* (*dáruharidrâ*), seeds of *Raphanus sativus* (*mulaka*), wood of *Pinus 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, *sarjikâkshâra* (impure carbonate of soda) one part, rub together with water, and apply.

REALGAR.

Sans. मनःशिला, *Manahsilâ.*

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.

*Chandesvara rasa.*³ Take of realgar, mercury, sulphur, and aco-

1. दावींमूलकजीजानि तालकं सुरदारु च । ताम्बूलफलं सर्वाणि कार्ष्णि-
कार्ष्णि पृथक् पृथक् ॥ शङ्खचूर्णं शानमात्रं सर्वान्येकत्र चूर्णयेत् । लेपोयं
वारिणा पिष्टः सिद्धानां नाशनः परः ॥ शार्ङ्गधरः ।

2. शङ्खचूर्णस्य भागौ द्वौ हरितालञ्च भागैकम् । मनःशिलाचार्द्धभागा
सर्जिका चैक भागिका ॥ लेपोऽयं वारिपिष्टस्तु केशान्तुपाच्य दीयते । अनया
लेपयुक्ता च सप्तवेले प्रयुक्तया । निर्मूलकेशस्थानं स्यात् क्षपणस्य शिरो यथा ॥
शार्ङ्गधरः ।

3 चण्डेष्टर रथः । समांशं योजयेत् खल्ले रसं गन्धं शिलां विषम् । निर्गुण्डी
सरसैर्भाष्यं त्रिवारं चाद्रक द्रवैः । युञ्जैकं भक्षयेत् प्रतिः ज्वरं हन्ति
सहोद्भूतम् ॥ रसेन्द्रसारसंघः ।

nite, equal parts, soak in the juice of *Vitex Negundo* (*nirgundi*), 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* (*apámarga*) 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
टङ्कमात्वानि मरिचं तच्चतुर्थं चम्पु ॥ त्रिकटु त्रियुषञ्चैव खल्लपिप्पली विचूर्णयेत् ।
रसः श्वासकुठारोऽयं श्वाससर्व्वज्वरापहः ॥ रवेन्द्रसारसंघः ।

2. मनःशिलाल मरिचानि तैल मार्कं पयः कुष्ठहरः प्रदेहः ॥ चक्रः ॥

3 चन्द्रप्रभावर्त्तिः । अञ्जनं श्वेतमरिचं पिप्पली मधुयष्टिका । विभीतकस्य मध्यन्तु
शङ्खनाभि र्मनःशिला ॥ एतानि समभागानि अजाचीरेणपेषयेत् । छायाशुष्कां
कृतां वर्त्तिं नेत्रेषु च प्रयोजयेत् ॥ अर्जुदं पटलं काचं तिमिरं रक्तराजिकाम् ।
अधिमांसं मलञ्चैव यस्मिन्नात्रौ न पश्यति ॥ वर्त्तिश्चन्द्रप्रभा नाम जाताम्बुसपि
शोधयेत् ॥ चक्रः ॥

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

IRON.

Sans. लौह, *Lauha*.

THREE varieties of iron are used in Hindu Medicine, namely, *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* (*kulatha*), 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. Prepared iron is a fine impalpable

1 चूर्णेन गन्धकशिला रजनीभवेन सुव्यंशकेन कटुतैलपलाष्टकं तु । घत्तूर पत्ररसतुल्यमिदं त्रिपक्वं नाडीं जयेत् चिरभवामपि कर्ष्यजाताम् ॥ भावप्रकाशः ।

powder of a reddish grey or brick-dust 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*, *Chandanādyā lauha*, etc.

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

1. वृहत्सर्व्वज्वरहर लौहम् । पारदं गन्धकं शुद्धं ताम्बं मालिकामधुकम् ।
 हिरण्यं हरितालञ्च कर्षभेकं पृथक् पृथक् ॥ ऋतकान्तं पलं देयं सर्व्वभेकीकृतं
 शुभम् । वक्ष्यमानौषधैर्भाष्यं प्रत्येकं दिनसप्तकम् ॥ कारवेक्ष्ण रसेनापि दशमूल
 रसेन च । पर्यटस्यकषायेन काथेन त्रैफलेन च ॥ गुडुच्याः खरसेनापि नागवल्ली
 रसेन च । काकमाचौरसेनैव निर्गुण्ड्याः खरसेन च । पुनर्नवार्द्रकाम्भोभिर्भावनं
 परिकल्प्य च ॥ रक्तिकादिक्रमेष्वैव वटिकां कारयेद्भिषक् । पिप्पली गुडसंयुक्ता
 वटिका वीर्य्यवर्द्धिनी ॥ ज्वरमष्टविधं हन्ति चिरकाष्टसङ्गवम् । विविधं
 वारिदोषोष्यं नानादोषोद्भवन्तथा ॥ सततादि ज्वरं हन्ति साध्यासाध्यमथापि
 वा । क्षयोद्भवञ्च घातस्यं कामशोकमवं तथा ॥ भूतावेश ज्वरं हन्ति ऋक्ष-
 दोषभवन्तथा । अभिघात ज्वरञ्चैव अभिचार सङ्गवम् ॥ अभिन्यासं महाघोरं
 विषमञ्च त्रिदोषजम् । शीतपूर्व्वं दाहपूर्व्वं विषमं शीतलं ज्वरम् ॥ प्रलेपकज्वरं
 घोरं अर्द्धनारीश्वरं तथा । स्त्रीहज्वरं तथाकाशं चातुर्थकविपर्य्ययम् ॥ पाण्डु
 रोगान् गणान् सर्व्वान् अग्निमान्द्रं महागदम् । एतान् सर्व्वान् निहन्त्याशु
 पचाङ्गेनात्रसंशयः ॥ शाल्यन्तः तक्रसहितं भोजयेद्भिजसंयुतम् । ककारपूर्व्वकं
 सर्व्वं वर्ज्जनीयं विशेषतः ॥ मीथुनं वर्ज्जयेत्तावत् यावन्न वलवान् भवेत् । सर्व्वज्वर
 हरं श्रेष्ठं मनुपानं प्रकल्पयेत् ॥
 भैषजप्ररत्नावली ।

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 *Momordica Charantia* (*káravella*), decoction of *dasamula* or ten roots (see *Hedysarum 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*, (*Vitex 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.

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

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

1. चन्दनाद्यलौहम् । रक्त चन्दनहृदिवेर पाठोशीरकणाश्रिवा । नागरोत्पल
धात्रीभिस्त्रिमदेन समन्वितः । लौहं निहन्ति विविधान् समस्तान् विषमज्वरान् ॥

रसेन्द्र सारसंपहः ।

2. विषमज्वरान्तकलौहम् । हिङ्गुलसम्भवं सूतं गन्धकेन सुकज्जलीम् । पर्प-
टीरसवत्याच्यं सूतांघ्रिहेमभक्तकम् ॥ लौहं ताम्रमन्त्रकञ्च रसस्य द्विगुणं तथा ।
वङ्गकं गैरिकञ्चेव प्रवालञ्च रसाङ्गकम् ॥ सुक्ता शङ्खं शुक्तिभक्त्य प्रदेयं रसपादिकम् ।
सुक्तागृहे च संस्थाप्य पुटपाकेन साधयेत् ॥ भक्षयेत् प्रातरुत्थाय द्विगुञ्जाफल-
मानतः ॥ अक्षुपानं प्रयोक्तव्यं कणाह्निङ्गुससैन्धवम् । ज्वरमष्टविधं हन्ति वात-
पित्तकफोज्ज्वम् ॥ स्त्रीहानं यज्ञतं गुल्मं साध्यासाध्यमथापि वा । सन्ततं सतता-
ख्यञ्च 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 tola. Beat all these ingredients together into a mass with the aid of water. Inclose the mass within bi-valve shells, cover the shells with a layer of clay and roast them lightly in cow-dung fire. This medicine is given in doses of four grains with the addition of long pepper, rock salt and 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 suranádya lauha*, *Arsári lauha*, *Agnimukha lauha* etc. The first mentioned compound is prepared as follows.

Mána suranádya lauha.¹ Take of the root-stocks of *Colocasia Indica* (*mána*) and *Amorphophallus campanulatus* (*surana*), of the roots of *Ipomœa Turpethum* (*trivrit*) 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.

Lauhásava.² Take of powdered iron, of the three myrobalans,

1. मानशूरणाद्यलौहम् । मानशूरणभङ्गातत्रिष्टह्नीसमन्वितम् । त्रिकल्प-
समायुक्तसयोर्दुर्नासनाशनम् ॥ भैषजप्रत्नावली

2. लौहासवम् । लौहवर्षं त्रिकटुकं त्रिफलाञ्च यमानिकाम् । त्रिङ्गं चित्रकं
सुस्तं चतुःपलमितं पृथक् । चूर्णीकृत्य ततः चौद्रं चतुःषष्टिपलं क्षिपेत् ।
दद्यात् शुद्धतलां तत्र जबद्द्रोणद्वयं तथा । घृतभाण्डे विनिक्षिप्य निदध्या-
न्नासमात्रकम् । लौहासवमिदं मर्त्यैः पित्तद्वेष्टिकरं परम् । पाण्डुप्रत्ययशुब्धानि
जठराण्यर्षवां रुजम् । कुष्ठश्लीहामयं कण्डुकासश्चासं भगन्दरम् । व्यरोचकञ्च
ग्रहणीं हृद्दोगञ्च विनाशयेत् ॥ शार्ङ्गधरः ।

ginger, long pepper and black pepper, *ajwain*, *baberung* seeds, plumbago root, and tubers of *Cyperus rotundus* (*mustaka*), each thirty-two tolas, 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.

A'malakādya lauha.¹ Iron enters into the composition of several medicines for hæmorrhagic diseases, such as the *Khandakādya lauha*, *Sudhānidhi rasa*, *A'malakādya 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 mandura* 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.

Vidyādharaḍbhra.³ Take of *baberung* seeds, tubers of *Cyperus rotundus* (*mustaka*), the three myrobalans, *gulancha*, root of

1. आमलकाद्यलौहम् । आमलापिप्पलीचूर्णं तुल्यथा सितश सह । रक्तपित्त-
हरं लौहं योगराजमितसृष्टम् । वृष्याग्निदीपनं बल्यं चाम्बुपित्तविनाशनम् ।
पित्तोत्थानपि वातोत्थानं निहन्ति विविधानु गदानु । रसेन्द्रसारसंपहः ।

2. गुडमण्डूरम् । गुडामलकपथ्यानां चूर्णं प्रत्येकशः पलम् । त्रिपलं लौह-
किट्टस्य तत्सर्वं मधुसर्पिषा ॥ समालोड्य समञ्जीयादक्षमातिप्रमाणतः । आदि-
मध्यावसानेषु भोजनस्य निहन्ति तत् ॥ अक्षद्रवं जरत्पित्तमम्बुपित्तं सुदारुणम् ।
परिणाम समुत्थञ्च शूलं संवत्सरोत्थितम् ॥ भावप्रकाशः ।

3. विद्याधराभ्रः । विडङ्गसुस्तत्रिफला गुडूची दन्ती तट्टवृङ्गिकटुतयञ्च ।
प्रत्येकमेषां पित्तुभागचूर्णं पलानिचत्वार्यथ सोमलस्य । गोमूत्रगुडस्य पुरातनस्य

Baliospermum montanum (*danti*), of *Ipomœa Turpethum* (*trivrit*), of *Plumbago Zeylanica* (*chitraka*), ginger, long pepper and black pepper, 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, *babering* 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

यद्वायसन्तानि शिराटिकायाः । कणाभ्रचूर्णस्य पलं विशुद्धचिश्चन्द्रिकस्य स्रक्त-
मतीव सूतात् । पादोनकपर्णं खरसेन खल्लं शिलातले मन्युमनीदलस्य ।
विशोय पश्चादतिगुडगन्धपाषाणचूर्णेन पिचून्मितेन । युक्त्या ततः पूर्व्वर-
जांसि दत्त्वा सर्पिर्मधुश्चां परिमर्दयत्नात् । निधापयेत् स्निग्धविशुद्ध भाण्डे ततः
प्रयोज्योत्स्य रघोत्तमस्य । प्राङ्मासकोद्भावय वातयो वा गवां पयो वा शिशिरं जलं
वा । पिवद्दयं योगैः प्रभूतकालप्रनष्टानखदीपनेषु । योगेषु हन्यात् परि-
नामशूलं शूलं तथाक्षद्रवसंज्ञकञ्च । यत्क्षान्त्पित्तं पृहणीं प्रष्टुं जीर्णज्वरं
क्षोहितपित्तकुष्ठम् । न सन्ति ते यानि निहन्ति रोगान् योगोत्तमः सस्यगु-
प्रास्यमानः ।

रसेन्द्रसार संयहः ।

1. नवायसंलौहम् । त्वष्टृष्वतिफलामुस्तविडङ्गचितकाः समाः । नवायो-
रजघो भागास्तत्रूर्णं मधुसर्पिषा । भक्षयेत् पाण्डुहृद्रोगकुष्ठार्थः काम-
लापहम् ॥

चक्रः ।

by two grains till the maximum quantity is reached. The above preparation with the addition of one part of the watery extract of *gulancha* is called *Guduchyádi lauha*,¹ and is given in burning of hands and feet and in diseases supposed to be caused by deranged air.

Mahásvásári lauha and *Pippuládi 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 tolás, prepared talc one tolá, honey and sugar four tolás each, the three myrobalans, liquorice root, raisins, long pepper, kernel of jujube fruits, bamboo-manna, *tálisapatri* (leaves of *Pinus Webbiana*), *báberung* seeds, cardamoms, root of *Aplotaxis auriculata* (*kushtha*), and flowers of *Mesua ferrea* (*nágakesara*), each one tolá, 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* (*Amoora Rohitaka*). In enlarged liver the following called *Yakridari lauha*³ is used. Take of prepared iron, talc and copper, each four tolás, root of *Citrus Bergamia* (*limpáka*) eight tolás, burnt deer-skin eight tolás,

1. गुडूच्यादिलौहम् । गुडूचीसारसंयुक्तं त्रिकंतयमयो रजः । वातरक्तं निहन्त्याशु सर्व्ववातहरं परम् ॥ रसेन्द्रसारसंयहः ।

2 महाश्वारािलौहम् । कर्षद्वयं लौहचूर्णं कर्षार्द्धं मभ्रमेव च । सिताकर्षद्वयञ्चैव मधुकर्षद्वयं तथा । त्रिफला मधुकं द्राक्षा कणा कोलास्थिवंशजा । तालीशपत्रं वैडूरमेला पुष्करकेशरम् ॥ एतानि क्षण्णचूर्णानि कर्षार्द्धञ्च समांशिकम् । लौहे च लौहदण्डेन मर्द्दयेत् प्रहरद्वयम् । ततो मालां लिहेत् चौरैर्बुद्ध्वा दोषबलावलम् । इदं श्वारािलौहञ्च महाश्वारसं विनाशयेत् ॥ काशं पञ्चविधञ्चैव रक्तपित्तं सुदारणम् । एकजं द्वन्वजञ्चैव तथैव सान्निपातिकम् । निहन्ति नात्र सन्देहो भास्तरस्तिभिरं यथा ॥ भेषजप्रत्नावली ।

3. यकदरिलौहम् । द्विकर्षं लौहचूर्णस्य अभ्रञ्चापि तथैव च । कर्षद्वयं कृतं तास्रं लिम्पाकाङ्गुत्वचः पत्रम् । मृगाजिनंपत्रं भस्म सर्व्वमेकत्वकारयेत् । नवगुञ्जा प्रमाणेन वटिकां कारयेद्भिषक् । यकत्प्लीहोदरं हन्ति कामलाञ्च हलीमकम् । काशं श्वारसं ज्वरं हन्याद्वलवर्णाग्निवर्द्धनम् । यकदरिविदं लौहं बालयुत्सविनाशनम् ॥ रसेन्द्रसारसंयहः ।

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 *Tryushanádi lauha*.¹ Take of *yavākshára* (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 *Kálágnirudra rasa*² is recommended. Take of mercury, sulphur, prepared tale, iron, iron rust, and iron pyrites, each one part, rub them together with water, and roast the mixture within a covered crucible; when cool add to it one-tenth part of its weight of aconite, mix intimately, and divide the mass into twenty-two grain pills.

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

1 त्रूषणादिलौहम् । अथोरजस्त्रूषण यावन्मूकं चूर्णञ्चपीतं त्रिफलारसेन शोथं निहन्यात् सहसा नरस्य यथाशनिर्दृक्सुदीर्गवेगम् ॥ रसेन्द्रसारसंपहः ।

2 कालाग्निरुद्ररसः । सूतकान्ताभ्रलौहानां भस्म साक्षिकगन्धकम् । भूष-
राख्ये पुटे पश्चाद्दिनैकं तद्विपाचयेत् । दशमांशं विषं योज्यं साधमात्रञ्च
मक्षयेत् । रसः कालाग्निरुद्रोयं दशाहेन विसर्पयुत् ॥ रसेन्द्रसारसंपहः

3 मेहसुद्गररसः । रसाञ्जनं विडं दारुविल्वगोक्षुरदाडिमाः । भूनिम्ब
पिप्पलामूलं त्रिकटुत्रिफलात्रिष्टम् ॥ प्रत्येकं तोलकं देयं लौहचूर्णान्तु तत्
समम् । पलैकं गुग्गुलुं दत्वा घृतेन वटिकां कुरु ॥ साधैकप्रसिताचयेयं मेह-
सुद्गररसङ्गिनी । श्रीमद्भ्रह्मनाथेन लोकनिस्तारकारिणी ॥ अक्षुपानं प्रयोक्तव्यं
कागीदुग्धं जलञ्च वा । त्रिंशन्मोहं निहन्याशु मूलत्रयञ्च हलीमकम् ॥

रसेन्द्रसारसंपहः ।

. *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* (*ghritakumári*) 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 । हिङ्गुजात् सम्भवं मूतं पालिधारस मर्दितम् । रण्डा-
शोधित गन्धञ्च तेनैवकञ्जली कृतम् ॥ तद्वयद्विगुणं लौहं कन्यारसवि मर्दितम् ।
अश्वकं वङ्गकं रौप्यं खर्परं मात्तिकं तथा ॥ सुवर्णञ्च समं सर्वं प्रत्येकञ्च रसाङ्क-
कम् । तत्सर्वं कन्यकाद्रावैर्मर्दयेद्भावेत्तथा । भेरुपर्णीरमेनैव वटीं गुञ्जाद्वयां
हिताम् । मधुना भक्षयेच्चापि सोमरोग निवृत्तये । प्रमेहं विंशतिं हन्ति
वज्रमूलञ्च सोमगम् । मूत्रातिसारकृच्छ्रं सुवाघातं सुदारुणम् । मूत्रदोषं वज्र-
विधं प्रमेहं मधुसङ्गकम् । हस्तिमेहमिच्छुमेहं लालामेहं विनाशयेत् । गृहे
यस्य शतं स्त्रीणां विद्यते च व्यवायिनः । न तस्यलिङ्गशैथिल्यं शुक्रक्षयो न
जायते । अग्निञ्च कुरुते दीप्तिमन्तपित्तञ्च नाशयेत् । वातिकं पैत्तिकं चैव
सैम्निकं सोमनामकम् । नाशयेत् वज्रमूलञ्च प्रमेहमविकल्पतः ॥ रसेन्द्रसारसंग्रहः ।

2 लौहचूर्णस्य कर्षणं दशाङ्गं चूतमज्जतः । धात्रीफलद्वयं पथ्ये द्वेतथैकं विभी-

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 combination 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 (*gorochand*), *rusot* and orpiment, equal parts and beat into to a paste with *kánjika*. It is useful in intertrigo, pruritis etc.²

Kásisadyataila.³ Take of sesamum oil four seers, water sixteen seers, sulphate of iron, wood of *Withania somnifera* (*asvagandhá*), bark of *Symplocos racemosa* (*lodhra*), root of *Pothos officinalis* (*gajapipali*) 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.

तकम् । पिष्ट्वा लोहमये भाण्डे स्थापयेद्भिषि वासयेत् । लेप्योयमचिराद्भन्ति पलितं
नात्र संशयः । भावप्रकाशः ।

1. हिक्काश्वसे अवलेहः । काशीशं दधिनामच हिक्काज्ञा मधुसंयुताः । चक्रः
2. काशीशं रोचनातुल्यं हरितालं रसाञ्जनम् । अश्लपिष्टेः प्रलेपोयं
दृषकच्छुहि पूतयोः ॥ चक्रः ।
3. काशीशायुतैलं । काशीशतरुगन्धा शारंगजपिप्पलीविपक्वेन । तैलेन
यान्ति वृद्धिं स्तनकण्ठवराङ्गलिङ्गानि ॥ चक्रदत्तः ।

IRON PYRITES.

Sans. स्वर्णमाक्षिक Svarnamākshika, तारमाक्षिक Tāramākshika.

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

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

* न केवलं स्वर्णरूप्यगुणास्तापजयोर्म ता द्रव्यानरस्य संसर्गात् सन्तुन्योऽ-
पिगुणास्तयोः॥ भावप्रकाशः।

1. स्वर्णमाक्षिकं व्यस्ति लक्ष्मणकोलभागैः सवैः समं माक्षिकधातुचूर्णम् ।
तैर्भौ दकः क्षौद्रयुतोत्तक्रः पाण्डुरामये दूरगतेपिप्रस्तः ॥ चक्रः ।

2. गर्भविनोदरसः । त्रिभागं त्रिकटुदेयं चतुर्भागञ्चिह्नुलम् । जातीकोषं
लवङ्गञ्च प्रत्येकञ्च त्रिकार्षिकम् । सुवर्णमाक्षिकञ्चैव पलाङ्गं प्रक्षिपेद्दुधः । जलेन
मर्द्दयित्वा च चण्मात्रावटीकता । निहन्ति गर्भिणी रोगं भास्करस्तिमिरं यथा ॥

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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 horsegram. 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 cinnabar, sulphur, borax, prepared copper, tin and iron pyrites, rock-salt, and black pepper, prepared iron and silver, each one part, prepared gold two parts, powder them well, mix and soak the mixture three times respectively in the juice of *datūra* 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 hemagarbha 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 । हिङ्गुलसम्भवं सूतं गन्धकं टङ्गणं तथा । ताम्रं वङ्गं माचिकञ्च सैन्धवं मरिचं तथा । सर्वं समं समाहृत्य द्विगुणं स्वर्णमस्यकम् । तद्वर्द्धं कान्तलौहञ्चरूपमस्त्रापि तत्समम् । एतत्सर्वं त्रिचूर्णार्थं भावयेत् कनकद्रवैः । शेफालिदलजैश्चापि दशमूलरसेन च । किराततिक्तकाथैः त्रिवारं भावयेत् सुधीः । भावयित्वा ततः कार्यागुञ्जद्वयमिता वटी । अतुपानं प्रयोक्तव्यं जोरकसधुसंयुतम् । जीर्णज्वरं महाघोरं चिरकालससृज्ज्वरम् । ज्वरमष्टविधं हन्ति साध्यासाध्यमथापिवा । पृथक् दोषांश्चविविधान् समस्तानुविषमज्वरान् ।

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2 ऋगाङ्गरसः । स्याद्रसेन समं हेमं मौक्तिकं द्विगुणं भवेत् । गन्धकस्तु समस्तेन रसपादस्तु टङ्गणः ॥ सर्वं तद्गोलकं कृत्वा काञ्जिकेन विशोधयेत् । भाण्डे लवणपूर्णं च पचेद्यामघतुष्टयम् ॥ ऋगाङ्गसृज्ज्वरको ज्ञेयं रोगराज निहन्तनः ॥

रसेन्द्रसारसंपहः ।

Svarna 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 diarrhœa, 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 *Svarna-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, take

1 स्वर्णपर्पटी । रसोत्तमं पलं शुद्धं हेमतोल्ककसंयुतम् । शिलायां मर्हयेत् तावत् यावदेकत्वमागतम् ॥ गन्धकस्य पलञ्चैकमयःपात्रे ततो दृढे । मर्हयेद्दृढपाणिभ्यां यावत् कज्जलतां ब्रजे ॥ ततः परं विधानज्ञः पर्पटीं कारयेत्-सुधीः । रक्तिकादिक्रमेणैव योजयेदनुपानतः । यद्दृष्टं विविधां हन्ति वृथा सर्वञ्चरापहा ॥
रसेन्द्रसारसंयहः ।

2 मध्वामलकचूर्णेञ्च सुवर्णञ्चेति तत्रयम् । प्राश्यारिषट्हीतोऽपि सूच्यते प्राणसंशयात् । वचाघृतं सुवर्णञ्च मधुना सह संलिहेत् । सम्बन्धरं प्रयुञ्जानः श्रुतिधारी भवेन्नरः ॥
सन्देहभङ्गनी ।

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 up to 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 adminis-

1 चन्द्रोदयमकरध्वजः । पलं मृदुस्वर्णदलं रसेन्द्रात् पलाष्टकं षोडशगन्धकस्य ।
 शोषैः सुकार्पासमत्रैप्रसूनैः सर्वं विमर्द्वाथ कुमारिकाङ्गिः । यत्काचकूपे
 निहितं प्रगाढं मृत्कपर्पटैस्तद्द्विसत्रयञ्च । पचेत् क्रमाग्नौ सिकताख्ययन्त्रे ततो
 रजः पल्लारागरज्यम् । निग्द्व्य चैतस्य पलं पलानि चत्वारिकर्पूररजस्तथैव ।
 जातीफलं शोषणमिन्द्रुष्यम् । कस्तूरिकाया इहशाय एकः । चन्द्रोदयोयं
 कथितोऽस्य माषोभुक्तोह्रिवल्लीदल मध्यवर्ती । सदोन्मदानां प्रसदाशतानां गर्वा
 दिक्त्वं श्लाघयत्यवश्यम् । इतं घनीभूतमतीवदुग्धं गुरुणि मांसानिसमण्डकानि ।
 माषान्नापिष्टानि भवन्ति पथ्यान्यानन्ददायीन्य पराणिचात् । वक्षीपलितनाशन
 स्तनुभृतां वयस्तम्भनः समस्तगदनाशनः प्रवल रोगपञ्चाननः ।

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tered as an aphrodisiac, it is usual to mix it with some stimulant 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 *Ashtavakra rasa*, is sublimed from a mixture of mercury, sulphur, gold, silver, lead, copper, zinc and tin in equal parts. It is used as a nervine tonic in general debility.

SILVER.

Sans. रूय, *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,

* *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*.

etc. Dose, grains one to two. 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 *Sphæranthus 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*), *Jayamangala rasa* (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 sulphide

1 वृहत्वातगजाङ्कुशः । सूताभ्रतीक्ष्णताम्बाणितारतालकगन्धकम् । स्वर्णं
शुण्ठी बलाधान्यं कट्फलञ्जाम्बाविषम् ॥ पथ्याश्टङ्गी पिप्पली च मरिचं टङ्ग
यान्तथा । तल्लं खल्ले दिनं मह्यं सुण्डीनिर्गुण्डीजैर्द्रवैः । द्विशुङ्गां वटिकं
खादेत् सर्व्ववातप्रसान्तये । साध्यासाध्यं निहन्याशु रसोवातगजाङ्कुशः ॥

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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 realgar, 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.

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

1 चौद्रलोढं ताम्ररजोवसनं गरदोषनुत् । चक्रः ।

2 शीतभञ्जिरसः । तालकोदरदोहृतो पारदोगन्धकः शिला । क्रमाङ्गागाङ्गं विहितं कारवेल्या प्रमर्हितम् ॥ अग्नेनास्य प्रमाणेन ताम्रपत्रं प्रलेपयेत् । अधोमुखी दृढे भाण्डे तान्निरुध्याथ पूरयेत् ॥ चुल्यां बालुकापात्राध अग्निं प्रज्वालयेददम् । शीतं संचर्य माषोऽस्य नागबल्ली दले स्थितः ॥ भक्षितो मरिचैः सार्द्धं समस्तान् विषमज्वरान् । शीतदाहृादिकान् हन्ति पथ्यश्चास्यौदनं पयः ॥

रसप्रदीपः ।

3 खच्छन्दभैरवरसः । ताम्रभस्मविषं हेन्नः शतधा भावितं रसैः । युञ्जार्द्धं सन्निपातादिनञ्जरहरं परम् । आर्द्रांस्वशर्करासिन्धुयुतः खच्छन्दभैरवः । चौद्रद्राक्षासिताञ्चापि दधिपथ्यं रुचौददेत् । रसेन्द्रसारसं पृहः ।

*Mahámritunjaya lauha.*¹ Take of mercury, sulphur, talc, orpiment and realgar, each one part, iron two parts, copper four parts, *yavakshára* and *sarjikákshára* (impure carbonates of potash and soda), borax, black salt, burnt couries, and conch-shells, plum-bago-root, assafætida, root of *Picrorrhiza Kurroa (katuki)*, *Amoora rohitaka (rohitaka)*, and *Ipomæa Turpethum (trivrit)*; tamarind pulp, colocynth root, root bark of *Anogeissus latifolius (dhava)*, root of *Alangium decapetalum (ankota)*, *Achyranthes aspera (apámárga)*, ashes of the spikes of the palm-tree, turmeric and wood of *Berberis Asiatica (dárugaridrâ)*, croton seeds, sulphate of copper, *rusot* and *Oxalis corniculata (amlalonikâ)*, 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 *gulancha* and add to it thirty-two tolás 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 म्हाष्टत्युञ्जयलौहम् । शुद्धसूतं समं गन्धं जारिताम्बं समं तथा ।
गन्धकाद्द्विगुणं लौहं षट्पतन्मं चतसृणम् । द्विचारं टङ्गणविडुं वराञ्जीमथ-
शङ्खकम् । चित्तकं कुनटीं तालं रामठं कटुकीं तथा । रोहितकं त्रिष्टु चिञ्चा
विशाला धवसङ्कठम् । अपामार्गं ताललण्डमस्त्रिका च निशायुगम् । कानकं
तृत्यकञ्चैव यक्ष्मर्द्दरसाञ्जनम् । एतानि सूक्ष्मभागानि चूर्णयित्वा विभावयेत् ।
आर्द्रकस्य रसेनैव शुद्धूचीस्वरसेन च । मधुनः कूडवैर्भाव्यं वटिकां मासमात्रकम् ।
मक्षयेत् प्रातरुथाय सञ्चोदरकुलान्तकत् । स्त्रीहानं ज्वरहृद्यञ्च कासञ्च विषम-
ज्वरम् । कासं श्वासं शिरोरोगं कर्णरोगं सयोथजम् । चिरजं कुब्जञ्चैव
स्त्रीपदं हन्ति दारुणम् । रोगानीकविनाशाय धन्वन्तरिजतं पुरा । षट्सुञ्जय-
मिदं लौहं सिद्धिदं शुभदं षट्षणम् ॥ रसेन्द्रसारसंयहः ।

2 केवलं जारितं ताम्बं षट्ङ्गवेररसैः सह । दातव्यं पर्यं खण्डेन
सर्व्युत्सं निवारणम् ॥ रसेन्द्रसारसंयहः ।

Gulma kálánana 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*), *Heliophyllum 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, *Suryávarta rasa*, *Hridayánava rasa* etc.

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

1 गुल्मकालाननरसः । स तं गन्धकं ताम्रं तालकं टङ्गणं समम् ॥
 तोलद्वयमितं भागं यवक्षारञ्च तत्समम् ॥ सुस्तकं मरिचं शुण्ठी पिप्पली
 गजपिप्पली । हरीतकी वचाकुष्ठं तोलैकं चूर्णयेत् सुधीः ॥ सर्वभेकी
 कृतं पाले भावना क्रियते ततः । पपैटी वारण शुण्ठीमपामार्गपटोलकैः ॥
 तत्पुन चूर्णयेत् पश्चात् सर्वगुल्मविनाशनम् । गुग्गुलुचतुष्टयं खाद्यं हरीतक्य
 रुपानतः ॥ वातिकं पित्तिकं गुल्मं श्लैष्मिकं च त्रिदोषजम् इन्द्रजा च निहन्त्याशु
 वातगुल्मं विशेषतः ॥ श्रीमद्ब्रह्मनाथेन निर्मितो विश्व सम्पदे । गुल्मकान्ना
 नलो नान्ना रसोयं सुविदुर्लभः ॥ रसेन्द्रसारसंपहः ।

2 सूर्यावर्तरसः । सूतकं गन्धकञ्चैव यामकं कन्धकाद्रवैः । द्वयोस्तुल्यं ताम्रपत्रं

*Hridayārṇava 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. तप्त, *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

कन्याकल्केन लेपयेत् । दिनैकं कृण्विडकायन्ने पचेत् शीतं ससृजरेत् । सूर्यावर्त्ते
रसोनामद्विगुणः श्वासकासजित् । रसरत्नावली ।

1 हृदयार्थवरसः । शुद्धस्वतं समं गन्धं मृतताञ्जं तयोः समम् । मर्दयेत् त्रिफला
काथे काकमाचीद्रवैर्दिनम् ॥ चनमात्रायटीं खादेद्रसोयं हृदयार्थवः । काक-
माचीफलं कर्षं त्रिफलाफलसंयुतम् ॥ द्वात्रिंशत्तोलकं तोयं काथमष्टावशे-
पिकम् । अक्षुपानं पिवेज्वाल हृद्रोगेहि कफालके ॥ रसेन्द्रसारसंयहः ।

2 ताञ्जे श्वरः । ताञ्जं रसं टङ्कनगन्धलौहं भस्मीकृतं मागधिका समेतम् ।
पञ्चाङ्गनिम्बेन फलत्वयेष विभावितां राजतरोरुश्वैव ॥ नियोजयेद्वल्लयुगं प्रसाथं
कुष्ठेषु सर्वेष्वपि रोगसंघे ॥ उपाचरेत् कुष्ठं कुष्ठं नान्यथा सिद्धमिच्छति ॥
रुद्धो स्निग्धा क्रियाकार्यविपरीतो विपर्यये ॥ रसेन्द्रसारसंयहः ।

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

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

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

*तस्यं वितृक्कञ्चापि शिखिपीवं मयुरकम् । तस्यन्तान्पोष धातु हि किञ्चि-
न्साभ्येष तद्भवेत् ॥ किञ्चिन्तान् शुष्यन्तस्माद्दक्षमाण युञ्जतत् । भावप्रकाशः ।

1 चातुर्थकारिरसः । हरितालं शिलातल्यं शङ्खवूर्णञ्च गन्धकम् । समांशं
सर्दयेत् प्राज्ञः कुमारिरसभावितम् । शरावसंपुटे कृत्वा लिप्ता गजपुटे पचेत् ।
कुमारिकारसेनैव वल्लभात्वा वटीकृता । दत्त्वा शोतज्वरं हन्ति चातुर्थकं विशे-
षतः । मरिचद्वययोगेन तक्रं पीत्वा चरेद्वटीम् । एतया वमने जाते ज्वरः
सद्यो विनश्यति ॥

भैषजप्रतन्त्रः ।

2 अङ्गुलीकपाटः । तस्यं तालं रसं कान्तं माञ्जिकं टङ्गणं तथा । सपादनिष्कं
प्रत्येकं पञ्चभिष्कावराटिका । द्विनिष्कं गन्धकं सर्व्यं पिप्पला जम्बीरजैर्द्रवैः । अङ्ग-

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 *Sutikāvinoda* 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.* *Vern.* *Rāng.*

TIN, though not indigenous to India, has been known from a very ancient period and is mentioned by Susruta. Dr. Royle

भाग करीषेण घटितं भस्मशोभनम् । योजितं यहणीयुष्मन्त्रयकुष्ठप्रमेहजित् ॥

1 गर्भविलासंरसः । रस गन्धकतुल्यञ्च त्वहं जम्बीरमर्दितम् । द्विजोरकं त्रिक-
टुना देयं गुञ्जाचतुष्टयम् । गर्भिण्याः शूलविष्टम् ज्वराजीर्णेषु केवलम् ॥

रसेन्द्रसारसंग्रहः

2 त्रयविशोधने । कुष्ठं त्रिष्टित्तितादन्तीमागध्यः सैन्धवं मधु । रजनी त्रिकालो
तुल्यं हितं त्रयविशोधनम् ॥ चक्रः

3 चक्षुःरोगे । तुल्यकं वारिण्यायुक्तं शुक्लं हन्यच्चिपूरणात् ॥ चक्रः ।

observed " But the Hindoos like the Egyptians have employed tin for various purposes from very ancient times. And though there 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 *yavakshāra*. (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* (*durvā*) and the decoctions of liquorice root, gum of *Bombax Malabaricum* (*Mocharasa*), and *Tribulus terrestris* (*gokshura*). Then roast in a covered crucible, again soak in the above mentioned fluid medicines and make into four-grain pills. This medicine is given with a decoction in milk of the above named vegetable drugs, in painful micturition.

Vangesvara rasa.² Take of the preparation of mercury called

1 त्रिनेत्ररसः । वङ्गं सूतं गन्धकं भावयित्वा लौहपात्रे मर्हयेदेकवस्त्रम् ।
दूर्वायष्टी शास्मलीगोक्षुरैस्तु सप्तमध्ये भूषरे पाचयित्वा । तत्तद्भ्रूभावायित्वा-
स्यवक्त्रं दद्याच्छीतं पायसं वक्ष्यमाणम् । दूर्वायष्टी शास्मलीवल्कतुल्यैर्दुग्धैः
कुर्यात् पायसंतद्दीत । प्रातःकालेशीत पानीयपानात् मूत्रेजातेस्यात् हृत्सी-
चंक्रमेण ॥ रसेन्द्रसारसंघः ।

2 वङ्गेश्वरः । रसभस्मसमायुक्तं वङ्गभस्म प्रकल्पयेत् । अस्त्रमाषडयं हन्ति
प्रमेहान् चौद्रसंयुतम् । रसेन्द्रसारसंघः ।

Rasasindura, and of prepared tin, equal parts and mix. Dose about four grains with honey in urinary diseases and diabetes.

Vrihat Vangesvara rasa.¹ Take of prepared tin, mercury, silver and talc, sulphur and camphor each two tolas, prepared gold and pearls, each half a tola, mix them together, soak the mixture in the juice of *Eclipta prostrata* (*kesarājā*), 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*).

Svarnavanga.² Take of mercury, sulphur and tin, equal parts, and rub them together, then take sal-ammoniac in quantity equal to all the above ingredients and rub together in a mortar. Introduce the mixture in a glass bottle and expose to heat in a sand-bath. The resulting powder called *Svarna Vanga* or golden preparation of tin has a beautiful golden lustre and flaky texture. It is given in urinary complaints in doses of five to ten grains with honey and the juice of emblic myrobalans. This preparation is the bisulphuret of tin or mosaic gold "used in the arts as a bronze powder especially for the manufacture of paper hangings." It is noticed by Pereira. The Sanscrit text for its preparation quoted below, is taken from a manuscript compilation in the possession of Kavi-

1 वृहवङ्गैश्वरः। वङ्गभस्मरसं गन्धं रौप्यं कर्पूरमभ्रकम् । कर्षं कर्षं मानसेषां
मूत्राङ्घ्रिं हेममौक्तिकम् । केशराजरसैर्भाञ्जं द्विगुञ्जाफलमानतः । वृहवङ्गै-
श्वरोनाम सोमरोगं निहन्यलम् । बङ्गमूत्रं बङ्गविधं मूत्रमेहं व्यपोहति ।
मूत्रातीसारकञ्चु चोष्णानां पुष्टिवर्द्धनम् । ओजस्वेजस्करं स्त्रीषु सग्यक्चापि
वृषायते । बलवर्णकरं रुच्यं शुक्रसञ्जनकं परम् । छागं वा यदि वा गव्यं
पयो वा दधिनिर्मितं अक्षुपानं प्रयोक्तव्यं बुध्वा दोषगतिं भिषक् । दद्यात्
बाले च प्रौढे च सेवयेच्च रसायनम् ॥ भैषज्यरत्नावली ।

2 स्वर्णवङ्गः । सूतेन मर्द्दितं वङ्गो गन्धकेन सुकञ्जली । नरसारेण तत्
पश्चात् सर्वतुल्येन खल्लयेत् । पश्चात् तं यालुका यन्त्रे काच कुप्याम् निधा-
पयेत् । पाकं कुर्याद्भिषक प्राप्न स्वर्णवण्यं यदा भवेत् । तदासिद्धं विज्ञानियात्
सर्वमेहेषु योजयेत् । वातिकं पैत्तिकं चैव क्लैम्निकं सान्निपातिकं । सर्वव्याधि
विनाशाय महादेवेन निर्मितः ॥

raja Benod Lal Sen. It is evidently a recent innovation if not an imitation of the European preparation.

ZINC.

Sans. अशद, *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.

1 सुवर्णं सुक्ता दरद सरिचं भागद्वयं प्रदिष्टं खर्पराद्यौ प्रथमं सखिलं
मर्हयेत् सृक्षणेन । यावत् क्षोभो व्रजति बिलयं निम्बनीरेण तावत् युञ्जाद्वन्
मधु चपलया सालतीप्राग्वसन्ता ॥ सेवितेयं हरेत्तूर्यं जीर्णञ्च विषमज्वरम् ।
व्याधीनन्यांश्च कासादोन् प्रदीप्तं कुरुते जनलम् । वैद्य विनोदः ।

2 खर्परवर्तिः । शिलायां रसकं पिद्वा सम्यगाग्राव्य वारिणा । गृह्णीयात्
तज्जलं सर्व्वं त्यजेत्तूर्यं मधोगतम् । शुष्कञ्च तज्जलं सर्व्वं पर्पटी सन्निभं भवेत् ।
विचूर्ण्य भावयेत् सम्यक् त्रिवेलं त्रिफलारसैः । कर्पूरस्वरजस्तत्र दशमांशेन
निक्षिपेत् । अञ्जयेत् नयनेतेन सर्व्वदोषहरं हितत् । सर्व्वरोगहरं चूर्णम्
चक्षुषः सुखकारि च ॥ साङ्गधरः ।

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 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 *Sindurádyá 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*. सौविराञ्जन, *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

¹ सिन्दुराद्यं तैलम् । सिन्दुरार्द्धपलं पिप्पला जीरकस्य फलं तथा । कटुतैलात् पचेन्मानीं सद्यः । पामाह्वरं परम् ॥ चक्रः ॥

circumstance of its being considered the best application or cosmetic for them. The other varieties of *anjana* mentioned are *srotonjana*, *pushpánjana* and *rasánjana*.

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

स्रोतोञ्जन *Srotonjana* is described as of white colour, and is said to be produced in the bed of the Jamuná and other rivers. It is called *saffed 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 *Pushpánjana* is described as an alkaline substance. I have not met with any vernacular translation of this word, nor with any person who could identify or supply the drug. Wilson, in his Sanskrit-English Dictionary, translates the term as calx of brass, but I know not on what authority.¹

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

Sauviránjana or galena is chiefly used as a cosmetic for the eyes, and is supposed to strengthen these organs, improve their appearance and preserve them from disease. It enters into the composition

1. सौवीराञ्जनं कृष्णं कालनीलं सुवीरजम् । स्रोतोञ्जनं तु स्रोतोर्जं नदीजं
यासुनं वरम् । सौवीरं यद्वाहि मधुरं चक्षुष्यं कफघ्नतजित् ॥ सिध्वाक्षयास्तु-
च्छीतं स्रोतोञ्जनमपीदृशम् ॥ पुष्पाञ्जनं पुष्पकोट रीतिजं कुसुमाञ्जनम् । पुष्पा-
ञ्जनं क्षारसुष्यं काचार्मपटलापहम् ॥
मदनपालः ।

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 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 *surmā* the Hindus meant sulphide of lead, and not sulphide of antimony as is generally supposed.

BELL METAL AND BRASS.

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

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

1 अग्निप्रसन्नसौवोरं निषिञ्चेत् लिफलाभारसैः । सप्तवेलन्तथास्तन्यैः स्त्रीणां
सिक्तं विचूर्णितम् । अञ्जयेन्नयनेतेन प्रत्यहञ्चक्षुषोर्हितम् । सर्वानक्षिविकारां
स्तु हन्यादेतन्नसंशयः ॥ शार्ङ्गधरः ।

2 शुद्धे नागे द्रुते तल्यं शुद्धं सूतं विनिक्षिपेत् । कण्ठाञ्जनं तयोस्तुल्यं सर्वमेकत्र
चूर्णयेत् । दशमांशेन कर्पूरं तस्मिन् चूर्णे प्रदापयेत् । एतत् प्रत्यञ्जनं नेत्रगदा-
जिन्नयनामृतम् । शार्ङ्गधरः ।

3 नित्यानन्दरसः । द्विङ्कुनात् सम्भवं सूतं गन्धकं मृतताम्रकम् । कांश्यं
वङ्गहरितालं तल्यं शङ्खं वराटकम् । लिफट्, लिफलाभौहं विडङ्गं पटु-
पञ्चकम् । चविकापिप्पलीमूलं हनुषाच वचातथा । शटीपाठादेवदारु एलाच

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 zedoaria* (*sati*), *Stephania hernandifolia* (*páthá*), *Pinus deodara*, cardamoms, seeds of *Argyreia speciosa* (*vridhya dáraka*) 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 *sheábhra*.

Talc is purified in the following manner. It is first heated and washed in milk. The plates are then separated and soaked in the juice of *Amaranthus polygamus* (*tandulia*) and *kánjika* for eight days. Talc thus purified is reduced to powder by being

वृद्धदारकम् । एतानि समभागानि संदूर्य वटिकां कुरु । हरीतकीरसं
दत्त्वा पञ्चयुञ्जामितां शुभाम् । एकैकां खाद्येन्नित्यं शीतलञ्च जले पिवेत् ।
स्त्रीपदं कफवातोत्थं रक्तमांसाश्रितञ्च यत् । मेदोगतं घातुगतं हन्यवश्यं न
संशयः । अर्जुदं गण्डमालाञ्च सन्त्वट्टिं चिरन्तनीम् । वातट्टिं पित्तट्टिं
स्त्रीपदट्टिं निहन्ति च । अग्निट्टिं करोत्येष बलवर्णकरः परः । श्रीमद्गहन-
नाथेन निर्दिष्टो विश्वसम्पदे । नित्यानन्द रसो नाम यथोक्तः स्त्रीपदे गदे ॥

रसेन्द्रसारसंग्रहः ।

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 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.

Jvaràsani 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.

Agnikumára rasa.² Take of mercury, sulphur, borax, iron,

1 ज्वराशनि रसः । रसं गन्धं सैन्धवञ्च विषं ताम्रं समं समम् । सर्वं चूर्णं समं लौहं तप्तम् शुद्धमभ्रकम् । लौहे च लौहदण्डेन निर्गुण्डीस्वरसेन च । मर्द्दयेद्दयन्नतः पश्चात् मरिचं सुतप्तव्यक्तम् । नागवज्रादलेनैव दातव्यं रक्तिमस्मितम् । सर्वज्वरहरः श्रेष्ठः ज्वरान् हन्ति सुदारुणान् । कासं प्रवासं महाघोरं विषमाख्यं ज्वरं वमिम् । धातुस्थं प्रवलं दाहं ज्वरं दोषं चिरोद्भवम् । यकट्कुम्भोदरं श्लेहं श्वयथुञ्च विनाशयेत् ॥ भैषज्यरत्नावली ।

2 अग्निकुमार रसः । रसं गन्धं विषं व्योषं टङ्गं लौहभस्मकम् । अजमोदाऽहिफेणञ्च सर्वतुल्यं मृताभ्रकम् । चित्रकत्वक्कसायेण मर्द्दयेद्भाममात्मकम् । मरिचाभां वटीं खादेदजीर्णं ग्रहणीं तथा । नाशयेद्भ्रातसन्देहो गुच्छो भैषज्यरत्नावली ।

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.

Sulachanàmritábhra.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 *Oxlais corniculata* (*amlalonikà*), 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 kumárábhra* 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.

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

1 सुलोचनामृताभ्रम् । पलं सुजीयं गगणन्तु वज्रकं तेजोवती कोल
सुशीरदाडिमम् । धातुप्रल्लोनीरुचकं पृथक्सैः पलोन्मिरैर्महितमेव
सेवितम् । अरोचकं वातकफत्रिदोषजं पित्तोज्ज्वं गन्धसमुद्भवं नृणाम् । काशं
खराघातं सुरोपहं रुजं श्वासं वलासं यक्षुभगन्दरम् । श्लोहाग्निमान्दं
श्वयथुं समीरणं मेहं भृशं कुष्ठमसृग्दरलमीन् । शूलाम्लपित्तं क्षयरोग-
सुद्धतं स रक्तपित्तं वमिदाहसशरीम् । निहन्तिचाशांसि सुलोचनामृतं
वलप्रदं वृष्यमिदं रसायनम् । रसेन्द्रसारसं ग्रहः ।

2 हरिशङ्कर रसः । मृताभ्र सामलकजैः सप्ताहं भावयेत् रजः । हरि-
शङ्करः सङ्गः स्याद् भुक्तः सर्वप्रभे हजित् । रसेन्द्रसारसं ग्रहः ।

3 अर्जुनाभ्रम् । सहस्रं पुटितैः सिद्धं दञ्जाभ्रमर्जुनत्वचः । सत्त्वैविम-
हितं सप्तदिनं खल्लेविशोपितम् । छायाशुष्कावटीकायां नाम्नेदमर्जुना-

the mass into two-grain pills. In phthisis and chronic bronchitis the following called *Sringárábhra*¹ is used. Take of prepared talc sixteen tolás, camphor, cardamoms, nutmegs, mace, cloves, root of *Pavonia odorata* (*bálá*), *Pothos officinalis* (*gajapippulí*), leaves called *tejpatra*, *jatamansi* root, leaves of *Pinus Webbiana* (*tálisapatra*), cinnamon, flowers of *Mesua ferrea* (*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.

Mohàlakshmi bilásarasa.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 half a tolá, gold half a tola, camphor, nutmegs and mace, each four tolás, seeds of *Argyreia speciosa* (*bridhadáraka*) and of *datura*, two tolás each. Mix together, rub with the juice of betle leaves and

भ्रकम् । हृद्रोगं सर्वं शूलशो हृल्लासच्छर्दप्ररोचकान् । अतिसारं मन्दमग्निं
रक्तपित्तं क्षतक्षयम् । शोथोदराण्यभ्रपित्तं विषमज्वरमेव च । हृन्त्यन्यान-
पिरोगांश्च वल्यं दृष्यं रसायनम् । अनुपानं पिबेच्च त्व हृद्रोगे च कफात्मके ।
रसेन्द्रसारसंग्रहः ।

1 शृङ्गाराभ्रम् । शुद्धं क्षणाभ्रचूर्णं द्विपलपरिमितं शाण्णमानं यदन्यत् ।
कपूरं जातीकोषं सजलमिभकनातेजपत्रं लवङ्गम् । मांसोतालीशचोचेगज-
कुसुमगदं धातकीचेति त्वल्यं । एजाजातीफलाख्यं क्षितितलविधिनाशुद्धगन्ध्राश्रस-
कोलं । कोलाङ्गं पारदस्य प्रतिपदविहितं पिष्टमे कत्वमित्थं । पानोयेनैव कार्यः
परिणत चनकस्त्रित्वल्लासवश्यः । प्रातः खाद्याश्वतस्रस्तदनुखलुकियत् शृङ्गवेरं
सपर्यं । पानीयं पीतमन्लेधुवमपहरतिक्षिप्रमेतान् विकारान् । कोष्टेदुष्टाग्नि-
जातान् ज्वरमुदररूजां राजयक्ष्मक्षयञ्च । कासं श्वासं सशोथं नयनपरिभवं
मेहमेदोविकारान् । सारकौसुदी ।

2 महालक्ष्मीविलासः । पलं क्षणाभ्रचूर्णस्य तदर्द्धं गन्धपारदं । वङ्गभस्म तदर्द्धञ्च
तदर्द्धं तारकस्य च । तत् समं हरितालञ्च तदर्द्धं ताम्रभस्मकं । रसत्वल्यं कपूरञ्च

make into pills of about six grains each. Another preparation of composition similar to the above is called *Manmathābhra rasa*. It is, as its name implies, intended for the votaries of Cupid.

Galitakushthāri rasa.¹ Take of mercury, sulphur, prepared copper and iron, bdellium, plumbago root, *silājatu*, 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. स्फटिकार Sphatikāri.

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.

जातीकोषफलं तथा । वृद्धदारकवीजं वीजं स्वर्णफलस्य च । प्रत्येकान् कार्ष्णिकान् भागान् मृतस्वर्णञ्च शायकम् । नागवल्लीरसैः पिष्ट्वा त्रिगुञ्जाफलमानतः । वटीकार्यानुपानञ्च व्याधिं वीक्ष्य प्रयोजयेत् । निह्निषत्त्रिपातोत्थान् गदान् घोरान् सुदारुणान् । प्रोक्तः प्रयोगराजोयं अगस्त्येन महात्मना । महालक्ष्मीविद्यासोयं वासुदेवो जगद्गुरुः । अस्य प्रसादाद् भगवान् लक्ष नारीषु वल्लभः ।
रसेन्द्रसारसंयुतः ।

1 गलितकुष्ठारि रसः । रसेवलिस्ताम्बुमयः पुरोऽग्निशिलाजल स्याद्विपतिन्दु-
कश्च । वराच तल्लं गगण करञ्जवीजं पृथक् भागचतुष्टयञ्च । संमर्द्या सर्वं मधु-
नाद्यतेन द्रव्यपात्रे निहितं प्रयत्नात् । कर्षं भजेत् प्रत्यहमस्य पथ्यं शाल्योदनं
दुग्धं मधुत्रयञ्च । विशीर्षकर्षाङ्गुलिनासिकोऽपि भवेद्नेनेन स्मरतल्लयमूर्त्तिः । दारा
परित्याग इहप्रदिष्टो जलौदनं तत्र निवृद्धमूले ॥ भाव प्रकाशः ।

BORAX

Sans. टङ्कण, *Tankana*. Vern. *Sohágá*.

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.

Amirtakalpa 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, *Chavica officinarum* (*chaviká*), 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

1 अमृतकल्पतरसः । पारदं गन्धकञ्चैव समानौ कञ्जतीकतौ । तयोरङ्गं विषं शुद्धं
नत् समं टङ्कणं भवेत् । ऋङ्गराज इवैर्भायं त्रिदिनं यत्नतः पुनः । सुद्वप्र-
माणा वटिका कर्त्तव्याभिषजांवरैः । वटीद्वयं हरेच्छूलं अग्निमान्द्रं सुनिश्चितं ।
अजीर्णं जरयत्याशु धातुपुष्टिं करोति च । नाना व्याधि हराचेयं वटी शुद्धवचो
अथा । अलुपानविशेषेण सम्यग् गुणकरी भवेत् ॥ रसेन्द्रसारसंघः ।

2 चन्द्रामृततरसः । त्रिफला त्रिकटुचव्यं धान्यं जीरकं सैन्धवम् । प्रत्येकं तोलकं
प्राञ्चं आगीदुग्धेन पेययेत् । रसगन्धक लौहानि प्रत्येकं कार्ष्णिकानि च । टङ्कणस्य

these pills a decoction made of *gulancha*, *Adhatoda vasica* (*vásaka*), *Clerodendron Siphonanthus* (*brahmayashti*), *Cyperus rotundus* (*mustaka*), and *Solanum Jacquini* (*kantakári*) should be administered.

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

A mixture of equal parts of borax, long pepper and *baberung* 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 *Vallaris dichotoma* (*bhadravalli*) is applied to diseased nails.

LIME.

Sans. शङ्खभस्म, *Sankha bhasma*. चूर्ण, *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 following are a few examples.

पलंदत्वा मरिचस्य पलार्द्धकं । नवगुञ्जा प्रमाणेन वटिकां कारयेद् भिषक् । एकैकां
वटिकां खादेत् रक्तोत्पल जलश्लुताम् । नीलोत्पल रसैर्वापि कुलत्यस्य रसेन वा ।
च्छागीक्षीरेण मण्डने केशराजरसेन वा । निहन्ति विविधं कासं यच्छ्वाण-
मपिदारुणम् । वासा गुडूचिका भार्गीसुस्तकं कण्टकारिका । समभागं कतंकाथं
प्रत्यहं भक्षयेदनु ॥ रसेन्द्रसारसंयुतः ।

1 पिप्पली विडङ्ग टङ्गण समचूर्णं या पिबेत् पयसा । ऋतु समये नहि तस्या
गर्भः सञ्जायते कापि ॥ मावः प्रकाशः ।

Amrita vati.¹ 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.² 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.³

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.⁴ 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.⁵

1 अमृतवटो । अमृतवराटक मरिचैर्द्विपञ्चनवभागिकैः क्रमशः । वटिका-
ससुद्धमानाकफपित्ताग्निमान्द्रहारिणी । भैषज्यरत्नावली ।

2 अग्निकुमारोरसः । रसेन्द्रगन्धौ सहटङ्गणेन समं विषं योज्यमिह-
त्रिभागम् । कपर्दशङ्खाविहनेत्रभागौ मरिचमात्राष्टशुणं प्रदेयम् । सुपक-
जम्बीरसेनघृष्टः सिद्धो भवेदग्नि कुमारएषः । विसूचिकाजीर्णसमीरणार्त्तै-
दद्यात् द्विवक्त्रं सहणी गदे च । भैषज्यरत्नावली ।

3 रसेन जम्बीरफलस्य शङ्खनाभिरजः पीतमवश्यमेव । शाणप्रमाणं शस्ये-
दशेषं स्त्रीहामयं कुर्मसमानमाशु । भावप्रकाशः ।

4 सर्जिकासुलकचकारः शङ्खचूर्णसमन्वितः । प्रलेपोविहितस्तोक्ष्णोहन्ति अन्य-
वुंदादिकान् । चक्रदत्तः ।

5 तालकं शाणयुग्मं स्यात् षट्शणं शङ्खचूर्णकम् । द्विशणिकं पलाशस्य चारं
दत्त्वा प्रमर्दयेत् । कदलीदण्डतोयेन रविपत्ररसेन वा । अस्यापि सप्तभिलेपै-
र्लोम्नां शतनसुत्तमम् । शाङ्गधरः ।

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 Sinde, 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 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.

विट् लवण. *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 *aonlás* (*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 *kálánimak* 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 "*sajimáti*" (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 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 शाकम्बरी *Sákambari*, is the salt produced from the Sambar Lake near Ajmere. The name *romaka* is said to be derived from a river called Rumá. 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.

औब्जिद *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.

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

Nárikelakshára.² Take a cocoa-nut fruit full of water, make a hole in it and fill the cocoa-nut with rock salt, that is, dissolve the salt in its water. Then close the opening, cover the nut with a layer of clay and roast it in a pit of fire. The salt thus roasted is esteemed as a valuable medicine in the form of dyspepsia which is attended with pain, two or three hours after meals. It is given with the addition of long pepper. Dose about a quarter tola.

Bháskara lavana.³ Take of *karkach* salt sixteen tolas, *sonchal* salt ten tolas, black salt, rock salt, coriander, long pepper, long

1 वसनं त्वलसे पूर्व्वं लवणेनोष्णवारिणा चक्रदत्तः ।

2 नारिकेलक्षारः । नारिकेलं स तोयञ्च लवणेन प्रपूरितम् । विपकमग्निना सम्यक् परिणामजशूलक्षुत् । वातिकं पैत्तिकञ्चैव ह्यैष्टिकं सान्निपातिकम् ।

चक्रदत्तः ।

3 भास्करलवणचूर्णं । सामुद्रलवणं कार्यमष्टकर्षमितं बुधैः । पञ्चसौवर्चलं पाह्यं विह्वसैन्ववधान्यकम् । पिप्पलीपिप्पलीमूलं क्षणजीरकपत्रकम् । नागकोशरं तालीशमन्धवेतसकं तथा । द्विकर्षमात्राण्येतानि प्रत्येकं कारयेद्बुधः । सरिचं जीरकं विश्वमेकैकं कर्षमात्रकम् । दाडिमं स्याच्चतुष्कर्षं त्वगेलेचाडिकांशिके ।

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 on the cornea, either singly or in combination with other drugs, as in the following. Take of the seeds of *Acacia Lebbek* (*sirisa*), long pepper, black pepper and rock salt in equal parts, rub them together with water, and make into pellets or pencils. These are rubbed on opacities of the cornea.

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 hexastichum*), dissolving the ashes in water, straining the solution through thick cloth, and evaporating it over the fire. The resulting salt is a clear amorphous powder with a saline and partly acid taste. Chemically it is carbonate of potash with some impurities. *Yavakshára* is described as stomachic, laxative and diuretic. It is used in urinary diseases, dyspepsia, enlarged spleen and other enlargements of the abdominal viscera. A decoction of chebulic myrobalan and *rohitaka* 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

बीजपूररसेनैव भावितं सप्तवारकम् । एतच्चूर्णिकृतं सर्वं लवणं भास्कराभिधम् ।
 शायप्रमाणं देयन्तु मस्तुतक्रसुरासवैः । वातस्त्रेषुसभवं गुल्मं स्त्रीहानसुदरक्षयम् ।
 मन्दाग्निं नाशयेदेतद्दीपनं पाचनं परम् । सर्वलोकहितार्थाय भास्करेषोदितं
 सुरा । शार्ङ्गधरः ।

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. सर्जिकाक्षार *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 *gharás* or earthen vessels having small holes pierced in their upper portion are buried. The holes are kept closed at the commencement of the operations. 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,

1 पथ्यारोहितकं काथं यवक्षारकषायुतम् । पिबेत् प्रातर्द्वत्सोऽह्णुत्सो-
दरनिवृत्तये । शाङ्गधरः ।

2 यवक्षारस्य चूर्णन्त संयोज्य सितया सह । भक्षयेद्वियतं तस्य प्रथ-
मेन्मूलनिग्रहः । भावप्रकाशः ।

potash etc. The properties of *sarjiká* are said to be like but somewhat inferior to those of *yavakáshara*. It is chiefly used in combination with other medicines of its class in the treatment of acidity, dyspepsia, and enlargements of the abdominal viscera. Externally it is used as a caustic.

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

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

1 खर्जिकाद्यचूर्णम् । खर्जिका च यवचारः सिन्धुगौरक्षलं विडम् ।
सास्रद्रिकं रोमकञ्च कोलमात्राणि कारयेत् । एकीकृत्याखिलं चूर्णं भाषयेन्मातु-
लुङ्गजैः । रसेर्वा दाडिमैर्वापि शोषयेदात्मनेन वा । तच्चूर्णं नाशयेद्गुल्मं
सहषीमामजां रुजम् । अग्निञ्च कुरुते दीप्तं रुचिञ्च कफनाशनम् ।
शाङ्गधरः ।

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 reduciug 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 *nausadar* 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, चार, 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.

*Vásvánarakshára.*¹ Take of the mixed ashes of *Euphorbia*

¹ वैश्वानरचारः । कुड्मकीचिलकैरण्डवह्यं च पुनर्नवम् । तिलापामार्ग-

neriifolia (snuhi), *Calotropis gigantea* (arka), *Plumbago Zeylanica* (chitraka), *Ricinus communis* (eranda), *Cratava Roxburghii* (varuna), *Boerhaavia diffusa* (punarnavá), *Sesamum Indicum* (tila), *Achyranthes aspera* (apámárga), *Musa sapientum* (kádali), *Butea frondosa* (palása), 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, *kálájirá*, ginger, long pepper, black pepper and assafoetida, each four tolas, and mix. This combination is given in doses of one to two scruples, with cold water in dyspepsia, anasarca etc.

Abhayá-lavana.¹ This is a preparation similar to *Vaisvánaraka-kshára* 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,

कदली पलाशं तिलनिर्डीं तथा । गृहीत्वा ज्वालयेदेतत् प्रस्यं भस्माखिलं
यथा । जलादके विपक्तव्यं यावत् पादावशेषितम् । सुप्रसन्नं विनिस्त्राव्य
लवणं प्रस्यसंयुतम् । पक्कं निर्धूमकठिनं स्रक्ष्मचूर्णीकृतं पुनः । यवानी जीर-
कव्योषस्थूलजीरकहिङ्गुभिः । शीतोदकेन तज्जूरुणं पिबेत् प्रातर्हि मातया ।
तस्मिन् जीर्णोद्गमश्चीयाद् यूषैर्जाङ्गलजै रसैः । ईषदन्तैः स लवणैः सुखोष्णै-
र्वक्त्रदोषनैः । एतेनाग्निर्विबर्द्धेत बलमारोग्यमेव च । तत्रानुपानं शस्तं हि
तक्रं वा भोजनेहितम् । सन्दाग्न्यर्शो विकारेषु वातश्चेद्भ्रामयेषु च । सर्वाङ्ग-
शोयरोगेषु शूलगुल्मोदरेषु च । अश्लथ्यां शर्करायाञ्च विण्मूत्रानिलरो-
गिषु ।

भावप्रकाशः ।

1 अभयालवणम् । पारिभद्रपलाशाकसुह्यपामार्गचित्कम् । कर्णाग्निमन्थवसुकं
श्वदंष्ट्रवहतीदयम् । पूतिक्रास्कोतकृटजकोषातक्यः पुनर्नवा । समूलपत्रशाखाश्च
क्षोदयित्वा उदूखले । तिलनालेन दीप्ताग्निं सुदग्धं भस्मशीतलम् । चारं प्रस्यं

assafœtida, ajowan, root of *Aplotaxis auriculata*, (*kushtha*), and *Curcuma Zedoaria (sati)*, each four tolás, and the whole intimately mixed. This medicine is given in doses of half to one tolá 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 betle leaves. Both these vegetables should not be less than three years old. The diamond is enclosed within this paste and roasted in a pit of fire. The process is repeated seven times, when the stone is easily reduced to a fine powder. Another process consists in roasting the diamond enclosed in a paste made of horn-shavings, for three times in succession. Diamond thus prepared is said to be a powerful alterative tonic that improves nutrition, increases the strength and firmness of the body and removes all sorts of diseases. Dose about one grain.

Diamond enters into the composition of several alterative and tonic medicines, such as the *Trailakya chintamani rasa*, *Ratnagiri-rasa*, *Sarvanga sundara rasa*, etc. These medicines are similar in

गृहीत्वा च न्यसेत् पात्रे नवे दृढे । जलद्रोणे विपक्तव्यं यावत् पादावशेषितं ।
 पूर्वं वत्क्षारकत्वेन साधयेच्च यवक्षयः । प्रस्थमेकञ्च लवणं तदर्द्धाञ्च हरीतकीम् ।
 गोमूत्रस्याङ्कं दत्त्वा क्षारवत् साधयेत् शनैः । किञ्चिद्धारिणि सान्द्रे च सम्यक्
 सिद्धेऽवतारिते । अजाजोत्पूषणं हिङ्गुयमानी पुष्करं शठी । एतैर्द्धपलैर्भागै-
 श्चूर्णीकृत्य प्रदापयेत् । लवणञ्चाभयानाम भक्षयेच्च यथाबलम् । व्याधीन वेद्य
 मतिमाननुपानं यथाबलम् यक्तुञ्जीहोदरानाह शुभसाहोला मनसान्द्रजित् ।
 यावत् कोष्ठगता रोगान् निहन्त्याशुनसंशयः । प्रतितुन्यर्त्ति हृद्रोगशर्वराश्ररि-
 नाशनम् ॥

भैषजप्रत्नावली ।

composition. They all contain diamond, pearls, gold, iron, talc, mercury, etc, in varving proportions and are used in similar cases.

*Trailakya 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 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.

Pittántaka rasa.² Take of nutmegs, mace, *jatámánsi* root, root

1 त्रैलोक्यचिन्तामणिरसः । हीरं सुवर्णं मृत्तञ्जुतारं एषां समं तीक्ष्णरजश्च-
तुर्गम् । समंमृताद्यं रससिन्दूरञ्च निष्प्रेष्यतीक्ष्णस्य तथा प्रसवारा । खल्ले द्रव्यैव
कुमारिकाया गुड्गाप्रमाणाथ वटी प्रकाय्या । अद्यादिमं योगशतैरवार्यामय
प्रथायाय मुनिप्रणीतम् ।
रसेन्द्रसारसंग्रहः ।

2 पित्तान्तकरसः । जातीकोषफलं मांसी कृष्टं तालीशप्रत्तकं । भाक्षिकासृत्
लौहञ्च अन्नं दिव्यं समांशकं । सर्व्वतु यं मृतं तारं सत्यक्निष्प्रेष्य वारिणा ।
द्विगुड्गाभावटीकार्या पित्तरोगविनाशिनी । कोषाश्रितञ्च यत्पित्तं शाखाश्रित-
मथाप वा । मूलञ्चैवास्त्वपित्तञ्च पाण्डुरोगं हृत्तीमकम् । दुर्नामश्चान्ति
वान्तीश्च क्षिप्रमेव विनाशयेत् । रसः पित्तान्तकोहेषुष काशीराजेन भाषितः ।
तारशब्देनात्रशुद्धसौत्तिकं गृह्यते बुधैः ।
रसेन्द्रसारसंग्रहः ।

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.¹ 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 *Pavonia odorata* (*bálá*), juice of the flowers and root-stock of the plantain tree, of the root-stock of *Nelumbium 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).

¹ वसन्तकुसुमाकरः । पृथग् द्वौ हाटकं चन्द्रं त्रयो वङ्गाहिकान्तकम् ।
 चत्वारिंशद्भ्रमश्च प्रवालं मौक्तिकं तथा । भावना गव्यदुग्धेन भावनेक्षुरसेन-
 च । वासा लाञ्छारसोदीच्यरन्नाकन्दप्रसूनकैः । शतपत्ररसेनैव मालत्याः
 कुसुमोदकैः । पशानुष्टगमदैर्भावीं सुगन्धिरससम्भवे । गुञ्जाद्वयमिदं सेव्यं
 सितामध्वज्यसंयुतम् । मेहघ्नं कान्तिदञ्चैव कामदं पुष्टिदं तथा । वलीपलित-
 हञ्चैव सृष्टिभ्रंशविनाशनम् । तुष्टिदं बल्यमायुष्यं पुत्रप्रसवकारकम् । प्रमेहान्
 विंशतिञ्चैव जयमेकादशं तथा । तथा सोमरुजं हन्यात् साध्यासाध्यमथापि
 च । कुसुमाकरनामायं वसन्तपदपूर्वकः । भैषज्यरत्नावली ।

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*), *Terminalia 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*.

* 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.

Yogarāja. 1 Take of *silājatu*, prepared iron, iron pyrites and silver, each five parts, of the three myrobalans, ginger, black pepper and long pepper, plumbago root and *bāberung* seeds, each one part, sugar eight parts. Powder, mix and make into a confection with honey. Dose about half a 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.* *Gerumāti.*

Two sorts of *gairiká* or ochre are mentioned by Sanskrit writers, namely, red and yellow. The red variety, called also *Raktapáshána* is used in medicine. It is a silicate of alumina 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 *Jvarakunjara párin dra rasa*, which contains nearly all the mineral substances.

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

1 योगराजः । त्रिफलायास्त्वयोभागास्तयस्त्रिकटुकस्य च । भागश्चि-
कमूलस्य विडङ्गानां तथैव च । पञ्चाशसजवनो भागास्तयारूथ्यमलस्य च ।
मात्रिकस्य विशुद्धस्य लौहस्य रजसस्तथा । अष्टौ भागाः सितायाश्च तत्सर्वं
स्रग्णचूर्णितम् । मात्रिकेणाप्तं स्याद्यमायसे भाजने शुभे । उडुखरसमां
मात्रां ततः खादेत् यथाग्निना । दिने दिने प्रयोगेन जीर्णं भोज्यं यथेष्ट-
तम् । वर्जयित्वा कुलस्थंश्च काकमाची कपोतकान् । योगराज इति ख्यातो
योगोऽयमस्त्वोपमः । रसायनमिदं श्रेष्ठं सर्वरोगहरं परम् । पाण्डुरोगं
विषं कासं यच्छ्राणं विषमज्वरम् । कुष्ठान्यजरकं मेहं श्वासं हिक्कामरोचकम् ।
विशेषाद्गन्धपञ्चारं कामलां गुदजानि च । चक्रदत्तः ।

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.

Pradípána. 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.

Kálakuta. 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 Concans.

Haláhala. 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 Malayáchala, 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 *Vatsanábha* 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 मरिचं पिप्पलीकणा । गन्धटङ्गं
तथा भागं द्विभागं हिङ्गुलं भवेत् । जलेन वटिकां कार्या गुञ्जामात्रा प्रमा-
णतः । मधुना लेहनं कार्यं सर्व्वञ्चरनिवर्त्तये । रसरत्नाकरः ।

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 *Panchavakra 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*, *vit* and *sambar* salts, the three myrobalans, ginger, long pepper and black pepper, prepared talc, mercury and sulphur, in equal parts. First rub the mercury and sulphur together, then mix them with the other ingredients, soak the mixture seven times successively in the juice of the following leaves, namely, of *Vitex*

1 ज्वरहरारिः । हिङ्गुलञ्च विषं व्योषं टङ्गणं नागराभया । जयपाल-
समायुक्तं सद्योज्वरनिवारणम् । सर्व्वचूर्णसमं जयपालचूर्णं सर्व्वं पिष्ट्वा
कलायप्रमाणा वटिका कार्या आर्द्रकस्वरसेन पिबेत् ॥ भैषज्यरत्नावली ।

2 पञ्चवक्त्ररसः । शुद्धस्त्रतम्बिषं गन्धं मरिचं टङ्गणङ्गणा । मर्दयेद्भूर्त्तजै-
र्द्रावैर्दिनमेकञ्च शोषयेत् । पञ्चवक्त्रोरसोनामद्विगुञ्जः सन्निपातहा । अर्कमूल-
कषायन्तुसत्सूषणमनुपाययेत् । शार्ङ्गधरः ।

3 सौभाग्यवटिका । सौभाग्यामृतः जीर पञ्चलवण व्योषा भयाक्षामला ।
निश्चन्द्राश्रक शुद्धगन्धकरसानेकीकृतान् भावयेत् । निर्गुण्डीयुग मृङ्गराजक टषा-
पामार्गपत्रोल्लसत् । प्रत्येकस्वरसेन सिद्धवटिका हन्तिदोषोदयम् । येषां
शीतमतीव दाहमखिलं खेदद्रवाद्दीकृतम् । निद्रां घोरतरां समस्तकरणव्याभो-
हमूढं मनः । स्थूलं श्वासवलासकाससहितं मूर्च्छाश्चिह्नड्वजरम् । तेषां वै
परिहृत्य जीवितमसौ गृह्णाति मृत्योर्मुखात् । भैषज्यरत्नावली ।

Negundo (*nirgundi*) *Nyctanthes Arbor-tristis* (*sepháliká*), *Eclipta prostrata* (*kesarāja*), *Adhatoda Vasica* (*vásaka*) 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 *Rámavána 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 *Hutásana 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* (*másha*), 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। पारदासूत खवङ्गगन्धकं भागयुग्मं सरिचेन मिश्रितम् ।
तत्रजातिफलसर्द्धभागिकं तिन्निङ्डीफलरसेनसर्द्धितम् । वह्निमान्द्यदशवत्ताना-
शनो रामवाण इतिविश्वुतोरसः । रसेन्द्रचिन्तामनी ।

2 कफकैटूरसः । टङ्गणं मागधीशङ्खं वत्सनाभं समंससम् । चार्द्रकस्वरसे-
नापि भावयेद्विषसलयम् । गुञ्जाभातं प्रदातव्यं चार्द्रकस्वरसेन वै । पीनसंश्यास
कासञ्च गलरोगं गलयहम् । कर्णरोगं नेत्ररोगं दन्तरोगञ्चदारुणम् ।
एतान् रोगाच्चिह्न्याशु कफकैटूरसोत्तमः । रसेन्दसारसंग्रहः ।

Visha taila.¹ Take of sesamum oil four seers, aconite root eight tolas, seeds of *Pongamia glabra* (*karanja*), turmeric, wood of *Berberis Asiatica* (*dáruharidrā*), root of *Calotropis gigantea* (*arka*), of *Nerium odorum* (*karavira*), flowers of *Tabernaemontana coronaria* (*tagara*), *Acorus calamus* (*vacha*), *Aplotaxis auriculata* (*kushtha*) *Vallaris dichotoma* (*ásphotá*), red sandal wood, flowers of *Aganosma caryophyllata* (*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, *A'taicha*, अतिविष, *A'tivisha*. *Vern.* *A'tis*.

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

In fever with diarrhoea the following compound decoction² is much used in practice. Take of *átis*, ginger, *kurchi* bark, tubers of *Cyperus rotundus* (*mustaka*), and root of *Tinospora cordifolia* (*gulancha*), 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 । नक्तमालं हरिद्रे द्वे अक्षरगरेभ्यश्च । करवीरं वचाकुडमा-
स्फोतारक्तचन्दनम् ॥ मालतीसप्रपर्णञ्च मञ्जिष्ठासिन्धुगरिका । एषामर्द्धपलान्
भागान् विषस्यापिपलन्तथा । चतुर्गुणे गवां मूत्रे तैलप्रस्थं विपाचयेत् । श्वित्त-
विस्फोट क्तिम कीटलूता विचर्चिकाः । कण्डुकच्छु विकाराश्च ये व्रणाविषदू-
षिताः । विषतैलमिदं नान्ना सर्व्वव्रणविशोधनम् । चक्रदत्तः ।

² नागरं कूटजोमस्तसृष्टतातिविषातथा । एभिःकतं पिबेत्काथं च्वराती-
सारनाशनम् । शार्ङ्गधरः ।

quantity is given in two or three divided doses during the course of the day. Chakradatta recommends the following called *Hrive-rádi*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, diarrhoea, 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-ka*,² from its being composed of four ingredients.

NIGELLA SATIVA.

Sans. कणजीरक, *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, diarrhoea puerperal diseases etc. They are also said to increase the secretion of milk, and are therefore given to recently delivered females in combination with a few other medicines. *Nigella* seeds are scattered between layers of woolen clothes, shawls etc., to preserve them from insects. This use of the seeds appears to be common all over India.

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

¹ ह्रीवेरादिः । ह्रीवेरातिविषामुस्त विलुधान्यकनागरैः । पिवेत्पिच्छा-
विबन्धघ्नं शूलदेषामपाचनम् । सरक्तं हन्यतीसारं सज्वरं वायविज्वरम् ।

चक्रदत्तः ।

² बालचालुर्भद्रिका । घनकण्ठारुणाष्टङ्गीचूर्णं जौष्ट्रेण संयुतम् । शिशो-
र्वेरातिसारघ्नं कासश्वासवमीहरम् ।

चक्रदत्तः ।

³ कालाजाजी तु सगुडा विषसज्वर नाशिनी ।

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* (*vadari phala*), root of *Aplotaxis auriculata* (*kushtha*) and *kamala* powder, each one *tolá*, treacle one hundred *tolás*, milk one seer, clarified butter four *tolas*. Boil them together and prepare a confection. Dose about a drachm every morning.

NAT. ORDER. MENISPERMACEÆ.

STEPHANIA HERNANDIFOLIA.

Syn. Cissampelos hexandra. Rox.

Sans. अम्बश, Ambashthá. पाठा, Páthá. Vern. A'kanádi, Nemuka.

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

1 कारव्यजाजीमरिचं द्राक्षाट्टक्षास्त्रदाडिमम् । सौवर्चलं गुडं क्षौद्रं सर्वा-
रोचकनाशनम् । चक्रदत्तः ।

2 उपकुञ्चिकां पिप्पलीञ्च मदिरां लाभतः पिबेत् । सौवर्चलेन संयुक्तां
योनिशूलनिवारणीम् । चक्रदत्तः ।

3 पञ्चजीरक पाकः । जीरकं स्थूलजीरञ्च शतपुष्पाद्वयं तथा । यवानी
चाजमोदा च धान्यकं मेथिकापि च । शुण्ठी कृष्णाकणामूलं चित्रकं ह्रवुषापि
च । वदरीफल चूर्णञ्च कुष्ठं कम्प्लुकं तथा । एतानि पलमात्राणि गुडं
पलशतं मतम् । क्षीरप्रस्थद्वयं दद्यात्सर्पिषः कुडुवं तथा । पञ्चजीरकपाको-

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, diarrhœa, urinary diseases, dyspepsia etc.

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

इयं प्रसूतानां प्रशान्तये । युज्यते सूतिकारोगे यीनिरोगे ज्वरेक्षये । काशे
श्वासे पाण्डुरोगे काश्ये वाताभये च । भावप्रकाशः ।

1 पाठेन्द्रयवभूतं सुत्तपर्पटकास्तृताः । जयन्याममतीसारं सज्वरं सम-
होषधाः । चक्रदत्तः ।

2 शभयतिपाठामूलं क्षोद्रयुतं तण्डुलाम्भसापीतम् । अन्नभूतं विद्रधि-
सुद्धतमाश्वेवमनुजस्य । अपक्वेतेतदुद्दिष्टं पक्वे तु ब्रणवत् क्रिया । चक्रदत्तः ।

3 पारिजातजयानिम्बवाङ्गगायत्रिणां पृथक् । पाठायाः सागुरोः पीताह-
यस्य शारदस्य च । जले क्षुमद्यसिकृताशनैर्लेवणपिष्टकान् । सान्द्रमेहान् क्रमात्
घ्नन्ति अष्टौ काथाः सरालिकाः । चक्रदत्तः ।

4 दृहतीधावनीपाठायशीमधुकलिङ्गकाः । पाचनीयोदहत्यादिः कच्छद्रोष-
त्वयापहः । चक्रदत्तः ।

root of *Solanum Indicum* (*vrihati*), liquorice root and *indrajava* seeds, equal parts, in all two tolas. Boil down to one-fourth.

TINOSPORA CORDIFOLIA.

Sans. गुड़ुची, *Guduchi*. अमृता, *Amritá*.

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

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

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

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

1 पिप्पलीमधुसंमिश्रं गुड़ुची खरसं पिबेत् । जीर्णं ज्वर कफ श्लेह
कासारोचकनाशनम् । गुड़ुची पर्पटं सुप्तं किरातं विश्वभेषजम् । वात
पित्तज्वरे देयं पञ्चमद्भिदं शुभम् ।

भावप्रकाशः ।

2 धात्रीमोदकः । धात्रीं पथ्यां कषां गुण्ठीं तल्याञ्च चूर्णयेद् दृढम् ।

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.

Guḍuchyādi 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 guḍuchyādi 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 guḍuchyādi 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

चतुःसमान्ताज्ञेया शर्कराच पलं तथा । मधुना मोदकं कर्ष्यात् जीर्णञ्चरहरं परं । मन्दाग्निदीपनं चैव सद्योदाह विनाशनम् । श्लेहञ्चरे तथाकासे श्वासे च रक्तपित्तके । दापयेत् मोदकं वैद्यः धार्तानामभिदं महत् । सारकौस्तुदी ।

1 वत्स्यादन्तुङ्गवः काथः पीतो गुग्गुलुसंयुतः ।

2 गुडूच्याः स्वरसं कल्कं चूर्णं वा काथमेव वा । प्रभूत कालभासेव्यं मुच्यते-
वातशोषितात् । चक्रदत्तः ।

3 गुडूचीकाथकल्काभ्यां तैलं वा वातरक्तनुत् ।

चक्रदत्तः ।

manner. This oil is recommended by Charaka in eruptive skin diseases with troublesome itching, as also in diseases of nervous origin.

NAT. ORDER. BERBERIDEÆ.

BERBERIS ASIATICA AND OTHER SPECIES.

Sans. दारुहरिद्रा, *Dāruharidrā*. दार्वी, *Dārvi*.

Vern. *Dāruhaldi*. *Hind.*

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

Rasānjana† *churna*,¹ or compound powder of *rasot*. Take of *rasot*, *ātis*, the bark and seeds of *Holarrhena antidysenterica*, flowers of *Woodfordia floribunda* (*dhātakī*) and ginger, in equal parts. Powder and mix. Dose, about a drachm, with rice water

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

† दार्वीकाय समंश्चारं पादम्भक्त्वा यथाघनम् । तदारसाञ्जनाख्यन्तुनेलयोः परमंहितम् ।

1 रसाञ्जनादि चूर्णः । रसाञ्जनं सातिविषं कुटजस्य फलं त्वचम् । धातकी-
शृङ्गवेरञ्च प्रपिबेत्तण्डुलाम्बुना ॥ चौद्विनयुक्तं सुदतिरक्तातिसारमुल्लनम् ।
मन्दं दीपयतेचार्णि मूलञ्चापिनिवर्त्तयेत् । चक्रदत्तः ।

(*tandulámbu*) and honey. This powder is said to be useful in bilious diarrhoea.

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 aphthous sores.

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

1 दाक्षीणादिकाथः । दाक्षीं रसाञ्जनं वृषाब्दं किरातं विल्वं भङ्गातकै रवि-
हत्तोमधुनाकषायः । पीतो जयत्यतिबलं प्रदरं सन्धूलं पीतासितारुणं विलोहित
नीलं शुक्लम् ॥ चक्रदत्तः ।

2 दाक्षीं तथै वाभलकीरसेन समाल्लिकां पैत्तिकं सूत्रदृच्छे । चक्रदत्तः ।

3 त्रिफला खदिरो दाक्षीं न्ययोधादिवलाकुशाः । निम्बं कोलकपत्राणि
कषायः शोधने हितः । चक्रदत्तः ।

4 रसाञ्जनं विशेषेण पानालेपनयोर्हितम् । गुदभ्रंशेगुदं स्नेहैरभ्यज्याशु
प्रनेशयेत् । 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 varie-
 ty 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 *Mrindāla*. The species of
Nymphæa described, are as follows :—

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

Nymphæa stellata. Nilotpala, Sans. Nilsaphalā, Beng.

Nymphæa rubra. Raktotpala, Sans. Raktakambal, Beng.

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

1 हरीतकीसैन्धवञ्च गरिकञ्च रसाञ्जनम् । विडालकोजलेपिष्ठः सर्वनेत्राम-
 यापहः ॥ शार्ङ्गधरः ।

2 दाड्योरसाञ्जनं वापि सन्ध्युक्तं प्रपूरणम् ॥ निहन्तिशीघ्रं दाहाश्रुवेदनाः
 सन्दसम्भवाः । चक्रदत्तः ।

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 *makhánna* is 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 tolas, and prepare a decoction in the usual way. This decoction is said to be useful in thirst, burning of the body, fainting, vomiting, hemorrhage from the internal organs, and bleeding from the womb during gestation.

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

1 सपद्मकेशरं चौद्रं नवनीतं नवं लिहन् । सिताकेशरं संयुक्तं रक्तार्थसि-
सुखी भवेत् । भावप्रकाशः ।

2 दन्न सौवर्चला जाजीमधुकं नीलसुत्वलम् । पिबेत् चौद्रयुतं नारीवाता-
हृग्दरपीडिता । चक्रदत्तः ।

3 युधिष्यागर्भतोरक्तं स्रवेद्यदि स्रुर्भुङ्क्तेः । तन्निरोधाय सा दुग्धसुपलादि
सूतं पिबेत् । भावप्रकाशः ।

4 मृणालविमशालूकचन्दनोत्पलकेशरैः । स्निग्धशीतैः शिरोदिह्यात्तद्वदा-
मलकोत्पलेः । चक्रदत्तः ।

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.

PAPAVR SOMNIFERUM.

Sans. अहिफेन, *Ahiphena.* *Vern.* A'phim.

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

The capsules of the poppy are called *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 a 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 diarrhœa and cholera the following, called *A'marákshasi*,² is used. Take of opium, nutmeg, cloves, cinnabar and camphor,

1 चन्दनाम्बु कणः खान्दिता लवणोपवीजितः। सुषाहाहार्दितोऽम्बोजकद-
लीदलसम्भवे । चक्रदत्तः ।

2 आमराक्षसी । जातीफलं लवङ्गं स्यादहिफेणं मशोऽयितम् । कर्पूरं
समभागञ्च वटीं कुर्यात् द्विरक्तिकाम् । अन्नखोदकस्यन्तु अतुपानं प्रशस्यते ।

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

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

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

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

असाध्येत्वामरोगे तु एषयेत्रमहौषधम् । आभराक्षसीनामायं रसः परमदु-
र्लभः । रसेन्द्रसारसंप्रहः ।

1 यहणीकपाटरसः। जातीफलं टङ्गणम भ्रुकञ्च धूर्धूरवीजं समभागचूर्णम्।
भागद्वयंस्यादह्निफेणकस्य गन्धालिकापत्र रसेनमर्दम् । चणप्रमाणां वटिकां
प्रकार्यां यत्नाद्विदध्यात् यहणोगद्देशु । सामेषु शूलेषु सरक्तकेषु पक्षेष्पक्षेषु
गुदामत्रेषु । पथ्यं सद्ध्योदनमत्रदेयं रसोत्तमोयं यहणीकपाटः ।

रसेन्द्रसारसंप्रहः ।

2 दुग्धवटी । अमृतं सूर्यगुञ्जं स्यात् अह्निफेणं तथैव च । पञ्चरक्तिक
लौहञ्च षड्विंशतिभक्तकमभ्रकम् । दुग्धगुञ्जाद्वयमिता वटीकार्याभिषग्विदा ।
दुग्धानुपानं दुग्धैश्च भोजनं सर्वथा हितम् । शोथं नानाविधं हन्ति
यहणी विषमज्वरम् । मन्दाग्निं पाण्डुरोगञ्च नाम्ना दुग्धवटी परा । वर्जयेत्
लवनं वारि व्याधिनिःशेषतावधि । भैषज्यरत्नाबली ।

3 शम्भुनाथ रसः। तालकं टङ्गणं रक्तं फटिकारी च मनःशिला। गोदन्तं
वत्सनाभञ्च सर्वतल्लञ्च भागिकम् । सर्वतल्ल्यं रसं गन्धं तत्समं फण-
फेणकम् । शक्राशन रसैर्भाव्यं निर्गुण्डग्राश्च रसेन च । कनकस्य पत्ररसैर्निश्च-

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.

पत्ररसैः पुनः । पृथगेषां रसैः सप्त भावयेत् कुशलोभिषक् । वटीं रक्तिद्वयं
कुर्व्यात् शङ्खवेरानुपानतः । सर्वरूपं साज्जिपातम तिसारञ्च नाशयेत् । पृथ्वी
मामदोषञ्च ज्वरं सर्वं विनाशयेत् । उद्वेगे मस्तके तैलं पथ्यञ्च दधिभक्तकम् ।
श्रीतोपचारं कर्त्तव्यं क्रमेण गुणवर्द्धते । शम्भुनाथ इति ख्यातो महादेवेन
भाषितः ।

भैषज्यतन्त्रः ।

¹ अकरादिचूर्णः । अकराकरभः शुराठीककोलं कुङ्कुमं कण्ठा । जाती-
फलं लवङ्गञ्च चन्दनञ्चेतिकार्षिकान् । चूर्णानिमांस्ततः कुर्व्यादहिफेणं पलो-
न्मितम् । सर्वभेकीकृतं चूर्णं सूक्ष्मं तद्वस्त्रगालितम् । सितासर्वसमादेयामाषकं
भधुनालिहेत् । शुक्रसम्भकरं चूर्णं पुंसामानन्दकारकम् । नारीणां प्रीतिजननं
सेवेतनिशिकासुकः ।

शाङ्गधरः ।

² दुग्धेन खाखसंवीजं प्रलेपाहारणं जयेत् ।

शाङ्गधरः ।

NAT. ORDER. CRUCIFERÆ.

SINAPIS.

Sans. सिद्धार्थ, *Siddhārtha*. राजिका, *Rājikā*.

Vern. *Sarishá*, *Rái Sarishá*, *Beng*.

Two varieties of mustard are mentioned by Sanskrit writers, namely, *siddhārtha* or white mustard, (*Sinapis glauca* of Roxburgh, *Brassica campestris*, *L.*) and *rājikā* or dark brown variety, (*Sinapis 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 वचाच्छोभ्र सैन्धवैश्चप्रलेपनम् । वसनञ्च निहन्याशु पिडकां योवनोद्भवाम् । चक्रदत्तः ।

2 सिद्धार्थं रजनीकुष्ठप्रपुञ्जाटतिलैः सह । कटुतैलेन संमिश्रमुदईभ्रं विलेपनम् । याज्ञिकः ।

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 Sāran-gadhara. 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, diarrhœa, and skin diseases from disordered blood. It is said to be a very efficaceous 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. वरुण, Varuna. चशुरिन्न, 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 organs.

1 गौरसर्षपकवकेन प्रदेहोवा रुजापहः । भावप्रकाशः ।

2 पुनर्नवांदाशुशुठौ सिद्धार्थं शिशुमेवच । पिद्वाचैवारनालेन प्रलेपः सञ्च-
शोथहा । शार्ङ्गधरः ।

3 चन्द्रसूररसः । चन्द्रसूरस्य बीजानि क्षिपेदद्युषे जले । यदा सृष्टूनि
सृष्टीयान्ततोवासि गालयेत् ॥ ह्रिक्कातिवेगविकलस्तज्जलं पलमात्रया । पिबेत्
पिबेत् पुनश्चापि ह्रिक्कावष्टं प्रशाम्प्रति ॥ भावप्रकाशः ।

In calculous affections it is used in a great variety of forms. Thus a simple decoction of the bark may be given with the addition of treacle.¹ A compound decoction is prepared along with equal parts of *Tribulus terrestris* (*gokshura*) and ginger, and is administered with the addition of *yavakshāra* and honey.² A compound powder called *Varunādyā churna*³ is prepared as follows. A solution of the ashes of *varuna* is made as directed under the head of alkaline water (*Kshārodaka*). This solution is boiled with the addition of *varuna* bark in powder and *yavakshāra* (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 *Varunādyā guḍa* is prepared by adding to the fluid extract of the bark, treacle and a number of diuretic and aromatic substances.

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

1 वरुणत्वक्कषायन्त पीतञ्च गुडसंयुतम् । अश्रुरीं पातयत्याशु वस्तिमूल-
निवारणम् । चक्रदत्तः ।

2 वरुणस्य त्वचं श्रेष्ठं शुण्ठीगोक्षुरसंयुताम् । यवक्षारागुडं दत्त्वा काथ-
यित्वा पिबेद्विताम् । चक्रदत्तः ।

3 वरुणकभक्षपरिशुत मल्लिं तञ्चूर्णं यावशुक्युतम् । कथनेयं तत्तावद्याव-
श्चूर्णत्वमायाति । तद्गुडयुक्तं हन्यात् तद्दरामश्रुरीं घोराम् । श्लोहानं
गुल्मवरं श्रोण्यां कुक्षोरजां तीव्राम् । भावप्रकाशः ।

4 वरुणाद्यं हतम् । वरुणस्य तुलां क्षुषां जलद्रोणे विपाचयेत् । पादशेषं
परिस्त्राय हतप्रस्थं विपाचयेत् । वरुणं कदली विल्वं तण्डुलं पञ्चमूलकम् ।
अमृताचाश्रुजं देयं बीजञ्च त्रयोदशवम् । शतपर्ष्वतिलक्षारं पलाशक्षारमेव च ।
यूथिकायाश्च मूलानि कार्ष्णिकाणि समावपेत् । अस्य मात्रां पिबेज्जन्तुदेशका-
लाद्यपेक्षया । जीर्णं तस्मिन् पिबेत् पूर्वं गुडं जीर्णन्तु मस्तुना । अश्रुरीं
शर्कराञ्चैव मूलद्वयञ्च नाशयेत् । भावप्रकाशः ।

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

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

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

NAT. ORDER. MORINGACEÆ.

MORINGA PTERYGOSPERMA.

Sans. शोभाञ्जन, *Sobhánjana*. शिग्रु, *Sigru*.

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

¹ वरुणाद्यं तैलम् । त्वक्पत्रमूलपुष्पस्य वरुणात्प्रतिकण्टकात् । कषायेण पचेत्तैलं वस्तिना स्थापनेन च । शर्कराशुक्लीशूलघ्नं मूलकच्छनिवारणम् ।

चक्रदत्तः ।

² काञ्चनारत्वचः काथः शुण्ठीचूर्णेन नाशयेत् । गरुडमालां तथा काथः क्षौद्रेण वरुणत्वचः ।

शाङ्गधरः ।

³ पुनर्नवावरुणयोः काथोन्तर्विद्रधिङ्गयेत् ।

शाङ्गधरः ।

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

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

In internal and deep seated inflammation and abscess (*vidradhu*) 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

1 पीतः श्लोहोदरं हन्यात्पिप्पलीमरिचान्वितः । अश्लवेतसंयुक्तः
शिशुक्वाथः ससंभवः । चक्रदत्तः ।

2 शोभाञ्जनकनिर्यूहं संभवान्निकृषणान्वितम् । पलाशचचारयुक्तं वा यवचारं
प्रयोजयेत् । चक्रदत्तः ।

3 शोभाञ्जनकनिर्यूहोहिङ्गुसंभवसंयुतः । अचिरं विद्रधिं हन्ति प्रातः-
प्रतिनिषेवितः । चक्रदत्तः ।

4 शिशुमूलं जले धौतं दरपिठं प्रगालयेत् । तद्रसंमधुना पीत्वाहन्यन्तर्वि-
द्रधिं नरः । चक्रदत्तः ।

5 स्वेदोपनाहाः कर्त्तव्याः शिशुमूलसमन्विताः । 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 कायश्च शिग्रुमूलोत्थः कटुष्णोऽश्मरीघातनः । चक्रदत्तः ।

2 सैन्धवं श्वेतमरिचं सर्षपाः कुष्ठमेव च । वस्तुमत्रेण संपिष्टं तन्द्रालसं
निदारणम् । भावप्रकाशः ।

3 शोभाञ्जनकनिर्यासस्त्रिलतलेन संयुतः । व्यक्तोष्णः पूरणः कर्षे
कर्षमूलोपशान्तये । चक्रदत्तः ।

4 नवनीततिलैः कल्कोजेतारक्तार्थसां सृष्टतः । नवनीतसितानागकेशरश्चापि
तद्भिधः । शाङ्ग धरः ।

5 नागकेशरचूर्णं वा शतधौतेन सर्षपा । पिष्ट्वा लेपो विधातव्योदाहे हर्षेच
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*. बाट्यालका, *Bátyálaka*.

Vern. Berela, Beng. Khareti, Hind.

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

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

1 श्वेतोवा यदि वा रक्तःशुपको पृच्छणीगदः गुडं नाधिकसर्जेन भक्षितेनाशु-
नश्यति । भावप्रकाशः ।

2 सिन्धुवन्धवगुडभधुमहिषाक्षगैरिकं सद्यतम् । सिक्थकमेतत्पक्वं पादस्फुट-
नापहं सिद्धम् । चक्रदत्तः ।

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 *Másha baládi kvátha*.³ Take of the pulse of *Phaseolus Roxburghii* (*másha*), root-bark of *Sida cordifolia* (*balá*), root of castor oil plant and of *Mucuna pruriens* (*átmaguptá*), *Hygrophila polysperma* (*katrina*), *Vanda Roxburghii* (*rásná*), and *Withania somnifera* (*asvagandhá*), equal parts, in all two tolas, and prepare a decoction in the usual way. It is administered with the addition of assafoetida and rock salt, in hemiplegia, stiff neck, facial paralysis, and noise in the ears with headache. An oil for external application in these diseases, called *Balátaila*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 महाबलामूल सहौषधाभ्यां क्वाथो निह्न्याद्विषमञ्चरं हि । शीतं
सकम्पं परिदाह्युक्तं विनाशयेत् द्वित्तिदिनप्रयोगात् । भावप्रकाशः ।

2 प्रदरं हन्ति बलाया मूलं दुग्धेन मधुयुतं पीतम् । चक्रदत्तः ।

3 माषबलादिः । माषबलाशुक्लिश्वीकटणरास्नाश्वगन्धोरुचूकाणाम् ।
क्वाथो नस्यनिपीतो रामठलवणान्वितः कोष्णः । अपहरति पल्लवातं मन्यास्तम्भं
सकर्णनादरुजम् । दुर्जयमर्हितवातं सप्ताहाञ्जयतिचावश्यम् । चक्रदत्तः ।

4 बलातैलम् । बलानिःक्वाथकल्काभ्यां तैलपक्वं पयोनितम् । सर्व्वा-
तविकारघ्नमेवं शैरीयपाचितम् । 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 diarrhœa, dysentery and menorrhagia. *Mocharasa* with sugar in equal parts, is given in doses of twenty to forty grains, in the diarrhœa of children. In the dysentery of children, the following is used. Take of *mocharasa*, flowers of *Woodfordia floribunda*(*dhátaki*),

* 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^t Materia Medica, the *Hypoxis orchioides* of Botanists.

root of *Mimosa pudica* (*lajjálu*), 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 *mocharasa* and *indrajava* seeds.²

HIBISCUS MOSCHATUS. *Sans.* लताकस्तुरिका *Latá-kasturiká*, *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 *Bálá*, ह्रिवेर *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. *Bálá* enters into the composition of a well-known fever drink called *shadanga pániya*, (see *Andropogon muricatum*).

NAT. ORDER STERCULIACEÆ.

PTEROSPERMUM SUBERIFOLIUM. *Sans.* सुचुकुन्द, *Muchukunda*. 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 मोचरसः समङ्गाव धातकीपद्मकेशरम् । पिट्टैरेतैर्यवागृः स्याद्रक्तातीसार-
नाशिनो । भावप्रकाशः ।

2 त्रिलुं छागपयः सिद्धं सितामोचरसान्वितम् । कलिङ्गचूर्णसंयुक्तं रक्ता-
तिसारनाशनम् । चक्रदत्तः ।

3 शिरोर्त्तिं वातजां हन्यात्पुष्पं वा सुचुकुन्दजम् । शाङ्गधरः ।

NAT. ORDER GERANIACEÆ.

OXALIS CORNICULATA.

Sans. अम्ललोणिका, *Amlaloniká*. चाङ्गेरी, *Chángerí*.

Vern. *A'mrulsák*, *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 *dadhi*, 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 diarrhœa, 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.* *Kámrángá*, *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 । चाङ्गेरी खरसे सर्पिः कल्कैरेतैर्विपाचितम् । चतुर्गुणे च दध्ना च तद्दहनं कफवातनुत् । अशांसि गृहणीदोषं मूलकच्छं प्रवाहिकाम् । गुदभ्रंशात्तिमानाहं घृतमेतद्गुपोहति ! चक्रदत्तः ।

2 चाङ्गेरी कोल दध्यन्त चार नागर संतुतम् । घृतं विपक्वं पातव्यं गुदभ्रंशगदापहम् । भावप्रकाशः ।

NAT. ORDER ZYGOPHYLLACEÆ.

TRIBULUS TERRESTRIS.

Sans. गोक्षुरी, *Gokshuri*. इक्षुगन्धा, *Ikshugandhá*.

Vern. Gokhuru, *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

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

1 काथं गोक्षुरबीजस्य यवक्षारयुतं पिबेत् । सूत्रकच्छं सकञ्जञ्च पीतं
शीघ्रं निवारयेत् । चक्रदत्तः ।

2 समतिलगोक्षुरचूर्णं छागीजीरेणसाधितं समधु । भुक्तं क्षपयति पाण्डुरं
यज्जनितं कुप्रयोगेण । भावप्रकाशः ।

3 गोक्षुरकाद्यबलेहः । गोकण्टकं सदलमूलफलं गृहीत्वा, संकुट्टितं पल-
शतं कथितं तु तोये । पादस्थितेन सलिलेन पलानि दत्त्वा पञ्चाशतन्तु विपचे-
दथ शर्करायाः । तस्मिन् घनत्वमुपगच्छति चूर्णितानि दद्यात् पलद्वयमितानि
सुभाजनानि । शुण्ठीकषामरिचनागदलत्वगेलाजातीयकोषककुभवपुष्पीफलानि ।
वांशीपलायकमिहृ पण्णिधायनित्यम् लेह्यं तु शुद्धममृतं पलसम्मितन्तु । हन्याशु
मूत्रपरिदाहं विवन्धं शुक्रकच्छ्राशरी रुधिरमेहसधुप्रमेहान् । 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		
निम्बूक, <i>Nimbuka</i> . Vern. <i>Kágujinebu</i> , Beng. do. do. 2		
बीजपुर, <i>Vijapura</i> . Vern. <i>Tabánebu</i> , Beng. do. do. 7		
मधुकर्कटिका, <i>Madhukarkatiká</i> , Vern. <i>Miṭhánebu</i> , Beng. do. 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>C. 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 indiges-

* *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.

tion 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 *Járák 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 *Assafœtida*), *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 *yavakshāra* (impure carbonate of potash) and honey.²

Rasāyanāmrita lauha.³ Take of long pepper, black pepper, ginger, the three myrobalans, *bāberung* seeds, cumin and nigella seeds, *ajowan* and the seeds of *Cnidium diffusum* (*vanajamāni*), *chiretta*, *trivrit*, root of *Baliospermum montanum* (*danti*), *nim* bark, and rock salt, each two tolās, prepared iron sixteen tolās, 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 seer and

1 जम्बीरस्वरसः पीतः सायं हृत्पित्तकम् । चक्रदत्तः ।

2 वोजपूररसः पानान्मधुनारयुंतोजयेत् । पार्श्वं हृदस्तिग्मूलानि कोष्ठाद्युच्च
दारुणम् । शार्ङ्गधरः ।

³ रसायनामृतलौहः । त्रिकटु त्रिफला सुखं विरुद्धं जीरकद्वयम् । यमानी-
द्वयं भूनिम्बं त्रिवृद्धन्तीच निम्बुकम् । सर्वेषां कार्षिकं भागं सैन्धवं कर्षमर्द्धकम् ।
खण्डस्य षोडशपलं प्रस्थञ्च त्रिफलाजलम् । जम्बीराणां रसं दद्यात् पलषोडशकं
तथा । पाच्यं सर्वं प्रयत्नेन लौहं दत्त्वा पलद्वयम् । सिद्धे पाके पुनर्दद्यात् घृतं
पलचतुष्टयम् । सर्वरोगेषु संयोज्यं महामृतरसायनम् । गुल्मं पञ्चविधं हन्ति
यकत्प्लीहोदराणि च । कामलां पाण्डुरोगञ्च शोथं जीर्णज्वरन्तथा । रोगान्
सर्वान् निहन्त्याशु भास्करस्तिमिरं यथा । भैषज्यरत्नावली ।

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 MARMELOS.

Sans. विल्व, *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 a 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* (*báld*), 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 diarrhœa 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.

Vilva taila is thus prepared.⁶ Take of dried *bela* fruits, twelve seers and a half and boil in sixty-four seers of water, till reduced

1 गुडेन खाद्येद्विल्वं रक्तातिषारनाशनम् । आमशूलविबन्धघ्नं कुक्षिरोग-
विनाशनम् । चक्रदत्तः ।

2 विबवाब्दं धातकी पाठा शुण्ठी मीचरसाः समाः । पीता रुन्धन्यती-
सारं गुडतक्रेण दुर्जयम् । चक्रदत्तः ।

3 विल्वञ्च पुष्पाणि च घातकीनां जलं सलोभं गजपिप्पली च । क्वाथाव-
लेहौ मधुनैव निश्चयौ बालेषु योज्यावति सारितेषु । चक्रदत्तः ।

4 विल्वमूलकषायेण लाजाश्चैव शर्कराः । आलोहं पाययेद्बालं हृद्यं ती-
सारनाशनम् । चक्रदत्तः ।

5 विल्वपत्ररसं पूतं सोषणं त्रयथौत्त्रिजे । विट् सङ्गैश्चैव दुर्नाम्नि विदध्यात्-
कामलाखपि । चक्रदत्तः ।

6 विल्वतैलम् । शतं संप्लविल्वस्य जलद्रोणे विपाचयेत् । तेन पादावशेषेण
तैलप्रस्यं विपाचयेत् । राक्ष्ता पुनर्नवाङ्गुष्ठं नागरं विल्वमेव च । धातकीदेव-

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* (kushṭa), 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* (sálmaliveshṭa), and prepare an oil in the usual way. This oil is used externally in chronic bowel complaints.

FERONIA ELEPHANTUM.

Sans. कपित्थ *Kapittha*. Vern. Käthbel, 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 *cháttni*, 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.

Kapittháshṭaka churna.¹ Take of the pulp of unripe wood apples eight parts, sugar six parts, pomegranate juice, tamarind

दारुञ्चलोर्ध्वं सुस्तं वच्चा तथा । शाल्मलीवेष्टकञ्चैव पृथक्कर्षत्वयं पचेत् । अस्य
तैलस्य सिद्धस्य षट्पु वीर्यमतः परम् । दुर्णामपहणीरोग मतोसारं सवेदनम् ।
कामला पाण्डुरोगघ्नं क्षमिदोषविनाशनम् । वङ्गिसन्दीपनं बल्यं मेदनास
विघ्ननम् । अपचीं गण्डमालाञ्च ज्वरं जीर्णं व्यपोहति । अश्विभ्यां
निर्मितं पूर्वं विल्वतैलमिदं महत् ॥ तैलावलीसंघोत्तं ।

1 कपित्थाष्टकचूर्णम् । अष्टौ भागाः कपित्थस्य षड्भागाः शर्करामताः ।
दाडिभं तिन्त्रिङ्गीकञ्च श्रीफलं धातकीतथा । अजमोदाच पिप्पल्यः प्रत्येकं
सुस्त्रिभागकाः । मरिचं जीरकं धान्यं पन्धिकं बालकन्तथा । सौवर्षलं

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 *Pavonia 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.* तम्बुरु, *Tumburu*. *Vern.* *Nepáli dhaniá*, *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.* *Guggul*. *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.

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.

यसानीञ्च चातुर्जातं सचित्रकम् । नागरञ्चैकभागाः स्युः प्रत्येकं सूक्ष्मचूर्निताः ।
कपित्थाष्टकं संज्ञं स्यात् चूर्णमेतद्गुलासयान् । अतीसारं जयञ्चैव पदहृणीञ्च व्यपो-
हति ।

याङ्गधरः ।

Yogarāja guggulu.¹ Take of plumbago root, long pepper root *ājowan*, seeds of *Nigella sativa* (*kālājirā*), *báberang* seeds, seeds of *Carum Roxburghianum* (*ajamodá*), cumin seeds, *Pinus Deodara* (*devadáru*), *Chavica officinarum* (*chavya*), cardamoms, rock salt, root of *Aplotaxis auriculata* (*kushṭha*), root of *Vanda Roxburghii* (*rásná*), 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 *Trayodasānga guggulu* is similar in composition to the above. It is made with thirteen aromatic adjuncts, hence its name, and is recommended for use in rheumatism affecting the loins and the sacrum. In rheumatism affecting the joints and bones the following preparation called *A'dityapáka guggulu*² is used. Take

1 योगराजगुग्गुलुः । चित्रकं पिप्पलीमूलं यमानो कारवीन्ध्या ।
 विडङ्गान्यजमोदाश्च जीरकं सुरदारुष ॥ चव्यैलासैन्धवं कुष्ठं रास्नागोक्षुरधा-
 न्यकम् । त्रिफलासुस्तकं व्योषं त्वगुशीरं यवायजम् । तालीशपत्रं पत्रञ्च
 सूक्ष्मचूर्णानि कारयेत् । यावन्त्येतानि चूर्णानि तावन्मात्रान्तु गुग्गुलुम् ।
 संसर्द्य सर्पिषा गाढं स्निग्धे भाण्डे निधापयेत् । ततोमात्रां प्रयुञ्जीत यथेष्टा-
 हारवानपि । योगराजइतिख्यातोयोगोऽयमस्त्वतोपमः । अमवाताद्ववातादीन्
 क्कमिदुष्टव्रणानपि । स्त्रीहायुस्त्रोदरानाहडुर्नामानि विनाशयेत् । अग्निञ्च
 कुरुते दीप्यं तेजोवृद्धिं बलन्ध्या वातरोगान् जयत्येष सन्धिमञ्जगतानपि ।

चक्रदत्तः ।

2 आदित्यपाक गुग्गुलु वटुकः । पृथक् पलांशा त्रिफला पिप्पलीचेति-
 चूर्णितम् । दशमूलाम्बुना भाव्यं त्वगेलाहर्षपलान्वितम् । दत्त्वा पलानि पञ्चैव

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 ¹ 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.

Kaisara guggulu.² Take of pure bdellium, *gulancha* and the three myrobalans, each two seers, water ninety-six seers. First boil the *gulancha* and the myrobalans in the water till the latter is reduced to one-half, and strain the decoction; to the strained fluid add the bdellium and boil in an iron vessel till the whole is reduced to the consistence of treacle. Now add to it the following

गुग्गुलोर्बटकीकृतः । एष मांसरसाभ्यासाद्वातरोगान् विधेषतः । हन्ति सन्ध्या-
स्थिमञ्जस्यान् वृक्षमिन्द्राग्निर्यथा । भाव्यद्रव्यसमंक्वाथ्यं क्वाथोऽष्टांशस्तुतेन च ।
आर्द्रं यावद्दिनं भाव्यं सप्ताहं भावनाविधिः । चक्रदत्तः ।

1 वातारिरसः । रसो गन्धो वरा वङ्गि गुग्गुलुः क्रमवर्द्धितः । त्रिभागा
त्रिफला योज्या चतुर्भागस्तुचित्रकः । गुग्गुलुः पञ्च भागः स्याद्द्रुवतैलेन
मर्द्दितः । क्षिप्त्वा तत्रोदितं चूर्णं तेन तैलेन मर्द्दयेत् । गुटिकां कर्षमात्वान्त
भक्षयेत् प्रातरेवाह्नि । वातारिसंज्ञकोह्येष रसो नियतसेवितः । माघेन मरुतो
रोगान् हरेत् सुरतवर्जिनः । भावप्रकाशः ।

2 कैशर गुग्गुलुः । त्रिफलायास्तृयः प्रस्थाः प्रस्थैकाचाष्टता भवेत् । सङ्कुञ्च-
लीहपात्त्रेण सार्द्धद्रोषाम्बुना पचेत् । जलमर्द्धष्टतं ज्ञात्वाग्दहीयाद्वस्त्रगा-
लितम् । ततः काथे क्षिपेच्छुद्धं गुग्गुलुं प्रस्थसम्मितम् । पुनर्देयमयःपात्रे
दाव्यासंघर्षयेन्मुहुः । सान्दीभूतं ततोज्ञात्वागुडपाकसमाकृतम् । चूर्णैक्यतत-
स्तत्रद्रव्यापीमानिप्रक्षिपेत् । त्रिफलाद्विफला ज्ञेया गुडूचीपलिकामता । षड्यं

substances in fine powder, namely, the three myrobalans, each sixteen tolás, *gulancha* eight tolás, ginger, long pepper and black pepper, each six tolás, *báberang* seeds four tolás, root of *Baliospermum montanum* (*danti*) 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 *gulancha*, root of *Momordica dioica* (*patala*), the three myrobalans, long pepper, black pepper, ginger, and *babering* 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.

OLIBANUM. The gum of the *Salai* tree of India (*Boswellia*

त्रुषणं पोक्तं विडङ्गानां पलार्द्धकम् । दन्तीकर्षमिताकार्या त्रिवृत्कर्षमितातथा ।
ततः पिण्डीकृतं सर्व्वं द्रवपात्रेविनिक्षिपेत् । गुटिकां शायमात्रेण युञ्ज्याद्दो-
षत्वपेक्षया । अनुपानं भिषग्दद्यात्कोष्णं नीरं पयोथवा । सञ्जिष्ठादिदृष्टं
वापियुक्तयुक्तं ततःपरम् । जयेत्सर्वाणिकुष्ठानि वातरक्तं त्रिदोषजम् । सर्व-
व्रणानिगुल्मान्श्च प्रमेहपिडकान्तथा । शार्ङ्गधरः ।

1 पडङ्गगुग्गुलुः । विभोक्तक शिवा धात्री पटोलारिष्ट वासकैः । क थोगु-
गुलुनापेयः शोथशुलाक्षिपाकहा । पिलञ्च सत्रणं शुक्रं रागादींश्चापि नाशयेत् ।
एतैश्चापिधृतं पक्कं रोगांस्तांश्च व्यपोहति । चक्रदत्तः ।

2 अमृतागुग्गुलुः । अमृता पटोलमूल त्रिफलात्रिकटु क्षमिष्णानाम् ।
सप्तभागानां चूर्णं सर्व्वसमोगुग्गुल्बोर्भागः । प्रतिवासरमेकैकां खादेदन्नप्रमाणात् ।
जेतुं व्रणान्वातासृग्गुल्बोदरश्चयथुरोगादीन् । चक्रदत्तः ।

thurifera), is called *Kundurū* in Sanskrit. It is used as an incense and as a local application to buboes.¹

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

NAT. ORDER MELIACEÆ.

AZADIRACHTA INDICA.

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 disease as for example, in the following compound decoction called *Amritāshtaka*.² Take of *nim* bark, *gulancha*, root of *Picrorrhiza Kurroa* (*katuki*), tubers of *Cyperus rotundus* (*mustaka*), seeds of *Holarrhena antidysenterica* (*indrayava*), leaves of

1 अत्रोक्षीरेण गोघूमकल्कं कुन्दरुकस्य वा। प्रलेपनं सुखोष्णं स्याद्द्वन्द्व-
मूलहरः परः । चक्रदत्तः ।

2 अमृताष्टकः । अमृतारिष्ट कटुका सुस्तन्द्रयव नागरैः । पटोलचन्दना
भ्याञ्चपिप्पलीचूर्णयुक्तम् । अमृताष्टकमेतच्च पित्तहोश्मज्ज्वरापहम् । कर्द
रोचकहृत्लास दाह तृष्णा निवारणम् । शार्ङ्गधरः ।

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 ghrīta*, *Pancha nimba guḍikā*, *Pancha kashāya*, etc.

Pancha tikta ghrīta.² Take of *nim* bark, leaves of *Momordica dioica* (*patala*), *Solanum Jacquini* (*kantakāri*), *gulancha*, and bark of *Adhatoda vasica* (*vāsaka*), each eighty tolas, and boil them in sixty-four seers of water till it is reduced to one-fourth. To the strained decoction, add four seers of clarified butter and a seer of the three myrobalans in the form of a paste, and prepare a *ghrīta* 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 हतेन धात्रीविमिश्राण्य चोपयुञ्ज्यात् । विस्कोट-
कोट क्षत शीतपित्तं कण्डूस्त्रपित्तं सहस्रांशजज्ञात् । चक्रदत्तः ।

2 पञ्चतिक्तकं हतम् । निम्बं पटोलं व्याघ्रीञ्च शुद्धूर्वीं वासकं तथा ।
कुर्याद्दृश्यत्वान् भागानेकैकस्य सुकुट्टितान् । जलद्रोणे विपक्वव्यं यावत्पादा-
वशेषितम् । हतप्रस्यं पचेत्तेन त्रिफलागर्भसंयुतम् । पञ्चतिक्तमिदं ख्यातं
सर्पिः कुष्ठविनाशनम् । चक्रदत्तः ।

3 निम्बार्जुनाश्चत्यकदम्बशालजम्बूवटोडुम्बरवेतसेषु । प्रक्षालनालेपहतानि
कुर्याच्चूर्णानि पित्तास्रभवोपदंशे । 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*. षड्विका, *Mridviká*

Vern. *A'ngurphal*, *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 arishṭa. This is a medicinal wine prepared as follows. Take of raisins six seers and a quarter, water one hundred and

1 निम्बपत्र तिलैः कल्को मधुना क्षतशोधनः । चक्रदत्तः ।

2 मनःशिला लभल्लात स्रक्क्षै बागुरु चन्दनैः । जातीपल्लव कल्कैश्च निम्ब-
तैलं विपाचयेत् । वल्मीकं नाशयेत्तद्विबद्धिर् बद्धस्त्रवम् । भावप्रकाशः ।

3 द्राक्षामलक खर्जूरं पिप्पलीमरिचान्वितम् । पित्तकासापहं ह्येतत्
लिह्यान्माक्षिकसर्पिषा । शार्ङ्गधरः ।

twenty-eight seers, boil them together till reduced to one-fourth, and strain. To the strained decoction add twenty-five seers of treacle and eight tolás each of the following substances in fine powder, namely, cinnamon, cardamoms, *tejpatra*, flowers of *Mesua ferrea* (*nágakesara*), fruit of *Aglaia Roxburghiana* (*priyangu*), black pepper, long pepper and *báberang* 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. ज्यौतिष्मती, *Jyautishmati*.

Vern. Latáphaṭkari, *Nayáphaṭki*, 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 *yautishmati* 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 द्राक्षारिष्टः । द्राक्षा तुलाङ्गं द्विद्रोणेजलस्य विपचेत्सुधीः । पादशेषे कषाणे च पूते शीते विनिःक्षिपेत् । गुडस्य द्विद्वलान्त त्वगेला पत्र केसरम् । प्रियङ्गु, मरिचं कृष्णं विडङ्गं चेति चूर्णयेत् । पृथक् पलोन्मितैर्भागैस्ततो भाण्डे निधापयेत् । समन्ततोषट्टयित्वा प्रिवेज्जातरसन्ततः । उरःक्षतं क्षयं हन्ति काश-श्वास गलामयान् । द्राक्षारिष्टाङ्गयः प्रोक्तोबलकन्मलशोधनः । शार्ङ्गधरः ।

2 सकाञ्जिकं जवापुष्पं श्टं ज्यौतीष्मतीदलम् । दूर्वापिष्टञ्च कं प्राश्य धनिता त्वार्त्तवं लभेत् ॥ चक्रः ।

3 पीतं ज्यौतीष्मतीपत्रं सर्ज्जिको प्यासनम् । त्प्रहं शीतेन पयसा पिष्टं कुसुमं जनयेत् ध्रुवम् । भावप्रकाशः ।

NAT. ORDER ANACARDIACEÆ.

RHUS SUCCEDANEA, *Linn.**Sans.* कर्कटशृङ्गी, *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 sapida* (*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*, *átis*, and long pepper, equal parts; powder and make into a linctus with honey.³

MANGIFERA INDICA, *Linn.**Sans.* आम्र, *A'mra*. *Vern.* A'm. *Beng.* *Hind.*

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

1 भार्गो द्राक्षा शटी शृङ्गी पिप्पली विश्वभेषजैः । गुड़तैलयुतो लेहो
हृत्तोभास्तकासिनाम् । चक्रदत्तः ।

2 मधुना क्षणा कट्फल कर्कटशृङ्गी भवं चूर्णम् । श्वासामय महोप्ये
लीङ्गा लोकः सुखी भवति । भावप्रकाशः ।

3 शृङ्गादिचूर्णम् । शृङ्गीप्रतिविषां क्षणां चूर्णतां मधुनालिहेव् ।
शिशुःकासजरश्कृदिगान्धैवा केवलां 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* and ginger.¹ In bleeding from the nose the juice of the kernel is recommended to be snuffed. In bleeding from internal organs, a cold infusion of the barks of *Mangifera Indica*, *Eugenia Jambolana*, and *Terminalia Arjuna* is prescribed.² This infusion is also used in diarrhœa. The Bhāvaprakāsa recommends a confection made of the juice of the ripe mango sugar and aromatics, for use as a restorative tonic.

SEMECARPUS ANACARDIUM, Linn.

Sans. भल्लातक, *Bhallātaka*. अरुष्कर, *Arushkara*.

Vern. *Bhelá*. 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 योज्यश्चर्द्दितिसारेषु विस्वाम्नास्थिभवस्तथा । शार्ङ्गधरः ।

2 आम्रजम्बू च ककुभं चूर्णीकृत्य जलेक्षिपेत् । हिसं तस्य पिबेत्प्रातः स
चौद्रं रक्तपित्तजित् । शार्ङ्गधरः ।

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

*Amrita Bhallátaki.*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 *Saindhavádyataila*, for which see Ginger.

1 तिलभल्लातकं पथ्या गुडश्चेति समांशिकम् । दुर्नामकासश्चासन्नं श्लोह-
पाण्डु ज्वरापहम् । चक्रदत्तः ।

2 अमृतभल्लातकी । सुपक्वभल्लातफलानि सस्यक् द्विधाविदार्याङ्कसम्मि-
तानि । विपाच्यतोयेन चतुर्गुणेन चतुर्थशेषे व्यपनीयतानि । पुनः पचेत्
क्षीरचतुर्गुणेन घृतांशयुक्तेन घनं यथा स्यात् । सितो पलाषोडशभिः पलैस्तु
त्रिभिश्चरुसंस्थाप्यदिनानि सप्त । ततः प्रयोज्याग्निवलेन मात्वां जयेद्गुदोत्थान
खिलान् विकारान् । कचान् सुनीलान् घनकुञ्चिताग्रान् सुपर्णद्विष्टिं सुकुमा-
रताञ्च । जवं हयानाञ्च मातङ्गजं बलं स्वरं मयूरस्य हृताशदीप्तिम् । स्त्री-
वल्लभत्वं लभते प्रजाञ्च नीरोगमव्द्विशतानि चायुः । 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, Yashṭi madhu, मधुक, Madhuka.**Vern. Jashṭi madhu, Beng. Mulhaṭṭi. 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 अशोकवृक्षकलकायष्टतं दुग्धं सुशीतलम् । यथाबलं पिबेत् प्रातस्तोत्रा-
सृग्दरनाशनम् । चक्रदत्तः ।

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 FÆNUM-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* (*tâlisa*), flowers of *Mesua ferrea* (*nâgakesara*), *tejpatra*, cinnamon, cardamom, nutmegs, mace, cloves, sandal wood and camphor one part each; fenugreek seed, 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 । त्रिकटुत्रिफलासुस्तजोरकद्वयधान्यकम् । कट्फलं पौष्करं शङ्को यमानी सेम्भवं पिडम् । तालीशकेशरं पत्रं त्वगेला च फलं तथा । जातीकोषं लवङ्गञ्च सुराकर्पूरचन्दनम् । यावन्त्येतानि चूर्णानि तावदेव ह्य मेथिका । संचूय्य मोदकः कार्यः पुरातनगुडन च । एतेन मधुनाकिञ्चित् स्वादेद्ग्निलं प्रति । अग्निञ्च कुरुते दीप्यं घामे मेदे महौषधम् । भैषज्यरत्नावली ।

ALHAGI MAURORUM, *Tournef.*

Sans. डुरालभा, *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 it 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.* (*Roxb.*)

Sans. सालपर्णी, *Sálaparni*. *Vern.* *Sálpáni*, *Beng.* *Sarivan*, *Hind.*

THIS little shrub is regarded as febrifuge and anti-catarthal. 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*), *Urvia lagopodioides* (*prispiparni*), *Solanum Jacquini* (*kantakári*), *Solanum Indicum* (*vrihati*), *Tribulus terrestris* (*gokshura*), *Ægle Marmelos* (*vilva*), *Calosanthos Indica* (*syonáka*), *Gmelina arborea* (*gambhári*), *Stereospermum suaveolens* (*pátalá*) and *Premna spinosa* (*ganikáriká*).

¹ ह्रीतकी डुरालभा कतमालक गोक्षुरैः । पाषाणभेदसाहितैः काथामालक संयुतः । विबन्धे मूलकच्छेप सदाहेसर्जोहितः । शाङ्गधरः ।

² द्राक्षा यासाभया कण्ठा चूर्णं सदीह सर्षिषा । लीटं चाशं निहन्यासु कामञ्च तमकं तथा । चक्रदत्तः ।

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 pancha mula* is used in catarrhal fever, cough and other diseases supposed to be caused by deranged phlegm. The *vrihat pancha mula* 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 *Ashṭādasāṅga pāchana* consists of the ten drugs above mentioned, with the addition of the eight following, namely, *chiretā*, *devadāru*, ginger, tubers of *Cyperus rotundus* (*mustaka*), root of *Picrorrhiza Kurroa* (*katuki*), *indrajava* seeds, coriander, 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 । विल्व श्योनाक गाम्भारी पाटला गणिकारिकाः । दीपनं कफ-
वातघ्नं पञ्चमूलमिदं महत् । शालपर्णी पृश्निपर्णी वृहतीद्वय गोक्षुरम् । वातपित्त-
हरं वृष्यं कनीयः पञ्चमूलकम् । उभयं दशमूलन्तु सन्निपातञ्चरापहम् । कासे
श्वासेच तन्द्रायं पार्श्वशूलेव शस्यते । पिप्पलीचूर्णसंयुक्तं कण्ठहृदुपहृणा-
शनम् । चक्रदत्तः ।

2 पित्तश्लेष्महरोऽष्टादशाङ्गुः । भूनिम्ब दारु दशमूल महौषधाद् तित्तेन्द्र-
धीज धनिकेभ कणाकपायः । तन्त्रोप्रलाप कसनादिषु दाहमोह श्वासादिद्युक्त-
सखिलं च्वरमायु हन्ति । चक्रदत्तः ।

URARIA LAGOPODIODES, *DC. Edgew. Syn. Doodia lagopodioides Roxb. Sans. पृश्निपर्णी, Prishniparni. Vern. Chákulid, 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, Aparájitá, विष्णुकान्ता, Vishnukrántá.

Vern. Aparájitá, Beng. Aprájit, Hind.

THE root of *Clitorea ternatea* is regarded as laxative and diuretic, and is generally used in combination with other medicines of the sort in ascites, fever, etc. The following is an example of a prescription containing *aparájitá* root. Take of the roots of *aparájitá*, *Pladera decussata* (*sankhini*), *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. आत्मगुप्ता, Atmaguptá. कपिकच्छु, Kapikachchhu. वानरी, Vánari.

Vern. A'lkusi, Beng. Kiwach, Hind.

THE English names Cowage or Cowitch are derived from the Hindi *Kiwach*. The plant is indigenous to India and has been used in Hindu medicine from a very ancient period. Susruta describes the seeds as a powerful aphrodisiac, and gives the following formula for their use. Take of the seeds of *Mucuna pruriens* and the fruits *Tribulus terrestris* (*gokshura*) equal parts and administer in doses of about a drachm with sugar and tepid milk.² The Bháva-

1 गवाक्षी शङ्खिनी दन्तो नीलनीकल्कसंयुतम् । सर्वोदरविनाशाय गोमूत्रं
पाह्नुमाचरेत् ॥ चक्रः ।

2 स्वयं गुप्तेवुरक्तयोर्वीजं चूर्णं सशर्करम् । धारोष्णं न नरः पीत्वा पयसा
न क्षयं व्रजेत् । सुश्रुतः ।

prakāsa recommends the following preparation called *Vānari vati*. Take of the seeds of *Mucuna pruriens* thirty-two tolas, boil them in four seers of cow's milk till the latter becomes thick. The seeds should now be decorticated and pounded, then fried in clarified butter and made into a confection with double their weight of sugar. The mass should then be divided into balls which should be steeped in honey. Dose, about a tola. This preparation is said to be the best of 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 Assafœtida.

BUTEA FRONDOSA, Roxb.

Sans. पलाश, *Palāsa*. किंशुक, *Kinsuka*. *Vern.* Dhāk. *Hind.*

DR. HOOKER states "that when in full flower the *Dhāk* tree is a gorgeous sight; the masses of flowers resembling sheets of flame; their bright orange red petals contrasting brilliantly against the jet black velvety calyx." These beautiful flowers were used as ear-ornaments by the ancient Hindu women and much admired by the poets. The seeds of *Butea frondosa* are said to be laxative and anthelmintic and are used, both alone and in combination with other medicines, for expelling intestinal worms. Thus the fresh juice of the seeds, or the seeds beaten to a paste are given with honey.² Śārangadhara gives the following recipe for worms.

1 वानरोवटिका । बीजानि कपिकच्छाङ्कडुव मितानि खेदयेच्छनकः ।
 प्रस्थे गोभवदुग्धे तावत् यावद्भवेत् गाडुम् । त्वपहितानिचक्रत्वा सूक्ष्मसस्ये-
 षयेत्तानि । पिष्टिका या लघुवटिकाः कृत्वा गन्धे पचेदाज्ये । द्विगुणित
 शर्करापाता वटिकाः सम्पक्रया लेप्याः ॥ वटिका माक्षिक मध्ये मज्जनयोग्ये
 विरलाः स्याप्याः ॥ पञ्चटङ्क मितस्तास्तु प्रातः सायञ्च भक्षयेत् । अनेन शीघ्र-
 द्रावीयो यश्च स्यात्पतितभ्रजः । सोऽपि प्राप्नोति सुरते सामर्थ्यमति वाजिवत् ।
 नानेन सदृशं किञ्चिद्द्रव्यं वाजिकरं परम् । भावप्रकाशः ।

2 पलाशबीजस्वरसं पिवेद्वा चौद्रसंयुतम् । पिवेत्तद्बीजकं वा तत्रेण क्रिमिना-
 यनम् । भावप्रकाशः ।

Take of the seeds of *Butea frondosa*, root of *Ipomæa Turpethum* (*trivrit*), seeds of *Hyoscyamus niger* (*párasika yamáni*), *kamalá* 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.

मुद्गा, *Mudga*. *Phaseolus Mungo*, Linn. Vern. *Mug*, B.

माष, *Másha*. *Phaseolus Roxburghii*, W. & A. Vern. *Urid*, H.

मुद्गापर्णि, *Mudgaparni*. *P. trilobus*, Ait. Vern. *Mugáni*, B.

मकुश, *Makushtha*. *P. aconitifolius*, Jacq. Vern. *Mot*, H.

कुलथ, *Kulattha*. *Dolichos uniflorus*, Lamark. Vern. *Kulthi*, H. B.

राजमाष, *Rájamásha*. *Vigna Sinensis*, Linn. Vern. *Barbati*, B.

शिम्बि, *Simbi*. A common name for several species of *Dolichos*.

चणक, *Chanaka*. *Cicer arietinum*, Linn. Vern. *But*, Beng. *Chená*, H.

मसुर, *Masura*. *Vicia Lens*, Benth. Vern. *Masur*, H. B.

सतिला, *Satilá*. *Pisum sativum*, Linn. Vern. *Matar*. H. B.

1 त्रिवृत्पलाशबीजानि पारसीक्यमानिका । कम्पिल्लकं विडङ्गञ्च गुडञ्च
समभागिकः । तत्रेण कल्क एतेषां पीतः क्रिमिगणापहः । शङ्खधरः ।

2 चन्दनं सैन्धवं पथ्या पलाशतरुशोणितम् । क्रमद्वन्द्वमिदं चूर्णं रुक्माश्मादि-
विलेखनम् । चक्रदत्तः ।

आड़की, *A'dhaki. Cajanus Indicus, Sprengel. Arar, B. Tor, H.*
 त्रिपट्टी, *Triputi. 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*, *kulattha* 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 *chanakámla* in Sanskrit. It is collected by spreading a cloth over the plants during the night and rinsing the fluid absorbed by it. *Chanakámla* 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* (*átmaguptá*) 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 assa-fœtida.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. गुञ्जा, *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 माषातमगुप्त्रकैरण्ड वाय्यालक श्दतं पिबेत् । हिङ्गुसैन्धवसंयुक्तं पक्षाघात
निवारणम् । चक्रदत्तः ।

2 खल्पमाषतैलम् । तैलं सङ्कुचितेऽभ्यङ्गो माषसैन्धवसाधितम् । वाङ्मयी-
मते नस्यं पानञ्चौत्तरभक्तिकम् । कायोऽत्र माषनिष्पाद्यः सैन्धवं कल्कमेव ।
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* (*kákamáchi*). 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

Gunjádya tailam.⁴ Take of prepared sesamum oil four seers, juice of the leaves of *Wedelia calendulacea* (*bhringarája*) 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 गुञ्जाभद्रसः । निष्कं त्रयं शुद्धकृतं निष्कद्वादश गन्धकम् । गुञ्जाबीजञ्च
षड्निष्कं निम्बबीजं जयातथा । प्रत्येकं निष्कमानन्तु निष्कं जैपालबीजकं ।
जयाजम्बोर धुस्तूरकाकमाची द्रवैर्दिनम् । भावयित्वा वटीं कृत्वा दद्याद्गुञ्जा-
चतुष्टयम् । गुञ्जाभद्रसो नाम हिङ्गु, सैन्धव संयुतः । शमयत्युल्वणं दुःखस्रु-
स्तम्बं सुदारुणम् । रसेन्द्रः पारस्यहः ।

2 तत्रप्रदेहं दद्याच्चपिष्टं गुञ्जाफलैःकृतम् । तेनाववाहजा पीडा विषयी
वृद्धरीतया । अन्यापि वातजापीडा प्रशमयतिवेगतः । शार्ङ्गधरः ।

3 गुञ्जाफलाग्निचूर्णञ्च लेपितं श्वेतकुष्ठचुत् । शार्ङ्गधरः ।
गुञ्जाफलेश्चिरं लिम्पन्तु केशभूमिं समन्ततः । हस्तीदन्तमर्षीं कृत्वा मुख्यञ्चैव
रसाञ्जनम् । लोमान्यदेन जायन्ते नृणां पाणितलेष्वपि । चक्रदत्तः ।

4 गुञ्जादि तैलम् । गुञ्जाफलैः शृतं तैलं भृङ्गराजरसेन च । कण्डुदारुण
कृत् कुष्ठं कपालव्याथिनाशनम् । भावप्रकाशः ।

PONGAMIA GLABRA, Vent.

Sans. करञ्ज, *Karanja*. नक्तमाला, *Nactamála*.

Vern. *Darkaranja*, Beng. *Kiramál*, 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* (*kushtá*); are rubbed into a paste with cow's urine, and applied to eruptive skin diseases.¹

Prithisára taila.² Take of the expressed oil of the seeds of *Pongamia glabra* one seer, *kánjika* eight tolás, roots of *Plumbago Zeylanica* (*chitraka*), *Nerium odorum* (*karavira*), *Vitex Negundo* (*nirgundi*), aconite, and the seeds of *Corchorus olitorius* (*nádika*), eight tolás each, in the form of a paste made with *kánjika*. Mix them together and warm in the sun. This oil is said to be useful in various sorts of skin diseases, ulcers etc.

Tiktádyá ghrita.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* (*málati*) 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 *Nátáka-*

¹ करञ्जबीजडगजः सकुडो गोमूत्रपिष्टश्च वरः प्रदेहः । चक्रदत्तः ।

² पृथ्वीसारतैलम् । चित्रकस्याथनिर्गुण्ड्या ह्यमारस्य मूलतः । नाडीच-
बीजाद्विषतः काञ्जिपिष्टं पलं पलम् । करञ्जतैलापलं काञ्जिकस्य पलं पुनः ।
मिश्रितं सूर्यसन्तप्तं तैलं कुटव्रणास्त्रजित् । चक्रदत्तः ।

³ तिक्ताद्यं घृतम् । तिक्ता सिक्थ निशायटी नक्ताङ्गफलपञ्चनैः । पटोल
मालती निम्बपत्रैर्ब्रह्मण्यं घृतं पचेत् । चक्रदत्तः ।

ranja in Bengali, are said to resemble those of the seeds of *Pongamia glabra*. Their antiperiodic virtues were not known to Sanskrit writers.

PTEROCARPUS SANTALINUS. Linn.

Sans. रक्तचन्दन, *Raktachandana*.

Vern. *Raktachandan*, Beng. *Lálchandan*, 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 "*peet 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 पयः शिता चौरं नैलं मधुक चन्दनम् । लेपेन शोथरुग् दाह
रत्तां निर्व्वापयेद्गृणान् । चक्रदत्तः ।

CASSIA FISTULA, Linn.

Sans. आरग्वध, *A'ragbadha*. सुवर्णक, *Suvarnaka*.

Vern. *A'multás*, Hind. *Sondháli*, 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 *Rájataru* 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.

Aragbadhádi.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. कासमर्द, *Kásamarda*. Vern. *Kálkásundá*, Beng. *Kásundá*, Hind.

CASSIA TORA, Linn. Sans. चक्रमर्द, *Chakramarda*. Vern. *Chákundia*, Beng. *Chakaund*, Hind.

CASSIA ALATA, Linn. Sans. दद्रुघ्न, *Dadrughna*. Vern. *Dád-mardan*. 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 आरग्वधादि। आरग्वध कषामूल सुस्त तिक्ताभयाकतः। काचःशक्यति क्षिप्रं ज्वरं वातकफोत्तरम् ।

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

BAUHINIA VARIEGATA, Linn.

Sans. काञ्चनार, *Kánchanára*. कोविदार, *Kovidára*.

Vern. Kachnár, *Hind.* Rakta Kánchan, *Beng.*

Two species of *Bauhinia*, namely purple and white flowered (*Bauhinia variegata* and *acuminata*), are noticed in the *Bhávaprakása* under the names of *Kovidára* and *Kánchanára* 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 *Sárangadhara* gives the following preparation for the same affection.

1 कासमर्द्दकवीजानि मूलकानां तथैवच । गन्धपाषाणमिश्राणि सिध्मानां
परमौषधम् । चक्रदत्तः ।

2 चक्राह्वयं क्षुहीचीरभावितं भूतसंयुतम् । रवितम्रं हि किञ्चित्तु लेपनात्
किटिमापहम् । चक्रदत्तः ।

3 चक्रमर्द्दकवीजानि करञ्जसमांशकम् । स्त्रोकं सुदर्शनामूलं दद्रुकुष्ठविना-
शनम् । चक्रदत्तः ।

4 पिष्टा ज्येष्ठांश्च नापेयाः काञ्चनालत्वचः शुभाः । विश्वभेषजसंयुक्ता गण्ड-
पालापहाः पराः । चक्रदत्तः ।

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

TAMARINDUS INDICA, Linn.

Sans. तिन्निड़ी, *Tintiḍi*. अम्बिका, *Amliká*.

Vern. Tentul, *Beng.* Imlí, *Hind.*

THE tamarind tree is met with throughout India, and has been known from a very remote period. "From the Hindus it would seem that the fruit became known to the Arabians who called it *Tamare-hindi*:" from 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 *Abhayá-lavana*, (see Alkaline ashes). The pulp of the ripe fruit, as well as

1 काञ्चनारगुग्गुलु । काञ्चनारत्वचोप्याह्यं पलानां दशकं वृषैः । त्रिफला
षट्पलाप्याह्या त्रिकटुस्यात्पलत्रयम् । पलैकोवरुणः कार्यं एलात्वक्पत्रकन्था ।
एकैकं कर्षमात्रं स्यात्सर्वाण्येकत्रचूर्णयेत् । यावच्चूर्णमिदं सर्वं तावन्मात्रस्तु
गुग्गुलुः । सङ्कुयसर्वमेकत्र पिण्डं कृत्वाच धारयेत् । गुटिकाःशाणिकाः
कृत्वा प्रातर्प्याह्यायथोचितम् । गरुडमालां जयत्युप्यामपचीसर्वुदानिच । अन्य
त्रयानिगुल्मांसं कुष्ठानिच भगन्दरम् । प्रदेशश्चानुपानार्थं काथोष्ठिखण्डितिकाभवः ।
काथः खदिरसारस्य पय्याकाथोयचोष्णकम् । शार्ङ्गधरः ।

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

Amliká pána.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 अश्लिकापानम् । अश्लिकायाःफलंपकं मर्दितं वारिणाडदं । शर्करा
परिचोन्नित्त्वं लवङ्गेन्दु सुवासितं । अश्लिकाफल सम्भूतं पानकं वातनाशनम् ।
पित्तश्लेष्मकरं किञ्चित् सुख्यं वाङ्ग वीपकं । भावप्रकाशः ।

2 मन्त्रः खर्जूर मृद्वीका वृक्षान्नाम्नीकदाडिमैः । परुषकैः सामलकैर्युक्तो
मद्य विकारणुत् । 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 diarrhœa it is sometimes used in combination with other medicines of its class, as for example in a prescription in the Bhaishajya 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 this disease.

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, betle-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 *khadiráshtaka* is prescribed by several writers for internal use in boils, prurigo, measles and other

1 तैलाक्रं खरभेदेवा खदिरं धारयेत्सुखे । चक्रदत्तः ।

2 स्वल्पखदिरवटिका । खदिरस्य तुलां सम्यग्जलद्रोणे विपाचयेत् । शेषेऽप्ये
भागे तत्रैव प्रतिवापं प्रदापयेत् । जातीकर्पूरपूगानि कक्कोलकफलानि च । इत्ये
षागुडिका कार्यासुखसौभाग्यवर्द्धिनी । दन्तौष्ठस्वरोगेषु जिह्वाताब्जामयेषु च ।

चक्रदत्तः ।

3 खदिरोकषाय त्रणशोधने हितः ।

चक्रदत्तः ।

skin diseases.¹ Take of catechu, the three myrobalans, *nim* bark, leaves of *Trichosanthes dioica* (*patala*), *gulancha* and *Justicia Adhatoda* (*vásaka*), equal parts, and prepare a decoction in the usual way Sárangadhara describes a fermented liquor called *khadirárishta* for use in skin diseases. It is prepared with catechu and the wood of *Pinus Deodara*, and some other ingredients in smaller proportions.²

ACACIA ARABICA, *Willd.* *Sans.* बबूल, *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. हरीतकं, *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 प्रलेपोद्धर्तनं स्नानं प्राणभोजनकर्म्मणि । शालितं खादिरं वारि सर्व्व-
त्वग्दोषनाशनम् । चक्रदत्तः ।

² खदिराटकः । खदिरं त्रिफलारिष्टं पटोलान्मृतवासकैः । काथोऽष्टकाङ्गो
जयति रोमान्तिकमस्त्रिकाः । कुष्ठविस्पर्षं स्फोटकवद्वादीनापि पानतः ।

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.

Chebolic myrobalans are described as laxative, stomachic, tonic and alterative. They are used in fevers, cough, asthma, urinary diseases, piles, intestinal worms, chronic diarrhoea, 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 *triphalá* or the three myrobalans, they are extensively used as adjuncts to other medicines in almost all diseases.

Two or three chebolic myrobalans, rubbed into a paste and taken with a little rock salt, act as a mild laxative. The following compound decoction called *Pathyádi kvátha* is also much used as a purgative. Take of chebolic myrobalans, pulp of *Cassia fistula* (*áragbadha*), root of *Picrorrhiza Kurroa* (*katuki*), root of *Ipomœa Turpethæm* (*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, chebolic 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 liable to be

¹ पथ्यादिक्वाथः । पथ्यारग्वधत्किता त्रिवृदामलकैः शहतपेयं । पाचनसारक युक्तं नवजीर्णज्वरे सामे ।

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*, *sarjikákhshára*, 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 myrobalan are not much in vogue at present.

TERMINALIA BELLERICA, Roxb.

Sans. विभितकी, *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 गुडने मधुनाशुण्ड्या कण्ठ्यालवणेन वा। द्वे द्वे खादन्सदापथ्ये जीवेद्वर्षं शतं सुखी । सिन्धुव्यूथशर्करा शुण्ठीकणामधुगुडैः क्रमात् । वर्षादिष्वभयासेव्यारसायनगुणैषिण्या । चक्रदत्तः ।

2 हरीतक्याः शतं प्याह्यं तक्रैः खिन्नञ्च कारयेत् । यत्राद्दीजं समुद्धृत्य षड्दूषणं पञ्चपटु । यमानीद्वयमेव च । त्रिचारं हिङ्गु दिव्यञ्च कर्षद्वयमितं पृथक् । स्रग्णचूर्णीकृतं सर्व्वं चक्राम्बेनापि भावयेत् । निम्बाकखरसेनापि भावयेच्च दिनत्रयम् । खाद्येदभयामेकां सर्व्वजीर्णविनाशिनोम् । भैषज्यरत्नावली ।

of *triphalá* 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. अर्जुन, *Arjuna.* कुकुभ, *Kukubha.*

Vern. *Arjuna,* *Beng. Kalu,* *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 विभीतफलमज्जस्तु लेपोदाहृत्तिनाशनः । शाङ्गधरः ।

2 कलितरुफलं सिन्धु कणाचूर्णं तन्नेत्रेण लीढमपहरति। स्वरभेदं गोपयसापीतं वामलकचूर्णञ्च । चक्रदत्तः ।

3 विभीतकफलं किञ्चिद्दृष्टेनाभ्यज्य लेपयेत् । गोधूमपिष्टैरङ्गारैर्विपचेत्पुट-पाकवत् । ततः पक्वं समुद्धृत्य त्वचलस्य मुखेक्षिपेत् । कासश्वास प्रतिश्याय स्वर भङ्गाञ्जयेत्ततः । शाङ्गधरः ।

4 अर्जुनस्य त्वचासिद्धं क्षीरं योज्यं हृदामये । शितयापञ्चमूल्यावा वलयया मधुकेन वा । दृतेन दुग्धेन गुडाम्भसावा पिवन्तिचूर्णं ककुभ त्वचोये । हृद्रोग-जीर्णञ्जर रक्तपित्तं हत्वा भवेयुश्चिरजीविनस्ते । चक्रदत्तः ।

5 अर्जुनघृतम् । पार्थस्य कल्क स्वरसेन सिद्धं यस्तं दृतं सर्व्वं 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 *Jámbava* 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 भग्नः पिवेत्क्वपयसार्जुनस्य गोधूमचूर्णं सद्यतेनवाथ । चक्रदत्तः ।

2 विल्वशक्राम्बुमोचाब्द विद्धमाजं पयःशिशोः । समांशरक्तां ग्रहणीं पीतं
हृदयात् विराततः । तद्वदजाक्षीरसमी जम्बुत्वग्द्वयोरसः । चक्रदत्तः ।

3 जम्बुश्वाम्नामलकीनान्तु पल्लवानथ कुट्टयेत् । संगृह्य स्वरसं तेषामजा-
क्षीरेण योजयेत् । तं पीवेन्मधुनायुक्तं 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 *Chatuḥsama vati*, is commonly used in indigestion. Take of cloves, ginger, *ájowan* and rock salt, equal parts, and make into eight-grain pills.

NAT. ORDER LYTHRACEÆ.

WOODFORDIA FLORIBUNDA, *Salisb.*

Syn. Grislea tomentosa, Roxb.

Sans. धातकी, *Dhátaki*. अग्निजगल, *Agñijála*.

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 *Guchehhapushpi* or having clusters of blossoms, on account of its numerous small flowers, which give it a gaudy appearance. From the circumstance of its being common in mountainous tracts, it has got the name of *Párvati* or hill-born.

The dried flowers of *Woodfordia floribunda* are regarded as stimulant and astringent and are much used, in combination with other astringent medicines, in bowel complaints and hæmorrhages. Two drachms of the dried flowers are given with curdled milk in dysentery, and with honey in menorrhagia.² In the dysentery of children, the following combination is recommended to be given in the form of powder or decoction with the addition of honey. Take of the flowers of *Woodfordia floribunda*, *bel* fruits, bark of *Symplocos racemosa* (*lodhra*), root of *Pavonia odorata* (*bálá*), and the fruits of *Pothos officinalis* (*gajapipul*), in equal parts, two *tolás* in all, and prepare a decoction in the usual way.³

¹ पिपासायामनुत् क्लेशे लवङ्गस्याम्बु शस्यते । चक्रः ।

² धातक्याश्चाक्षमात् वा आमलक्यामधुद्रवम् । पाण्डुप्रदरशान्त्यर्थं
पिबेत्तण्डुलवारिणा । चक्रदत्तः ।

³ धातकीबिल्वलोभाणि बालकं गजपिप्पली । एभिः कृतं शृतं शीतं
शिशुभ्यः क्षौद्रसंयुतम् । प्रदद्याद्वलेहं वा सर्वातीसारशान्तये । शार्ङ्गधरः ।

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

NAT. ORDER HAMAMELIDEÆ.

LIQUIDAMBAR ORIENTALE, *Miller. Sans. सिहक, 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, *Linn.*

Sans. दाडिम, Dádima. Vern. A'nár, 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 diarrhoea. 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.

*Dádímáshtaka.*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 धातकोचूर्णलोघैर्वा तथा रोहन्ति ते व्रणाः । चक्रदत्तः ।

2 दाडिमाष्टकः । कर्षोन्मिता लुगाक्षीरी चातुर्जातं द्विकार्षिकम् । यमानी धान्यकाजाजी यन्विव्योषं पलांशिकम् । पलानिदाडिमाष्टौ सितयाञ्चकतः जतः । गुणैः कपित्थाष्टकवच्चर्णो ऽयं दाडिमाष्टकः । चक्रदत्तः ।

NAT. ORDER CUCURBITACEÆ.

BENINCASA CERIFERA, *Savi.*

Syn. Cucurbita Pepo, Roxb.

Sans. कुष्माण्ड, 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

¹ खण्डकुष्माण्डकः । कुष्माण्डकात्पलशतं सुखिन्नं निष्कुलीकृतम् । पचे तप्ने घृतप्रस्थे शनैस्ताम्रमये वृद्धे । यदा मधुनिभः पाकस्तदाखण्डशतं न्यस्येत् । पिप्पली शृङ्गेवेराभ्यां द्वे पले जीरकस्य च । त्वगेलापलमरिच धान्यकानां पलाङ्कम् । न्यसेच्चूर्णीकृतं तत्र दर्व्यासंघटयेन्मुहुः । तत्पकं स्थापयेद्भाग्ण्डे दत्वाचौद्रं घृताङ्कम् । तद्यथाग्निबलं खादेद्द्रुक्पिप्तीकृतचयी । कासश्वास तम मूर्च्छादिदृष्ट्याज्वरनिपीडितः । वृष्यं पुनर्नवकरं बलवर्णप्रसाधनम् । उरः सन्धान करणं वृंहणं स्वरबोधनम् । अश्विभ्यां निर्मितं सिद्धं कुष्माण्डकरसायनम् । खण्डामलकमानानुसारात्कुष्माण्डकद्रवात् । पात्रं पाकाय दातव्यं यावान्वातरसो भवेत् । अत्रापि सुद्रयापाको निस्त्वचं निष्कुलीकृतम् ।

चक्रदत्तः ।

this process is preserved, the seeds being rejected. The pulp is 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 khandā.*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

¹ वासाखण्डकुष्माण्डकः। पञ्चाशच्चपलं खिन्नं कुष्माण्डात्प्रस्यमाज्यतः।
 याज्ञं पलशतं खण्डं वासाकाथादके पचेत्। सुस्ताघाती शुभाभागी तिस्रग-
 न्मैश्च कार्षिकैः। ऐलेय विश्वधन्वाकसरिचैश्च पलांशिकैः। पिप्पलीकुडवञ्चैव मधु-
 मानीं प्रदापयेत्। कामं श्वासं क्षयं हृिकां रक्तपित्तं हृलीभकम्। हृद्गोम-
 स्तपित्तञ्च पीनसञ्च व्यपोहति। चक्रदत्तः।

elabáluka, cinnamon, cardamom, *tejapatra*, each quarter of a *tolá*, 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, *Paṭola*. *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 *paṭola* leaves and coriander, in equal parts, is given as a febrifuge and laxative.² The leaves

1 कुशाण्डकृतम् । कुशाण्डकरचे सर्पिरष्टादशगुणे पचेत् । यथाङ्ग-
कलकं तत्यानमपस्वारविनायनम् । चक्रदत्तः ।

2 दीपनं कफविच्छेदि वातपित्ताहलीमनम् ज्वरघ्नं पाचनभेदि श्वेतं धान्य-
पटोलयोः । चक्रदत्तः ।

enter into the composition of several compound decoctions for fever. The following called *Paṭoládi kvátha* is an illustration. Take of *paṭola* 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

Paṭola 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 *paṭola* 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 *Paṭoládyá churna* is an illustration. Take of the root of *Trichosanthes dioica* (*paṭola*), 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

1 पटोलं चन्दनं मूर्धा तिक्ता पाठामृता गणः । पित्तश्लेष्माश्चिर्द्धिं ज्वर-
कण्डूविषापहः । चक्रदत्तः ।

2 पटोलासूतभूनिम्ब वासकारिपपर्पटैः । खदिराद्ध्युतैः काथो विस्फोटा-
क्तिस्वरापहः । चक्रदत्तः ।

3 पटोलाद्यं चूर्णम् । पटोलसूतं रजनी विडङ्गं त्रिफलात्वचम् । काम्प्लकं
नीलिनोश्च त्रिष्टताञ्चेति चूर्णयेत् । षडाद्यान् कार्षिकानन्यांस्त्रींश्चद्विलिचद्यु-
ष्यान् । कृत्वाचूर्णं ततोऽष्टिं गवांमूत्रेणनापिवेत् । विरिक्तोजाङ्गलरसैर्भुञ्जीतसूदु-
भोदनम् । मण्डपेयाञ्च पीत्वाच सव्योषं षडहं पयः । शहतं पिवेत्तु तच्चूर्णं
पिवेदेवं पुनः पुनः । हन्तिस्वर्षीद्रान्येतच्चूर्णं जातोदकान्यपि । कामलां पाण्डु-
रोगञ्च श्वयथुञ्चापकर्षति । 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. Kánkur, 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 sativa*, (*Sans.* त्रपुष, *Trapusha. Vern. Khirá, 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 Kavirájas 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 tola along with a pill, every morning.

1 रसस्निग्धपटोलस्य पत्राणां तद्विलेपनात् । इन्द्रजिह्वापहोषेपोमधुनादहती-
रसः । भावप्रकाशः ।

2 कल्कमेष्वांतुबीजानामक्षमात् ससेन्धवम् । धान्यान्धुक्तं पीत्विन्नूत्वाघा-
ताद्विमुच्यते । चक्रदत्तः ।

3 कुष्माण्डस्य सुबीजानि बीजानि त्रपुषस्य च । वस्त्रोपन्यायेत् तेन
प्रशाम्येन्नूत्त निपहः । भावप्रकाशः ।

CITRULLUS COLOCYNTHIS, *Schrad.**Syn. Cucumis Colocynthis, Linn.**Sans. इन्द्रवारुणी, Indraváruni. Vern. Indráyan. 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 *indráyan*. 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.

*Jvaragñi guṭiká.*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 *indraváruni* 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.

यमनि, *Yamáni. Ptychotis A'jowan,* DC. Vern. A'jowan Hind.*

वनयमनि, *Vanayamáni. Seseli Indicum, W. & A. Vern. Banjoán, B.*

¹ च्वरघ्नोगुटिका। भागेकः स्याद्दशाक्षुद्वाद्दशोयः पिप्पलीशिव। अकार-
करभोगन्धः कटुतैलेन शोधितः । फलानि चेन्द्रवारुण्यास्तु भागमितास्यमी । एक-
त्रमर्दयेच्चूर्णे मिन्द्रवारुणिकारसैः । काषोन्मितां वटीकृत्वा दद्यात्सद्यश्चरेभिषक् ।
द्विद्वारसानुपानेन ज्वरघ्नोगुटिकामता ।

याङ्गधरः ।

² इन्द्रवारुणिकाबीजतैलेनाभ्यङ्गमाचरेत् । प्रत्नहन्तेन काष्ठाग्निवृद्धिभा-
गुन्मलाश्लम् ।

याङ्गधरः ।

* Now included in the genus *Carum* by Hooker and Bentham.

अजमोदा, *Ajamodá*. *Carum Roxburghianum*, Benth. Vern. *A'jmad*, Hind. *Rándhuni*, Beng.

जीरक, *Jiraka*. *Cuminum Cyminum*, Linn. Vern. *Jirá*, Beng.

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

मधुरिका, *Madhuriká*. *Fœniculum vulgare*, Gærtn. *Mauri*, Beng. *Sonf*, Hind.

मिन्त्रेया, *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 tea spoonful 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, *yavakshára*, *assafœtida*, and chebulic myrobalan, equal parts ; powder the ingredients and mix. Dose, grains ten to twenty, to be taken with wine.¹ *A'jowan*, taken daily with treacle, is said to cure urticaria within a week.² *A'jowan*, 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*) 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 several¹ carminative and stimulant preparations, such as the *Ajamodádi churna* (see *Argyreia speciosa*), etc.

CUMINUM CYMINUM. 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, सिन्धूल्य चार शौवर्चलाभयाः। सरामण्डेन पातव्या
गुल्मशूल निवारणाः। चक्रदत्तः।

2 सगुडं दीपकं यस्तु खादेत् पथरान्न भुङ्गन्तः। तस्य नश्यति सप्ताहाडुर्दः।
सर्वदेहजः। चक्रदत्तः।

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

in dyspepsia, diarrhœa, 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 tale, flowers of *Mesua ferrea* (*nágakesara*), leaves called *tejapatra*, cinnamon, 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 diarrhœa 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

FÆNICULUM 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 *A'rak bádian*, and is used as a domestic carminative.

CARUM CARUI. The fruits called *shíá jirá* 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 सिन्दुरार्द्धपलं तथा । कटुतैलं पचेदाभ्यां सर्व्वपामाह्वरं परम् । भावप्रकाशः ।

2 जीरकस्य क्वतः कल्को हतसैन्धव संयुतः। सुखोष्णो मधुमालेपोः दृष्टिकस्य 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 (*puḍiná*).²

FERULA ASSAFŒTIDA, Linn.

Sans. हिङ्गु, *Hingu.* *Vern.* Hing, *Beng.* Hind.

SANSKRIT writers describe assafœtida as an exudation from the root of the assafœtida plant which is indigenous to Persia, Khorasan and Multan.* Assafœtida is regarded as a stimulant and carminative and is much used in dyspepsia, flatulence, colic, and diseases of the nervous system. It is fried before being used internally. Raw or unfried assafœtida is said to cause vomiting.

*Hingvashṭaka 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 सशर्करः पेयोहिमोधन्याकसम्भवः । अन्नह्रीं तथात्क्षणां
जयेच्छ्रोतोविशोधनः । भावप्रकाशः ।

² धान्यनागर सिद्धन्तु तोयं दद्याद्द्विचक्षणः । आमाजीर्णं दीपनं प्रशसनं
वस्तिशोधनम् । चक्रदत्तः ।

³ हिङ्गुवटकं चूर्णम् । त्रिकटुक मज्जोदा सैन्धवं जीरके द्वे समधरण
पृतानामष्टमोहिङ्गुभागः । प्रथम कवडभुक्तं सर्पिषा चूर्णमेतज्जनयति जठ-
राग्निं वातरोगांश्च हन्यात् । भैषज्य रत्नावली ।

* Not now found at Multan. G. K.

In the flatulence of infants a powder composed of assafœtida, rock salt, cardamoms, ginger, and the root of *Clerodendron Siphonanthus (bhārgi)*, 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 *Māshabalādi*, (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.* मण्डुकपर्ण, *Manḍukaparni. Vern. Thalkuri, Beng. Brāhmamanḍuki, Hind.* The properties of this plant are said to resemble those of *Brāhmi (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, *DC.*

Syn. Oldenlandia biflora, Roxb.

Sans. पपेट, Parpaṭa. Vern. Khetpāprā. Beng.

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

1 घृतेन सिन्धु विश्वैला हिङ्गुभागीरजोक्षिहनु । आनाहं वातिकं पृक्तं
जयेत्तोयेन वा शिशुः । चक्रदत्तः ।

2 हिङ्गुमाक्षिक सिन्धुत्यैः पक्तावर्त्तिं सुनिर्मिताम् । घृताभ्यक्तां गुदेदद्याद्-
दावर्त्तं विनाशिन्यीम् । चक्रदत्तः ।

3 हिङ्गुषोष्णन्तु मतिमान् क्रिमिदन्तेषु दापयेत् । चक्रदत्तः ।

4 मण्डुकपर्ण्याः खरसः प्रयोज्यः क्षीरेण यटीमधुकस्य चूर्णम् । रघो
गुडूच्यास्तु समूलपुष्पाः कसकः प्रयोज्यः खलुसंङ्गपुष्पाः । आयुः प्रदान्यामय-
नाशनाभि मेध्या विश्लेषणस्तु यद्गुपुष्पो । 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, diarrhoea, skin diseases, etc. A simple decoction of the plant is used in bilious fever, with irritability of the stomach or delirium.¹ *Parpaṭa* enters into the composition of numerous febrifuge and tonic decoctions. The following is an example.

Panchabhadra.² Take of *parpaṭa*, tubers of *Cyperus rotundus* (*mustaka*), *gulanča*, *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* (*vásaka*), *Acorus Calamus* (*vachá*), *nim* bark, leaves of *Trichosanthes dioica* (*paṭola*), and bark of *Aglaia Roxburghiana* (*priyangu*), equal parts, half

1 एकः पर्पटकैः श्रेष्ठः पित्तज्वरविनाशनः । किंपुनर्यदियुञ्जेत चन्दनो
शोरवाकः । दर्पणः ।

2 पर्पटाद्भ्रूताविश्वकिरातैः साधितं जलम् । पञ्चभद्रमिदं त्रैयं वातपित्त
ज्वरापहम् । शाङ्गधरः ।

3 पञ्चकषायः । घाटरुषं वचानिम्बं पटोलं फलिनीत्वचम् । काथयित्वा-
पिपेत्तोर्यं वान्निहन्मदनान्वितम् । काथ्यद्रव्यस्य कुडवं अपयित्वा जलाटके ।
चतुर्भागावशिष्टन्तु वमनेध्वचारयेत् । 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 Manjistā, Roxb.

Sans. मंजिष्ठा, Manjishthā, 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 *kānjika*, 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

Manjishthādyā 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 fætida* is a long climbing plant, twining up and over trees. All parts of the plant give off a most offensive odour when bruised. The leaves, boiled and made into soup, are considered wholesome and suitable for the sick and convalescent. The entire plant including stem, leaves and root, is much used both internally and externally in rheumatic affections for which it is regarded as a specific.

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

1 आलेपनायं मञ्जिष्ठा मधुकं चाक्षुषेयितम् । चक्रदत्तः ।

2 मञ्जिष्ठाद्यं घृतम् । मञ्जिष्ठां चन्दनं मूर्वां पिप्पला सर्पिर्विपाचयेत् । सर्षपं
मग्निदग्धानामेतद्रोपणमिष्यते । चक्रदत्तः ।

wo 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 prasárani taila*,² is argely used by native physicians. Take of the entire plant of *Pæderia fetida* 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 fetida*, 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 fetida* till the water is nearly evaporated, then boil the oil successively with the addition of milk, whey and *kánjika*, adding the aromatic paste during the last process of boiling. This oil is used externally in rheumatism with contraction and stiffness of the joints. After the application of the oil, the affected parts should be fomented with dry heat.

1 प्रसारणीलेहः । प्रसारणयादके काथे प्रस्थो गुडरसीमतः । पक्वः
पञ्चोदधरजः यश्च स्वादामवातहाः । भावप्रकाशः ।

2 कुजप्रसारणी तैलम् । प्रसारणीशतं क्षुण्णं पचेत्तोयान्मनेशुभे । पादशिष्टे-
समं तैलं दधिदद्यात्सर्कोज्जकम् । द्विगुणञ्च पयोदत्त्वा कल्कान् द्विपलिकां-
स्तथा । चित्तकं पिप्पलीमूलं मधुकं सैन्धवं वचाम् । शतपुष्पां देवदारु रान्नां
वारणपिप्पलीम् । प्रसारणयाश्च मूलानि मांसी भल्लातकानि च । पचेन्मृदग्नि-
नातैलं वातह्नेष्वाभयान् जपेत् । अशितिं नरनारीस्थान् वातरोगानपोहति ।
कुजं स्तिमितपङ्कत्वं मृधसीखञ्जकार्हितम् । हनुष्टयिरोपीवास्तम्भं वापि-
नियच्छति । चक्रदत्तः ।

NAT. ORDER VALERIANACEÆ.

NARDOSTACHYS JATAMANSI, DC.

Syn. Valeriana Jatamansi, Jones.

Sans. जटासंघि, Jaṭāmānsi. Vern. Jaṭāmānsi, 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 *jaṭāmānsi* 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 *jaṭāmānsi*, 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, *jaṭāmānsi* 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, Kushṭha. 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 कुलथ्य यवकोलानि शण्णवीजं पलङ्कषाम् । जटिणां पञ्चमूल्यौ द्वे पथ्या
ञ्चोक्ताय्य वल्लतः । वस्तमूलयुतं सर्पिः पिबेत्तद्वातिके 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, chebulic myrobalan, six parts, plumbago root, seven parts, and the root of *Aplotaxis auriculata*, eight parts. Powder the ingredients, mix and pass the powder through a cloth. Dose, twenty to forty grains with whey or wine in dyspepsia with loss of appetite.

A liniment composed of the root of *Aplotaxis auriculata*, *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. शङ्कराज, Bhringarāja. केशराज, Kesarāja.

Vern. Kesarāja, Beng. Bhánrá, Hind.

THERE is some confusion between the Sanskrit and vernacular names of *Wedelia calendulacea*, and *Eclipta prostrata*. Both these plants are called *kesarāj* or *kesuriá* 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 । हिङ्गुभागोभवेदेकोवचा च द्विगुणाभवेत् । पिप्पली त्रिगुणाच्चैव शङ्कवेरं चतुर्गुणम् । यमानिका पञ्चगुणा षडगुणाच हरीतकी । चित्तकं सप्तगुणितं कूष्ठञ्चाष्टगुणं भवेत् । एतद्वातहरं चूर्णं पीतमात्रं प्रसन्नया । चूर्णमग्निमुखं नाम न क्वचित्प्रतिहन्यते । चक्रदत्तः ।

2 कुष्ठमेरुण्डतैलेन लेपात्काञ्जिक पेषितम् । शिरोर्त्तिं वातजां हन्यात्पुष्पं वा सुचकुन्दजम् । शार्ङ्गधरः ।

3 कुष्ठसैन्धवयोः कल्कशुक्रतैल समन्वितः । सुखोष्णो मर्द्दने योज्यः खल्लो मूलनिवारणः । 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.

*Játipháládya churna.*² Take of nutmeg, *baberang* seeds, plum-bago root, flowers of *Tabernæmontana 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 *bhringarája* leaves, sixteen seers and prepare an oil with a paste composed of the following substances, namely, root of castor oil plant, and of *Tabernæmontana coronaria* (*tagara*), dill seeds, *Cælogyne ovalis* (*jivanti*), *Vanda Roxburghii* (*rásná*), rock salt, *Wedelia calendulacea* (*bhringarája*), *baberang* seeds

1 शङ्कराजरसः क्वागीचीर तृल्लोऽर्कतापितः । सूर्यावर्त्तं निहन्त्याशु
नखेनैव प्रयोगराट् । भावप्रकाशः ।

2 जातीफलं चूर्णम् । जातीफलं विडङ्गानि चित्रकं तगरंतिळाः ।
तालीसं चन्दनं शुष्ठी लवङ्गसप्तकुञ्चिका । कर्पूरश्चाभया धात्री सरिचं
पिप्पली तुगा । एषा त्वक्षसमा भागश्चातृजातक संयुताः । पलानि सप्त
शङ्कायाःसिता सर्व्वसमा मता । चूर्णमेतत् क्षयं कासं श्वासञ्च ग्रहणीगदम् ।
क्षरोचकं प्रतिश्यायं तथाचानल मन्दाताम् । एतान् रोगान् निहन्त्येव वृक्ष
मिन्द्राशनिर्यथा । भावप्रकाशः ।

3 षड्बिन्दुतैलम् । एङ्गुलभूलं तगरं यताह्वा जीवन्ति राक्ता सहस्रैश्च वञ्च ।
शङ्कं विडङ्गं मधुयष्टिकाच विन्धौषधं क्षणतिक्षय तैलम् । व्याजंपयस्त्रैलविनि

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* (*syámalatá*), 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, *Somaráji*. अवाल्युज, *Avalguja*. वाकुची, *Vákuchi*.
Vern. Hákuch, Somráj, 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

श्वितञ्च चतुर्गुणे षडङ्गरसे विपकम् । षड्विन्द्वोनासिकयाविधेयाः शीघ्रं निह-
न्युःशिरसोविकारान् । च्युतांश्च केशांश्चलितांश्च दन्तान् दुर्वङ्गमूलांश्च दृढी-
करोति । सुपर्णदृष्टिप्रतिमञ्च चक्षुर्वाह्णोर्बलञ्चाभ्यधिकं ददाति । चतुर्दत्तः ।

¹ षडङ्गराज तैलम् । षडङ्गराजरसेनैव लोहकिटफलत्रिकम् । सारिवाच
पचेत्कक्कैश्चैलं दारुणनाशनम् । अकालपलितं कण्डूमिन्द्रलुप्तञ्च नाशयेत् ।

शाङ्गधरः ।

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 (*kánjika*), and apply over the eruptions.² *Vákuchi* seeds four parts, and orpiment one part are rubbed into an emulsion with cow's urine, and applied to the patches of white leprosy or leucoderma.³

Somaráji taila. Take of *vákuchi* seeds, twelve seers and a half, water sixty four seers, and boil down to sixteen seers. Take of the seeds of *Cassia Tora* (*chakramarda*) twelve seers and a half, water sixty four seers and boil down to sixteen seers. Boil these two decoctions with sixteen seers of cow's urine, sixteen seers of mustard oil and the following substances in the form of a paste, namely root of *Plumbago rosea* (*raktachitráka*), of *Gloriosa superba* (*lánguli*), ginger, turmeric, *páitchak* 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*

1 अथल्लगुजाद्बीजकर्षं पीत्वाकोष्णेन वारिण्या । भोजनं सर्पिषाकार्यं सर्वं
कुष्ठप्रणाशनम् । तोत्रेण कुष्ठेन परीतदेहो यः सोमराजीं नियमेन खादेत् ।
संवत्सरं क्षणतिलद्वितीयां स सोमराजीं वपुषातिथेते । चर्मसेवीकदुष्णेन वारिण्या
वागुजी पिबेत् । चक्रदत्तः ।

2 अथल्लगुजं कासमर्द्दं चक्रमर्द्दं निशायुतम् । माणिसन्धेन तृल्ल्यांशं मस्तु-
काञ्जिकपेषितम् । कक्षुं कण्डूं जयत्युषां सिद्धएषप्रयोगराट् । चक्रदत्तः ।

3 कुष्ठवोऽथल्लगुजबीजाद्भरिताल चतुर्थभागसंमिश्रः । मूत्रेण गवां पिष्टः
सवर्षेकरणः परः श्विते । चक्रदत्तः ।

Racemasa (ladhra), black pepper, *nim* leaves, leaves of *Cassia Sophera (kásamarda)*, juice of cow-dung, orpiment and realgar, each eight tolás. This oil is said to cure all sorts of skin disease^s from vitiated blood, ringworm, prurigo, etc.¹

ANACYCLUS PYRETHRUM, *DC.* 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, *DC.* *Syn. Hingtsha repens, Roxb. Sans. हिलमोचोका, Hilamochiká. Vern. Hingchá, 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, Chitraka. Vern. Chitá, Beng. Hind.

THE root of *Plumbago Zeylanica* is said to increase the digestive power, to promote the appetite and to be useful in dyspepsia, piles, anasarca, diarrhœa, skin diseases, etc. It is much used as a stimulant adjunct to other preparations, in the form of a com-

1 दृष्टवृषोमराजी तैलम् । सोमराजी तुलाकाये दद्रुघ्नस्व तथैव च ।
विपचेत्पलिकर्मागैः कटुतैलादकं भिषक् । चित्रकं लाङ्गुली बोधुं नागरं कुष्ठ-
मेव च । हरिद्रा नक्तमालञ्च हरितालं मनःशिला । आस्कोता करवीरञ्च
सप्रपर्याकं गोमयं । खदिरं निम्बपत्रञ्च मरिचं काशमर्दकम् । गोमूत्रस्यादकं
दत्त्वा शनैर्भृङ्गिनापचेत् । हन्ति सर्वानि कुष्ठानि कण्डुदुष्टव्रणानपि । कटिभं
दद्रुजातञ्च गात्र वैषर्षं नाशनं । राठीयशारसंपहः ।

ination 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. Lálichitá, Beng.* The properties of the root of *Plumbago rosea* are said to be like those of *P. Zeylanica*. It has besides a specific

1 सिन्धूपयप्रमगधोद्भवक्लिचर्षुसुग्याम्बुनापिवति यः खलुनटर्वाङ्गः । तस्मा
सिषेय सद्यतेन वरं नवाच्चंभस्त्रोमवत्यशितमात्वमिहक्षणेन । चक्रदत्तः ।

2 चित्रकेन्द्रयवाः पाठा कटुकातिविषाभयाः । महाव्याधिप्रथमनोयोगः
सङ्घरणः स्मृतः ॥ चक्रदत्तः ।

3 दन्ती चित्रकमूलत्वक् सुधार्क पयसीगुडः । भङ्गातकश्काशीशं सैन्धवंदारणे
स्मृतः । 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, *Vidānga.* *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 गरोमदनदहनमूलं चिरजमपिगर्भं शृतमशृतं वा निपातयति ॥

चक्रदत्तः ।

² विडङ्गं शृतपाण्डियं विडङ्गेनावधलितम् । पीतं कर्मिहरं इष्टं कर्मिजांश्च गदाञ्जयेत् । लिह्याद्विडङ्गचूर्णं वा मधुना कर्मिनाशनम् ॥

भावप्रकाशः ।

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.* Maulsarau, *Hind.*

THIS ornamental tree is generally reared in gardens for the sake of its fragrant flowers from which a distilled water is prepared. The ripe fruits are sweetish and edible. The unripe

1 विडङ्ग सैन्धव शिवा शशिरखा सर्षप करञ्जरजनीभिः।गोजलपिष्टोलेपः।

कुठहरोदिवसनाथसमः ।

चक्रदत्तः ।

2 मधुकपुष्पगम्भारी चन्दनोशीरधान्यकैः । द्राक्षायाश्च कृतः फाण्टः शीतः-
शर्करायुतः ॥ तृष्णापित्तहरः प्रोक्तो दाहमूर्च्छांश्चानुजयेत् । शार्ङ्गधरः ।

3 मधुकसारिण्यिरः खिलञ्चास्य 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, Roxb.

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 Amritasāgara 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. शेफालिका, *Sephālikā*. रजनौहासा, *Rajanihāsā*.

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 thick-

1 चलदन्त स्थिरकरं कार्यं वकुलचर्ब्वणम् । चक्रदत्तः ।

2 दन्तचालेह गरुडूषोषकुलत्वक् कृतोहितः । चक्रदत्तः ।

3 भिज्जोदककषायेन तथैवामलकस्य वा । प्रचालयेत् सुखं नेत्रे खस्यशी-
तोदकेन वा । निलीकां सुखशोषज्ज पीडिकां व्यङ्गमेवच । रक्तपित्तकतान्
रोगान् सद्यैव विनाशयेत् ॥ सुश्रुतः ।

4 शैशिरे हृतरक्तोच लोध्रसुस्तरसाङ्गनेः । सद्योद्गैः शस्यते खेपोगरुडूषे
क्षीरिण्योहिताः ॥ चक्रदत्तः ।

ly 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 सर्वज्वरनुच्छेफालीदलजोरसः । | चक्रदत्तः । |
| 2 श्लेफालिकादलैः काथो मृद्वग्निपरिसाधितः । दुर्ब्भारं मृध्रसीरोगं पीत-
मात्रं समुद्धरेत् । | चक्रदत्तः । |
| 3 जातीपत्रञ्च संमर्द्य दद्यादलसके भिषक् ॥ | चक्रदत्तः । |
| 4 सुखपाके शिरावेधः शिरः कायविवेचनम् । कार्य्यञ्च बद्धधानित्यं
जातीपत्रस्य चर्च्चणम् ॥ | भावप्रकाशः । |
| 5 जातिपत्ररसे तैलं विपक्वं पूतिकर्णजित् ॥ | चक्रदत्तः । |

NAT. ORDER APOCYNÆÆ.

NERIUM ODORUM, *Solander.*

Sans. करवीर, *Karavira.* अश्वमारक, *Asvamáraka.*

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.

*Karavirádyā 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. Chlátin, Beng. Chhátían, Hind.

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

1 करवीराद्यं तैलम् । श्वेतकरवीररसोगोमूत्रं चित्तकं विद्धङ्गञ्च । कुष्ठेषु
तैलयोगः सिद्धोयं सम्प्रतोभिषजाम् । चक्रदत्तः ।

2 करवीरस्यमूलेन परिपिष्टेन वारिणा । असाध्यापित्रजत्वस्तं लिङ्गोत्था-
रुक्प्रलेपनात् । शाङ्गधरः ।

3 करवीरतरुणकिशलयच्छेदोद्भव वज्जलसलिलसंपूर्णम् । नयनयुगं भवति
दृढं सहस्रैवतत्क्षणात् कुपितम् । चक्रदत्तः ।

etc. 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* (*paṭola*), tubers of *Cyperus rotundus* (*mustaka*), *Calamus Rotang* (*vetra*), catechu and *nim* leaves, and prepare a decoction in the usual way.

HOLARRHENA ANTIDYSENTERICA, *R. Br.*

Sans. कुटज, *Kuṭaja*, 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 *Kuṭajáshtaka* is

¹ सप्त च्छदं गुड, चीञ्च निम्बस्फूर्त्यकमेव च । काथयित्वा पिबेत्काथं
सर्वौद्गं कफजे ज्वरे । सुश्रुतः ।

² स्थूलवस्त्रिकापत्र रसः पानाद्गुणोद्धति । सर्वातिशारानुश्लोनाककुट-
जत्वपसोयथा । शार्ङ्गधरः ।

³ कुटजत्वक्कतः काथो घनीभूतः सुशीतलः । लोहितोऽतिविषायुक्तः
सर्वातिशारनुद्भवेत् । चक्रदत्तः

thus prepared. Take of *kuṭaja* bark, *ātis*, 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 tolá each, water thirty two tolas; boil together till reduced to one-fourth.¹

*Kuṭajaleha*² or confection of *kuṭaja* bark. Take of *kuṭaja* 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 *sonchal* 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.

Paṭhádya 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* (*kaṭuki*), *ātis*, tubers of *Cyperus rotundus* (*mustaka*), wood of *Berberis Asiatica* (*dárvi*), *chiretá*, seeds of *Holarrhena antidy-senterica* (*indrayava*), one part each, *kuṭaja* bark, equal in weight

1 कुटजातिविषा पाठा धातकी लोभ सुस्तकैः । स्त्रीवेर दाडिमयुतैः कृतः
काथः समाश्लिकः । पेयोमोचरसेनैव कुटजाटकसंश्लकः । अतीसारान् जयेद्दाह
रक्तमूत्रामदुस्तरान् ।
शाङ्गधरः ।

कुटजलेहः । शतं कुटजमूलस्यक्षुप्तं तोयार्मणे पचेत् । काये पादावशेषे-
स्मिन् लेहं पुते पुनः पचेत् । सौवर्ज्जल यवक्षार विडसंश्लव पिप्पली । धात-
कीन्द्रयवाजाजी चूर्णं दत्त्वापलद्वयम् । लिङ्गादहरमात्रं तत् शीतं क्षौट्रेणसंयु-
तम् । पक्वापकमतीसारं नानावर्णं श्वेदनम् । दुर्ब्बारं सङ्घणोरोगं जयेच्चैव-
प्रवाहिकाम् ।
चक्रदत्तः ।

3 पाठाद्यं चूर्णम् । पाठा विल्वानल व्योष जम्बूदाडिमधातकी। कटुकाति-
विषामुस्त दाडिमी भूनिम्बवत्सकैः । सञ्जैरेतैः समं चूर्णं कौटजं तृणुलाम्बूना ।
सक्षौद्रञ्च पिपेच्छर्हिष्वरातिषारमूत्रयान् । तद्दाहपङ्घणीदोषारोचकान-
कसादजित् ।
चक्रदत्तः ।

to all the above ingredients ; powder them finely and mix. Dose, about one to two scruples to be taken with rice-water and honey. Another compound powder called *Gangádhara churna*, is of similar composition to the above, with a few additional substances.

Kuṭajárishta,¹ or fermented liquor of *kuṭaja*. Take of *kuṭaja* 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* (*dhátaki*), 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 sesasum oil, decoction of *kuṭaja* bark and a number of astringent and aromatic substances in small quantities.

Pradarári lauha.² Take of *kuṭaja* bark, twelve seers and a half and prepare a fluid extract as in the preparation called *kuṭaja-leha*, 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* (*dhátaki*), *átis*, prepared talc and iron, each eight tolás, mix them

1 कुटजारिष्टः। तुलांकूटजमूलस्य ऋद्धीकार्दतुलान्तथा । मधूकपुष्पकाशस्यर्थो
भौगान्दशपलोन्मत्तान् । चतुर्द्वीयेऽन्धसःपद्माकाथयेत्द्रोणशेषिते । धातक्या
विंशतिपलं गुडस्य च तुलां क्षिपेत् । मासमात्रं स्थितोभाण्डे कुटजारिष्टसंज्ञकः ।
श्वरान्प्रथमयेत्सर्वान् कुथरंक्षीणं घनञ्जयम् । शार्ङ्गधरः ।

2 प्रदारारिखौहं । बत्सकसतुलां सम्यक् जलद्रोणे विपाचयेत् । अष्टभागा-
वशिष्टन्तु कषायमवतारयेत् । वस्त्रपूते घनीभूते द्रव्यानीमानि दापयेत् ।
समङ्गाशाल्मलं पाठा विल्वं सुस्तञ्चघातकी । अतिविषा रूषा व्योमकं
लौहं प्रत्येकन्तुपलंपलं । कोलमात्रां प्रयुञ्जित कुशमूलं पयोञ्जितु ।
श्वेतंरक्तं तथानीलं पीतंप्रदरदुस्तरं । कुलिशूलं कटीशूलं देहशूलञ्चसर्व्वगं ।
प्रदारारिखं लौहोहनिरोगान् सुदुस्तरान् । आयुःपुष्टिकरश्चैव वलवर्णाग्निवर्द्धनः ।

भैषज्यरत्नावली ।

intimately and prepare a confection. Dose, about a drachm. This preparation is given in menorrhagia and other discharges from the uterus.

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 tolas, 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

Laghu gangádharma churna.² 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. शारिवा, *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*, शारिवा, *Sárivá*.

Vern. *Anantamul*, Beng. *Hind*.

In Sanskrit Medicine, *Hemidesmus Indicus* and *Ichnocarpus frutescens* are both called *sárivá* and are described under the name

1 सुस्तकेन्द्रयवैः सिद्धा प्रमथ्या द्विपलोन्मिता । सुशीता मधुसंयुक्ता रक्तातीसार-
नाशिनी । शार्ङ्गधरः ।

लघुगङ्गाधरचूर्णम् । सुस्तमिन्द्रयवं विल्वं लोभं मोचरसन्तथा । धातकीं
चूर्णयेत्तत्र गुडाम्यां पाययेत् सुधीः । सर्वातीसारघननं निरुषद्विप्रवाहिकाम् ।
लघुगङ्गाधरं नामचूर्णं संपाहकं 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* (*kaṭuki*), 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* (*parparṭa*), 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. A'kanda, 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

¹ अन्नना बालकं सुखं नागरं कटुरोहिणी । पिप्पला सुखाम्बूना कल्कं
पाययेदन्न सन्मृतं । कल्कः स्वल्पेनकालेन हन्यात् सर्वज्वरामयं । विदध्यात्
कोष्ठसंशुद्धि दीपयेच्च कृताशनं । भेषज्यरत्नावली ।

² इन्द्रवारुणिकानन्ता शारिवा पर्यटैः समैः । एभिः कृतं पिबेत् काथं
कषायुग्गुलूसंयुतम् । अष्टादशेसुकुष्ठेषु वातरक्तादिते तथा । उपदंशेलीपदेच
प्रसृप्ते पक्षघातके । शार्ङ्गधरः ।

Madras 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 nerifolia*. 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 nerifolia* 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 अकपत्रं सखवणमन्तधूमं दहेत्ततः। मस्तुनातत्पिवेत्चारं गुल्मशीहोदरा-
पहम् । चक्रदत्तः ।

2 मरिच शीतार्कक्षीरैर्वाकीं त्वचमाशुभावितांशुष्काम्। कृत्वाविधिनाधूमं
पिवत्तः कासाः शमं यान्ति । चक्रदत्तः ।

3 निष्पिष्टमारण्येन हृषिकामूलवल्कलम्। प्रलेपात्क्षीपदं हन्ति बद्धमूल-
मपिष्टम् । चक्रदत्तः ।

4 क्षुद्राकडुग्ध दाक्षीभिर्भृत्तिं कृत्वा विचक्षणः। भगन्दरगतिं ज्ञात्वा पूर-
येत्तां प्रयत्नतः । चक्रदत्तः ।

5 सप्तच्छदाकडुग्धाभ्यां पूरणं क्रिमिदन्तवृत् । 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, *Vishamushtī*.

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 *vishamushtī*, which is generally interpreted to mean in these places, *nux vomica* seeds ; but *vishamushtī* according to the *Bhāvaprakāsa* has an edible fruit and is called *Kareruá* in Hindi. In this work the Sanskrit term *kupilu* with its synonyms, *kulaka*, *vishatinduka*, *markatinduka*, 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 Divedi* of the *Agra College*. This interpretation however is not accepted in Bengal, for neither *Wilson* nor *Sir Rájá Rádhákunta 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 *vishamushtī* as *kuchilá*.

The *Strychnos nux vomica* is indigenous to most parts of India. I found it to be common in the jungles about *Manbhom*. The

1 अर्कतैलम् । अर्कपत्ररसेपक्वं कटुतैलं निशायुतम् । मनःशिलायुतं वापि
पाषाकच्छादिनाशनम् । 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, assafœtida, sulphur and rock salt, equal parts and make into four-grain pills. These are given with warm water in dyspepsia with pain after meals, and in diarrhoea. Sârangadhara gives the following prescription in which the term *vishamushti* is usually understood to mean nux vomica. Take of mercury, sulphur, aconite, ajowan, the three myrobalans, *sarjikâ* (impure carbonate of soda), *yavakshâra* (impure carbonate of potash), rock salt, plumbago root, cumin seeds, *sonchal* salt, sea-salt, *bâberang*, 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 मूलहरणयोगः । हरीतकी त्रिकटुकं कुचिलाहिङ्गु गन्धकं । सैश्ववच्चसमं सर्ववर्तीकुर्व्यात् सुखावहाः । लघुकोलप्रमाणास्ता यस्यन्नेप्रातरेवच । एकैका-
पटिकाभ्याह्या गुल्ममूलनिवारिणी । ग्रहयामतिसारेच साजीर्णेभन्दपावके ।
योजयेदुष्णपयसा सुखमाप्नोति तत्क्षणात् । रसेन्द्रसारसंप्रहः ।

² शुद्धसूतं त्रिषं गन्धमजमोदा फलत्रयम् । सर्जिलारं यवचारं वङ्गसैश्व-
जीरकम् । सौवर्चलं विडङ्गानि सासुद्रं तूप्रषणंसमम् । विषसृष्टिं सर्वतुल्यं जम्बी-
रास्त्रेण सहयेत् । मरिचाभां वटीं खादेदङ्गि मान्द्यप्रशान्तये । शार्ङ्गधर ।

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. किराततिक्ता, *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 Bhava-prakása 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 decoction

¹ शङ्खः क्षौद्रेण संयुक्तः कतकः सैन्धवेन वा । सितयार्णवफेनो वा पृथगङ्गन
सर्जने । चक्रदत्तः ।

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.

Kirdádi 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, *sonchal*, *vit*, and rock salts, root of *Justica 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.

CANSORA DECUSSATA, *R. et Sch.*

Syn. Pladera decussata, Roxb.

Sans. शङ्खुष्पी, Sankhapushpi.

Vern. Dánkuni, Beng. Sankháhu, 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 किरात तिक्तमन्त्रतो द्राक्षा आमलकीं शठी । निष्ठीड्य सततंकाथं
वातपित्तञ्चरे पिबेत् । भैषज्यरत्नावली ।

2 किरातादि तैलम् । सूर्वाभाक्षा हरिद्रेहे मञ्जिष्ठा सेन्द्रवारुणी । पुष्करं
ह्रीवेरं रास्ना कपिवल्ली कटुलयं । पाठा चेन्द्र यवश्चैव लवणलय संयुतं ।
वासकाकं श्यामादारु महाकाल फलं तथा । दधि मन्वारनालेन किरातेनच
संपचेत् । प्रस्यं प्रस्यं समादाय तैल प्रस्ये विमाचयेत् । लिप्त भूक्त ज्वरश्चैव

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 *Canscora 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. अरलु, 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 diseases. The tender fruits are described as grateful, carminative and stomachic.

सन्ततं सततं तथा । धातुस्य अस्थिमज्जस्यं सर्वं च्वरं व्यापोहति । कामलां
पहणीञ्चैव अतिसारं हलीमकं । श्लोहा पाण्डु श्वयथुञ्च नाशयेत् नात्रसंशयः ।
नास्ति तैल वरञ्चैव च्वरदर्पं कुलान्तकं । भैषज्यरत्नश्लो ।

1 ब्राह्मी कुष्माण्ड षट्पन्थाशङ्खीनीस्तरसः पृथक् । मधु कुष्ठ युतः पीतः
सर्व्वीनादापहारकः । चक्रदत्तः ।

2 रसोगुडूच्यास्तु समूलपुष्पाः कवकः प्रयोज्यः खलुशङ्खपुष्पाः । आयुः
प्रदान्यामयपाशनानि बलाग्निवर्णस्तरवर्द्धनानि । मेध्यानि चैतानि रसायनानि
मेध्याविशेषणतु खलुपुष्पी । चक्रदत्तः ।

3 गुडच्यपामार्गं निडङ्ग शङ्खिनी बचाभया कुष्ठशतावरोसमा । हृतेन लीटा-
प्रकरोति मानवं त्रिभिर्दिनैः लोकसहस्रधारिणम् । 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 *Calosanthes Indica*.²

STEREOSPERMUM SUAVEOLENS, DC.

Syn. Bignonia suaveolens, Roxb.

Sans. पाटला, Pátalá. Vern. Páruł, Beng. Pád, Hind.

THIS is a middle sized flowering tree, a native of Bengal. The flowers are large, of a dark crimson colour and exquisitely fragrant. Steeped in water they impart their fragrance to it. Rubbed up with honey they are given to check hiccup. The root-bark is an ingredient of *dasamula* (see *Desmodium gangeticum*), and is thus largely used in native medicine. It is regarded as cooling, diuretic and tonic, and is generally used in combination with other medicines. The ashes of this plant are used in the preparation of alkaline water and caustic pastes.

NAT. ORDER. CONVULVULACEÆ.

IPOMŒA TURPETHUM, R. Br.

Syn. Convolvulus Turpethum, Roxb.

Sans. त्रिवृत्, Trivrit. त्रिपुटा, Tripuṭá.

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 pre-

¹ अरलुत्वकृतश्चैव पुटपाकोग्निदीपनः । मधुमोचरशाम्याञ्च युक्तः सर्वा-
तिमारजित् । शार्ङ्गधरः ।

² तैलं श्योनाकमूलेन मन्दाग्नौपरिपाचितम् । हरेदाशु त्रिदोषोत्थं कर्ण
शूलं प्रपूरणम् । शार्ङ्गधरः ।

ferred 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 two 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.

Tumburádyá churna.² Take of the fruits of *Xanthoxylum hostile* (*tumburu*), rock, *vit* and *sonchal* salts, *ajowan*, *páchak* root, *yavakshára*, chebolic myrobalan, assafœtida and *babérang* 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 त्रिष्टतासप्तपञ्चुल्या कर्षचूर्णितं क्लृप्तम् । प्राग्भोजने च समधु विडालपदकं लिहेत्प्राज्ञः । एतद्भाटपुरीषे पित्ते कफे च दिनियोज्यम् । सुस्नादुर्न्ध्रपयोग्योऽयं चूर्णो नाराचकोनाम्ना । भावप्रकाशः ।

2 तम्बुर्वीर्यं चूर्णम् । तम्बुरुषि त्रिलवणं यवानी पुष्कराह्वयम् यवक्षाराभयाहिङ्गु विडङ्गानि समानि च । त्रिष्टत्त्रिभागिकात्रेया सूक्ष्म चूर्णानि कारयेत् । पित्तेदुष्येन तोयेन यवकायेन वा पिवेत् । जवेत्सर्व्वीषि शूलानिगुल्मा भ्रानोदराणि च । शार्ङ्गधरः ।

³ क्षीराशनः पित्तकृतेऽयथोये त्रिष्टद्गुडची त्रिफलाकषायम् । चक्रदत्तः ।

BATATAS PANICULATUS, *Choisy*.

Syn. Convolvulus paniculatus, Roxb.

Sans. विदारो, Vidári, भूमिकुशाण्ड, 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 विदारोऽकन्दं सुरयापिवेदा स्तन्यवर्द्धनम् । चक्रदत्तः ।

² यदातु दुर्बलो बालः खादन्नपि च बङ्गमान् । विदारोऽकन्दं गोधुमयवचूर्णं
एतन्मुत्तम् । खादयेत्तदनुक्षीरं शृतं समधुशर्करम् । भावप्रकाशः ।

³ चूर्णं विदार्याः सुकृतं खरसेणैवभावितम् । सपिःक्षीरयुतं लीढायुतं
गच्छेद्दराङ्गनाः । सुश्रुतः ।

⁴ मूत्रकच्छान्तकरसः । विदारो गोक्षरं यष्टी केशरञ्च समं पचेत् । तत्-
कषायं पिवेत् क्षौद्रं रसमक्षयुतं पुनः । मूत्रकच्छहरंख्यातं सप्ताहात् पित्त-
सम्भवम् । रसेन्द्र सारसंयहः ।

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, Vriddhadāraka. Vern. Bijtarká, 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 tola, 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 tolas, chebulic myrobalan ten tolas, root of *Argyreia speciosa* twenty tolas, ginger twenty tolas; powder and mix. Dose, about two drachms with treacle. This preparation is said to be useful in rheumatic affections and hemiplegia.

1 वृद्धदारकमूलानि क्लृप्त्वा चूर्णानि कारयेत्। शतावय्या रसेनैव सप्ररात्वाणि भावयेत्। अक्षमात्नन्तु तच्चूर्णं सर्पिषा सह भोजयेत्। सासमात्वोपयोगेन सति मान् जायते नरः। मेधावी स्मृतिमांश्चैव वलिपलितवर्जितः। चक्रदत्तः।

2 गुग्गुलुं क्रोष्टुमीषैस्तु गुडुचोत्पिफलाभ्रसा। क्षीरेशैरण्डतैलं वा पिवेद्वा-
वृद्धदारकम्। भावप्रकाशः।

3 अजमोदादां चूर्णम्। अजमोदाविडङ्गानि सैन्धवं देवदारुच। चित्तकं पिप्पलीमूलं शतपुष्पाच पिप्पली। मरिचञ्चेति कर्षांशं प्रत्येकं कारयेद्बुधः। कर्षास्तु पञ्चपथ्याया दश स्युर्दृद्धदारकात्। नागराञ्चदशैवस्युः सर्वाण्येकत्र चूर्णयेत्। पिवेत्कोष्णजलेनैव चूर्णञ्च गुडसन्मितम्। भक्षयेद्यथा सम्यक् परं श्वयथु नाशनम्। आमवातरुजं हनिसार्द्धपीडाच गृध्रसीम्। कटिष्टग्दस्याञ्च जङ्घयोश्च रुजां जयेत्। तूर्नीं प्रतूर्नीविश्वचीकफबातामयान् जयेत्। शार्ङ्गधरः।

NAT. ORDER SOLANACEÆ.

DATURA ALBA, *Rumph. and* FASTUOSA, *Linn.**Sans.* धूसूर, *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 stupefying 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 also used

1 रसं गन्धं विषञ्चैव प्रत्येकं समभागिकम् । द्विभागं धूसुवीजञ्च त्रिकटु
तद्वर्द्धभागिकम् । जम्बीराणां रसेर्भर्द्द्वैत्रयोयुञ्जाद्वयम्भता । कणाचूर्णं पिबेत्
चाशुर्वीत श्लेष्मज्वरं जयेत् । रसेन्द्रसारशंपहः ।

2 श्वेतोन्मत्तोत्तरदिङ्मूलसिद्धस्तु पायसः । युडाज्यसंयुतो हन्ति सर्व्वान्ना-
दांस्तु दोषजान् । चक्रदत्तः ।

in this disease. The fresh juice of the leaves alone, or mixed with opium, is a common domestic application to inflamed parts.

In inflammation of the breasts, a paste composed of turmeric and *dhatūra* fruits is recommended to be applied.¹ An oil prepared in the usual manner with the paste and juice of *dhatūrā* leaves, is applied to the head for destroying lice.² An oil prepared by boiling *dhatūrā* seeds, and sesamum oil, with an alkaline water made from the ashes of *Colocasia Indica* (*mānaka*), 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 *dhatūra* 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. JACQUINIS, *Schrad.*

Syn. Solanum Jacquini, Linn.

Sans. कण्टकारी, Kanṭakāri, निदिग्धिका, Nidigdhikā.

Vern. Kanṭakāri, Beng. Kaṭeli, Kaṭai, 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 निशाकणकफलाभ्यां लेपश्चापिस्तनार्त्तिं हा । चक्रदत्तः ।

2 धत्तुरपत्रकल्केन तद्दूसेनैव पाचितम् । तैलसभ्यङ्गमात्रेण युक्ता नाशयति क्षणात् । भावप्रकाशः ।

3 उन्मत्तकस्य बीजेन साणकदारवारिणा । कटुतैलं विपक्तव्यं शीघ्रं हृत्वाद्दिपादिकाम् । चक्रदत्तः ।

Kanṭakāri is used in medicine in various forms, such as decoction, electuary, *ghrita*, etc. A decoction of the root is given with the addition of long pepper and honey, in cough and catarrh, and with rock salt and assafœtida in spasmodic cough.¹ Several compound decoctions made along with other expectorant and demulcent drugs are in use. The following is an example. Take of *kanṭakāri*, root of *Justicia Adhatoda* (*vāsaka*), pulse of *Dolichos uniflorus* (*kulattha*) and ginger, equal parts, in all two tolas; prepare a decoction in the usual way and administer, with the addition of *pāchak* root, in cough with difficult breathing.²

*Kanṭakāryavaleha*³ or electuary of *Solanum Jacquinii*. Take of *kanṭakāri* root twelve seers and a half, water sixty-four seers, boil till reduced to one fourth and strain. Boil the strained decoction till reduced to the consistence of a fluid extract, and add to it the following substances in fine powder, namely, *gulancha*, *Piper Chaba* (*chavya*), plumbago root, tubers of *Cyperus rotundus* (*mustaka*), *Rhus succedanea*, (*karkāṣa sringi*), long pepper, black pepper, ginger, *Alhagi Maurorum* (*yāsa*), *Clerodendron Siphonanthus* (*vārgi*), *Vanda Roxburghii*, (*rāsnā*) and zedoary root, each eight tolas, sugar two seers and a half, sesamum oil and clarified butter each one seer, and boil together till reduced to the proper 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.

1 कण्टकारीकृतः कायः सङ्गणः सर्वकासहा । चक्रदत्तः ।

2 क्षुद्रा कुलत्थ वासाभिर्नागरेण च साधितः । कायः पौष्करचूर्णैश्चः
श्वासकाशौ निवारयेत् । शार्ङ्गधरः ।

3 कण्टकार्यवलेहः । कण्टकारी त्वलां नीरद्रोणे पक्त्वा कषायकम् ।
पादशेषं गृहीत्वा च तत्र चूर्णानि दापयेत् । पृथक्पलांशान्शेतानि
गुडूची चव्यञ्चितकौ । सुस्तं कर्कटशृङ्गी च लुपुषणं धन्व्यासकः । भार्गी
रास्ना शटी चैव शर्करापलविंशतिः । प्रत्येकं च पलान्यसौ प्रदद्यात् हततैलयोः ।
पक्त्वालेहत्वमानीय शीते मधुपलापकम् । चतुर्भागन्तु गाक्षीर्याः पिपपली
च चतुःपलम् । क्षिपत्वा निदध्यात् सुहृदे ऋणस्ये भाजने शुभे । लेहोऽयं हन्ति
हिक्कासिं काशश्चासानशेषतः । भावप्रकाशः ।

Kañtakári ghríta.¹ This is prepared in the usual proportions with the fresh juice of *kañtakári*, 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 *Hridayárnaśa*, (page 66).

SOLANUM INDICUM, *Linn.*

Sans. वृहती, Vrihati. भरटाकी, 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 Jacquinii* (*kañtakári*), *Sida cordifoliá* (*bálá*), *Justicia Adhatodá* (*vásaka*) 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, Roxb.

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 that the

1 कण्टकारीघृतम् । इतं रास्नावलाव्योष श्वदंद्राकल्कपाचितम् । कण्ट-
कारीरसे सर्पिः पञ्चकासनिसूदनम् । चक्रदत्तः ।

2 वलाहिवृहतीवासाद्राक्षाभिः काथितं जलम् । पित्तकाषापहं पेयं शर्करा-
सघयोजितम् । चक्रदत्तः ।

root smells like a horse whence the Sanskrit name *asv gandhá*. 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 *asv gandhá* 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

Asv gandhá ghrita.³ Take of the decoction of *asv gandhá* 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 *asv gandhá* root, taken with milk or clarified butter is said to act as an aphrodisiac and restorative to old men. *Asv gandhá* 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 *khoraśáni yamáni*. They are considered stimulant or heating, narcotic,

1 कण्णाद्राक्षासितालेहः क्षयहा क्षौद्रनैलवान् । मधुसर्पिर्युतो वाञ्छगन्धा-
कण्णासितोज्ज्वः । चक्रदत्तः ।

2 पीतान्नगन्धापयसाङ्गं मासं हतेन तैलेन सुखाम्बुना वा । कशस्य पुटिं
वपुषो विधत्ते वालस्य शस्यस्य यथास्वुष्टिः । चक्रदत्तः ।

3 अञ्चगन्धाहतम् । पादकल्केऽञ्चगन्धायाः क्षीरे दशगुणे पचेत् । हतं पेयं
कुमाराणां पुष्टिकृद्बलवर्द्धनम् । चक्रदत्तः ।

4 अञ्चगन्धादिचूर्णम् । अञ्चगन्धा दशपला तन्मात्रो हृद्गदारकः । चूर्णीकृत्यो-
भयं विद्वान् हतभाण्डे निधापयेत् । कर्षकं पयसा पीत्वा नारीभिर्नैव लभ्यति ।
अगत्वा प्रसदं भूयाद्दलीपलितवर्जितः । शाङ्गधरः ।

astringent and digestive, and are used in combination with other medicines of their class.

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 *Tāmrakuṭa*, and quotes as authority for the use of the word, a passage from the Kulárnáva Tantra where it is stated to be one of eight intoxicating agents.

CAPSICUM FRUTESCENS, *Linn. and* MINIMUM, *Roeb.* 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, *Kaṭuká*, कटुरोहिणी, *Kaṭurohini*. *Vern.* *Kaṭki*, *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. About two drachms of the powdered root given with sugar and warm water, is said to act as a mild purgative.¹ In bilious fever the following decoction is highly recommended. Take of *kaṭuki* root, liquorice, raisins, and *nim* bark, half a tola each, water thirty-two tolas; boil till reduced to one-fourth.² The following is an example of a powder containing *kaṭuki* root, used in dyspepsia. Take of *kaṭuki*, *Acorus Calamus* (*vachá*), chebulic myrobalans and plumbago root, equal parts; powder and mix.

¹ सयर्करामक्षमात्तां कटुकासुष्णवारिणा । पीत्वा ज्वरं जयेज्जन्तुः कफ-
पित्तसहज्वरम् । चक्रदत्तः ।

² ऋद्धीका मधुकं निम्बं कटुका रोहिणी समा । अत्रश्यायस्थितं पाक्यमे-
तत् पित्तज्वरपहम् । चक्रदत्तः ।

Dose, about a drachm with cow's urine in dyspepsia with severe pain.

HERPESTIS MONNIERA, H. B. K.

Syn. Gratiola Monniera, 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 Monniera*. 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 every where I got the *Herpestis Monniera* 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 1 page 202.

² ब्रह्मीवचा भयात्रासा पिप्पली मधुसंयुता । अश्वप्रयोगात् सप्ताहात्कि-
न्नरेः सह गीयते । भावप्रकाशः ।

³ ब्रह्मीघृतम् । ब्रह्मीरसे वचाकुल शङ्खुपुष्पीभिरेव च । पुराणं मेध्यसन्नाद-
पहापकारणदृष्टवम् । चक्रदत्तः ।

NAT. ORDER ACANTHACEÆ.

JUSTICIA ADHATODA, *Roxb.**Syn. Adhatoda Vasica, Nees.**Sans.* वासक, *Vásaka*, अटरुष, *Aṭarusha*. *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 tolá, 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 tolás 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.

*Vásávaleha*² or electuary of *vásaka*. Take of the juice of *vásaka* leaves four seers, white sugar one seer, long pepper sixteen tolás, clarified butter sixteen tolás, boil them together till reduced to the consistence of an extract. When cool add honey

1 केवलौ वासकः काथः पीतः चौद्रेण नाशयेत् । वासकः श्वरसः पेयो मधुना रक्तपित्तजित् । वासाद्राक्षाभया काथः पीतः सचौद्रशर्करः । निहन्ति रक्तपित्तात्ति श्वासकासञ्च दारुणम् । वासात्तुद्रासृता काथः चौद्रेण श्वरकासहा । शार्ङ्गधरः ।

2 वासावलेहः । वासकस्य रसप्रस्थं माणिकासितशर्करा । पिप्पल्यद्विपलं तावत् सर्पिषश्च शनेः पचेत् । तस्मिन् लेहत्वभायाते शीते चौद्रपलाटकम् । दत्त्वावतारयेद्द्वयो लीडो लेहोऽयमुत्तमः । हृन्त्येवराजच्छायं काशं च दारुणम् । पार्श्वशूलं च हृच्छूलं रक्तपित्तज्वरं तथा । भावप्रकाशः ।

one seer, 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 lae eight seers, water sixty-four seers; boil down to sixteen seers. Take of red sandal wood, *gulanča*, root of *Clerodendron Siphonanthus* (*brahmayashti*), the ten drugs called *dasamula* and *Solanum Jacquinii* (*nidigdhiká*), each two seers and a half, water sixty-four seers; boil down to sixteen seers. To these decoctions, add of whey and prepared sesamum oil sixteen seers each and the following substances in the form of a paste, namely, red sandal wood, liquorice, wood of *Berberis Asiatica*, long pepper, black pepper, ginger, turmeric, *páchak* root, emblic myrobalans, *tejapatra* leaves, wood of *Cedrus Deodara*, cinnamon, and cardamom, seeds called *renuka*, pouch of civet cat, root of *Withania somnifera* (*asvaganthá*), *Pæderia foetida* (*prasárani*), *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. कौकिलाक्ष, *Kokiláksha*, इक्षुगन्धा, *Ikshugandhá*. Vern. Kuliákkhará, Beng. Tálmakhána, Hind.

¹ वृहत्वासा चन्दनादितैलं । चन्दनं रेणुका पूति ह्यगन्धा प्रसारणी । त्रिस्तुगन्धकणामूलं नागकेशरमेव च । मेदे द्वे च त्रिकटुकं रास्ना मधुकशैलजं । शठी कुष्ठं देवदारु वनिता च धिमीतकं । एतेषां पलिक्कैर्भागैः पचेत्तैलादकं भिषक् । वासास्य तुलां काथ्यां जलद्रोणे विपाचयेत् । लाक्षारसादकञ्चैव तथैव दधिमस्तुकं । चन्दञ्चासृताभार्गीदशमूलं निदिग्धिका । एतेषां विंशतिपलं जलद्रोणे विपाचयेत् । पादशेषे स्थितेकाये तैलं तेनैव साधयेत् । कासान् चरान् रक्तपित्तं पाण्डुरोगंहली मकं । कामलाञ्च क्षतक्षीणं राजयच्छाणमेव च । आसान् पञ्चविधं हन्ति बलवर्णाग्निपुष्टिकत् । तैलं वासा चन्दनादि वृहदेतत् प्रकीर्तितं ।

This little annual is met with in low places all over the country. 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 *A'lui*. 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*, न्ने हफल, *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 शोधनुत्कोकिलाक्षस भस्ममूत्रेण वाम्भषा ।

चक्रदत्तः ।

the largest quantity of oil. White *til* is of intermediate quality. *Til* of red or other colours is said to be inferior and unfit for medicinal use.

Sesamum seeds are used as an article of diet, being made into confectionary with sugar, or ground into meal. They form an essential article of certain religious ceremonies of the Hindus, and have therefore received the names of *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 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, Linn.

Sans. निर्गुण्डी, *Nirgundi*, सिन्धुवार, *Sindhuvára*.

Vern. *Nisinda*, *Beng.* *Nisindá*, *Sámbhalu*, *Hind.*

SANSKRIT writers mention two varieties of *nirgundi*. That with pale blue flowers is called *sindhuvára* (*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

1 नवनीततिलैः कल्को जेता रक्ताशसां स्मृतः ।

शाङ्गधरः ।

2 कक्कः संरोपणः कार्यस्तिष्ठानां मधुकान्वितः ।

चक्रदत्तः ।

medicine. The root of *Vitex Negundo* is considered tonic, febrifuge and 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. गम्भारी, *Gambhāri*, श्रीपर्णी, *Sriparni*, काश्मरी, *Kāsmari*.

Vern. Gámāri, Beng. Gámhbār, 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 tolás, water thirty-two tolás, and boil till reduced to one half. This decoction is used as a drink in bilious fever.³

1 सिन्धुवारदलकायं कषाट्टं कफजे ज्वरे । जङ्घयोश्च बले क्षीणे कर्णे च
पिहिते पिबेत् ॥ भावप्रकाशः ।

2 निर्युग्णितैलम् । समूलपत्रां निर्युग्णीं पीडयित्वा रसेन तु । तेन
सिद्धं समं तैलं नाडीद्वष्टव्रणापहम् । हितं पामापचीनान्तु पानाभ्यञ्जन
नावनैः । विविधेषु च स्फोटेषु तथासर्व्वब्रणेषु च ॥ चक्रदत्तः ।

3 काश्मर्यशर्करायुक्तं पिबेत् तृष्णार्हितो नरः । श्रीपर्णीचन्दनोशीरसमधूक
परुषकम् । पानं पित्तज्वरं हन्यात् शारिवाद्य शशर्करम् । चक्रदत्तः ।

CLERODENDRON SIPHONANTHUS, *R. Br. Syn. Siphonanthus Indica,* } *Lam. Sans. ब्रह्मयष्टिका, Brahmayashtikā भार्गी, Bhārgī. Vern. Bámanhāti, Beng. Bhārangī, Hind.* The root of *Clerodendron Siphonanthus* is considered useful in asthma, cough and scrofulous affections. The root beaten to a pulp is given with ginger and warm water in asthma.¹ It enters into the composition of several compound decoctions for diseases of the lungs. A confection called *Bhārgigūḍa* 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, Roxb. Sans. गनिकारिका, Ganikārikā, अग्निमन्थ, Agnimantha. Vern. Ganiāri, 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, Parnāsa. Vern. Tulsi, Beng. Hind.

SANSKRIT writers make two varieties of this plant (founded upon some difference in the colour of their leaves) namely, white and black. The *Ocimum sanctum* is held sacred to Vishnu of the

¹ हिक्काश्वासी पिवेद्भार्गी सविश्वामुष्णवारिषा । नागरं वासिता भार्गी
सौवर्चलसमन्वितम् ॥ चक्रदत्तः ।

² अग्निमन्थमवमूलं पिष्टं पीतञ्च सर्पिषा । शीतपित्तोदङ्गकोठान् सप्रा-
ह्लादेवनाशयेत् ॥ चक्रदत्तः ।

Hindu trinity, and is reared in every hindu house where it is daily watered and worshipped by all the members of the family. The beads or rosaries used by orthodox natives for counting the number of recitations of their deity's name, are made of the stems of this plant.

The leaves are regarded as anti-catarrhal or expectorant and are used in catarrh, cough and pain in the sides. The juice of the leaves is given with the addition of black pepper in catarrhal fever.¹ It is often used as an adjunct to metallic preparations, which are rubbed with it into a thin paste and then licked up. The leaves enter into the composition of some compound decoctions for cough and affections of the chest. The following is an example. Take of the leaves of *Ocimum sanctum*, *gulancha*, ginger, root of *Clerodendron Siphonanthus*, (*bhārgi*) and *Solanum Jacquini* (*kanṭakāri*), 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* (*kanṭakāri*), *Baliospermum montanum* (*danti*), *Acorus Calamus* (*vachā*), *Moringa pterygosperma* (*sigru*), long pepper, black pepper, and ginger.³

OCIMUM BASILICUM, *Linn. Syn. Ocimum pilosum, Willd. Sans. शर्वर, Varvara. Vern. Bābui tulsi. Beng.* The seeds of this plant, called *rehān* in the vernacular, are demulcent and nourishing. Steeped in water they swell into a mucilaginous jelly which is taken with the addition of sugar in dysentery, gonorrhœa and cough.

1 पीतोमरिचचूर्णेन सुखसोपत्रजोरसः। श्लेष्मप्रप्योरसोप्येवं निहन्तिविषम-
ज्वरान् शार्ङ्गघरः ।

2 अमृतानागरफड्गोव्याघ्रीपर्णाश्च साधितः काथः। पीतः सकण्ठाचूर्णः कास
श्वासौ जयत्याशु ॥ चक्रदत्तः ।

3 व्याघ्रीदन्तीवचाशियुसुरसव्योषसैन्धवैः। पाचितं नाबनं तैलं पूतिनासा-
गदं जयेत् ॥ चक्रदत्तः ।

NAT. ORDER AMARANTACEÆ.

AMARANTHUS SPINOSUS. Linn. Sans. तण्डु, लेय, Tandulīya. 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 efficaceous 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 ghrīta*.

ACHYRANTHES ASPERA, Linn.*

Sans. अपामार्ग, Apámárga. खरमञ्जरी, Kharamanjari.

Vern. A'páng, 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, शोधनी, Sothaghni.

Vern. Svetapunarnabá, Beng. Sánt, 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

१ रसाञ्जनं तण्डुलकस्य मूलं क्षौद्रान्वितं तण्डुलतोषपीतम् । असृग्दरं

सर्वभवं निहन्ति श्वासञ्च भार्गी सङ्घनागरेण ।

भावप्रकाशः ।

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

२ अपामार्गचारतैलम् । अपामार्गचारजले तृक्षतकल्पोन साधितं तिल-

जम् । अपहरतिकर्णनादं वाधिर्यं श्वापिपूरणतः ॥

चक्रदत्तः

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.

Punarnaváshṭaka.² Take of *Punarnavá* root, nim bark, leaves of *Trichosanthes dioica* (*patola*), ginger, *Picrorrhiza Kurroa* (*kaṭuki*), chebulic myrobalan, *gulancha*, and the wood of *Berberis Asiatica* (*dáruharidrá*), quarter of a tola each, water thirty-two tolas; boil together till reduced to one-fourth. This decoction is given in general anasarca with ascites, cough, jaundice, difficult breathing, etc. An oil, prepared with a decoction of the root and a number of the usual aromatics in the form of a paste, is rubbed on the body in general anasarca complicated with jaundice. It is called *Punarnavá taila*.³

The Bhávaprakáśa 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*, चन्द्राह्व, *Chandráhva*.

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 भूमिन्व विश्वकल्कं जग्ध्वापेयः पुनर्नवाक्रायः। अपहरति नियतमाशुशोथं सर्वाङ्गजं नृणाम् ॥

² पुनर्नवाटकः । पुनर्नवाण्यम्बपटोलशुण्ठीतिक्तामृतादावर्वाभयाकषायः। सर्वाङ्गशोथोदर कासमूलश्वासान्वितं पाण्डुगदं निहन्ति ॥ चक्रदत्तः ।

³ पुनर्नवातैलम् । पुनर्नवापलशतं जलद्रोणे विपोचयेत् । तेन पादावशेषेन तैलप्रस्थं विपोचयेत् । त्रिकटु त्रिफला शङ्खी धन्याकं कटफलं तथा । शठी दाहप्रियङ्गुश्च देवदारुहरेणुभिः । कुष्ठं पुनर्नवाघनं यमानी कारवी तथा । एला त्वचं पद्मकञ्च पत्रं नागरकेशरम् । एषाञ्च कार्षिकैः कल्कैः पेषयित्वा

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, diarrhœa, impotence, cough, eye-diseases, etc. It is also much used in the preparation of medicinal oils for imparting fragrance to them, singly as well as in combination with other aromatic substances. Camphor enters into the composition of numerous medicines for the diseases mentioned above. The following is an illustration.

Karpura rasa.¹ Take of cinnabar, opium, camphor, tubers of *Cyperus rotundus* (*mustaka*), *indrajava* seeds and nutmegs, equal parts; powder the ingredients, and make into four-grain pills with water. These pills are used in diarrhœa.

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 with

विनिक्षिपेत् । कामलापाण्डु रोगं च हृल्लिमकमथापि वा । श्लीहानसुदरञ्चैव
जीर्णज्वरव्यप्रोहति । तैलं पुनर्नवा नाममलव्याधिक्षयच्छति । सारकौसुदो ।

¹ कर्पूररसः । हिङ्गुलमहिफेणञ्च सुस्तकेन्द्रयवं तथा । जातीफलञ्च कर्पूरं
सर्वं संमर्द्य यत्नतः । जलेन वटिकाकार्यां द्विगुह्यपरिमाणतः । ज्वरातीसारिणे
चैव तथातीसाररोगिणे । ग्रहणीषट्प्रकारे च रक्तातीसारउल्लवणे । अत्र-
कोचित्कङ्कनमध्ये कभागमिच्छन्ति । रसरत्नावली ।

² वटकीरेणसंयुक्तं श्लक्ष्णं कर्पूरजं रजः । क्षिप्रमङ्गनतोहन्ति शुक्रञ्चापि
घनोन्नतम् ॥ चक्रदत्तः ।

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

CINNAMOMUM ZEYLANICUM, *Breyn. Sans.* गुड़त्वक्, *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 *trijátaka*, 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, *Srikhanda*.

Vern. Chandan, *Beng.* Saphed chandan, *Hind.*

SANSKRIT writers describe several varieties of *chandana* and some include the woods of *Pterocarpus Santalinus* (*raktachandana*) and *Cesalpinia Sappan* (*pattanga*) under this common denomination. Excluding these last, two varieties of sandal wood are generally recognised, namely, *srikhanda* or white sandal wood

¹ मेहनस्याद्ययोनेर्वां सुखस्याभ्यन्तरे शनैः। घनसारयुतां वृत्तिं श्वारयेन्मूल-
नियच्छे । भावप्रकाशः ।

² पिपासायामनुत्क्षेपे लवङ्गस्याम्बुशस्यते । जातीफलस्य वाशीतं 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 *chandana* (*chua chandana*) obtained by distillation from the heart-wood and roots, is of a pale yellow colour and has a peculiar fragrant smell best appreciated by rubbing a few drops of it on the hand. It is much used as a perfume by the Hindus both for themselves and for their idols. In Orissa it is a practice with the better classes to rub a little sandal oil in the spices which they take with their betle-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, A'malaki, घातृ, Dhátri.

Vern A'mlaki, Beng. A'onlá, Hind.

LIKE chebulic myrobalan, emblic myrobalan is also extensively used in Hindu medicine, both alone and in combination

¹ पित्तकृते विषर्षेलेपाविधेयाः सद्यताः सुधीताः । मदेहाः परिपेकाश्च
चन्दनैर्वा प्रशस्यते । वक्रदत्तः ।

² पीतं मधुसितायुतं चन्दनं तण्डुलाम्बुजा । रक्तातीसारजिद्रक्तपित्तहृद्-
दाहमेहहृत् ॥ भावप्रकाशः ।

with the two other myrobalans. The fresh fruits are glolular, 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 chebolic. The fresh juice is cooling, refrigerant, diuretic and laxative. The dried fruits are astringent and useful in hæmorrhages. It is said that the exudation from incisions made on the fruits while on the tree, is a very useful external application in recent inflammation of the eye. It is also used as a collyrium.¹

The following preparation is used as a cooling and stomachic drink in irritability of the stomach. Take of emblic myrobalan, raisins, sugar and honey, eight tolas each, water half a seer; rub them together, strain through cloth and administer the strained fluid in suitable doses.²

About two drachms of emblic myrobalan is recommended to be given in the form of a paste, with the addition of honey for checking menorrhagia and discharge of blood from the uterus. The fresh juice of the ripe fruits is given with honey as a diuretic.³ A paste of the fruits is applied over the pubic region in irritability of the bladder.⁴

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

1 धात्रीफलनिर्घ्नोऽमोनवडकोपं निहन्तिपूरणतः । तरुस्थविड्मालकरसः
सर्वाङ्घ्रि रोगनुत् । चक्रदत्तः ।

2 पिद्वाधात्रीफलं द्राक्षां शर्कराञ्चपलोन्मिताम् । दत्त्वा मधुपलञ्चाल
कुडवं सलिलस्य च । वाससामलितं पीतं हन्तिच्छर्दिं त्रिदोषजाम् । चक्रदत्तः ॥

3 धात्रीरसेन सञ्चौष्टं सर्वमेहहरं परम् । चक्रदत्तः ।

4 व्यामलत्रयाश्च कल्केन वस्त्रिभागं प्रलेपयेत् । तेन प्रशाम्यति क्षिप्रं निय-
मान्मूलनिपहः ॥ भावप्रकाशः ।

5 खण्डामलकी । खिन्नपीडितकुष्माण्डान्तु लार्द्धं भटमाज्यतः । प्रस्थाद्धे
खण्डतल्यन्तु पचेदामलकीरसात् । प्रस्थेसुखिन्नकुष्माण्डरसप्रस्थे विषट्टयन् ।

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

द्व्यांपाकं गते तस्मिंश्च शौक्यं विनिक्षिपेत् । द्वे द्वे पले कणाजाजीशुण्ठीनी
मरिचस्य च । पलं तालीश धन्याक चातुर्जातक सुस्तकम् । कर्षप्रमाणं प्रत्येकं
प्रस्थाङ्गं सात्त्विकस्य च । पक्तिशूलं निहन्येतद्विषयभवञ्च यत् । ऊर्ध्वस्तपि-
त्तमूर्च्छाश्च श्वासकासावरोचकम् । हृच्छूलं रक्तपित्तञ्च पृष्ठशूलञ्च नाशयेत् ।
रसायनमिदं श्रेष्ठं खण्डामलकसंज्ञितम् । चक्रदत्तः ।

1 धात्रीलौहम् । धात्रीचूर्णस्याधौ पलानि चत्वारिणोहृच्चूर्णस्य । यष्टी-
मधुकरजस्य द्विपलं दद्यादपले षट्पम् । अमृताकाशेनैतच्चूर्णं भाव्यञ्च सप्ता-
हम् । खण्डातपेषु शुपक्रं भूयः पिष्ट्वा नवे घटे स्थाप्यम् । इतमधुनासहयुक्तं
भुक्त्वादौमध्यतोऽन्नेच । त्रीनपिवारान् खादेत्पथ्यं दोषानुबन्धेन । भक्त-
स्यादौ नाशयति व्याधीन् पित्तानिलोद्भवान् । मध्येऽत्रविषमं जयति नष्टां
विदहते नाक्षम् । पानाक्षतान् दोषान् भुङ्गन्ते शौलितं जयति । एवं
जीर्णं तिचाच्चे शूलं नष्टां सुकष्टमपि ॥ चक्रदत्तः ।

*Dhatri arishta*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. जयपात्र, *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.

*Ichhhávedivatiká.*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 धात्रिरिश्टः । धात्रीफलसहस्रे द्वे षोडशित्वारसं भिषक् । चौद्राष्ट-
भागं पिप्पल्यासूर्णाद्विकुडबान्वितम् । शर्कराद्वैतलोन्मिश्रं पक्वं क्षिग्ध-
घटे स्थितम् । प्रपिप्पल्याण्डुरोगार्त्ता जीर्णं हितमिताशनः । कामलापाण्डु-
हृद्दोगवातासृक्विषमञ्चरान् । कासहृक्कारुचिश्चासानेषोऽरिष्टः प्रयाशयेत् ।

चक्रदत्तः ।

2 इच्छाभेदीरसः । शुद्धं पारदद्वयं समरिचं त्र्यम्बकसगन्धा तथा विश्वाच
त्रिगुणा ततो नवगुणं जैपालचूर्णं क्षिपेत् । गुञ्जकप्रमितो रसो हिमजलैः
संसेविते रेचयेद्यावन्नोष्णजलं पिबेदपिनरः पथराञ्चदध्यौदनं । रसेन्द्रसारसंग्रहः

3 रुक्केयोरसः । अभयाचूर्णमादाय नूतनैर्जयपालजैः । पञ्चमांशेन मिलितैः
सुहीडग्वैर्विपाचितम् । गुडिकास्तस्य कर्तव्या वस्तुलाञ्छणकप्रभाः । विष्ट-
म्भे गुडिकादेया चोदरेदारुणात्मके ॥ रसेन्द्रसारसंग्रहः ।

seeds one part, soak them in the milky juice of *Euphorbia nerifolia* (*snuhi*), and make into four-grain pills. These are given with a decoction of the root of *Ipomæa 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 nerifolia* (*snuhi*), root of *Ipomæa 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 tola of husked croton seeds, tie them in a piece of thin cloth and boil them in the above mentioned decoction till the latter is reduced to the consistence of a fluid extract. To this extract add a powder composed of eight parts of purified croton seeds, three parts of ginger and two of black pepper, mercury and sulphur, in quantity sufficient to make a pill-mass; rub them together for twelve hours, and make into two-grain pills. These are given with cold water in tympanitis, colic, ascites, etc., as a drastic purgative. After the operation of this medicine, rice should be given with curdled milk and sugar.

BALIOSPERMUM MONTANUM, *Mull.*

Sans. दन्ती, *Danti.* *Vern.* *Danti,* *Hind. Beng.*

THE seeds of *Baliospermum montanum* are described as drastic. Like croton seeds they are boiled in milk before use. The root of the plant is considered cathartic. Both are much used in diseases where purgatives are indicated. The following are a few examples of prescriptions containing these medicines.

1 महानाराच रसः। अम्यारग्वधो धात्री दन्ती तिक्ता स्फुही तिष्ठत्। सुस्ता-
प्रलेकमेतानि प्याद्यानि पलमात्रया । तानि सङ्कुच्य सर्वाणि जलादकयुगे पचेत् ।
तत्र तोयेऽष्टमं भागं कषायसबशेषयेत् । निस्त्वक्जैपालबीजानि नवानि पलमा-
त्रया । तनुवस्त्रप्रतायेव तस्मिन् काये यनैः पचेत् । उवाचयेदनलं मन्दं यावत्
क्वाथो घनो भवेत् । ततः खल्ले क्षिपेद्भागानष्टौ जैपालबीजतः । भागान् त्रीन्
नागरात् द्वौ च सरिचादुहौ च पारदात् । गन्धकादुहौ च तानीह यावद्यामं

*Nārācha 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 chebolic myrobalans and enclose them in a piece of cloth ; then take of the roots of *Baliospermum montanum* and *Ipomœa Turpethum* (*trivrit*), each two hundred tolás, water sixty-four seers, boil them together till the water is reduced to eight seers. Strain the decoction, take out the chebolic myrobalans and fry them in thirty-two tolas 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* (*nágakesara*) each

विमर्दयेत् । रसो नाराचनामायं भक्षितो रसिकाभितः । जलेन शीतलेनैव
रोगानेतान् विनाशयेत् । आध्मानं शूलमानाहं प्रत्याध्मानं तथैव च । उदावर्त्तं
तथा गुल्मसुदरानि हरत्यसौ । वेगेशान्ते तु भुञ्जीत शर्करासहितं दधि । ततस्तत्
सैम्भवेनापि ततो दध्योदनं मनाक् । भावप्रकाशः ।

1 नाराचरसः । सूतगुणकान्तुल्यं मरिचं समतुल्यकम् । गन्धकं पिप्पली
शुण्ठी द्वौ द्वौ भागौ विचूर्णयेत् । सर्वतुल्यं क्षिपेद्दन्ती बीजन्निस्तुपितम्भवेत् ।
गुञ्जकं रेचनं सिद्धचाराचोयं महारसः । आध्मानमलविष्टम्भसुदावर्त्तञ्च
नाशयेत् । शाङ्गधरः :

2 दन्तीहरीतकी । जलद्रोणे विपक्ताव्या विंशतिः पञ्च चाभयाः । दन्त्याः
पलानि तावन्ति चित्रकस्य तथैव च । तेनाष्टभागशेषेण पचेद्दन्तीसमं गुडम् ।
ताश्चाभया द्विष्टञ्चूर्णात्तैलाच्चापि चतुःपलम् । पलमेकं कणाशुण्ठीः सिद्धे लेहे
च शीतले । क्षौद्रं तैलसमं दद्याच्चातुर्जातपलन्तथा । ततो लेहपलं लीढ्वा
जराध्वाचैकां हरीतकीम् । सुखं विरिच्यते स्निग्धो दोषप्रस्यमनाभयः । स्त्रीहृत्
यथुगुल्मार्थो हृत्पाण्डुपहणोगदाः । शाम्यन्तुप्रत्क्लेशविषमञ्चरकूषान्यरो-
चकाः । चक्रदत्तः ।

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 tola every morning in flatulence and retained secretions, anasarca, jaundice, etc.

RICINIS COMMUNIS, *Linn.*

Sans. एरण्ड, *Eranda*. रुवुक, *Ruvuka*.

Vern. *Bherendá*, *Beng.* *Erend*. *Hind.*

THE root of *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 गुडार्कम् । व्योषं दन्ती त्रिवृत्तं क्षणामूलं विचूर्णितम् । तच्चूर्णं
गुडसन्मिश्रं भक्षयेत् प्रातरुत्थितः । एतद्गुडार्कं नाम बलवर्षाग्निवर्द्धनम् ।
शोथोदावर्त्तं मूलघ्नं श्लेष्माण्डामयापहम् । सर्वचूर्णसमोगुडो देयः ।

भावप्रकाशः ।

2 दशमूलीकषायेण पिवेद्वा नागराम्भसा । कटिशूलेषु सर्वेषु तैलमेरण्ड
सम्भवम् । 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

MALLOTUS PHILIPPENSIS, Mull.

Syn. Rottlera tinctoria, Roxb.

Sans. कम्पिल्ल, Kampilla, रेचनक, Rechanaka.

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

ROXBURGH and Brandis give *Punnága* as the Sanskrit for this plant. As far as my information goes, *Punnága* is the Sanskrit for *Calophyllum inophyllum*, a large tree of the Coromandel Coast with beautiful white fragrant flowers and numerous stamens arranged in rows. *Kampilla* is the red mealy powder covering the capsules of *Mallotus Philippensis*. It is described as cathartic and anthelmintic and is chiefly used to expel intestinal worms. *Kampilla* powder given in doses of one tola with treacle, is said to kill and expel all intestinal worms.⁴ It enters into the composition of

1 विशोध्यैरण्डबीजानी पिप्पा क्षीरे विपाचयेत् । तत्पायसं कटीशुले
ग्टध्रस्त्रां परमौषधम् । भावप्रकाशः ।

2 एरण्डमूलं द्विपलं जलेष्टगुणते पचेत् । तत् काथो यावन्मुकाट्टः
पार्श्वं च्चकफमूलहा । शाङ्गधरः ।

3 एरण्डपल्लवे मूले त्वचिचार्जं पयःसूतम् । कष्टकार्याश्च मूलेषु सुखीष्णं
सेचने हितम् । चक्रदत्तः ।

4 कम्पिल्लचर्णकर्षाडं गुडेन सहभक्षितम् । पातयेत् क्रिमीन् सर्वानुदर-
स्थानसंशयः । भावप्रकाशः ।

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. सुहि, *Snuhi*, वज्जी, *Vajri*, सेडुवड, *Sehunda*.

Vern. Mansásij, Beng. Sehund, Thohar, Hind.

THIS prickly shrub is sacred to Mansá the goddess of serpents. On the fifth day after full moon of the month of Sravana (July, August) it is planted in the court-yard of Hindu houses and worshipped as the representative of Mansá the goddess of serpents. *Euphorbia antiquorum*, called *tekátá sij* in Bengali on account of its triangular stem, is probably alluded to by some Sanskrit writers under the name of *vajri*, which is explained as a variety of *snuhi*. This plant is supposed to ward off lightening strokes and is generally kept in tubs or pots on the roofs or other exposed parts of native houses. Its popular medicinal uses are like those of *Euphorbia neriifolia*.

The milky juice of *Euphorbia neriifolia* is considered purgative and rubefacient. As a purgative it is generally used in combination with other medicines which are steeped in it. Chebulic myrobalan, long pepper, *trivrit* root, etc., are thus treated and administered as drastic purgatives, in ascites, anasarca and tympanitis.² It enters into the composition of several compound prescriptions of a drastic character as for example, the *Mahánd-rácha rasa* described under *Croton Tiglium*, and *Vindu ghrita* a preparation with clarified butter, of similar composition.

Turmeric powder mixed with the milky juice of *Euphorbia*

1 विडङ्गसैम्बवच्चारकाम्बिज्जकहरीतकीः । पिवेत्तक्रेण संपिटाः सर्व-
क्रिमिनष्टत्तये । चक्रदत्तः ।

2 विष्टदुहरीतकी श्यामाः सुहीचीरेण भावयेत् । वटिकागूलपीतास्ताः
त्रेष्टाशानाहभेदिकाः । चक्रदत्तः ।

nerifolia 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. कटफल, *Kaṭphala*. *Vern.* Káephal, *Hind.*

THE bark of *Myrica sapida* (a Himalayan tree), is its most valuable product, and is largely exported to the plans. 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.

*Kaṭphaládi Churna.*⁴ Take of the bark of *Myrica sapida*, tubers of *Cyperus rotundus* (*mustaka*), root of *Picrorrhiza Kurroa* (*kaṭuki*), *Curcuma Zedoaria* (*saṭi*), *Rhus succedanea* (*karkarṭa 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 सूक्कीरं रजनीयुक्तं लेपाद्दुर्नामनाशनम् । चक्रदत्तः ।

2 भावितं रजनीचूर्णैः स्नुहीचारे पुनः पुनः । बन्धनात् सुहृदं सूतं
भिनत्यर्थो भगन्दरम् । चक्रदत्तः ।

3 स्नुह्यार्कदुग्ध दाब्धीभिर्वर्त्तिं कृत्वा विचक्षणः । भगन्दरगतिं ज्ञात्वा पुर-
येत्तां प्रयत्नतः । यथा सर्वशरीरस्यां नाडीं हन्यान्नसंशयः । चक्रदत्तः ।

4 कट्फलादिचूर्णम् । कट्फलं सुस्तकतिक्ता शटोष्टङ्गी च पुष्करम् ।
चूर्णमेषाञ्च मधुना शृङ्गवेररसेन च लिहेत् । ज्वरहरं कण्ठं कासश्वासार्वो-
जयेत् । वायुच्छिदिं तथाम्बुलं जयञ्चैव व्यपोहति । शार्ङ्गधरः ।

NAT. ORDER URTICEÆ.

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

FICUS BENGALENSIS, *Linn. Sans.* वट, *Vaṭa. Vern. Bar. Hind.*

FICUS GLOMERATA, *Willd. Sans.* उडुम्बर, *Uḍumbara. Vern. Jagnoḍumar, Beng. Gular, Hind.*

FICUS INFECTORIA, *Roxb. Sans.* पर्कटि, *Parkati. Vern. Pákur, 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

1 प्रदेहाः परिपेकाश्च यस्मिन्ने पञ्चवलकलैः । चक्रदत्तः ।

2 अश्वत्थत्वग्दलकौद्रुमैर्मुखपाके प्रलेपनम् । चक्रदत्तः ।

3 अन्तर्दग्धकुठारकोदहनजं लेपान्निहन्निघ्नणान्। अश्वत्थस्य विशुष्कवलकलं कृतं चूर्णं तथागुण्डनात् । चक्रदत्तः ।

4 समाक्षिकः फल्गुफलोद्भवो वा पीतोरसः योषितमाशुहन्ति। शौद्रयुक्तं

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, loose 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

फलरसं कोष्णोद्गुस्वरजं पिवेत् । असृग्दरविनाशाय सशर्करपयोद्धमुक् ।

चक्रदत्तः ।

1 जाता मन्दरमन्यनाज्जलनिधौ पीयूषरूपा सुरा त्रैलोक्यविजयप्रदेति
विजया श्रीदेवराजप्रिया । लोकानां हितकाम्यया क्षितितले प्राप्ता नरैः
कामदा सर्वातद्भुविनाशहर्षजननीयैः सेविता सर्वदा । राजवल्गवः ।

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 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 *gánga*, 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

*Játiphaládyá churna.*² Take of nutmeg, cloves, cinnamon,

* Bengal Dispensatory, p. 582.

¹ मृष्टन्तु बिजयाचूर्णं मधुनानिश्चि भक्षयेत् । निद्रानाशोऽतिसारे च पहीर्यां पावकक्षये । दर्पणः ।

² जातीफलाद्यं चूर्णम् । जातीफलबङ्गैलापत्वं स्वग्नागकेशरैः । कर्पूरचन्दन तिलैस्त्वक्क्षीरीतगरामलैः । तालीशापिप्लीपथ्या चित्तकस्यूलजीरकैः । शुण्ठी विडङ्गमरिचैः समभागानि चूर्णितैः । यावन्त्येतानि सर्वानि कुर्याद्भङ्गा च तावती । सर्वचूर्णसमा देया शर्करा च भिषग्वरैः । कर्षमात्रं तथास्वादेन्मधुना म्नावितं सुधीः । अल्पप्रभावाद्दुग्धक्षणीकासश्वासारुविक्षयान् । वातक्षेपप्रतिश्यायः प्रशमं यातिवेगतः । शार्ङ्गधरः ।

cardamon, *tejapatra* leaves, flowers of *Mesua ferrea* (*nágakesara*), camphor, sandal wood, sesamum seeds, bamboo manna, flowers of *Tabernæmontana coronaria* (*tagara*), chebulic and emblic myrobalans, long pepper, black pepper, ginger, leaves of *Pinus Webbiana* (*tálisa*), 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.

Jválnala rasa.¹ Take of *yavakshára*, and *sarjikákshára*, (impure carbonates of potash and soda) borax, mercury, sulphur, long pepper, black pepper, *Piper Chaba* (*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

¹ ज्वालानलोरसः। चारत्रयं सुतगन्धौ पञ्चकोलमिदं समम् । सर्वं सुल्या
जया भृष्टा तदर्द्धां शिग्रुजा जटा । एतत्सर्वं जया शिग्रु वङ्गीनां केवलै-
र्द्रवैः । भावयेत् त्रिदिनं घर्मे ततो लघुपुटे पचेत् । मार्कण्डेयस्य द्रवैर्घटो रसो
ज्वालानलो भवेत् । निस्त्रोऽस्य मधुनालीढो ऽनुपानं गुडनागरम् । हृन्त्य-
जीर्षमतीसारं पृहणीमग्निमाद्भवम् । स्नेहहृत्तासवसनमालस्य मरुचिं
जयेत् ।

भावप्रकाशः ।

sugar, honey and the usual aromatics. *Májoon*, the preparation 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* (*vanuyamáni*), liquorice root, seeds of *Trigonella fœnum-græcum* (*methi*), cumin and nigella seeds equal parts ; hemp leaves with flowers and seeds fried in clarified butter, equal in weight to all the other ingredients ; sugar equal in weight to the hemp. Prepare a syrup with the sugar, then add the other substances in fine powder and make into a confection. Lastly add clarified butter, honey, powdered sesamum seeds, cardamoms, cinnamon, *tejapatra* leaves and camphor, each two *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 combina-

1 मदनमोदकः। तैलौक्कविजयापत्नं सवीजं हतभर्जितम्। त्रिकटु त्रिफला
शङ्खी कुष्ठं धान्यकं सैन्धवम्। शटीतालीशपलञ्च कटफलं नागकेशरम्।
अजमोदा यमानी च यटीमधुकमेव च। मेष्ठीजीरकयुष्मञ्च गृहीत्वा क्षुण्ड
चूर्णितम्। यावन्त्येतानि चूर्णानि तावदेव तदौषधम्। तावदेववितादेया
यावदायाति वस्त्रनम्। हतेन मधुनामिश्रं मोदकं परिकल्पयेत्। भर्जितं
तिलचूर्णं च मोदको परिविन्दयेत्। त्रिसुगन्धसमायुक्तं कर्पूरेनाधिवासितम्।
स्थापयेत् हतभाण्डे तु श्रीमदनमोदकम्। सर्वरोगहरं ह्येतत् संयत् यद्दृषी
हरम्। एतस्य सतताभ्यासाद्दृष्ट्वोपि तरुनायते। हतत् कामप्रद्वद्वार्थं नार-
देन प्रभाषितम्।

शरकौसदी।

tion 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 guḍiká.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* (*tálisa*) 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, chebulic myrobalan is substituted for the ginger in the above prescription.

The bald patches of alopecia are recommended to be rubbed

1 पीतो मरिचचूर्णेन तुलसीपत्रजोरसः । द्रोणपुष्पी रसोवापि निहन्ति-
विषमञ्जरान् । भावप्रकाशः ।

2 प्राणदागुड़िका । त्रिपलं शङ्खवेरस्य चतुर्थं मरिचस्य च । पिप्पल्याः
कुडवार्द्धञ्च चव्यायाः पलमेव च । तालीशपत्रस्य पलं पलाद्धं केशरस्य च ।
द्वेपले पिप्पलीमूलादद्धं कर्षञ्च पत्रकात् । सूक्ष्मैलाकर्षमेकन्तु कर्षं त्वगम्बुधा-
लयोः । गुड्वात् पलानि तु त्रिंशत् चूर्णमेकत्रकारयेत् । अक्षप्रसायागुड़िका-
प्राणदेति च सास्त्रता । पूर्व्वं भक्षेत्तु पश्चात्तु भोजनस्य यथाबलम् । मद्यं
मांसरसं यूषं क्षीरं तोयं पीवेत्तथा । हृन्त्यादर्शांसि सर्वाणि सहजान्यस्रजानि
च । वातपित्तकफोत्थानि सन्निपातोद्भवानि च । चक्रदत्तः ।

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, कण्णा, 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 of *trikatu* or the three acrids (see *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 दृष्टस्य कर्कशैः पत्रैरिन्द्रुपस्य गुण्डनम् । चूर्णितैर्मरिचैः कार्यं मिन्द्रु-
लुपनिवारणम् । चक्रदत्तः ।

2 मधुनापिपप्लीचूर्णलिहेत्कासज्वरापहम् । द्विक्लाञ्चासहरं कण्डू
झीह्वं बालकोचितम् । भावप्रकाशः ।

3 पिपप्लीपिप्लीमूलं मरिचं विश्वभेषजम् । पिबेत् मूत्रेण मतिमान्
कफजे स्वरसंक्षये । भावप्रकाशः ।

4 पिपप्लीवर्जं सामानि । क्रमद्वयादद्याद्द्वानि दशपिपप्लिकं दिनम् ।
वर्द्धयेत् पयसासाङ्गं तथैवापनयेत् पुनः । जीर्णं जीर्णं च मुञ्जीत यदिकं क्षीर-

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.

Ashṭakaṭvara taila.¹ Take of ginger and long pepper each sixteen tolas, mustard oil four seers, butter-milk thirty-two seers, curdled milk four seers and boil them together in the usual way. This oil is rubbed externally in sciatica and paraplegia.

PIPER CHABA, *Hunter. Sans.* चबिका, *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. ताम्बुल, *Tám-bula. 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 langour when deprived of it. The ancient Hindu writers recommend that betle-leaf should be taken early in the morning, after meals and at bedtime.

सर्पिषा । पिपप्लोनां प्रयोगोऽयं सहस्रस्य रसायनः । दशपिप्लिकः ऋषो-
मध्यमः षट्प्रकीर्तितः । यस्त्रिपिप्लिपर्यन्तः प्रयोगः सोऽवरः सुतः ।
दृंह्यं दृष्यमायुष्यं स्त्रीहोदरविनाशनम् । वयसः स्थापनं मेध्यं पिपप्लोनां
रसायनम् । पञ्चपिप्लिकश्चापि दृश्यते वर्द्धमानकः । पिष्टास्तावलिभिः पेयाः
श्वतामध्यवलैर्नरैः । शीतोष्णहृत्स्वलेर्देहदोषामयान् प्रति । चक्रदत्तः ।

¹ अष्टकट्टरं तैलम् । पलाभ्यां पिपप्लोनीमूलनागरादष्टकट्टरः । तैलप्रस्थः
सप्तोद्भूता गृध्रसूक्ष्महापहः । अष्टकट्टरतैलेऽत्रतैलं सार्धपनिष्यते । चक्रदत्तः

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. ताबीशपत्र, *Tálishapatra*, *Vern. Tálishapatra Beng. Hind.*

THE dried leaves used by Kavirajas under the name of *tálishapatra*, 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 *tálishapatra* 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 (vāsaka) and honey in cough, asthma and hæmoptysis.¹ A confection called *Tālisādyā churna* is prepared with *tālisapatra*, 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. शरत्, *Sarala*, *Vern. Chir*, *Saral*, *Hind.*

THE aromatic wood of *Pinus longifolia* is used in Hindu medicine. The tree yields an oleo-resin called *sarala drava*, *sriśāsa* and *kshira* in Sanskrit. In the vernacular it is called *gandhabirozá*. 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 medicines.

1 तालीशचूर्णसंयुक्तः पेयः क्षौद्रेण वासकस्वरसः। कफपित्ततमकश्वासस्वर-
भेदरक्तपित्तहरः । चक्रदत्तः ।

2 तालीशाद्यं चूर्णम् । तालीशं मरिचं शुण्ठीपिप्पलीवंशलोचना । एक
द्वित्रिचतुःपञ्चकर्षैर्भागान् प्रकल्पयेत् । एलात्वचोस्तु कर्षार्द्धं प्रत्येकं भागमा-
वहेत् । द्वालिशं चूर्णं कर्षत्तलितप्रदेयाशर्करा बुधैः । तालीशाद्यमिदं चूर्णं पाचनं
रोचनं स्मृतम् । कासश्वासज्वरहरं कर्षतीसारनाशनम् । शोषाध्यानहरं स्त्रीह
पहृषीपाशुुरोगजित् । पक्कां वा शर्करां चूर्णं क्षिपेत् स्याद्गुटिका ततः ।

शाङ्गधरः ।

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 medicinally. The terminal bud of the tree is esteemed as a nourish-

¹ श्रीवासगुग्गुलुगुरुशालनिर्वासधूपिताः । कठिनत्वं व्रणायान्ति नश्यन्त्यु-
याद्य वेदनाः । चक्रदत्तः ।

² देवदुमं शिथुभयूरकञ्च गोमूलपिष्टामघवाऽश्वगन्धाम् । पीत्वाशुहृन्त्याड-
दरं प्रहृञ्जं क्रिमीन् सशोषात्तुदरञ्च इष्यम् । चक्रदत्तः ।

ing, strengthening and agreeable vegetable. The same remark applies to the tops of the *tál* palm and date trees. The root of the cocoa-nut is used as a diuretic as also in uterine diseases. Cocoa-nut oil is said to promote the growth of hair. It is much used as a hair-oil by the lower classes of native women. For this purpose it is scented by steeping in it a number of fragrant vegetable substances sold in packets under the Bengali name of *Máthághasá*. The ashes of the leaves are used in 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.

Narikelakhandá.¹ Take of the pounded pulp of cocoa-nut, half a seer, fry it in eight tolas 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* (*nága-kesara*) one tola each in fine powder and prepare a confection. Dose, two to four tolas, in dyspepsia and consumption.

BORASSUS FLABELLIFORMIS, *Linn.*

Sans. ताल, *Tála*, तण्णराज, *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, cooling,

¹ नारिकेलखण्डः । गुडवमितमिहस्यान्नारिकेलं सुषिष्टं पलपरमितसर्पिः पाचितं खण्डित्यम् । निजपयसितदेतत्प्रस्थभाते विपक्वं गुडवदद्यसुशोते शाण्णभागान् क्षिपेच्च । धन्याकपिप्पलिपयोदत्तगादिजीरान् शाण्णं त्रिजातमिभकेशरवद्विचूर्णम् । हृत्पित्तपित्तमरुचिं क्षयमक्षपित्तं शूलं वभिं सकलपौरुषकारिहारि । चक्रदत्तः ।

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 *patsálás* write with iron pens on palm leaves. In Bengal the leaves are written upon with pen and ink as on paper. The ashes of the flowering stalk are said to be useful in enlarged spleen.¹

ARECA CATECHU, *Linn.*

Sans. गुवाक, *Guváka*, पूग, *Puga*, कसक, *Kramuka*.

Vern. Guá, *Supári*, *Beng.* *Supári*, *Hind.*

THE chief consumption of betel-nuts is as a masticatory, alone or in conjunction with betle 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.

1 तालपुष्पभवः क्षारः सगुडः स्त्रीहनायनः ।

चक्रदत्तः ।

Medicinally betel-nuts are used in urinary disorders and as an aphrodisiac. The Bhāvaprakasa gives a preparation called *Rativallava pugapāka*. 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 *Kāmesvara modaka*.

PHŒNIX SYLVESTRIS, *Roxb. Sans.* खर्जूर, *Kharjura*. *Vern* *Kejur*, *Beng. Hind.* The *Phœnix 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 *Phœnix dactylifera* are used medicinally as demulcents and expectorants.

NAT. ORDER HYPOXIDÆ.

HYPOXIS ORCHIOIDES.

Syn. *Curculigo orchioides*, *Gaërtn.*

Sans. मुषली, *Mushali*, तालमूली, *Tālamuli*. *Vern.* *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* (*satāvāri*), *Sphœranthus mollis* (*munḍitikā*), *gulanča*, 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.¹ The Rāja nirghantu mentions two varieties of *mushali*, namely, white and black. The properties of the white variety are said to be inferior to those of the black which is preferred for use as an alterative tonic. The roots of *Bombax Malabaricum* and *Asparagus racemosus* are sometimes sold by the native druggists

1 शतावरी सुखितिका गुडुची सहस्रिकर्षा सह तालमूली । एतानि कृत्वा समभागयुक्तान्याज्येन किंवा मधुनावलिहारात् । जरारुजाश्लय् वियुक्त देहो भवेन्नरो वीर्यवलादियुक्तः । विभाति देवप्रतिमः सनित्यं प्रभामयो भूरि-
विष्टिबुद्धिः । भावप्रकाशः ।

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 of *talamuli* or *musali* is, as already noticed, mentioned in the Rája nirghantu.¹ The tubers of *Curculigo orchioides* become when dry, trans lucent 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*, षडग्रन्था, *Shadgranthá*. *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 medicines in low fevers, epilepsy and insanity.

AMORPHOPHALLUS CAMPANULATUS, Blume.

Syn. *Arum campanulatum*, *Roxb.*

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

THE *Amorphophallus campanulatus* is cultivated for the sake of its tubers, which are cooked and eaten by the natives like yams or potatoes. The tubers contain an acrid juice which should be got rid off by thorough boiling and washing, otherwise the vege-

1 मषली च द्विधा प्रोक्ता श्वेता चापरा संज्ञका । श्वेता खल्यगुणोपेता
अपरा च रसायनी । राजनिर्घण्टः ।

2 वचालवणतोयेन वान्तिरामे प्रशस्यते । चक्रदत्तः ।

3 मूलीविबन्धकोष्ठोऽङ्गिरुष्णाभिश्चूर्णिताः पिबेत् । द्विजुप्रतिविषाव्योषवचा
सौवर्जलाभयाः । चक्रदत्तः ।

table 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 *Laghusurana modaka*, *Vrihat surana modoka*, *Surana pindi*, *Kánkáyana 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. Mánkanda, Hind.

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

¹ सौर्यं कन्दमादायपुटपाकेन पाचयेत्। सतैलवृणस्तस्य रससार्थोविकार
हृत् । शार्ङ्गधरः ।

² खल्यशूरणभोदकः । मरिचमहौषधचित्तकस्य शूरणभागाद्यथोत्तरं द्वि-
गुणाः । सर्व्वसमोगुडभागः सेव्योऽयं भोदकः प्रसिद्धफलः । जत्रलनं जत्रल-
यतिजाठरसुन्मूलयतिशूलगुल्मगदान् । निःशेषयति श्लेपदमर्शांसिनाशयत्याशु ।

भाषप्रकाशः ।

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 *Mánamanda*, 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, *A'rdraka*, शङ्खवेर, *Sringavera*.

Vern. A'dá, *Beng.* A'drak, *Hind.*

GINGER is described as acrid, heating, carminative and useful in dyspepsia, affections of the throat, head and chest, piles, rheumatism, urticaria, dropsy, etc. It is much used as a carminative adjunct along with black pepper and long pepper under the name of *trikaṭu* or the three acrids. The dried root is called *Nágara*, *Sunṭi* and *Mahaushadha* in Sanskrit. In addition to possessing the properties of ginger it is said to be laxative.

Ginger with salt taken before meals, is highly praised as a carminative. It is said to purify the tongue and throat, increase the appetite and produce an agreeable sensation. Ginger forms the active ingredient of several medicines for dyspepsia and hæmorrhoids.

Samasarkara churna.² Take of cardamoms one part, cinna-

¹ पुराणं माणकं पिष्ट्वा द्विगुणोक्ततण्डुलम्। साधितं क्षीरतोयाभ्यामभ्यसेत् प्रायसं ततः । हन्ति वातोदरं शोथं सङ्घर्षी पाण्डुतामपि । सिद्धो भिषग्भि-
राख्यातः प्रयोगोऽयं निरेत्ययः । चक्रदत्तः ।

² समशर्करं चूर्णम् । शुण्ठीकणामरिचनागदलत्वगेलं चूर्णोक्तं क्रमविवर्द्धित-

mon 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 sunṭi.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.

Sunṭi ghrita.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.

A'rdraka khandā. 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

सूक्ष्मन्यात् । खादेदिदं समसितं गुदजाग्निमान्द्यकासाऽऽरुचिश्चमनकरुहृद्दाम
येषु । भावप्रकाशः ।

1 सौभाग्यशुग्री । आञ्जंस्थात् पलशुग्ममत्र पयसः प्रस्थद्वयं खण्डतः
पञ्चाशत् पलमत्र चूर्णितमथो प्रक्षिप्यते नागरम् । प्रस्थाञ्जं शुद्धर्वाद्दपाञ्च
विधना सुष्ठितयं धान्यकात् मिश्याः पञ्चपलं पलं क्रिमिरिपोःसाजाजिजी-
रादपि । व्योषाम्भोददलोरगेन्द्रसुमनस्त्वग्द्राविड्डीनां पलं पलं नागरखण्ड-
संज्ञकमिदं तत्स्वतिकारोगहृत् । तट्छर्दिच्चरदाहशोषशमनं सन्धासकासा-
पहम् । स्त्रीहृव्याधि विनाशनं क्मिहरं सन्दाग्निसन्दीपनम् । भावप्रकाशः ।

2 सर्पिर्नागरकक्केन सौवीरं तच्चतुर्गुणम् । सिद्धमग्निकरं त्रैत्र सामवातहरं
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.* स्थूलमूत्रि, *Sthulagranthi*, *Vern. Mahá bari bach*, *Hind. Beng.*

ZINGIBER CASSUMUNAR, *Roxb. Sans.* वनार्द्रक, *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 adjuucts in complex prescriptions, but they have nothing peculiar in their properties or action.

CURCUMA LONGA, *Roxb.*

Sans. हरिद्रा, *Haridrá*, निशा, *Nisá*. *Vern. Halud*, *B. Haldi*, *H.*

THE turmeric plant is extensively cultivated for the sake of its tubers which are an essential ingredient of native curry powders. Turmeric pounded into a paste and mixed with oil, is rubbed on the skin to improve its appearance and prevent skin diseases. The rubbing of turmeric and oil is an essential part of the Hindu marriage festival as well as of some religious ceremonies. Medici-

1 नागरकलकमिश्रं क्षीरं नखेनयोजितं पुंसाम् । नानादोषोद्भूतां
गिरो रुजां हन्ति तीव्रतराम् । चक्रदत्तः ।

2 आर्द्रकं खरसःक्षौद्रयुक्तोदषण्वातनुत् । श्वासकासारुचिं हन्तिप्रतिश्यायं
व्यपोहति । शार्ङ्गधरः ।

3 सैन्धवाद्यां तैलम् । द्वे पले सैन्धवात्पञ्चशुण्ठ्यापन्यकचित्कत्वात् । द्वे द्वे
भङ्गातकास्योनिविंशति द्वैतथाटके । आरणालात्पचेत्प्रस्यं तैलमेतैरपत्यदम् ।
ऋधस्युरूपहार्शोर्त्तिसर्व्वातविकारनुत् । चक्रदत्तः ।

nally turmeric is used chiefly in skin diseases both externally and internally. Turmeric paste with the addition of a little lime is a popular application to sprains and bruises. A decoction of turmeric is used as a cooling wash in ophthalmia; cloth steeped in it is employed as an eye-shade. A paste of turmeric and the leaves of *Justicia Adhatoda* (*vásaka*), with cow's urine is rubbed on the skin in prurigo.¹ Several other combinations of the sort are in vogue, such as turmeric and *nim* leaves, turmeric and the ashes of the plantain tree, etc. Turmeric is also given internally with cow's urine in prurigo and eczema.²

Haridrākhanda.³ Take of turmeric sixty-four tolás, clarified butter forty-eight tolás, milk sixteen seers, sugar twelve tolás, and boil them together over a gentle fire in an earthen pot. Then add black pepper, long pepper, ginger, cinnamon, cardamom, *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.

1 कोमलं सिंहाखटलं सनिशं सुरभिजलेन संपिष्टम् । दिवसत्रयेण निबतं
क्षपयतिकृत् विलेपनतः । चक्रदत्तः ।

2 हरिद्राकल्कसंयुक्तं गोमूत्रस्य पलद्वयम् । पिवेन्नरः कामषारीकक्षुपाभावि
नाशनम् । चक्रदत्तः ।

3 हरिद्राखण्डः । हरिद्रायाः पलान्यष्टौ षट्पलं हविषांतथा । क्षीरा-
दुकेनसंयुक्तं खण्डस्यार्द्धपलं तथा । पचेत् ऋद्धग्निना वैद्योभाजने ऋन्मये दृढे ।
त्रिकटु त्रिजातकञ्चैव क्रिमिघ्नं त्रिवृतातथा । त्रिफलाक्षैरं सुस्तं लौहं
प्रतिपलंपलं । संचूर्ण्यं प्रक्षिपेत्तत्र कर्षमेकन्तु भक्षयेत् । कण्डू विस्कीटदद्रूणां नाशनं
परमौषधं । प्रतप्तं काञ्चनाभासो देहो भवति नान्यथा । शीतपित्तोदूर्ध्वकोष्ठान्
सप्ताहादेवनाशयेत् । हरिद्रानामतः खण्डः कण्डूणां परमौषधं । भैषज्यरत्नावली ।

CURCUMA ZEDOARIA, *Roscoe.**Syn. C. Zerumbet, Roxb.**Sans.* शठो, *Saṭi*, *Vern. Saṭi*, *Beng. Kachur*, *Hind.*

THE rhizomes of this plant possess an agreeable camphoraceous smell and warm, bitterish, spicy taste. They are considered carminative and useful in fever and skin diseases arising from impure or deranged blood. They are generally used in combination with other medicines as also in the preparation of medicated oils. "The dry root powdered and mixed with the powdered wood of the *Cæsalpinia Sappan* makes the red powder called *ábir* by the Hindustanis, and *phág* by the Bengalis. It is copiously thrown about by the natives during the *Huli* or Hindu holidays in the month of March."

CURCUMA AROMATICA, *Salisb. Syn. C. Zedoaria, Roxb.**Sans.* वनहरिद्रा, *Vanaharidrâ. Vern. Banhalud, Beng. Jedwar, Hind.*

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

CURCUMA A'MA'DA', *Roxb. Sans.* कर्पूरहरिद्रा, *Karpuraharidrâ. Vern. A'mádâ, Beng.* The *Bhāvaprakāsa* mentions this plant under the name of *karpuraharidrâ*, 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, *Elâ. Vern. Elâchi, Hind. Gujrâti elâch, 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*, रन्भा, *Rambhá. Vern. Kalâ, Beng. Kelâ, 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*), *jatdmánsi* 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

¹ कदल्यादि घृतम् । कदलीकन्दनिर्यासे तत्प्रसूनतुलांपचेत् । चतुर्भागा-
वशेषे ऽस्मिन् घृतं प्रस्यं विपाचयेत् ! चन्दनं वरुणं मांषी कदलीमूलकन्नथा ।

native 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*, *gulancha*, *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

रेणालवङ्गं त्रिफला कपित्थफल मेवच । कल्केनानेन संसिद्धं सोमरोगनिवारणम् ।
मूत्ररोगानशेषांश्च प्रभृतान् शुक्रपिच्छिलान् । प्रमेहान् विंशतिञ्चैव मूत्राघातां
स्त्रयोदशान् । बद्धमूत्रं विशेषेण मूत्रकृच्छ्रं तथाशुशीरम् । कदल्यादि घृतं नाम
विष्णुना परिकीर्तितम् । राडीयसारसंग्रहः ।

¹ राक्षापञ्चकम् । राक्षामृतमहादारु नागरैरगुडं शृतम् । सप्तधातुगते-
वाते सामेसर्वाङ्गजे पिवेत् । शार्ङ्गधरः ।

² राक्षायाम्बु पलञ्चकं कर्षान् पञ्चचशुग्गुलोः । सर्पिषा वटिकां कृत्वा
खादेद्वाग्धृषीहराम् । 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, *Satávári*, शतमूली, *Satamuli*.

Vern. *Satamuli*, Beng. *Satávári*, 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 diarrhœa.² As an aphrodisiac tonic, it is used in a variety of forms. A *ghrita* is prepared as follows.—

Satávári ghrita.³ Take of clarified butter four seers, juice of *Asparagus racemosus* four seers, milk forty seers, boil them together and prepare a *ghrita*. This is given with the addition of sugar, honey, and long pepper.

Phalaghrita. This is prepared with four seers of clarified butter, and sixteen seers each of the juice of *Asparagus racemosus* and cow's milk, with the addition of a number of other medicines in small quantities, in the form of a paste. Its use is said to increase the secretion of semen, to cure barrenness in women and to remove disorders of the female genitals.

1 निशाचूर्णयुतःकन्यारसः स्त्रीहाऽपचीकरः ।

शाङ्गधरः ।

2 शतावर्याश्च सधुनापित्तमूलहरोरसः ।

शाङ्गधरः ।

3 शतावरीघृतम् । घृतं शतावरीगर्भं क्षीरे दशगुणे पचेत् । शर्करापिप्प-

लीचौद्रयुक्तं तद्वृष्यञ्च्यते ।

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 *sálidhánya*) 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 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,² popularly known as *Madhyama náráyana taila* is made by taking of the bark of *Ægle Marmelos* (*vilva*), *Premna spinosa* (*agnimantha*), *Calosanthes Indica* (*syonáka*), *Stereospermum suaveolens* (*pátalá*), *Erythrina Indica* (*páribhadra*), *Pæderia fetida* (*prasáraní*), *Withania somnifera* (*asvagandhá*), *Solanum Jacquinií* (*kantakári*), *Solanum Indicum* (*vrihati*), *Sida cordifolia* (*balá*), *Sida rhombifolia* (*atibalá*), *Tribulus terrestris* (*danshtrá*) and *Boerhaavia diffusa* (*punarnavá*), each twenty tolas, water sixty-four seers, and boiling down till reduced to one-fourth and straining. To the

¹ शतावरी काश कुश श्वदंष्ट्राविदारीशालीक्षुकशेरुकाणाम् । काशं सुशीतं मधुशर्कराक्तं पिवन् जयेत्पैत्तिकं मूलकच्छम् । चक्रदत्तः ।

² नारायणतैलम् । विल्वान्निमन्थश्लोणाकपाटलापारिभद्रकः । प्रसारखश्वगन्धा च वृहतीकण्टकारिका । बलाचातिवलाचैव श्वदंष्ट्रा सपुनर्नवा । एषां दशपलान् भागान् चतुर्दशैश्वभ्रसः पचेत् । पादशेषं परिस्त्राव्य तैलपात्रं प्रदापयेत् । शतपुष्पा देवदारु मांसीश्लेयकं वचा । चन्दनं तगरं कुष्ठमेलापर्णीचतुष्टयम् । रास्ना तुरगगन्धा च सैन्धवं सपुनर्नवम् । एषां द्विपलिकान् भागान् पेषयित्वाविनिक्षिपेत् । शतावरीरसञ्चैव तैलतुल्यं प्रदापयेत् । अजं वा यदि वा गव्यं क्षीरं दत्त्वा चतुर्गुणम् । पाने वस्तौ तथाभ्यङ्गे भोज्ये चैव प्रशस्यते । अश्वो वा वातसंभग्नौ गजो वा यदि वा नरः । पङ्कजः पीठसर्पिंच तैलेनानेन सिध्यति । अधोभागे च वेवाताः शिरोमध्यगताश्च ये । दन्तशूले हनुस्तम्भे मन्यास्तम्भे गलपहे । यस्य शुष्यति चैकाङ्गं गतिर्यस्य च विह्वला । एतत्तैलवरन्नेषां नाम्नानारायणं श्रुतम् । तगरं नतमत्वस्यादभावेशीयलिक्लोपडः । चक्रदत्तः ।

strained decoction add four seers each of the juice of *Asparagus racemosus* and prepared sesamum oil, sixteen seers of cow's or goat's milk and the following substances, namely, fennel seeds, wood of *Cedrus Deodara* (*devadāru*), *jātāmānsi* root, liquid storax, *Acorus Calamus* (*vachā*), sandal wood, *Limnanthemum cristatum* (*tagarapādrukā*), *Aplotaxis auriculata* (*kushṭha*), cardamoms, *Desmodium gangeticum* (*sālaparni*), *Uraria lagopodioides* (*prisniparni*), *Phaseolus trilobus* (*mudgaparni*), *Glycine labialis* (*māshaparni*), *Withania somnifera* (*asvagandhā*), *Vanda Roxburghii* (*rāsnā*), *Boerhaavia diffusa* (*punarnavā*) and rock salt, four tolās 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.

Vishnutaila. This is an oil much used in nervous diseases. It is prepared with sesamum oil, cow's or goats' 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 tāila. 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 pubic region in chronic gonorrhœa, stricture of the urethra, and other diseases of the urinary organs.

ALLIUM SATIVUM, Linn.

Sans. रसुन, 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 tolās, water

¹ माघयेच्छुद्धशुष्कस्य लसुनस्य चतुःपलम् । क्षीरोदकेऽपि शुषिते क्षीरशेषञ्च प्राययेत् । वातगुल्मसुदावर्त्तं गृध्रसीविषमञ्जरम् । हृद्रोगं विद्रधिं शोषं शययत्साशुतत्पयः । एवन्तु साधिते क्षीरे स्त्रीकमप्यत्रदीयते । 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, assafoetida, 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.²

GLORIOSA SUPERBA, Linn.

Sans. लाङ्गुलीका, *Lángulíká*, अग्निशिखा, *Agnisikhá*, कलिकारि, *Kalikári*.
Vern. Bishalánguli, Beng. Karihári, 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 plants 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 *Garbhaghátini* 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

1 स्त्र्यरसोनपिण्डः । पलमर्द्धं पलञ्चैव रसोनस्य सुकुट्टितम् । हिङ्गुजोरक-
सिन्धुस्थैः सौवर्चलकटुतयैः । चूर्णितैर्भाषकोन्मानैरबचूर्ण्यविलोडितम् । यथाग्नि
भक्षितं प्रातोर्वृक्षाथानुपानतः । दिने दिने प्रयोक्तव्यम् भाषमेकं निरन्तरम् ।
वातरोगं निहन्त्याशु अर्द्धितं सापतन्त्रकम् । ऐकाङ्गरोगिण्ये चैव तथासर्वा
ङ्गरोगिणे । उरुस्तम्भे च ग्ध्रुसां क्रिमिकोष्ठे विशेषतः । कटीपृष्ठाभयं हन्यादुद-
रञ्च विशेषतः चक्रः ।

2 लघुनाद्रक शिपुणां स्वरसः श्रेष्ठः कटुष्ण कर्षपूरणे । चक्रदत्तः ।

3 पाठां लाङ्गुलिसिंहास्य मयूरकजटैः शृथक् । नाभिवस्तिभगालेपात् सुखं
नारोप्रसूयते । चक्रः ।

a paste of the 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 *Lāngali guṭīkā* described in the *Bhāvaprakāsa*.

NAT. ORDER SMILACEÆ.

SMILAX CHINA, *Linn.*

-*Sans.* चोच्चिनि, *Chobachini.* *Vern.* *Chobchini.* *Hind:*

FLUCKIGER and Hanbury state that "the use of this drug as a remedy for syphilis was made known to the Portuguese at Goa by Chinese traders about A.D. 1535." If this statement, which is given on the authority of Garcia d'orta, is correct, the history of this drug will enable us to fix the approximate age of the latest and most comprehensive treatise on Sanskrit Medicine, namely, the *Bhāvaprakāsa*. 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 लाङ्गलिक्काःसंलिप्ते पाणिपादेच। अमरापातनं मद्यैः पिप्पल्या-
दिरजः पिबेत् । चक्रदत्तः ।

² चोच्चिनि, द्वीपान्तर वचा किञ्चित् तिक्तोष्णा वृद्धिदीप्तिहृत् । विवन्वा-
ध्मान मूलघ्नोयकनू मूलविशोधिनी । वातव्याधिन पञ्चारसुन्नादम् तदुवेदनाम् ।
व्यपोहति विशेषेण फिरेङ्गाभयनाशिनो । 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, diarrhœa and dyspepsia. The tubers of *Cyperus rotundus* are extensively used as an aromatic adjunct to numerous compound medicines.

Shaḍanga 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.* A'k, *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 । सुस्तपर्षटकोशीर चन्दनोदीच्यनागरैः । श्दतशीतं
जलं दद्यात् पिपासाञ्च रथान्तये । 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 *khanda*, that is treacle candied into white sand-like grains. Again the Bengali term *Gura* is derived from the Sanskrit *Guda* which is mentioned by such ancient writers as Charaka and Susruta. The manufacture of sugar therefore was evidently understood in Upper India before it was known in Bengal, at any rate there is nothing to 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. इक्षु रस, *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, *Guḍa* or sugar-cane juice boiled to a thick consistence, that is treacle.
4. मत्स्यण्डिका, *Matsyandiká* is sugar-cane juice boiled down to a solid consistence but which still exudes a little fluid on drawing.
5. खण्ड, *Khaṇḍa* is treacle partially dried or candied in white sand-like grains.
6. शर्कर, *Sarkara* or white sugar.
7. शितोपला, *Sitopalá* or sugar candy.
8. गौड़ी, *Gauḍi* 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 these 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, *Kása. Saccharum spontaneum, Linn.*
4. कुश, *Kusa. Poa cynosuroides, Linn.*
5. दर्भ, *Darva. Imperata cylindrica, Beauv.* Some practitioners substitute the root of *Andropogon muricatus* for that of *Imperata cylindrica*. A decoction of these roots is considered demulcent and diuretic and is largely prescribed as an adjunct to metallic medicines in gonorrhœa, strangury and suppression of urine. The following confection is also much used in these diseases.

1 त्र्यपञ्चमूलम् । कुशः काशः शरो दर्भ इक्षुश्चेति त्र्यण्डवम् । मूल
जम्बूहरं पञ्चमूलं वस्ति विशोधनम् । 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 *Cratæva religiosa* (*varuna*), *gulancha*, seeds of *Aglaia Roxburghiana* (*priyangu*), and the flowers of *Mesua ferrea* (*nágakesara*), two tolás each in fine powder; stir them well with a ladle and prepare an electuary. Dose one to two tolás.

ORYZA SATIVA, Linn. ETC.

THE following varieties of food grains belonging to this important natural order, are mentioned by Sanskrit writers:—

धान्य, *Dhánya*. *Oryza sativa*, Linn. Vern. *Dhán*, Beng. Hind.

गोधूम, *Godhuma*. *Triticum vulgare*, Linn. Gam, B. *Geṅhu*, H.

यव, *Yava*. *Hordeum hexastichum*, Linn. Jab, Beng. *Jow*, Hind.

These three are considered the best of grains. The following varieties pass by the name of कुधान्य, *Kudhánya* or inferior grains and क्षुद्रधान्य, *Kshudra dhánya* or minor grains.

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

कङ्गु, *Kangu*. *Setaria Italica*, Kunth. Vern. *Kángni*, 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.

1 कुशावलेहः । कुशः काशो वीरणश्च कण्ठोक्तुः खग्गडस्तथा । एषां दश-
पलान् भागान् जलद्रोणे विपाचयेत् । अष्टभागावशिष्टन्तु कषाय मवतारयेत् ।
खग्गप्रस्यं समादाय लेहवत् साधूसाधयेत् । अथतार्यं ततः पश्चात् चुर्णानो-
मानि दापयेत् । मधुकं कर्कटीबीजं कर्काह्वत्पुषं तथा । शुभामलक पत्राणि
त्वगेषामागकेशरं । वरुणाश्टताप्रियङ्गुश्च प्रत्येकमक्षुप्तम् । प्रमेहान् विंशतिं
हन्ति मत्साघातास्तथाश्मरीः । वातिकान् पैत्तिकान् चैव लैष्णिकान् सात्रि-
पातिकान् । हृत्परोक्षक मन्त्रं वर्षणपुष्टिकं परम् । भेषज्यरत्नावली ।

गवेधुका, *Gavedhuká*. Some species of *Coix*, *Gargaredhán*, *Beng.*

रागा, *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.*

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 *Shashṭika* 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 :—

यवागु, *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 *Manḍa*. Sometimes, instead of water, a decoction of medicinal herbs is used in preparing *yavágu*.

1 पौषे च दशमी शस्ता चैत्रके पञ्चमी तथा । नभस्ये पूर्णिमा चोया
गुरुवारे विशेषतः । आदकं चान्य सम्पूर्णं नानाभरण भूषितम् । सुगन्धि
शुक्ल पुष्पेन शुक्ल पत्रे प्रपूजयेत् । कालचन्द्रिका ।

Thus for example if it is ordered to give the patient *yavágu* made with ginger and long pepper, the process adopted in preparing it is as follows. Take of dry ginger and long pepper, one tola each, boil in four seers of water till reduced to two and strain. Now take nine, eleven or nineteen parts of this strained decoction and one part of powdered rice for making *yavágu* of the strength ordered.

बाजा, *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.

भट्टतण्डुल, *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.

घृथका, *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 *Bhávaprakása*, namely *Mahágodhuma* or large grained, *Madhuli* or small grained¹ and *Nihṣuki* 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 खल्य गोधूमः इति सटीक द्रव्यगुणः 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*, वीरण, *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, refrigerent, stomachic and useful in pyrexia, thirst, inflammation, irritability of stomach, etc. It enters into the composition of several cooling medicines, as for example the preparation called *Shadanga 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

1 तैलेन सर्पिषावापिताभ्यां वा शक्तुपिण्डिका । सुखोष्णः शोथपाकार्थ-
सुपनाहः प्रशस्यते । चक्रः ।

2 स्तनन्यस्तोशीरं प्रशिथिलम्बणालैकवलयं । प्रियायाः सावाधं तदपि-
कमनीयं वपुर्दिम् । शकुन्तला ।

An 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 káshṭha*.¹ The same medicines are reduced to a thin emulsion with water and applied to the skin.²

ANDROPOGON SCHÆNANTHUS, *Lin. Sans.* भूशृणु
Bhustrina, *Vern. Gandha bend*, *Beng.*

ANDROPOGON IWARANCUSA, *Roxb. Sans.* लामज्जक
Lámajjaka. *Vern. Lámjak*, *Hind. Karankusá*, *Beng.*

These two fragrant grasses are occasionally used as aromatics and refrigerants like the roots of *Andropogon muricatus*. *A. schænanthus* is common in Bengal, being cultivated in gardens for the sake of its fragrant leaves. *A. Iwaruncusa* 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 ह्रीवेरपद्म कोशीर चन्दनोदशरिणा । संपूर्णामवगाहेत द्रोणीदाहा-
दितोनरः । चक्रदत्तः ।

2 प्रदेहाः परिषेकाश्च शस्यन्ते पञ्चवल्कलैः । पद्मकोशीर मधुक चन्दनैर्व्या
प्रशस्यते । चक्रदत्तः ।

3 सितोपलादिचूर्णम् । सितोपलाषोडशस्यादष्टौ स्यादंशलोचना । पिप्पली-
स्याञ्जलः कर्षाक्षुद्रैलास्याद्विकार्षिकी । एककर्षस्त्वचःकार्यं चूर्णयेत्सर्वमेकतः ।
सितोपलादिकं चूर्णं मधुसर्पियुतं लिहेत् । श्वासकासक्षयहरं हस्तपादाङ्ग
दाहजित् । मन्दाग्निं सप्तजिह्वाञ्च पार्श्वशूलमरोचकम् । प्वरमूर्च्छामतं
रक्तपित्तमाशुष्यपोहति । शार्ङ्गधरः ।

pepper four parts, cardamoms, two parts, cinnamon one part, sugar sixteen parts ; powder the ingredients and mix. Dose, about a drachm with honey and clarified butter. This preparation is 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. Durbá, Beng. Dub, Hind.* This elegant and most valuable grass, like many other useful vegetables, has a niche in the temple of the Hindu religion. Medicinally the fresh juice of the leaves is considered astringent, and is used as a snuff in epistaxis.¹ The bruised grass is a popular application to bleeding wounds.

PRODUCTS OF FERMENTATION AND DISTILLATION.

WINES AND SPIRITS.

All fermented and distilled liquors causing intoxication, are called *Madya* or *Madirá* in Sanskrit. The following varieties are mentioned by the later writers.

मादिक, <i>Máddhika</i> ,	or spirit distilled from grapes.		
खार्ज, <i>Khárjura</i> ,	do. do.	dates.	
गौड़ी, <i>Gauḍi</i> ,	do. do.	treacle.	
शीघ्र, <i>Sidhu</i> ,	do. do.	sugar-cane juice.	
हरा, <i>Surá</i> ,	do. do.	rice.	
कोहल, <i>Kohala</i> ,	do. do.	barley.	
मधुलिका, <i>Madhuliká</i> ,	do. do.	wheat.	
पैठी, <i>Paishṭi</i> ,	do. do.	from different sorts of grain.	
मधुकुशुप्तोत्थ, <i>Madhuka pushpottha</i> ,	do. do.	the flowers of <i>Bassia latifolia</i> and treacle.	
जाम्बव, <i>Jámbava</i> ,	do. do.	ripe fruits of <i>Eugenia Jambolana</i> .	
कादम्बरि, <i>Kádambari</i> ,	do. do.	flowers of <i>Anthocephalus</i> <i>Cadamba</i> .	
वलकलि, <i>Valkali</i> ,	do. do.	belleric myrobalan and treacle.	
वारुणी, <i>Váruni</i>	is the fermented juice of the palm and date trees.		

1 मद्यं दाडिमपुष्पोत्थो रसो दूर्वाभवोऽथवा । आम्बास्त्रिजः पलाण्डोर्वा
नासिकासुतरक्तजित् । भावप्रकाशः ।

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* in the thickest and weakest of all. The forms of medicated spirituous liquors have been already described in the introduction, (see page 31).

Spirituos liquors are described as stimulant, sedative, agreeable, heating, intoxicating, digestive and nourishing. They are easily assimilated but injurious to health in hot climates. New wine is disagreeable to the taste and smell, unpleasant in its effects, not easily assimilated, laxative, heating and injurious to health. Old wine is agreeable, light and appetizing. It promotes the circulation of the fluids in the vessels and renders the senses acute. In amiable and virtuous men, wine promotes mirth and a desire for musical entertainments. In passionate men it gives rise to rashness and evil actions. Used at the proper season, in proper doses and with suitable food, wine acts like nectar. If taken to excess it induces a host of diseases. Medicinally, spirituous liquors are said to be useful in emaciation, debility, anæmia, urinary diseases, dyspepsia, chronic bowel complaints, chronic fever, deficient secretion of milk, etc.

A mixture of ginger, cumin seeds, treacle, wine and warm water is given in ague with prolonged cold stage.¹ In chronic 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. Several preparations of spirit distilled from treacle with the

1 शूठी जाजी गुडं पिष्टं पीतसृष्ट्येण वारिणा । जीर्णसद्येन तक्रुण
पीतं शीत ज्वरं जयेत् । भावप्रकाशः ।

2 सुरां समगुडं पानार्थे भक्षार्थे चरणायुधान् । तिन्रिरोश्च मयूरांश्च
प्रयुञ्जताद्विषमज्वरे । चक्रः ।

addition of various medicinal and aromatic substances are used in different diseases. The following is an example.

*Mritasanjivani surā.*¹ Take of new treacle eight hundred tolas and steep it in thirty times its weight of water. Add to the mixture the following substances in the form of a paste, namely, ginger sixteen tolas, bark of *Acacia Arabica* two seers, of *Ziziphus Jujuba (kola)* two seers, of *Symplocos racemosa (lodhra)* half a seer, betle-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, betle-nuts, cloves, sandal wood, cumin seeds, *ājowan*, black pepper, ginger, nutmegs, cardamoms, cinnamon, *tejapatra* leaves, fennel seeds, nigella seeds, the fragrant substances called *elavdluka*, *padma-kāshtha* and *granthiparni*, *devadāru* wood, *khas khas* root, zedoary root, *jatāmānsi* root and the tubers of *Cyperus rotundus (mustaka)*, each eight tolās, in coarse powder, and distil. This distilled liquor is used as a tonic, astringent and invigorating drink.

१ ऋतसञ्जीवनीसुरा । नूतनं गुडसंगृह्य शतमेकं पलं तथा । जलं अष्टगुणं
 देयं स्थापयेत् ऋतभाजने । वावरीत्वच संप्राह्य वदरीत्वचमेवच । प्रस्थं प्रस्थं
 प्रदातव्यं पूगंदेयं यथोचितं । लोधुञ्च कुडुवं दत्वा आर्द्रकञ्च पलद्वयं । गुडं
 संगोलकं कृत्वा दापयेत् बुद्धिमान् भिषक् । प्रथमे आर्द्रकं देयं द्वितीये वावरी
 त्वचं । तृतीये वदरी दत्वा गोलयित्वा भिषग्वरः । सुखे सरायकं दत्वा यत्र
 कृत्वा च वन्दनं । सुखसंबन्धनं कृत्वा स्थापयेद्द्विन विंशतिं । ऋतये मोर्च्छिका
 पाले मयूराक्षोपयन्त्रके । यथाविधि प्रकारेण मन्द मन्देन वद्धिना । चुम्बिमध्ये
 विधातव्यमृत्तिका इदं भाजने । तदौषधञ्च तन्मध्ये उद्धरित्वा विनिक्षिपेत् ।
 कुम्भमध्ये निधातव्यं पूगञ्च सैलवालुकं । देवदारु लवङ्गञ्च पद्मकोशीर
 चन्दनं । शत पुष्पा यमानी च सरिचं जीरक द्वयं । शठी मांसी त्वगेलाच
 जातिफलं सस्रस्तकं । पन्थिपर्णी तथाशुण्ठी मेथी मेषीच चन्दनं । एषा
 चार्द्रपलान् भागान् कुटयित्वा विनिक्षिपेत् । यथाविधि प्रकारेण चानलं
 दापयेत् सुधी । बुद्धिमान् शोधनं कृत्वा उद्धरेत् विधिवत्सुरां । एतन्मदां
 पिबेन्नित्यं यथाधातु वयक्रमात् । आरोग्यं देह दाह्यत्वं वलपुष्टिकरं
 सदा ।

उद्धृत पाठः ।

THE
MATERIA MEDICA

OF THE HINDUS

PART III.

ANIMAL MATERIA MEDICA.

THE LEECH.

LEECHES have been employed by the Hindus from a very remote period. Susruta gives a detailed account of their varieties habits, mode of application, etc. His account of leeches has been translated in full by Dr. Wise. Pundit Madhu Sudan Gupta had also furnished a note on the subject for publication in the Bengal Dispensatory. I will not therefore attempt a new translation but will give an extract from Dr. Wise's work. "There are twelve varieties of leeches, six of which are venomous, and six useful. The venomous leeches are found near putrid fish or animals in foul stagnant and putrescent water. Such leeches are consequently to be avoided. The good leeches are found in clear and deep pools of water which contain water lilies, and are surrounded with sweet smelling plants. The middle sized leeches are the best. These leeches are to be caught on a piece of leather or cloth, and placed in a new water pot in which some clay and pure water has been put. Some grass or leaves of aquatic plants are to be placed in the pot for them to lie upon, and the roots of water lilies and dry flesh are to be given them for food. The water is to be changed every third day, and the 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, *Lákshá Vern.* Láksh, *Hind.* Gálá, *Beng.*

THE lac insect (*Coccus lacca*), has been known to the Hindus from a very ancient period. The *Butea frondosa* is called *Lákshá 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 *A'lakta*. 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 *A'ltá* 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. A decoction of shell-lac is much used in the preparation of several medicinal oils, such as *Lákshádi taila*, *Chandanádi taila*, *Angáraka taila*, etc.

Laksháditaila.¹ Take of shell-lac two seers, water sixteen

1 लाक्षादि तैलम् । लाक्षारसं समं तैलं तैलान्मस्तु चतुर्गुणम् । अश्व-
गन्धा निशा दारु कौन्जीकुषाब्दचन्दनैः । समूर्वा रोहिणी रास्ना शताह्वा
सधुकैः समैः । सिद्धं लाक्षादिकं नाम तैलमभ्यङ्गनादिना । सर्वज्वर-
क्षयीन्नाद श्वासापम्भार वातनुत् । यज्ञ राक्षस भूतघ्न गर्भिणीनां च शस्यते ।

भावप्रकाशः ।

seers, 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 back 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*, *Sārkaumudi*, etc.

The poison of the black cobra (*Naga tripudians*. *Vern. Keute sâp*, *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.

Suchikâ 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 सूचिकाभरणोरसः । रसगन्धकनागञ्च विषं स्यावरजङ्गमम् । मत्स्य-
वराहमायूरच्छागपित्तैश्च भावयेत् । सूचिताभरणो नाम भैरवेण प्रकीर्तितः ।
सूचिकाश्रेण दातव्यः सन्निपातकुलान्तकः । भैषज्यरत्नावली ।

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, *Mriganábhi*, कस्तुरी, *Kasturi*.

THE *Bhávaprakása* 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 *Makaradhva* 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 कालानलः रसः । असृतं गरलं शङ्खं लौहितान्नञ्च टङ्गणं । रघं गन्धं त्रूपषणञ्च पञ्चपित्तैर्बिभाषयेत् । मातुलुङ्गद्रवे भाव्यं वटिका यवमानतः । क्षौद्रार्द्रक रसश्चानु दापयेत् सान्निपातिके । अति तीव्र च्चरं हन्ति सर्वोषद्रव संयुतं । हरिद्रा तैल संमिश्रं मर्दयेत् तीव्रतापिनं । तथा स्नानान्तरे गाढं लेपयेत् गन्धचन्दनं । दध्यन्नं दापयेत् पथ्यं द्राक्षादिचासु दाडिमं । कालानल रसो नान्ना गोष्यः परमदुर्लभः । रसरत्नाकरः ।

सल्पकस्तूरि भैरव रसः । हिङ्गुलञ्च विषं टङ्गं जातिकोष फलनथा । मरिचं पिप्पली चैव कस्तुरीच समांगिका । रक्तिद्वयं ततः खादेत् सन्निपाते सुदारुणे । रसेन्द्रसारसं पचः ।

and make into four-grain pills. These are given in remittent fever of low type.

Mriganávyádyavaleha.¹ Take of musk, cardamoms, cloves, cinnamon and dates, equal parts and make into a linctus with honey and clarified butter. This is given in hoarseness and loss of speech.

Vasantatilaka rasa.² Take of prepared gold one part, talc 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.* *Khátási*, *Beng.* The pouch of the civet cat (*Viverra Zibetha*, *Linn.*) contains an unctuous odorous secretion which is extracted and used in perfumery. The

1 मृगनाभ्यादिरवलेहः । मृगनाभि सस्त्रक्षौला लवङ्गकू सुमानि च ।
त्वक्क्षीरो चेति लेह्योयं मधुसर्पिः समायुतः । वाक्स्तम्भस्यं जयति स्वर
भ्रंस समन्वितम् । भावप्रकाशः ।

2 वसन्ततिलकरसः । हेन्त्रोभस्त्रकमभ्रकं द्विगुणितं लौहास्त्रयः पारदाः
चत्वारो नियतन्तु वङ्गयुगलं चैकीकृतं मर्द्दयेत् । सक्ताबिद्रुमयो रसेन समता
गोक्षुरवासेक्षुणा सर्व्वं वल्ल्यकरेण तेन मुद्ददं तत्तत् पचेत् सप्तधा ।
कस्तुरी घनसारमर्द्दितरसः पश्चात् सुसिद्धोर्भवेत् । कासश्वास सपित्त वात
कफजित् पाण्डु जयादीन् हरत् । श्लेष्मादिप्रहर्षी विषादिहरणं मेहाश्लरीं
विंशतिं । हृद्दोगापहरं ज्वराच्छिश्मनं दृष्यं वयोवर्द्धनं श्रेष्ठं पुष्टिकरं वसन्त-
तिलकं मृत्युञ्जयेनोदितम् । रसेन्द्रसारसंपहः । अयमपि मारात्मक-
कफरोगे प्रसिद्धः ।

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, dyspepsia

¹ शरावसंपुटे दग्धं शृङ्गं हरिणजं प्रिवेत् । गव्येन सर्पिषापिष्टं हृच्छूलं
नश्यति ध्रुवम् । शार्ङ्गधरः । दग्धमनिर्गतधूमं मृगशृङ्गं गोघृतेन सहपीतम् ।
हृद्यनितम्बजशूलं हरतिशिखीदारुनिवहृमिव । चक्रः ।

diarrhoea, urinary complaints, ascites and anasarca. A pure milk-diet to the exclusion of every other article (not excepting even salt and water) is often prescribed in the later stages of anasarca, ascites and chronic bowel complaints. Along with this milk diet, some sort of medicine, such as *Dugdha vaṭi*, *Svarnaparpati*, or *Māna 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 *chhachchhikā* or very dilute butter-milk. The second form called *takra* is used in medicine and as an article of sick diet. It is regarded as astringent, light, cooling, appetizing, nutritive, tonic, and useful in diarrhoea, dysentery, dyspepsia, urinary diseases, ascites, poisoning, etc. It is not suited to the weak, or consumptive nor to those suffer from fever and nervousness. The habitual use of butter-milk is said to be conducive to health and a preservative against disease.

दधि *Dadhi* or curdled milk is prepared by adding some acid or a little curdled milk as a ferment to milk previously boiled. In the course of twelve hours the whole of the milk thus acted upon is changed into a more or less thick, acidulous, jelly-like mass. It is considered agreeable, digestive and cooling, and is much used as an article of diet by all classes of natives. Taken to excess it causes biliousness and catarrh. It is useful in fever, diarrhoea, dysentery, urinary disorders and disinclination for food.

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.

किलाटक *Kilāṭaka* or curd of milk (*Vern. chhená, Beng.*) is hard of digestion, but is nourishing, tonic and suited to persons with strong digestive powers.

सन्तानिका *Santānikā* 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.

दत *Ghrīta* 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).

पुराणदत *Purāna ghrīta*. 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 *ghrīta* 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 उन्मादहृतो दृष्टः वा पुराणं वैकृतं दतम् । उपगन्धं पुराणं स्याद्-
शतवर्षस्थितं दतम् । लाचारस निभं शीतं प्रपुराणमतःपरम् । चक्रः ।

2 शतधौत दताभ्यङ्गः शीतवातादि सेवनम् । शीतस्पर्शाद्य संसेव्याः सदा-
दाहार्ति शान्तये । 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.

Udakamanjari 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.

गोरोचना Gorochana, or the concretions found in the gall-bladder of the ox, are considered cooling, aromatic and useful in abortion 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 and in the

1 शीताम्नः सानुशतशश्च विबोद्धितेन गव्येनचन्दन युतेन धनेनदिग्धा ।
दाहज्वरी सकमलोत्पलमात्मधारी क्षिप्रंविशेत् सलिलकोष्णमनल्पकालं ।
काञ्जिकार्द्रपटेनावगुण्ठनं दाहनाशनम् । दर्पणः ।

2 उदकमञ्जरीरसः । सूतं गन्धद्वयः सोषणश्च सर्वैस्तुब्धाः शर्करा सत्स्य-
पित्तैः । भूयोभूयो मर्हयेत् त्विरातं वल्लोदेयः षडङ्गवेर द्रवेण । तोयेशीतं
बीजनैस्तक्रभक्तएन्नाकाद्यं पथ्यमेतत् प्रदिष्टं । अङ्गवैभ्यं हन्ति सद्यज्वरन्तु
पित्ताधिकं मूर्च्छिं तोयञ्च दद्यात् । रसप्रदीपः ।

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.

Punarnavá manḍura.¹ Take of *Boerhaavia diffusa* (*punarnavá*) *Ipomœa Turpethum* (*trivrit*), ginger, long pepper, black pepper, *báberang* seeds, *devadáru* wood, plumbago root, *pátchak* root, the three myrobalans, turmeric, wood of *Berberis Asiatica*, (*dáruharidrâ*) root of *Baliospermum montanum*, (*danti*), *Piper Chaba* (*chaviká*), *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 part is evaporated. Dose, about twenty-two grains, in jaundice, ascites, anasarca, enlargements of the abdominal viscera, painful dyspepsia, etc.

Marichádya taila. Take of mustard oil four seers, cow's urine sixteen seers, aconite eight tolás, 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* (*dáruharidrâ*), *devadáru* wood, and red sandal wood, each

1 पुनर्नवामण्डूरम् । पुनर्नवात्रिवृच्छूराटी पिप्पलीमरिचानि च । विडङ्गं
देवकाष्ठञ्च चित्रकं पुष्कराह्वयम् । त्रिफलां द्वे हरिद्रे च दन्तीञ्च चविक-
न्था । कुटजस्य फलं तिक्तापिप्पलीमूलं सुस्रकम् । एतानि सप्तभागानि
मण्डूरं द्विगुणं ततः । गोमूत्रेऽष्टगुणे पक्त्वास्थापयेत्क्षिग्धभाजने । पाण्डु-
शोथोदरानाहं शूलार्थः क्रिमियुल्लमनुत् । भावप्रकाशः ।

four tolás, and prepare an oil in the usual way. This oil is said to 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 जाङ्गल *Jāngala* or land, and अमुप *Anupa* or water animals : Animals living on land are sub-divided into eight orders as follows :—जाङ्गला *Jāngalá* or animals living in the wilderness as deers, antelopes, etc.

विबस्थाः *Vilasthá*, or animals living in holes under ground, as serpents, lizards, porcupines, etc.

गुहाशयाः, *Guhásayá* or animals living in caverns, as tigers lions, bears, etc.

पर्यम्तगाः, *Parnamrigá* or animals living on trees, as monkeys squirrels, etc.

विष्किराः, *Vishkirá* or birds which take their food after tearing or scattering it, as peacocks, quails, partridges, etc.

प्रतुदाः, *Pratudá* or birds which strike with their beaks, as pigeons, wag-tails, cuckoos, etc.

प्रसहाः, *Prasahá* or birds of prey, as the hawk, falcon, etc.

पास्याः, *Grámyá* or domestic animals, as ox, goat, horse, sheep, etc.

Animals living in water or marshy lands are sub-divided into five classes as follows :—

कुलेचराः, *Kulechará*, or animals grazing in marshes, as buffalos, yak, rhinoceras, etc.

प्लवाः, *Plává*, or birds which swim in water, as geese, ducks cranes, etc.

कोशस्थाः, *Kosasthá*, or animals enclosed in shells, as conch-shells, bivalve-shells, etc.

पादिनः *Pádina*, or footed aquatic animals as tortoise, crocodile porpoise, etc.

1 मरिचाद्यं तैलम् । मरिचालशिलाह्वार्कपयोश्चारिजटातिष्ठत् । शकटस-
विशालारुड्निशायुग्दारुचन्दनैः । कटुतैलात्पचेत्प्रस्यं ह्यर्क्षैर्विषपलान्वितैः ।
सगोमूत्रं तदभ्यङ्गाद्द्दुश्चिन्विनाशनम् । सर्वेष्वपिच कुडेषु तैलमेतत् प्रश-
स्यते । चक्रदत्तः ।

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 आगलाद्यं दतम् । आजं चर्मविनिर्मुक्तं लङ्काशङ्खनखादिकम् । पञ्च मूलीहयञ्चैव जलद्रोणे विपाचयेत् । तेन पादावशेषेण दत प्रस्यं विपाचयेत् । जीवनीयैः सयश्चाह्नैः क्षीरञ्चैव यथावरी । आगलाद्यामिदं नाम्ना सर्व्ववात विकाररुत् । अर्हिते कर्णमूले च वाधिर्ये मूकमन्दिने । जङ्गदुग्द पङ्गुनां खञ्जे गृध्रसिकुञ्जयोः । अपतानेऽपतन्ने च सर्पिरेतत् प्रशस्यते । अत्रयदि मधु भागद्वयमिति शिवदासः । भैषज्यरत्नावली ।

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 *kshirakákali*, pulse of *Phaseolus trilobus* (*mugáni*), and of *Glycine debilis* (*masháni*), *Cælogyne 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.

Máshataila.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* (*kurañtaka*), of *Solanum Jacquini*, (*kanta-kári*), *Tribulus terrestris* (*gokshura*), bark of *Calosanthus Indica syonáka*, *jaśámánsi* root, seeds of *Mucuna pruriens* (*kapiqvachhku*), 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* (*erandá*), of *Bærrhaavia diffusa* (*punarnavá*), *Pæderia foetida* (*prasáraní*), *Vanda Roxburghii* (*rásná*), *Sida cordifolia* (*berelá*), *Tinospora cordifolia* (*gulancha*) and *Picrorrhiza Kurroa* (*katuki*) equal parts; in all one seer, and reduce them to a paste. Boil the above mentioned decoctions and the paste with four seers of sesamum oil in the usual way. This oil is rubbed externally in convulsions, paralysis, wasting of limbs and other diseases of the nervous system.

1 माषतैलम् । माषातमी यवकूहण्टक कण्टकारी गोकण्ट दुण्ट, क जटा कपिकच्छुतोयैः । कार्पासकास्थि शणवीज कुलत्यकोलकाथेन वस्तिपिशितस्य रसेन चापि । शुण्टा समागधिकया शतपुष्यया च सैरण्डमूल सपुनर्नवया सरण्या । रास्ता बलाभूत लता कटुकैर्विपकं माषाख्यमेतदववाहृहरञ्चतैलम् । अर्द्धाङ्गशोष सपतानक माट्रवातमाक्षेपकं सभुजकम्पशिरः प्रकम्पम् । नखेन वस्तिविधिना परिषेचनेन हृन्त्यात् कटीजघन जातुरुजः समीरात् । भेषज्यरत्नावली ।

A GLOSSARY
OF INDIAN PLANTS
MENTIONED IN SANSKRIT MEDICAL WORKS
WITH BENGALI, HINDI AND LATIN
SYNONYMS.



SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Áchehhuka आच्छुक	Ách, B.	<i>Morinda citrifolia</i> , Linn. and
Ádhaki आदकी	Ál, H. Arhar, B.	<i>Morinda tinctoria</i> , Roxb. <i>Cajanus Indicus</i> , Spreng.
Ádityabhaktá आदित्यभक्ता	Tor, H. Hurhuriá, B.	<i>Syn. Cytisus Cajan</i> , Linn. <i>Cleome viscosa</i> , Linn.
Agasti अगस्ति	Hurhur, H.	<i>Syn. Polanisia icosandra</i> , W. and A.
Agnimantha अग्निमन्थ		See Vaka.
Agnisikhá अग्निशिखा	Ganiári, B.	<i>Premna serratifolia</i> , Linn.
Aguru अगुरु	Arni, Agetha, H.	<i>Syn. Premna spinosa</i> , Roxb.
Ahinsrá अहिंसा		See Lángaliká.
Ahiphena अहिफेन	Agar, B. Agar, H.	<i>Aquilaria Agallocha</i> , Roxb.
Ajamodá अजमोदा	Kántágurkámái, B.	<i>Capparis sepiaria</i> , Linn.
	Áphim, B.	<i>Papaver somniferum</i> , Linn.
	Áphim, H.	Opium poppy.
	Ajmad, H.	<i>Pimpinella involucrata</i> , W. and A.
	Rándhani, B.	<i>Syn. Apium involucratum</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Ākarākarabha अकराकरभ	Ākarkarā, B. H.	Anacyclus Pyrethrum, DC. Pellitory root.
Ākāsamānsi आकाशमांसि		A small variety of Jatāmānsi said to be produced in the Kedār mountain.
Ākāsavalli आकाशवल्ली	Ākāsbel, B. amarbeli, H.	Cassytha filiformis, Linn.
Ākhukarni आखुकर्णी		See Muṣhikaparni.
Ākshoṭa आक्षोट	Ākhrot, H. B.	Juglans regia, Linn.
Alābu अलाब	Lāu, B. Laukā, H.	Lagenaria vulgaris, Sering.
Alarka अलर्क	Mithi tumbi, H. Svetākand, B. Mādār, H.	<i>Syn. Cucurbita lagenaria, Willd.</i> Calotropis gigantea, or procera, R. Br. The varieties with white flowers.
Āmalaki आमलकी	Āmlā, B. Āṇolā, H.	Phyllanthus Emblica. Linn. <i>Syn. Emblica officinalis, Gaert.</i>
Ambashthā अम्बष्टा		See Pāthā.
Ambuṅvetasa अम्बुवेतस	Barabet, B.	Calamus fasciculatus, Roxb. ?*
Amlalonikā आम्ललोनिका	Āmrul sāk, B. H.	Oxalis corniculata, Linn.
Amlāna अम्लान	Lāl gulmakhmal, B.	Gomphrena globosa, Linn.
Amlavetasa अम्लवेतस		See Chukra.

* Roxburgh gives *ambuṅvetasa* as the sanskrit for *Calamus fasciculatus*, but *ambuṅvetasa* means rattan growing in water, while *Calamus fasciculatus* grows in woods and not in marshes. The translation is therefore doubtful. I have not been able to procure the plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Amra	Ám, B.	Mangifera Indica, Linn.
अम्र [haridrā	Ám, H.	The Mango tree.
Ámragandhi-	Ámbahaldi, H.	Curcuma reclinata, Roxb.
अम्रगन्धिहरिद्रा		
Ámrátaka	Ámrá, B.	Spondias mangifera, Pers.
अम्रातक	Ámbrá, H.	Hog plum.
Amritaphala	Náshpáti, H.	Pyrus communis, Linn.
अमृतफल	Nák, Punj.	The pear-tree.
Anantá	Anantamul, B. H.	Hemidesmus Indicus, R. Br.
अनन्ता		<i>Syn. Asclepias pseudosarsa, Roxb.</i>
Anjira	Ánjir, H.	Ficus Carica, Linn. in Bengal,
अञ्जीर		Psidium pomiferum is called anjira in Sanskrit.
Ankoṭa	Dhalákura, B.	Alangium Lamarkii, Thwaites.
अङ्कोट	Dherá, H.	<i>Syn. A. Hexapetalum, Roxb.</i>
Apámarga	Ápáng, B.	Achyranthes aspera, Linn.
अपामार्ग	Latjirá, H.	Also A. bidentata, Bl.
Aparájitá	Aparájitá, B.	Clitoria Ternatea, Linn.
अपराजिता	Visnukránti, H.	
Áragbadha	Sondháli, B.	Cassia fistula, Linn.
आरग्वध	Ámaltás, H.	<i>Syn. Cathartocarpus fistula, Pers.</i>
Aralu,		See Syonáka.
अरलु		
Ádraka	Ádá B.	Zingiber officinale, Rosc.
आर्द्रक	Ádrak, H.	Common ginger.
Arimeda	Guábáblá, B.	Acacia Farnesiana, Willd.
अरिमेद	Gandbábul, H.	<i>Syn. Mimosa Farnesiana, Roxb.</i>
Arjuna	Arjun, B.	Terminalia Arjuna, Bedd.
अर्जुन	Kahú, H.	<i>Syn. Pentaptera Arjuna, Roxb.</i>
Arkamulá	Ishermul, B.	Aristolochia Indica, Linn.
अकमला		
Arka	Ákand, B.	Calatropis gigantea or procera, R. Br.
अर्क	Mádár, H.	<i>Syn. Asclepias gigantea, Willd.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Arkapushpiká	Arkahuli, B.	Gynandropsis pentaphylla, DC.
अर्कपुष्पिका	Sádáhurhuriá, B.	<i>Syn. Cleome pentaphylla, Linn.</i>
Arushkara		See Bhallátaka.
अरुष्कार		
Asana	Piásál, B.	Terminalia tomentosa, W. and A.
असन	Asan, H.	<i>Syn. Pentaptera tomentosa, Roxb.</i>
Ashtāvarga*		
अष्टवर्ग		
Asoka	Asok, B. H.	Saraca Indica, Linn.
अशोक		<i>Syn. Jonesia Asoka, Roxb.</i>
Asthisanhára	Hárjorá, B.	Vitis quadrangularis, Wall.
अस्थिसंहार	Harsankari H.	<i>Syn. Cissus quadrangularis, Linn.</i>
Asvagandhá	Asvagandhá, B.	Withania somnifera, Don.
अश्वगन्धा	Asgandh, H.	<i>Syn. Physalis flexuosa, Roxb.</i>
Asvakarna	Sál, B. H.	Shorea robusta, Gaertn.
अश्वकर्ण		
Asvattha	Asvattha, B.	Ficus religiosa, Linn.
अश्वत्थ	Pipal, H.	<i>Syn. Urostigma religiosum, Gasp.</i>
Atasi	Masiná, B.	Linum usitatissimum, Linn.
अतसी	Tisi, H.	
Atibalá	Pitbalá, B.	Sida rhombifolia, Linn.
अतिबला		

* 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 in stead.

Mahámedá, महामेदा. Sárivá, ,,

Jivaka, जीवक. Guḍuchi, ,,

Rishabhaka, ऋषभक. Vansalochana, ,,

Riddhi, ऋद्धि. Balá, ,,

Viiddhi, वृद्धि. Mahábalá, ,,

Kákoli, काकोली. See under this name.

Kshirakákoli, क्षीरकाकोली. Do. Do.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Ativisha अतिविष	Átis, H. B.	Aconitum heterophyllum, Wall.
Átmaguptá आत्मगुप्ता	Álkusi, B. Kiwanch, H.	Mucuna pruriens, DC. <i>Syn. Carpopogon pruriens, Roxb.</i>
A valguja अबलगुज		See Somaráji.
Ávartani आवर्त्तणि	Átmorá, B. Mararphali, H.	Helicteres Isora, Linn. <i>Syn. Isora corylifolia, Schott et End.</i>
Bádáma बादाम	Bádám, H. B.	Amygdalus communis, Linn. The almond tree.
Badara बदर		SeKol a.
Bahuvára बहुवार	Bahuári, B. Lasorá, H.	Cordia Myxa, Linn. <i>Cordia latifolia, Roxb. Bara Las rá.</i>
Balá बला	Bere!á, B. Khareṭi, Bariár, H.	Sida cordifolia, Linn.
Bálá बाला	Bá!á, H. Sugandha Bálá, H.	Pavonia odorata, Linn.
Bandhuka बन्धुक	Bándhuli, B. Dopohoriá, H.	Pentapetes phœnicea, Linn.
Bhadramunjá भद्रमुञ्जा	Rámsar, B. H.	A variety of Saccharum Munja, Roxb.
Bhadravalli भद्रवलि	Háparmáli, B.	Vallisneria spiralis, Linn. <i>Syn. Echites dichotoma, Roxb.</i>
Bhallátaka भल्लातक	Bhelá, B. Bhiláwá, H.	Semecarpus Anacardium, Linn. The marking nut tree.
Bhándṛira भाण्डीर	Bhánt, B. H.	Clerodendron infortunatum, Linn. <i>Syn. Volkameria infortunata, Roxb.</i>
Bhangá भङ्गा	Siddhi, B. Bháng, H.	Cannabis sativa, Linn. var. Indica. Indian hemp.
Bhantáki भण्टाकी		See Vártáku.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Bháradváji भारद्वाजी		See Vanakárpási.
Bhárgi भार्गी	Bámanháṭi, B. Bhárangi H.	Clerodendron Siphonanthus, R. Br. <i>Syn. Siphonanthus Indica, Lamk.</i>
Bhavya भव्य	Cháltá, B.	Dillenia Indica, Linn. <i>Syn. Dillenia speciosa, Thunb.</i>
Bhringarāja भृङ्गराज [ka]	Bhimrāj, B. Bhánrá, H.	Wedelia calendulacea, Less. <i>Syn. Verbesina calendulacea, Willd.</i>
Bhumichampa- भूमिचम्पक	Bhuichámpá, B.	Kæmpferia rotunda, Linn.
Bhumijambu भूमिजम्बु [nda]	Bhuijáṃ, B.	Premna herbacea, Roxb.
Bhumikushmá- भूमिकृष्णारु	Bhuikunrá, B.	Batatas paniculata, Chois. <i>Syn. Convolvulus paniculatus, Linn</i>
Bhumyámalaki भूम्यामलकी	Bhuiámhá, B. Jarámhá, H.	Phyllanthus Niruri, Linn.
Bhunimba भूनिम्ब		See Kirátatikta.
Bhurjapatra भूर्जपत्र	Bhurjapatra, B. Bhujpatar, H.	Betula Bhojpattra, Wall.
Bhustrina भूस्तृण	Gandhabená, B.	Andropogon Schœnanthus, Linn.
Bhutakesi भूतकेशी [tiká]	Bhutkesi, B. H.	Corydalis Govaniana, Wall.
Bráhmaṇayas- ब्राह्मणयष्टिका	Bámanháṭi, B. Bhárangi, H.	Clerodendron Siphonanthus, R. [Brown. <i>Syn. Siphonanthus Indica, Lamk.</i>
Brahmi ब्रह्मी [ka]	Brihmi sák, B. Barambhi, H.	Herpestes Monnieria, H. B. K. <i>Syn. Gratiola Monnieria, Linn.</i>
Chakramarda- चक्रमर्दक	Chákundiá, B. [H. Panwar, chakaund,	Cassia Tora, Linn. <i>Syn. Senna Tora, Roxb.</i>
Champaka चम्पक	Champá, B. H.	Mihelia 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. See Chandrasura.
Chandriká चन्द्रिका		
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 छिक्कणी	Nákchhikni, B. H.	Centipeda minuta, Benth. <i>Syn. Artemisia sternutatoria, Roxb.</i>
Chichindá चिचिण्ड	Chichingá, B. Cháchenḍa, H.	Trichosanthes anguina, Linn.
China चीन	Chiná ghás, B. Chena, Chin, H.	Panicum miliaceum, Linn.
Chitraka चित्तक	Chitá, B. H.	Plumbago Zeylanica, Linn.
Chobachini चोवचिनि	Chobchini, H.	Smilax China, Linn.
Chorapushpi चोरपुष्पी	Chorkánṭá, B.	Andropogon acicularis, Retz.
Chukra चुक	Chukapálang, B. Chukeká sák, H.	Rumex vesicarius, Linn. Country sorrel.
Dádima दाड़िम	Dálim, B. A'nar, H.	Punica Granatum, Linn. Pomegranate tree.
Dadrughna दद्रुघ्न	Dádmardan, B. H.	Cassia alata, Linn.
Dahu दहू	Mádár, B. Dahu, H.	Artocarpus Lakucha, Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Damanaka दमनक	Doná, B. Daoná, Marwá, H.	Artemisia vulgaris, Linn. <i>Syn. Artemisia Indica, Willd.</i>
Dandálu दण्डालु	Khámálu, B.	Dioscorea alata, Linn.
Dandōtpala दण्डोत्पल	Dánkuni, B.	Canscora decussata, Roem. et Schult. <i>Syn. Pladera decussata, Roxb.</i>
Danti दन्ति	Danti, B. H.	Baliospermum montanum, Mull. Arg. <i>Syn. Croton polyandrum, Roxb.</i>
Darbha दर्भ	Ulu, B. Dábh, H.	Imperata cylindrica, Beauv. <i>Syn. Saccharum cylindricum, Lamk.</i>
Dáruharidrā दारुहार्द्रा	Dáruharidrā, B. Dáruhaldi, H.	Berberis asiatica, DC. Also B. aristata, DC.
Dárvi दाव्वी		See Dáruharidrā.
Devadáru देवदारु	Debdáru, B. Deodár, H.	Cedrus Deodara, Loud. <i>Syn. Pinus Deodara, Roxb.</i>
Devadhánya देवधान्य	Deodhán, B. H.	Sorghum saccharatum, Pers. <i>Syn. Andropogon saccharatus, Roxb.</i>
Devatáda देवताड़	Detára, H. B.	Andropogon serratus, Retz.
Dhanvana धन्वन	Dhámáni, B. H.	See Dharmana.
Dhánya धान्य	Dhán, B. H.	Oryza sativa, Linn. Common rice plant.
Dhányaka धन्याक	Dhane, B. Dhaniá, H.	Coriandrum sativum, Linn. Coriander plant.
Dhárakadamba धाराकदम्ब	Kelikadamba, B. Haldu, H.	Adina cordifolia, Benth. and Hook. <i>Syn. Nauclea cordifolia, Roxb.</i>
Dharmana धर्मन	Dhámáni, H. B.	Grewia elastica, Royle.
Dhátaki धातकी	Dháiphul, B. Dhai, H.	Woodfordia floribunda, Salisb. <i>Syn. Griselea tomentosa, Roxb.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Dhava	Dháoyá, B. H.	Anogeissus latifolia, Wall.
धव [ká]		<i>Syn. Conocarpus latifolia, Roxb.</i>
Dholasamudri-	Dholsamudra, B.	Leea macrophylla, Roxb.
ढोलसमुद्रिका		
Dhustura	Dhaturá, B.	Datura metel, Linn.
धुसुर [ká]	Dhaturá, H.	Also Datura fastuosa, Linn.
Dirghapaṭoli-	Dhundul, B.	Luffa cylindrica, Roem.
दीर्घपटोलिका	Ghiátorai, H.	<i>Syn. Luffa pentandra, Roxb.</i>
Drákshá	Angur, B. H.	Vitis vinifera, Linn.
द्राक्षा		Dried fruits called Kismis.
Dronapushpi	Halkasá, B.	Leucas linifolia, Spreng.
द्रोणपुष्पी	Gumá, H.	<i>Syn. Phlomis Zeylanica, Roxb.</i>
Dugdhiká	Khirai, B.	Oxystelma esculentum, R. Br.
दुग्धिका	Dudhiálatá, B. H.	<i>Syn. Asclepias rosea, Roxb.</i>
Durálabhá	Jawásá, H.	Alhagi Maurorum, DC.
दुरालभा	Duralabhá, B.	<i>Syn. Hedysarum Alhagi, Linn.</i>
Durvá	Durbá, B.	Cynodon Dactylon, Pers.
दूर्वा	Dub, H.	<i>Syn. Panicum Dactylon, Linn.</i>
Elásukshma	Gujrátī eláchi, B.	Elettaria cardamomum, W. et Maton
एलासुक्य	Chhoṭa eláchi, B.	Also Amomum subulatum, Roxb.
Elabáluka	Eluá, H.	A red powder sold under these
ऐलवालुक	Láluká, B.	names ; the seed of some plant.
Eraká	Hoglá, B.	Typha angustifolia, Linn.
एरका	Paṭer, H.	<i>Syn. Typha elephantina, Roxb.</i>
Erandā.	Bherendá, B.	Ricinus communis, Linn.
एरण्ड	Erand, H.	Castor oil plant.
Erváru.	Phooṭ, H.	Cucumis Melo, Linn.
एर्वांड	Phuṭi, B.	<i>Syn. Cucumis Momordica, Roxb.</i>
Gajapippali.	Gajapipal, B. H.	Scindapsus officinalis, Schott.
गर्जापपली		<i>Syn. Pothos officinalis, Roxb.</i>
Gambhári	Gámári, H.	Gmelina arborea, Linn.
गम्भारी	Khambhári, H.	

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Gandagátra गण्डगात्र	Átá, B. [H.	Anona squamosa, Linn.
Gandharája गन्धराज	Sharifá, Sitáphal,	Custard apple.
Gandhatrina गन्धतय	Gandharáj, B.	Gardenia florida, Linn.
Ganikáriká गणिकारिका		See Bhustrina.
Gardhabhándā गर्दभाण्ड	Ganiári, B.	Premna serratifolia, Linn.
Garjara, गर्जर	Arni, H.	<i>Syn. P. spinosa, Roxb.</i>
Gavedhuká गवेधुका	Parespial, B.	Thespesia populnea, Corr.
Ghantápatāli घण्टापटली	Gajahandā, H.	<i>Syn. Hibiscus populneoides, Roxb.</i>
Ghantáravá घण्टारवा	Gájar, H.	Daucus Carota, Linn.
Ghritakumári घृतकुमारी	Gargaredhán, B.	Some species of Coix.
Godhápadi गोधापदी	Ghantáparul, B. H.	Schrebera swietenioides, Roxb.
Godhuma गोधूम	Jhanjhanía, B.	Crotalaria sericea, Retz.
Godumbá गोडुम्बा	Ghritakumári, B.	Aloe Indica, Royle.
Gojihá गोजिहा	Ghikumár, H.	<i>Syn. Aloe perfoliata, Roxb.</i>
Gokshura गोक्षुर	Goálilatá, B.	Vitis pedata, Vahl.
Granthiparna घन्धिपर्ण	Gam, B.	<i>Syn. Cissus pedatus, Lamk.</i>
	Gephu H.	Triticum vulgare, Linn.
	Gomuk, B.	Common wheat.
	Gobhi, H.	Cucumis Melo, Linn. [<i>Roxb.</i>
	Gojílátá, B.	<i>Syn. Cucumis madraspatanus,</i>
	Gokshura, B.	Elephantopus scaber, Linn.
	Gokhuru, H.	Tribulus terrestris, Linn.
	Gáñtálá, B.	<i>Syn. T. lanuginosus, Linn.</i>
	Thiyan, H.	A sort of gall caused by an insect on some tree.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Grishmasunda- यी शसुन्दर [ra Gudatvaka गुडत्वक	Gimásák, B.	Mollugo Spermula, Linn. <i>Syn. Pharnaceum Mollugo, Linn.</i> See Tvacha.
Guḍuchi गुडूची	Gulanča, B.	Tinospora cordifolia, Miers. [Willd.
Guggulu गुग्गुलु	Gurach, H. Guggul, B. H.	<i>Syn. Menispermum cordifolium.</i> Balsamodendron Mukul, Hooker. Also B. pubescens, Stocks.
Gundra गुन्द्र	Gand paṭer, H.	Panicum uliginosum, Roxb.
Gunjś गुञ्जा	Kuñch, B.	Abrus precatorius, Linn.
Guvśka गुवाक	Chirmiṭi, Gunj, H. Supári, H.	Areca Catechu, Linn. The betle nut tree.
Hallaka हल्लक	Guś, B.	Nymphæa Lotus, Linn. <i>Syn. N. rubra, Roxb.</i>
Hapushś हपुषा	Raktakambal, B.	Black stalks like those of black pepper; aromatic.
Harichandana हरिचन्दन	Habush, H.	Yellow variety of sandal wood.
Haridrś हरिद्रा	Pitchandan, B.	Curcuma longa, Roxb.
Haritaki हरीतकी [lśsa	Halud, B.	Terminalia Chebula, Retz.
Hastikarnapa- हस्तिकर्णपलाय	Haldi, H. Haritaki, B.	Chebolic myrobalan. Butea superba, Roxb.
Hastisunadś हस्तिशुण्डा	Har, H.	Heliophytum Indicum, DC. <i>Syn. Heliotropium Indicum, Linn.</i>
Hemapushpikś हेमपुष्पीका	Hătisurś, B.	See Suvarnajuthikś.
Hijjala हिज्जल	Hijjal, B. H.	Barringtonia acutangula, Gaertn. <i>Syn. Eugenia acutangula, Linn.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Hilamochiká	Hinchá, B.	Enhydra Heloncha, D C.
हिलमोचिका	Harhuch, H.	<i>Syn. Hingtsha repens, Roxb.</i>
Hingu	Hing, H. B.	Ferula Assafoetida, Linn.
हिङ्गु		
Hingupatri		The subacid leaves of Balanites
हिङ्गुपत्री		Roxburghii, Planchon, are so called.
Hintála	Hentál, H. B.	Phoenix paludosa, Roxb.
हिनताल		
Hrivera	Bálá, B.	Pavonia odorata, Willd.
ह्रीवेर	Sugandha bálá, H.	
Ikshu	Uk, H.	Saccharum officinarum, Linn.
इक्षु	Ák, B.	
Indraváruni	Indráyan, B	Citrullus Colocynthis, Schrad.
इन्द्रवारुणी	Mákál, H.	<i>Syn. Cucumis Colocynthis, Linn.</i>
Indrayava	Indrajab, H. B.	Seeds of Holarrhena antidysenterica, Wall.
इन्द्रयव		
Ingudi	Hingan, H.	Balanites Roxburghii, Planchon.
इङ्गदो	Inguá, H.	<i>Syn. Ximenia Ægyptiaca, Roxb.</i>
Jalapippali	Pánikánchirá, B.	Commelyna salicifolia, Kunth.
जलपिप्पली	Jalpipari, H.	
Jambira	Jambir nebu, H.	Citrus medica, Linn.
जम्बीर	Goránebu, B.	Citrus acida, Var. 3. of Roxb.
Jambu	Kála jám, B.	Eugenia Jambolana, Lamk,
जम्बु	Jáman, H.	<i>Syn. Syzygium Jambolanum, W. & A.</i>
Jaṭámánsi	Jaṭámánsi, B. H.	Nardostachys Jatamansi, D. C.
जटामांसी	Báluchar, H.	<i>Syn. Valeriana Jatamansi, Jones.</i>
Játi	Chameli, H.	Jasminum grandiflorum, Linn.
जाती	Játi, B.	
Játiphala	Jayphal, B. H.	Myristica officinalis, Linn.
जातिफल		The nutmeg tree.
Javá	Jabá, B.	Hibiscus Rosa-Sinensis, Linn.
जवा	Gudhal, H.	Shoe-flower plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Jayanti जयन्ती	Jayanti, B. H.	Sesbania aculeata, Pers. <i>Syn. Aeschynomene sesban, Roxb.</i>
Jayapála जयपाल	Jayapál, B. Jámalgoṭś, H.	Croton Tiglium, Linn. Croton oil plant.
Jhávuka भावुक	Jháu, B. H.	Tamarix gallica, Linn. <i>Syn. T. Indica, Willd.</i>
Jhingśka झिङ्गाक	Jhingś, B. Torśi, H.	Luffa acutangula, Roxb. <i>Syn. Cucumis acutangulus, Linn.</i>
Jhĩṭi झिण्टी	Jháṭi, B.	Barleria cristata, Linn.
Jingini जिङ्गिनी	Jiol, B. Jingan, H.	Odina Wodier, Roxb.
Jiraka जीरक	Jirś, B. H.	Cuminum Cyminum, Linn. Cummin seeds.
Jivanti जीवन्ती	Jibai, B. Jiba ság, H.	Cælogyne ovalis, Lindl.
Jyotishmati ज्योतिष्मती	Nayáphaṭki, B.	Cardiospermum Halicacabum, Linn.
Kachchi कच्ची	Kachu, B. H.	Colocasia antiquorum, Schott. <i>Syn. Arum Colocasia, Roxb.</i>
Kadali कदली	Kalś, B. Kelś, H.	Musa sapientum, Linn. Var. Musa Paradisiaca, Linn. [Hook
Kadamba कदम्ब	Kadam, B. H.	Anthocephalus Cadamba, Benth, and <i>Syn. Nauclea Cadamba, Roxb.</i>
Kairáta कैरात		See Bhunimba.
Kákśdani काकादानी	Káliakarś, B. Kántśgurkámái, B.	Capparis sepiaria, Linn.
Kákadumbar काकडुम्बर	Toṭmilś, H. Kákḍumar, B, H.	Ficus hispida, Linn. fil. <i>Syn. Ficus oppositifolia, Roxb.</i>
Kákjanghś काकजङ्घा	Kákjanghś, H. B.	Leca hirta, Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kákali काकली	Kákoli, H. B.	A root said to be brought from Nepal or Morung.
Kákamáchi काकमाची	Gurkámái, B. Mako, H.	<i>Solanum nigrum</i> , Linn.
Kákatinduka काकतिन्दुक	Mákrá kendu, B.	<i>Diospyros melanoxydon</i> , Roxb. Also <i>Diospyros tomentosa</i> , Roxb.
Kákaturṇḍi काकतुरण्डी	Kowáḍoḍi, H.	<i>Asclepias Curassavica</i> , Linn. ?
Kakkolaka कक़ोलक	Kákalá, B. H. Sitalchini, H.	Berries containing a black aromatic waxy substance.
Kálakuṭa कालकुट		A sort of Aconite.
Kalambi कलम्बी	Kalmi sák B:	<i>Ipomœa reptans</i> , Poir. <i>Syn. Convolvulus repens</i> , Willd.
Kálanusárivá कालानुसारिवा	Shiulichhop, B.	<i>Limnanthemum cristatum</i> , Griseb. <i>Syn. Menyanthes cristata</i> , Roxb.
Kálasáka कालशाक	Tagarmul, H. B. Narchá, B.	<i>Corchorus capsularis</i> , Linn.
Kaláya कलाय	Ghinalitá, B. Maṭar, B. H.	Jute plant. <i>Pisum sativum</i> , Linn. Common pea.
Kamala कमल	Padma, B. Kamal, H.	<i>Nelumbium speciosum</i> , Willd. The sacred Lotus.
Kámalatá कामलता	Parulatá, B.	<i>Quamoclit vulgaris</i> , Choisy. <i>Syn. Ipomœa Quamoclit</i> , Linn.
Kampillaka कम्पिल्लक [anda]	Kamaláguri, B. Kamilá, Kambilá, H.	<i>Mallotus Philippensis</i> , Mull. Arg. <i>Syn. Rottlera tinctoria</i> , Roxb.
Kánana er- काननरेरण्ड	Páhári erand, H. Bágbherendá, B.	<i>Jatropha Curcas</i> , Linn. The physic nut tree.
Kánchana कान्चन	Kachnár, H. Kánchan, B.	<i>Bauhinia acuminata</i> , Linn.
Kánchanáḍa कान्चनगुड	Rakta Kánchan, B. Kachnár, H.	<i>Bauhinia variegata</i> , Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kanchaṭa	Káchrádám, B.	Commelyna Bengalnsis, Linn.
कञ्चुड	Kánchará, B.	
Kangu	Kangu, korá, B.	Setaria Italica, Kunth.
कङ्ग	Kangni, H.	<i>Syn. Panicum Italicum, Linn.</i>
Kantakári	Kantakári, B.	Solanum xanthocarpum, Schrad.
कण्टकारी	Kaṭái, Kaṭeli, H.	<i>Syn. Solanum Jacquinii, Willd.</i>
Kapikachchhu	Álkusi, B.	Mucuna pruriens, D. C.
कपिकच्छु	Kiwach, H.	<i>Syn. Carpopogon pruriens, Roxb.</i>
Kapittha	Kathbel, B.	Feronia Elephantum, Corr.
कपित्थ	Kaith, H.	The wood apple tree.
Karamardaka	Karamchá, B.	Carissa Carandas, Linn.
करमर्दक	Karaundá, H.	<i>Syn. C. congesta, Wight.</i>
Karanja	Dahar karanja, B.	Pongamia glabra, Vent.
करञ्ज	Kiramál, H.	<i>Syn. Galedupa Indica, Lamk.</i>
Káravella	Karalá, B.	Momordica charantia, Linn.
कारवेल्ल	Kareli, H.	<i>Syn. M. muricata, Willd.</i>
Karavira	Karabi, B.	Nerium odorum, Soland.
करवीर	Kaner, H.	Sweet scented oleander.
Karira	Karil, H.	Capparis aphylla, Roth.
करीर		<i>Syn. Capparis Sodada, R. Br.</i>
Karkaṭaka	Kákrol, B. H.	Momordica mixta, Roxb.
कर्कटक		
Karkaṭasringi	Kákrá sringi, B.	Rhus succedanea, Linn.
कर्कटशृङ्गी	Kákar singi, H.	<i>Syn. R. acuminata, DC.</i>
Karkaṭi	Kákur, B.	Cucumis Melo, Linn.
कर्कटो	Kákri, H.	<i>Syn. Cucumis utilisissimus, Roxb.</i>
Karmaranga	Kámrángá, B.	Averrhoa Carambola, Linn.
कर्मरङ्ग	Kamarakh, H.	Carambola tree.
Karnikára	Kanakchampá, B.	Pterospermum acerifolium, Linn.
कर्णिकार	Kaniár, H.	
Kárpási	Kárpás, B.	Gossypium herbaceum, Linn.
कार्पासी	Ká pás, H.	Cotton plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Karpura कपूर [drá	Karpur, B. Kápur, H.	Cinnamomum Camphora, Nees et Camphor. [Eber.
Karpurahari- कपूरहरिद्रा	Karpurhaldi, H. Ámádá, B.	Curcuma Amada, Roxb. Mango ginger.
Karuná करुणा	Karuná nebu, B.	Citrus medica (variety of).
Kása काश	Kás, B. H.	Saccharum spontaneum, Linn.
Kásamarda कासमर्द्द	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,	Myrica sapida, Wall.
Katrina कत्तृण	Rámkarpura, B. Rohish, H.	A fragrant grass.
Kaṭuká कटुका	Kaṭki, B. Kuṭki, H.	Picrorrhiza Kurroa, Royle.
Kaṭutumbi कटुतुम्बी	Tikta láu, B. Tumbi, H.	Wild variety of Lagenaria vulgaris, Sering.
Kemuka केसुक	Keu, B. Keuá, H.	Costus speciosus, Linn.
Kesarája केशराज	Kesuria, B.	Eclipta alba, Hassk. <i>Syn. E. prostrata and erecta, Linn.</i>
Ketaki केतकी	Keyá, B. Keorá, H.	Pandanus odoratissimus, Linn. fil.
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 खजू र	Khejur, B. Khajur, H.	<i>Phoenix sylvestris</i> , Roxb. Wild date palm.
Kharvújá खर्वुजा	Kharbujá, H.	<i>Cucumis Melo</i> , Linn.
Kinsuka किंशुक		See Palása.
Kirátatikta किरातीतक		A name for <i>chireyta</i> . See <i>Bhunimba</i> .
Kodrava कोद्रव	Kodoá dhán, B. Kodo, H.	<i>Paspalum scrobiculatum</i> , Linn.
Kokanada कोकनद	Rakta kamal, B.	<i>Nelumbium speciosum</i> , Willd. Red variety.
Kokiláksha कोकिलाक्ष	Kantakulika, B. Kuliákhára, B. Tálmakháná, 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 कोशाम्र	Koshám,	<i>Mangifera sylvatica</i> , Roxb.
Koshátaki कोशातकी	Ghoshálatá, B. Karwitarui, H.	<i>Luffa amara</i> , Roxb.
Kovidára कोविदार		See Kánchanara.
Krishnachudá कृष्णचूडा	Krishna churá, 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 कृष्णकेलि [ṭi]	Krishnakeli, B.	<i>Mirabilis Jalapa</i> , Linn.
Kshetraparipa क्षेत्रपर्पटी	Khetpáprá, B. Daman papar, H.	<i>Oldenlandia herbacea</i> , DC. <i>Syn. Oldenlandia biflora</i> , Roxb.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kshirakákoli क्षीरकाकोली		A bulb of the onion tribe brought from the Himalaya.
Kubjaka कुब्जक	Kujá, B. Kujái H.	Rosa moschata, Mill. (variety of.) <i>Syn. Rosa pubescens, Roxb.</i>
Kuchilá कुचिला		See Vishamushti.
Kukubha कुकुभ		See Arjuna.
Kukuradru कुकरद्	Kukursungá, B. Kukkurbandá, H.	Blumea lacera, DC. <i>Syn. Conyza lacera, Burm.</i>
Kuláhala कुलाहल	Koksímá, B.	Celsia Coromandeliana, Roxb.
Kulanjana कुलंजन	Mahábarivach, B. Kulinján, H.	Alpinia Galanga, Linn. <i>Syn. Galanga major, Rumph.</i>
Kulattha कुलथ	Kulthi, B. H.	Dolichos uniflorus, Lamk. <i>Syn. Dolichos biflorus, Roxb.</i>
Kulika कुलिक		See Kokiláksha.
Kumbhiká कुम्भिका	Tákápáná, 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, Linn. also Jasminum hirsutum, Willd.
Kundurú कुन्दुरु	Kundarkhaṭi, H.	Boswellia serrata, Colebr. <i>Syn. B. Thurijera, Colebr.</i>
Kupilu कुपीलु	Kuchilá, B. H.	Strychnos nux vomica, Linn.
Kuruntaka कुरण्टक	Kántájáti, B. Kaṭsareyá, H.	Barleria Prionites, Linn.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Kuruvaka कुरुवक	Raktajhīṭī, H.	Barleria cristata, Linn. Red variety.
Kusa कुश	Kus, B. H.	Poa cynosuroides, Linn.
Kushmāṇḍa कुशमाण्ड	Kumrá, B. Peṭhā, H.	Benincasa cerifera, Savi. <i>Syn. Cucurbita Pepo, Roxb.</i>
Kusumbha कुशुम्भ	Kusamphul, B. Kusum, H.	Carthamus tinctorius, Linn. Safflower.
Kushṭha कुष्ठ	Kur, B. Páchak, Kuṭ, H.	Saussurea auriculata, Bth. et Hf. <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, B. Barhal, Dahu, H.	Artocarpus Lakoocha, Roxb.
Lámajjaka लामज्जक	Lámjak, H.	Andropogon Iwarancusa, Linn.
Lángalika लाङ्गलिका	Bishalánguli, B. Karihári, H.	Gloriosa superba, Linn.
Latákasturiká लताकस्तूरिका	Latákasturi, B. Mushkdáná, H.	Abelmoschus moschatus, Moench. <i>Syn. Hibiscus Abelmoschus, Linn.</i>
Lavali लवली	Loná, B.	Anona reticulata, Linn.
Lavanga लवङ्ग	Lang, H. Langa, B.	Caryophyllus aromaticus, Linn. Cloves.
Lavangalátá लवङ्गलता	Langphul, B.	Luvunga scandens, Ham. <i>Syn. Limonia scandens, Roxb.</i>
Lavani लवणी	Noári, B. Harfarauri, H.	Phyllanthus distichus, Mull. <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.	<i>Portulaca oleracea</i> , Linn.
Madana मदन	Baraluniá, B. H. Madan, B.	Also <i>P. quadrifida</i> , L. <i>Randia dumetorum</i> , Lamk.
Mádhavi माधवी	Mayin, H.	<i>Syn. Posoqueria dumetorum</i> , Roxb.
Madhuka मधूक	Mádhavilatá, B. H.	<i>Hiptage Madhablota</i> , Gaertn. <i>Syn. Gaertnera racemosa</i> , Roxb.
Madhuriká मधुरिका	Mauri, B.	<i>Foeniculum vulgare</i> , Gaertn.
Madhválu मध्वालु	Souf, H.	Fennel seeds.
Mahábalá महाबला	Mauá, B. H.	<i>Dioscorea aculeata</i> , Roxb.
Mahákála महाकाल	Svet berelá, B.	<i>Sida rhomboidea</i> , Roxb.
Mahánimba महानिम्ब	Sahadebi, H.	
Makhánna मखान्न	Mákál, B.	<i>Trichosanthes palmata</i> , Roxb.
Makushṭaka मकुष्टक	Indráyan H.	
Málati मालती	Ghoránim, B.	<i>Melia Azedarach</i> , Linn.
Malliká मल्लिका	Bakáin, H.	<i>Syn. Melia sempervirens</i> , Sw.
Mánaka मानक	Makháná, B. H.	<i>Euryale ferox</i> , Salisb. <i>Syn. Anneslea spinosa</i> , Roxb.
Mandára मन्दार	Maṭ, H.	<i>Phaseolus aconitifolius</i> , Jacq.
	Banmudga, B.	
	Málati, H. B.	<i>Aganosma caryophyllata</i> , G. Don. <i>Syn. Echites caryophyllata</i> , Roxb.
	Malliká, B.	<i>Jasminum Sambac</i> , Ait.
	Bel, H. B.	
	Mán kachu, B.	<i>Colocasia Indica</i> , Schott.
	Mán kand, H.	<i>Syn. Arum Indicum</i> , Roxb.
		See Párijáta.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Manḍukaparnī मण्डुकपर्णी	Thulkuri, B. Brahmamanḍuki, B.	Hydrocotyle Asiatica, Linn.
Manjishṭá मञ्जिष्ठा	Manjishṭá, B. Manjiṭ, H.	Rubia cordifolia, Linn. <i>Syn. R. Munjista, Roxb.</i>
Maricha मरिच	Golmarich, B. Kálimarich, H.	Piper nigrum, Linn. Black pepper.
Márisa मारिष	Natiyá ság, B. Marsá, H.	Amaranthus oleraceus, Linn.
Másha माष	Máshkalái, B. Urid, H.	Phaseolus Roxburghii, W. A. <i>Syn. P. radiatus, Roxb.</i>
Máshaparnī माषपर्णी	Másháni, B. Máshoni, H.	Teramnus labialis, Spreng. <i>Syn. Glycine debilis, Roxb.</i>
Masura मसूर	Masur, B. H. Chholanga nebu, B.	Vicia lens, Benth. <i>Syn. Cicer lens, Roxb.</i> Citrus medica, Linn. var. acida.
Mátulunga मातुलङ्ग	Lál murgá, B.	Celosia cristata, Linn.
Mayurasikhá मयुरसिखा	Kokan, H. Mendi, B.	Lawsonia alba, Lamk.
Mendiká मेन्दिका	Hená, H. Merásingi, B. H.	<i>Syn. L. inermis, Linn.</i> Gymnema sylvestre, R. Br. <i>Syn. Asclepias geminata, Roxb.</i>
Meshasringi मेषशृङ्गो	Methi, B. H.	Trigonella fœnum-græcum, Linn.
Methiká मेथिका	Śnlpha, B. Sowá, H.	Peucedanum Sowa, Bth. & Hf. Dill seeds.
Misreyá मिश्येया	Muchkand, B. H.	Pterospermum suberifolium, Lamk. and P. Heyneanum, Wall.
Muchukunda मुचुकुन्द	Moong, B. H.	Phaseolus Mungo, Linn.
Mudga मुद्गा	Mugáni, B. H.	Phaseolus trilobus, Ait.
Mudgaparnī मुद्गपर्णी		

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Mulaka मूलक	Mulá, B. Muli, H.	Raphanus sativus, Linn. Garden radish.
Munditiká सुखितिका	Murmuriá, B. Gorak mundi H.	Sphceranthus hirtus, Willd. <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 मूषिकपर्णी	Indurkáni, B.	Salvinia cucullata, Roxb.
Mushkaka मुषकक	Ghanṭá párul, B. Banpalás, H.	Schrebera swietenoides, Roxb.
Mustaka मुस्तक	Muthá, B. Mothá, H.	Cyperus rotundus, Linn.
Nágabalá नागबला	Gorakcháuliá, B. Gulsakari, 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 नागकेशर	Nágkesar, B. H.	Mesua ferrea, Linn.
Naganá नगना [taka		See Jautishmati.
Nágara mus- नागरमुस्तक	Nágarmuthá B. H.	Cyperus pertenuis, Roxb.
Nágaraṅga नागरङ्ग	Kamlá nebu, B. Nárángi, H.	Citrus Aurantium, Linn. The sweet orange.
Nágavalli नागवल्ली	Pán, B. H.	Piper Betle, Linn. <i>Syn. Chavica Betle, Miq.</i>
Náktamála नक्तमाल		See Karanja.
Nákuli 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.
Nāla	Nal, B.	Phragmites Karka, Trin.
नल	Narkul, H.	<i>Syn. Arundo Karka, Retz.</i>
Nāli	Mestápāt, B.	Hibiscus cannabinus, Linn.
नाली	Nālitā, H.	
Nalikā	Nalipaṭāri, H.	A red bark used in scenting medicinal oils.
नलिका		
Nandi vriksha	Tun, B. H.	Cedrela Toona, Roxb.
नन्दीवृक्ष		
Nādika	Pāt, B. H.	Corchorus olitorius, Linn.
नाडीक		Jute plant.
Nārikela	Nārikel, B.	Cocos nucifera, Linn.
नारिकेल	Nārial, H.	Cocoa-nut palm.
Navamālikā	Nabamallikā, B.	Jasminum Sambac, Linn.
नवमालिका	Motiā, H.	Double flowered Jasmine.
Nidigdhikā		See Kanṭakāri.
निदिग्धिका		
Nilā	Nil, B. H.	Indigofera tinctoria, Linn.
नील		Indigo plant.
Nilakamala		Blue Lotus ?
नीलकमल		
Nilotpala	Nilsāplā, B.	Nymphaea stellata, Linn.
नीलोत्पल	Nilofar, H.	var. cyanea, Hf. & T.
Nimba	Nim, B. H.	Melia Azadirachta, Linn.
निम्ब		<i>Syn. Azadirachta Indica, Juss.</i>
Nimbuka	Kāgjinembu, H. B.	Citrus medica, Linn. var. acida.
निम्बुक		
Nirgundi	Nisindā, B.	Vitex Negundo, Linn.
निर्गुण्डी	Sambhālu, H.	
Nirvishā	Nirbishi, B. H.	Kyillingia monocephala, Linn.
निर्विषा		
Nisā	Halud, B.	Curcuma longa, Linn.
निशा	Haldi, H.	Turmeric plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Nishpáva निष्पाव	Barbaṭi, B.	Vigna catjang, Endl.
Nivára निवार	Lobia, H.	<i>Syn. Dolichos sinensis, Linn.</i>
Nyagrodha न्यग्रोध	Uridhán, B.	Wild variety of <i>Oryza sativa</i> , Linn.
Olla ओल्ल	Ol, B. H.	See Vata. [Blume.
Padma पद्म	Jimikand, H.	Amorphophallus campanulatus,
Padmachárinī पद्मचारिणी	Padma, B. H.	<i>Syn. Arum campanulatum, Roxb.</i>
Padmakáshṭa पद्मकाष्ठ		<i>Nelumbium speciosum, Linn.</i>
Paláṇḍu पलाण्डु		See Sthala padma.
Pálankī पालङ्की	Padmakáshṭa, B.H.	A fragrant wood resembling toon brought from Malwa or Southern India.
Palása पलाश	Piáj, B. H.	Allium Cepa, Linn.
Panasa पनस [ni	Pálang ság, B.	Common onion.
Párasikayamá- पारसोक्तयमानो	Pálankī, H.	Beta maritima, Linn.
Párijáta पारिजात	Palás, B.	<i>Syn. B. Bengalensis, Roxb.</i>
Párisa पारिश	Dhák, H.	<i>Butea frondosa, Roxb.</i>
Paṛkaṭī पर्कटी	Káñṭál, B.	Artocarpus integrifolia, Linn.
Parpaṭa पर्पट	Kathar, H. [H.	Indian jack-tree.
	Khurásáni jamáni,	Seeds of <i>Hyoscyamus niger</i> , Linn.
	Pálitá mandár, B.	<i>Erythrina Indica, Lamk.</i>
	Pharhad, Pangrá, H.	Coral tree.
	Palás pipal, B.	<i>Thespesia populnea, Corr.</i>
	Pares pipal, H.	<i>Syn. Hibiscus populneooides, Roxb.</i>
	Pákur, B.	<i>Ficus infectoria, Willd.</i>
	Pakhar, H.	See Kshetraparpati.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Parusha	Phalsá, B.	Grewia Asiatica, Linn.
परुष [dana	Pharsá H.	
Páshán abhe-	Háthájori, B. H.	Selaginella imbricata, spring.
पाषाणभेदन		<i>Syn. Lycopodium imbricatum, Roxb.</i>
Páshánabhedí	Páthor chur, B. H.	Coleus Amboinicus, Lour.
पाषाणभेदो		<i>Syn. C. aromaticus, Benth.</i>
Pátalá	Páruł, B.	Stereospermum suaveolens, DC.
पाटला	Pár, H.	<i>Syn. Bignonia suaveolens, Roxb.</i>
Páthá	Ákanádi. B.	Stephania hernandifolia, Walp.
पाठा	Nemuká, B.	<i>Syn. Cissampelos hernandifolia, Linn.</i>
Pathyá		See Haritaki.
पथ्या		
Paṭola	Paṭol, B.	Trichosanthes dioica, Roxb.
पटोल	Palwal, H.	
Pattanga	Bakam, B.	Cæsalpinia Sappan, Linn.
पत्तङ्ग	Pattang, B.	
Phenila	Riṭhá, H. B.	Sapindus trifoliatus, Linn.
पेषिल		<i>Syn. Sapindus emarginatus, Vahl.</i>
Pilu	Pilu, B. H.	Salvadora Persica, Linn.
पिलु		<i>Syn. Salvadora Indica. Wight.</i>
Pinḍakharjura	Pinḍakhejur, H. B.	Phoenix dactylifera, Linn.
पिण्डखर्जुर		The date palm.
Pinḍálu	Chupriálu, B.	Dioscorea globosa, Roxb.
पिण्डालु		
Pinḍára	Pinḍára, H.	Trewia nudiflora. Linn.
पिण्डार	Piṭáli, B.	
Pippali	Pipul, B.	Piper longum, Linn.
पिपपली	Pipal, H.	<i>Syn. Chavica Roxburghii, Miq.</i>
Piyála	Piyál, B.	Buchanania latifolia, Roxb.
पियाल		The nuts are called Cheraunji.
Plaksha		See Parkaṭi.
प्लक्ष		

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Práchinámalaka	Paniáśá, B.	Flacourtia cataphracta, Roxb.
प्राचीनामलक	Pániámlak, H.	
Prapaunḍarika	Panderiá, H.	Root-stock of Nymphæa Lotus, Willd.
प्रपाण्डरीक		
Prasárani	Gandhabháduliá, B.	Pæderia foetida, Linn.
प्रसारणी	Khip, Gandháli, H.	
Prikká	Piring sák, B.	See Sprikká.
प्रका	Chini, H.	
Prisniparni	Piṭvan, H.	Uraria lagopodioides, DC.
प्रस्नीपर्णी	Chákulia, B.	<i>Syn. Doodia lagopodioides, Roxb.</i>
Priyangu	Priangu, B. H.	Aglaia Roxburghiana, W. A.
प्रियङ्गु		
Puga		See Guváka.
पुग		
Punarnavá	Punarnabá, B.	Boerhaavia diffusa, Linn.
पुनर्नवा	Sánt, H.	<i>Syn. B. procumbens and erecta.</i>
Punḍarika	Svetpadma, B. H.	Nelumbium speciosum, Willd. white variety.
पुण्डरीक		
Punnága	Punnág. B.	Calophyllum inophyllum, Linn.
पुन्नाग	[la Poláng, Oorya.	
Pushkaramu-	Pohokarmuly. H.	This root is not available ; the root, of Aplotaxis auriculata is substituted for it.
पुष्करमूल		
Putiká	Puisák, B.	Basella rubra, Linn.
पुतिका	Poi, H.	
Putikaranja	Nátá, B.	Guilandina Bonducella, Linn.
पुतिकरञ्ज	Kaṭkaraunj, H.	<i>Syn. Cæsalpinia Bonducella, Flem.</i>
Putranjiva	Jiáputa, H. B.	Putranjiva Roxburghii, Wall.
पुत्रञ्जीव		<i>Syn. Nageia Putranjiva, Roxb.</i>
Rági	Maruá, B.	Eleusine corocana, Gaertn.
रागी	Mandúá, Rági, H.	
Rájádani	Khirkhejur, B.	Mimusops Indica, DC.
राजादनी	Kshiri, H.	<i>Syn. Mimusops hexandra, Roxb.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Rájakoshátaki	Dhundul, B.	Luffa cylindrica, Roem.
राजकोषातकी	Ghiátarui, H.	<i>Syn. Luffa pentandra, Roxb.</i>
Rája másha	Barbaṭi, B.	Vigna sinensis, Savi.
राजमाष	Lobiá, H.	<i>Syn. Dolichos sinensis, Linn.</i>
Rajanigandhá	Rajanigandha, B.	Polyanthes tuberosa, Linn.
रजनीगन्धा	Gulshabbá, H.	Tube-rose.
Rájasarsapa	Ráisarísá, B.	Brassica juncea, Hf. and T.
राजसर्षप	Rái, H.	<i>Syn. Sinapis ramosa, Roxb.</i>
Raktachanda-	Raktachandan, B.	Pterocarpus santalinus, Linn.
रक्तचन्दन	Lálchandan, H.	Red sandal wood.
Raktachitraka	Lálchitá, B. H.	Plumbago rosea, Linn.
रक्तचित्रक		
Raktálu	Rángálu, B.	Dioscorea purpurea, Roxb.
रक्तालु	Ratálu, H.	
Raktotpala	Raktakambala, B.	Nymphœa Lotus, Linn.
रक्तोत्पल		<i>Syn. N. rubra, Roxb.</i>
Randá		See Mushikaparni.
रन्दा		
Rásná	Rásná, B. H.	Vanda Roxburghii, R. Br.
रास्ना		<i>Syn. Cymbidium tessaloides, Roxb.</i>
Rasonaka	Rasun, B.	Allium sativum, Linn.
रसोनक	Lahasun, H.	Garlic.
Renuká	Renuká, B.	Piper aurantiacum, Wall. ; probably.
रेणुका		
Rohitaka	Tiktaráj, B.	Amoora Rohituka, W. and A.
रोहितक	Harinhará H.	<i>Syn. Andersonia Rohituka, Roxb.</i>
Rudráksha	Rudráksha, B.	Elæocarpus Ganitrus, Roxb.
रुद्राक्ष [ya	Rudrákh, H.	
Sailaja, Saile-	Chharilá, H.	A species of Lichen.
शैलज शैलेय		
Saivála	Seyálá, B.	Blyxa octandra, Rich.
शैवाल	Sivál, H.	<i>Syn. Vallisneria octandra, Roxb.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sáka शाक	Segun, B. H.	<i>Tectona grandis</i> , Linn. fil. Teak tree.
Sákhoṭaka शाखोटक	Syáorá, B. H.	<i>Streblus asper</i> , Lour.
Sála शाल	Siorá H.	<i>Syn. Trophis aspera</i> , Retz.
Sálaparni शालपर्णी	Sál, B. H.	<i>Shorea robusta</i> , Gaertn.
Sálincha शालिञ्च	Sákhu, H.	<i>Desmodium gangeticum</i> , Burm.
Sallaki शल्लकी	Sálpáni, B.	<i>Syn. Hedysarum gangeticum</i> , Linn.
Sálmali शालमली	Sarivan, H.	<i>Alternanthera sessilis</i> , R. Br.
Sáluka शालुक	Sánchi, B.	<i>Syn. Achyranthes triandra</i> , Roxb.
Sami शमी	Salái, B. H.	<i>Boswellia serrata</i> , Colebr.
Sánkhalu शान्कलु	Simul, B.	<i>Bombax Malabaricum</i> , DC.
Sana शन	Semal, H.	<i>Syn. B. heptaphylla</i> , Cav.
Sanapushpi शनपुष्पी	SáluK, B.	Roots of different species of <i>Nymphaea</i> .
Sankhálu शङ्खालु	Sáin, B.	<i>Acacia Suma</i> , Ham.
Sankhapushpi शङ्खपुष्पी	Chhikura, H.	<i>Syn. Mimosa Suma</i> , Roxb.
Saptachhada सप्तच्छद	San, B. H.	<i>Crotalaria juncea</i> , Linn. Indian hemp.
Sara शर	Bansanui, B.	<i>Crotalaria verrucosa</i> , Linn.
Sarala शरल	Sanhuly, B.	<i>Pæchyrrhizus angulatus</i> , Rich.
	Sáṅkálu, B.	<i>Syn. Dolichos bulbosus</i> , Linn.
	Dánkuni, B.	<i>Canscora decussata</i> , R. et. Sch.
	Sankhahuli, H.	<i>Syn. Pladera decussata</i> , Roxb.
	Chhátin, B.	<i>Alstonia scholaris</i> , R. Br.
	Chhátían, H.	<i>Syn. Echites scholaris</i> , Roxb.
	Sar, B.	<i>Saccharum Sara</i> , Roxb.
	Rámsar, H.	Pen reed grass.
	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>
Sárivá शरिवा	Syámlatá, B.	Ichnocarpus frutescens, R. Br. <i>Syn. Echites frutescens. Roxb.</i>
Sarpagandhá सर्पगन्धा	Chandrá, B.	Ophioxylon serpentinum, Linn.
Sarpákshi सर्पाक्षि	Gandhanákuli, B.	Ophiorrhiza mungos, Willd.
Sarshapa सर्शप	Sarahaṭi H. Sarisá, B.	A common name for mustard seeds.
Sarvajayá सर्वजया	Sarson, H. Sarabajayá, B.	Canna Indica, Linn. Indian shot.
Satamuli शतमूली	Satábari, B.	Asparagus racemosus, Willd.
Satapatri शतपत्री	Satávar, H. Seuti, H. B.	Rosa moschata, Mill. <i>Syn. R. glandulifera, Roxb.</i>
Satapushpi शतपुष्पी		See Misreyá.
Saṭi शटी	Karchur, H. Saṭi, B.	Curcuma Zerumbet, Roxb.
Satilá सतीला	Maṭar, H. B.	Pisum sativum, Linn.
Saureya शौर्य	Suklajhinti, B.	See Jhinti.
Selu शेलू	Bahubára, B. Lasorá, H.	Cordia Myxa, Linn.
Sepháliká शेफालिका	Seuli, B. Harsingár, 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		See Sobhánjana.
शिग्रु		
Silhaka	Silha, Siláras, B.	Liquidamber orientalis, Miller.
सिल्हक	Nágorigond, H.	Liquid storax.
Simbi	Sim, B.	A name for several species of Dolichos.
शिम्बी		
Sindhuvára	Nishindá, B.	Vitex Negundo, Linn.
सिन्धुवार	Sambhál, H.	
Sinsapá	Sisu, B. H.	Dalbergia Sissoo, Roxb.
सिंशपा		
Sirisa	Siris, B. H.	Albizzia Lebbek, Benth.
शिरोष		<i>Syn. Mimosa sirissa, Roxb.</i>
Sitalapatriká	Muktápáti, B.	Maranta dichotoma, Wall.
शीतलपत्रिका	Sitalpátiṛ gách, B.	<i>Syn. Phrynium dichotomum, Roxb.</i>
Sitali		
शीतली		See Kálánusárivá.
Snuhi	Mansá sij, B.	Euphorbia neriifolia, Linn.
सुही	Thohar, H.	<i>Syn. E. ligularia, Roxb.</i>
Sobhánjana	Sajiná, B. H.	Moringa pterygosperma, Gaertn.
शोभाञ्जन	Sahinjan, H.	<i>Syn. Hyperanthera moringa, Willd.</i>
Somalatá	Somlatá B. H.	Sarcostemma brevistigma, W. A.
सोमलता		<i>Syn. Asclepias acida, Roxb.</i>
Somaráji	Somráj, B.	Vernonia anthelmintica Willd.
सोमराजि	Bákuchi H.	<i>Syn. Serratula anthelmintica, Roxb.</i>
Sprikká	Piring sák, B.	Trigonella corniculata, Linn.
स्पृक्का	Lankáyiká H.	
Sribáasa	Gandhabirajá, H. B.	Resin of Pinus longifolia, Roxb.
श्रीवास [ka		
Srigálakanta-	Siál káṇṭá, B.	Argemone Mexicana, Linn.
शृगालकराटक		
Srigálakoli	Siákul, B.	Zizyphus onoplia, Mill.
शृगालकोलि		

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Sringáṭaka शृङ्गाटक	Pániphal, B. Singhára H,	Trapa bispinosa, Roxb.
Sringi शृङ्गी		See Karkāṭasringi.
Sriphala श्रीफल		See Vilva.
Sth alapadma स्थलपद्म	Sthalpadma, B. Sthalkamal, H.	Hibiscus mutabilis, Linn.
Sthauneya स्थोनेय		See Grinthiparni.
Sthulailá स्थूलैला	Baraeláchi, B. H,	Amomum subulatum, Roxb.
Sudarsana सुदर्शन	Padma gulancha. B.	Tinospora tomentosa, Miers. <i>Syn. Menispermum tomentosum, Roxb.</i>
Sunandá सुनन्दा	Ishermul, B.	Aristolochia Indica, Linn.
Sunisannaka सुनिसन्नक	Sunsuniá, B.	Marsilea quadrifolia, Linn.
Suraua सुरण	Chaupatte, H. Ol, B. H.	[Blume. Amorphophallus campanulatus,
Surjamani सूर्यमणि	Jimikand, H. Surjamani, B.	<i>Syn. Arum campanulatum, Roxb.</i> Hibiscus phœniceus, Willd.
Surjávarta सूर्यवर्त	Hurhuriá, B. Hul hul, H.	Gynandropsis pentaphylla, DC. <i>Syn. Cleome pentaphylla, Linn.</i>
Sushavi सुषवी	Shiá jirá, H.	Carum Carui, Linn.
Sushavi सुषवी	Uchchhe, B. Karelá, H.	Momordica Charantia, Linn. <i>Syn. Momordica muricata, Willd.</i>
Svarnajuthiká स्वर्णयुधिक्ता	Svarnajui, B.	Jasminum revolutum, Sims. <i>Syn. J. chrysanthemum, Roxb.</i>
Svarnakshiri स्वर्णक्षीरी	Chos, Chok, H.	Cleome felina, Linn. f. <i>Syn. Polanisia felina. DC.</i>

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Syámáka श्यामाक	Syámá dhán, B. Samak, H.	<i>Panicum frumentaceum</i> , Roxb.
Syámalatá श्यामलता	Syámalatá, B.	<i>Ichnocarpus frutescens</i> , R. Br. <i>Syn. Ecthes frutescens</i> , Roxb.
Syonáka श्योनाक	Soná, B. Arlu, H.	<i>Calosanthos Indica</i> , Bl. <i>Syn. Bignonia Indica</i> , Linn.
Tagara तगर	Tagar, B. Chándni, H.	<i>Tabernæmontana coronaria</i> , Linn.
Tála ताल	Tál, H. B.	<i>Borassus flabelliformis</i> , Linn.
Tálamuli तालमूली	Mushali, H. Tál muli, B.	<i>Hypoxis orchioides</i> , Kurz. <i>Syn. Curculigo orchioides</i> , Gaertn.
Tálisapatra तालीशपत्र	Tálispatra, B.	<i>Pinus Webbiana</i> , Lindl. <i>Syn. Abies Webbiana</i> , Loud.
Tamála तमाल	Tamála, B. H.	<i>Garcinia Xanthochymus</i> , Hook. f. Also a name for <i>Cinnamomum Tamala</i> , Nees.
Támbula तांबुल	Pán, B. H. Támbuli, H.	<i>Piper Betle</i> , Linn. <i>Syn. Chavica Betle</i> , Miq.
Támrakuṭa ताम्रकुट	Támák, B. Támbáku, H.	<i>Nicotiana Tabacum</i> , Linn. Tobacco plant.
Tandūliya * तण्डुलीय	Chámpá naṭiá, B. Cholái, H.	<i>Amaranthus polygamus</i> , Willd.
Tankári टङ्कारी	Tekári, B. Tepuriá, B.	<i>Physalis Peruviana</i> , Linn. <i>Syn. P. edulis</i> , Sims.
Tarambuja तरम्बुज	Tarmuj, B. Tarbuz, H.	<i>Citrullus vulgaris</i> , Schrad. <i>Syn. Cucurbita Citrullus</i> , Roxb.
Taruni तरुणी	Seuti, 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 *Amaranthus spinosus*, Linn. under the name of Tandulia.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Tila तिल	Til, B. H.	Sesamum Indicum, Linn. <i>Syn. S. orientale, Linn.</i>
Tindisa टिण्डिश	Dheras, B. Rámtarui, H.	Hibiscus esculentus, Linn. <i>Syn. H. longifolius, Roxb.</i>
Tinduka तिन्दुक	Gáb, B. H.	Diospyros Embryopteris, Pers. <i>Syn. D. glutinosa, Kœnig.</i>
Tinisa तिनिश	Sandan, H. Tinis, B.	Ougenia dalbergioides, Benth. <i>Syn. Dalbergia oojeinensis, Roxb.</i>
Tintiri तिन्डिरी	Tentul, B. Imli, Amli, H.	Tamarindus Indica, Linn. Tamarind tree.
Trapusa त्रपुष	Khirá, H. Sasá, B.	Cucumis sativus, Linn.
Tráyamáná त्रायमाना	Balábahulá, B. Balálatá, B.	Ficus heterophylla, Linn. fil.
Tripuṭi त्रिपुटी	Khesári, H. B.	Lathyrus sativus, Linn.
Trivrit त्रिवृत्	Teori, B. Nisoth, Turbud, H.	Ipomœa Turpethum, R. Br. <i>Syn. Convolvulus Turpethum, Linn.</i>
Tuda, Tula तूद तूल	Tut, B. H. Tutri, H.	Morus Indica, Linn. <i>Syn. M. parvifolia, Royle.</i>
Tulasi तुलसी	Tulsi, B. H.	Ocimum sanctum, Linn.
Tumburu तुम्बुरु	Tumru, H. Nepálihaniá, B.	Zanthoxylum alatum, Roxb. <i>Syn. Z. hostile, Wall.</i>
Tunna तुन्न	Tun, B. H.	Cedrela Toona, Roxb.
Tvacha त्वच	Dálchini, B. H. Tvach, H.	Cinnamomum Zeylanicum, Breyn.
Udumbara उदुम्बर	Jagna dumar, B. Gular, H.	Ficus glomerata, Willd. <i>Syn. Covellia glomerata, Miq.</i>
U shira उशीर	Benámul, B. Khas khas, H.	Andropogon muricatum, Retz. The root is so called.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Utpala उत्पल		See Nilotpala.
Vach á वचा	Bach, H. B.	Acorus Calamus, Linn.
Vajri वज्री	Tekátásij, B.	Euphorbia antiquorum, Linn.
Vaka वक	Bak, B. H. Agasti, H.	Sesbania grandiflora, Pers. <i>Syn. Aeschynomene grandiflora, Roxb.</i>
Vákuchi वाकुची		See Somaráji.
Vakula वकुल	Bakul, B.	Mimusops Elengi, Linn.
Vanaharidrá वनहरिद्रा	Banhalud, B.	Curcuma aromatica, Salisb. <i>Syn. Curcuma Zedoaria, Roxb.</i>
Vanakárpása वनकार्पाश	Bankápás, B.	Hibiscus vitifolius, Linn.
Vanamalliká वनमल्लिका	Banmalliká, B. H.	Jasminum Sambac, Ait.
Vana methiká वनमेथिका	Banmethi, B. H.	The single flowered variety. Melilotus parviflora, Desf. <i>Syn. Trifolium Indicum, Willd.</i>
Van ádraka वनार्द्रक	Banádá, B. H.	Zingiber Cassumunar, Roxb.
Vanayamáni वनयमानि	Bonjoán, B.	Seseli Indicum, W. A. <i>Syn. Cnidium diffusum, DC.</i>
Vandáka वन्दाक		See Rásná.
Vansa वंश	Báns, B. H.	Bambusa arundinacea, Retz.
Vansarochaná वंशरोचना	Bansa lochan, B. Tabá sir, H.	Bamboo manna.
Varáhakrańtá वाराहकान्ता	Lájak, B. Lajjá vati, H.	Mimosa pudica, Linn. The sensitive plant.

SANSKRIT.	VERNACULAR.	SCIENTIFIC NAMES.
Vársiki वार्षिकी	Bel, H. B.	Jasminum Sambac, Ait. [see. Also a name for Triyamáná, which
Vártáku वार्त्ताकु	Begun, B.	Solanum Melongena, Linn.
Varuna वरुण	Bhantá, H.	Cratæva religiosa, Forst.
Varvara वर्वर	Barun, B.	<i>Syn. Capparis trifoliata, Roxb.</i>
Vavula ववुल	Barná, H.	Ocimum Basilicum, Linn.
Vásaka वासक	Bábuitulsi, B.	<i>Syn. O. pilosum, Willd.</i>
Vásphiká वाष्पिका	Bábul, H.	Acacia Arabica, Willd.
Vástuka वास्तुक	Báblá, B.	
Vata वट	Bábul, H.	Justicia Adhatoda, Roxb.
Vetasa, Vetra वेतस वेल	Bákas, B.	<i>Syn. Adhatoda Vasica, Nees.</i>
Vibhitaka विभितक	Arushá, H.	Pimpinella involucrata, Wight.
Viḍāṅga विडङ्ग	Rándhuni, B.	<i>Syn. Apium involucratum, Roxb.</i>
Vidári विदारी	Bethuá sák, B. H.	Chenopodium album, Linn.
Vijapuraka वीजपूरक	Bar, H. B.	Ficus Bengalensis, Linn.
Vijayá विजया	Bet, B. H.	<i>Syn. F. Indica, Roxb.</i>
Vikankata विकङ्कत	Bahera, H. B.	Calamus Rotang, Linn.
	Biranga, B.	<i>Syn. C. Roxburghii, Griff.</i>
	Báberang, H.	Terminalia Bellerica, Roxb.
	Bhumi kumra, B.	Embelia Ribes, Burm.
	Bilái kand, H.	<i>Syn. E. glandulifera, Wight.</i>
	Tábá nebu, B.	Batatas paniculata, Choisy.
		<i>Syn. Convolvulus paniculatus, Linn.</i>
		Citrus Medica, Linn. var.
		See Bhangá.
	Baiñch, B.	Flacourtia Ramontchi, L'Hert.
	Kantái, H.	<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>Coccinea Indica</i> , W. A. <i>Syn. Momordica monodelpha</i> , Roxb.
Virana वीरण	Bená, B. Khas khas, H.	<i>Andropogon muricatum</i> , Retz.
Visha विष	Sringi bish, B. Dagrá bish, H.	<i>Aconitum ferox</i> , Wall.
Visalyakrit विशल्यकृत्	Hápar máli, B.	<i>Vallis dichotoma</i> , Wall. <i>Syn. Echites dichotoma</i> , Roxb.
Visamushṭi विषमुष्टि		<i>Strychnos nux vomica</i> , Linn.
Vitkhadira विटखदिर	Guá báblá, B.	<i>Acacia Farnesiana</i> , Willd. <i>Syn. Mimosa Farnesiana</i> , Linn.
Vridhadáarak वृद्धदारक	Bijtarká, B.	<i>Argyreia speciosa</i> , Swt. <i>Syn. Lettsomia nervosa</i> , Roxb.
Vrihati वृहती	Byákur, B. Gurkámái, B.	<i>Solanum Indicum</i> , Linn.
Vrischikáli वृश्चिकाली	Barhanṭá, H. Bichaṭi, B.	<i>Tragia involucrata</i> , Jacq.
Yajnadumbur यज्ञडम्बुर		See Udumbara.
Yamáni यमाणी	Joán, B. Ájwán, H.	<i>Ptychotis Ajowan</i> , DC, <i>Syn. Ligusticum Ajowan</i> , Flem.
Yashṭimadhu यष्टीमधु	Ja shtimadhu, B. Jeṭi madhu, H. Mulhaṭṭi, H.	<i>Glycyrrhiza glabra</i> , Linn.
Yava यव	Jab, B. Jav, H.	<i>Hordeum hexastichum</i> , Linn.
Yávanála यावनाल	Joár, H.	<i>Andropogon Sorghum</i> , Roxb. <i>Syn. Holchus Sorghum</i> , Linn.
Yuthiká यूथिका	Juiṇ, B. Juthi, H.	<i>Jasminum auriculatum</i> , Vahl.

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ERRATA.

Page	27, line	28,	for "Reduced mercury,"	read "prepared mercury."
"	97, "	1,	for "SANSKRIT MATERIA MEDICA,"	read "THE MATERIA MEDICA OF THE HINDUS."
"	30, "	13,	for "Phyllanthus neruri,"	read "Phyllanthus Niruri."
"	40, "	19,	for "Vitex nigundo,"	read "Vitex Negundo."
"	102, "	16,	for "Mugrelá,"	read "Magrelá."
"	171, "	12,	for "Cucumis sativa,"	read "Cucumis sativus."
"	198, "	28,	for "of ous,"	read "of our."
"	198, "	31,	for "about Manbhom,"	read "about Mánbhum."
"	208, "	20,	for "Var. Jacquinis,"	read "Var. Jacquinii."
"	218, "	13,	for "Ghambhári,"	read "Gambhári."
"	320, "	3,	for "Echtes frutescens,"	read "Echites frutescens."

THE END.

NIDÁNA: A SANSKRIT SYSTEM OF PATHOLOGY.

TRANSLATED INTO BENGALI

By UDOY CHAND DUTT,

CIVIL MEDICAL OFFICER.

EXTRACTS FROM REVIEWS.

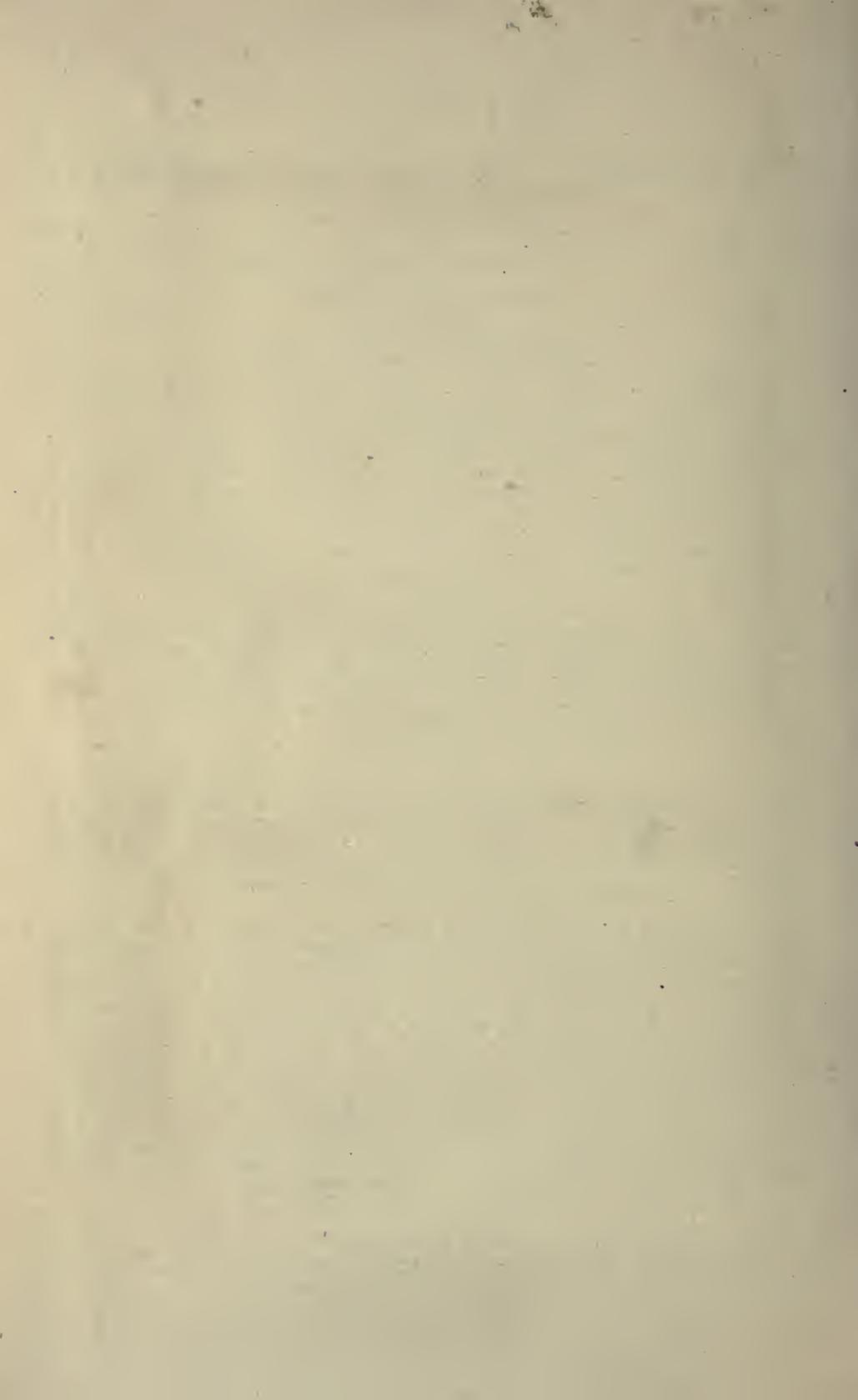
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