CHAPTER II
SIDDHA SYSTEM

Siddha system is known to be one of the most ancient systems of medicine in India which was spiritually enriched by the Siddhars.¹ “Siddha Medicine or ‘Siddham’² is not purely a medical system for curing the physical body, it is a way of life formulated by Siddhars through their vision and realization for getting peace for the mind, health for the physical body and purity for the soul. Siddhars through their great powers like Attmasiddhikal and through immense prayers realized the fact that soul which is ultimately a part of the Supreme is like a drop of water from sea”.

“Ever since the Human life existed on the Earth, they lived with other living being, such as plants and creatures side by side. Whenever human body is affected with illness on earth, there exists method of curing also against the illness or diseases. The Primordial Guru or Agasthiyar is

the Father of Siddha Medicine. The Siddhars did various research works on Mother Nature and formulated excellent medicines prepared from plants, animals and minerals. The action and medicinal uses of the plants were realized by them through their eminent mental and spiritual power. They formulated the medicines from the herbs thousands of years ago which are still used in the same way without any expiry in their medicinal value.  

Siddha system of medicines are formulated and prepared by the Siddhars thousands of years ago after undergoing various research work on flora, fauna and the rich mineral resources of Mother Earth. The medicines are enriched with prayers and power which not only cures the diseases but also provides peace to the mind and spirituality to the soul. They considered it on a divine system of medicine. It is a treasure of numerous medicines. The medicines which are available today are very few as many of them are still hidden either in the hands of traditional families or unknown to the present Siddha generation. However, the medicines range from

simple preparations like juice of a herb to the higher medicines like parpam and chendooram which can be preserved life-long. The methods of preparation and purification of raw drugs are the very important aspect. A siddha physician can be successful only if he understands these techniques. The most interesting fact about Siddha medicines is that all these preparatory methods are explained by the Siddhars in the form of tamil verses or poems. These verses are not very easy to de-code as it needs a good knowledge in ancient Tamil language and also the grace of Siddhars which is very important in order to realize them. This is one of the reasons why Siddha medicines have not been widely established so far.4

Siddha system of Medicine is the most ancient of all medical systems. The origin of this system dates back to thousands of years before Christ. Tamil language is said to be the most ancient language as per the research work done in manuscripts. Tamilnadu is considered as the home of Siddhars from where this primordial civilization and

medical system evolved. The excavations done in Harappa and Mohenjo-daro also reveal the existence of a civilization and medical system. In other words, Siddha can be described as a way of life which brought unity, peace and harmony in earth.5

According to Siddha System the human body is the replica of the universe so are the food and drugs irrespective of their origin. Siddha system believes that all objects in the universe including human body are composed of five basic primordial elements namely earth, water, fire, air and space. The human body is a conglomeration of three humors and seven physical components. The Food is considered to be a basic building material of human body, which gets processed into humors, tissues and wastes. The equilibrium of humours, body tissues and waste products is considered as a health and its disturbance or imbalance leads to disease or pathologic state.6

This system also deals with the concept of immortality and salvation in this life. The exponents of

this system consider that achievement of this state is possible by regulated diet, medicine and processing of mind by yogic or spiritual exercises like meditation and yoga.

Siddhars described 96 principles as the constituents of Human being. They include Physical, Physiological, Mental and Intellectual components of a person. They are nothing but the manifestations of the “Five Basic Elements”.

Disease is a condition in which there is imbalance in the “Five elements”, which alters the “Three Humours” which is also reflected in the seven physical constituents. The change disturbs the equilibrium and cause diseases.7

It is always essential to identify the cause for any disease to be accepted as a “Scientific method”. The diagnostic methodology in Siddha Treatment is unique as it is made purely on the basis of the “Clinical Acumen” of the Physician. He examines the Tongue, complexion, speech, eyes, palpipation in a patient and he also examines the urine and stools. The diagnosis is then confirmed by

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7. Principles of Siddha Medicine, (anonimus), Madras, p.17.
the “Pulse Diagnosis”. The above approach is collectively known as “Eight types of examinations”. However, the Siddha Physician now also accepts the modern diagnostic methods for purpose of diagnosis.

The following line of treatment have been in practice in Siddha medicine.

❖ Using medicines like Choornam, Kudineer, Vadagam etc. made of herbs.

❖ Surgical methods like incision, excision, heat application, blood letting and leech application etc.

❖ Physiotherapy – Thokkanam and Varma, the Siddha way of Touch therapy, Medicated Oil application, Fermentation, herbal steam bath etc.

❖ Using medicines like Parpam, Chenduram, Churanam etc. made of minerals especially of metals. 8

**Materia Medica**

Siddhars, with their clarified and initiative intellect resulting from their yogic powers explored the nature and exploited the natural resources for the sake of humanity.

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8. Principles of Siddha Medicine, (ananimus), Madras, p.35.
They documented their findings about the characteristics of plants, metals, minerals and animal products. They documented all their findings in the form of poems for the use of posterity. Knowledge was transmitted from Guru to disciples. Their boundless knowledge on the properties of drugs, purification, processing, heat application, fixing dosage, toxicity, antidote and clinical application is astonishing the modern scientific world.

The Siddha system is capable of treating all types of chronic diseases especially arthritis, skin problems, urinary tract disorders, infertility, degenerative disorders like osteo arthritis, disease of the liver, medicinally treatable Spinal disorders, general debility, diarrhoea and intractable allergic disorders. Aringnar Anna Government Hospital of Indian Medicine, Arumbakkam, being the premier institute in Tamilnadu for Indian Medicine and Homoeopathy treats both outpatient and inpatients.9

**Siddha Medicine for Chronic Ailments**

Siddha medicine is used for the following diseases, like abdominal ailments, cancer treatment, Arthritis, Bronchial

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Asthma and general disabilities. The Plant named *Saathikkai or Jaathikkai* is known as “The best medicine to treat abdominal ailments”. It belongs to the Myristica fragrans Family. It is prepared in the form of Carminative, Digestive, Tonic. 130 mg can be grinded well with honey and given twice or thrice a day before food to treat abdominal problems like flatulence, indigestion etc. 1 to 2 gm of Saathikkai powder with milk helps to treat Diarrhoea. For Insomnia and disturbed sleep half gram of Saathikkai can be given with milk before bed. Paste of Jaathikkai can be applied over inflamed joints for arthritis and forehead during head-ache.\(^\text{10}\)

**Cancer Treatment Through Siddha Medicines**

A study finds combination of Siddha medicines and conventional chemotherapy can help check the growth of cancer cells. A team of siddha doctors working with oncologists say, it has managed to reduce side-effects common during chemotherapy, such as fall in the white blood cell count, with the combination therapy. As the next step, the doctors plan, with support from the National

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Institute of Siddha, to conduct animal trials to find, if this new technique is effective. Practitioners from the Aarogya Siddha Hospitals began the research along with doctors and scientists of the Centre for Toxicology and Development Research of Sri Ramachandra University. They used a combination of a variant of cashew nut, kodiveli and aswagandha or Indian ginseng on cancer cell lines in a Petri dish. Weeks later, they found the growth of cancer cells had slowed by 37% in petric dish where combination therapy was used.\textsuperscript{11}

**Prevention of Diseases Through Siddha Systems**

Tamilnadu Health Centre, today launched a door delivery service of herbal drinking water. The water is believed to help improve immunity and general health. Dr. K. Veerababu, Siddha consultant said, “Siddha medicine has suffered a lot of bad press and misconception. People now perceive it as a cure for male infertility and nothing more. This initiative is an effort to bring back Siddha into vogue as a mainstream preventive

and curative medicine.”. This herbal drink for general health is made from arugam pul, vilva and other kayakalpa herbs, which are suitable for the well being of people of all ages. The water increases immunity and purifies blood, amongst other things.  

Natural Treatment for Osteo Arthritis is one of the most significant and common ailment seen during clinical practice is Azhal Keelvayu. It may be compared to osteoarthritis as per modern concept. Medically this condition is explained as degenerative joint disease or chronic disorder of synovial joint characterized by progressive degenerative changes in articular cartilage of weight bearing joints. It may be primary or secondary in nature. Primary Osteo Arthritis usually occurs due to ageing. Elderly people are prone to this especially woman after 40 years. This is because most of the ladies attain menopause after the age of 40 which lead to deficiency of female hormones like estrogen causing bone degeneration. In few woman early removal of uterus many provoke the degeneration of bones earlier. Secondary Ortho Arthritis

– appears at any age. This mainly occurs due to wear and tear of articular cartilages as a result of any injury fracture, inflammation or lose bodies. It mainly affects Knee, Hip and Spine. Siddha Concept of Azhal Keelvayu emphasizes on derangement of azhal or Pitham initially which is the basic reason of this disease. The deranged Pitham or extreme heat dries up the lubricating fluid present in the joint. Hence crepitating, restricted movements and swelling occurs. At times a low grade fever is present. This disease mainly affects Knee, Hip, Shoulder and Spine.¹³

People suffering from this disease may experience slight morning stiffness in the joints initially (less than 1 hour). Pain and tenderness occurs on flexion and extension. Diminished mobility or difficulty in moving the joints usually occurs after long rest or sleep. Swelling may be present with crepitation on movement. Pain decreases with mobility but reoccur soon after rest. Slowly the deranged Azhal humour may vitiate other two humours and produce associated symptoms. Causative factors: obesity,

Trauma, Hypermobility, Ageing, Inflammatory arthritis, Hypothyroidism, Over weight, Lack of exercises, Excessive intake of Oily or Fatty Food, Over eating, Sitting nature of work, Stress and Tension are the main reasons. Pathology: Loosening and flaking or articular cartilages, loss of cartilaginous matrix and chondrocytes, increased osteoclastic activity and spur (cartillagenous outgrowth) occur in the joints. Synovial effusion and chronic synovitis are seen in advanced stages. Degenerative changes in interphalangeal joints may be seen as hard, bony, painless enlargement in form of nodules at the base of terminal phalanx known as Herbeden’s nodes. This is common in females.\textsuperscript{14}

Siddha System advocates healthy food habits to prevent the diseases. Food should always be regular and balanced. Irregular dietary habits leads to derangement of three humours namely Vatha, Pitha and Kapha and Seven physical constituents Saram, Chenner, Oon, Kozhuppu, Enbu, Moolai, Sukilam or Sronitham. Hence diseases occur. This is the basic concept of Siddha Medicine.

\textsuperscript{14} Report of Natural Remedies and Siddha System, D.P.H., Madras, 16\textsuperscript{th} June, 2000, p.3.
regarding food habits. A diet containing all six tastes of Sweet, Astrigent, Pungent, Bitter, Salty and Sour is a balanced diet. Similarly digestion is a very important aspect. It is well highlighted in the Pathartha Guna Chinthamani that we should consume food only half of stomach, liquid quarter of stomach always. Quarter stomach should be kept empty to promote proper digestion of food. Fasting once a week or practising of taking meal once a day at least once a week is very good for digestive system and removes indigestion.15 “Food as medicine”, is well explained in Thirukkural about healthy eating habits and prevention of diseases. Siddhar Thiruvalluvar through his vision and experience explained specific rules or habits for the benefit of mankind, the value of which is realized only now in the present generation when life style diseases have created havoc everywhere. The amount of food should always be according to a person’s appetite. One should always consume food only after the complete digestion of previously eaten food. Food should never be consumed during excessive hunger, anger or grief. Food should never

be taken full stomach. Excess food, untimely food, overcooked food, illcooked food, unhygienic food, over fried food and very light fried foods should be avoided for people of all age groups. A person who wishes to reduce weight should always drink a glass of water before food to prevent over eating even if he or she is very hungry.\textsuperscript{16}

**Siddha and Bronchial Asthma**

The siddha herbal plant *Perugilai* or *Siruthekku* is a useful “A Siddha Herbal remedy for Diarrhoea, Rheumatic complaints, Fever and Skin ailments.” It belonged to Clerodendrum infortunatum Family. Its actions are Anti-diarrhoeal, Hepato-protective, Anti-Rheumatic and Anti-Microbial. The roots and bark of stem of this plant prepared as decoction and given in the dose of 60-80ml twice daily for respiratory diseases, fever, periodic fever, cough and bronchial asthma. The powder of the roots is given along with Trikadugu choornam with honey for Bronchial Asthma.\textsuperscript{17}

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\underline{17.} Report of Natural Treatment and Siddha System, Madras, 30\textsuperscript{th} June, 2011, p.12.
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The plant Gossupium arboretum is a natural remedy for Rheumatic ailments and diarrhoea. This plant is otherwise called paruthi (cotton). It helps to improve milk secretion also. It belongs to the family of Malvaceae. The decoction of the dried leaves is given for diarrhoea, and Dysentry. The paste of leaves when externally applied helps in ripening of ulcers. One palam (35 grams) of leaf juice is given with cow milk for diarrhoea, piles, leucorrhoea.¹⁸

**Herbal Medicine for Rheumatoid Arthritis**

Keelvayu is a disease caused due to derangement of Vatham or Vali humour mainly. The disease is usually associated with complaints like difficulty in flexion and extension of the joints, pain, swelling, accompanying other symptoms like fever, indigestion and megham. There are mainly ten types of Keelvayu.¹⁹ Of them, one of the commonest type is Vali Azhal Keelvayu, which can be compared to Rheumatoid Arthritis as per Modern Medicine. According to Siddha, Vali Azhal Keelvayu is caused due to derangement of Vali and Azhal humour. This

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results due to improper dietary habits like increased consumption of Red Meat, Eggs, Fishes, Alcohol and Sedentary lifestyle. Initially indigestion symptoms are seen like frequent constipation, obesity and abdominal discomfort. Then the joints of wrist, ankle, shoulders and fingers are involved with pain, redness and stiffness. The patient complaints of morning stiffness for more than one hour. This is a multi-system involving disease more common in females than in males. Genetic and Environmental factors are precipitating ones. The cause of onset of the disease may be traumatic, viral, over exposure to hot and cold weather and psychic factors. Mostly females above 40 years of age are affected. Hence, this disease can be defined as Chronic, Severe, Symmetrical, Ankylosing type of poly-arthritis affecting the connective tissues of smaller joints initially and later major joints with more pronounced morning stiffness.  

Drugs obtained from roots of the plants are used as medicine in Siddha. The siddha drug known as Aconite, is obtained from the tuberous roots of the Aconitum

heterophyllum (Family Ranunculaceae). This plant is a native to Alps, Pyrenees and other mounteous regions of Europe and Asia. It is a widely cultivated plant of temperate countries. The plants are valued for the medicinal value of the roots and leaves. They contain an alkaloid and yield a medicine called Aconite. It is useful in inflammatory diseases and gastritis. This is also used externally for neuralgia and rheumatism and internally to relieve fever and pain.

Another plant, Rauwolfia is an important medicinal plant of family Apocynaceae and is known as “Sharpa Gandha” in Hindi. Rauwolfia serpentine is its common species which is found in India, Indonesia, Thailand and in Central and South Africa.

Rauwolfia has been accepted as a medicine by the name of Sharpa Gandha in Sanskrit. In India this medicine is used in cure of central nervous system, excitement, Schizophrenia and in epilepsy.21

In India two species named Rauwolfia Caneaens and Rauwolfia Serpentia which are commonly found in Bengal,

Uttarpradesh, and Assam.\textsuperscript{22} The chemistry of Rauwolfia has been studied in detail in 1931. Nearly 60 alkaloids were extracted from its 50 species. In 1952 reserpene alkaloid was extracted. Other common alkaloids are serpentine, rauvolscine, descrpidene and ajmeline. This is mainly used for the adjustment of blood pressure and in snake biting.\textsuperscript{23}

Licorice is a drug is obtained from the roots of the plant Glycyrrhiza glabra, the family Leguminoseae. It is a perennial herb that grows wild in Southern Europe, and Western and Central Asia. The roots are dried in sheds and are shipped in cylindrical pieces. Licorice is used in medicine as a demulcent and expectorant and to disguise the taste of nauseous preparations.

Colchium is another drug obtained from the dried corms and roots of the plant Colchium autunnale the family Liliaceae. This is used as a medicine in the treatment of rheumatism and gout. It is also used as an external application to lesson swelling and pains. Colchicine is used in modern genetics to produce doubling of chromosomes.

\textsuperscript{23} Ibid.
The drug Squillis is obtained from a white variety of the sea union of squills (Urginea maritime and indica of the family Liliaceae). The bulbs are dug up and its inner fleshy scales are then sliced and dried. The drug is used as an expectorant and stimulant.

The drug Senega is obtained from the roots of the plant Polygala senega, a small perennial herb of North America. This is a glucosidal drug, which is used by Indians as a cure for snake bites. Senega is used as an expectorant, emetic and stimulant.\textsuperscript{24}

Jalap is a resinous drug which is obtained from the fleshy roots of Exogonium purga. The plant is cultivated in Mexico, Jamaica and India. The drug Jalap is used as a purgative.

Some other roots like Hemidesmus indicus (Anant mool) and several other underground parts also yield several drugs which are used in the treatment of so many diseases. Above all these drugs are obtained from the item of the plants in the Siddha system.

\textsuperscript{24} Gupta, S.K., and Kansia, M.P., \textit{op.cit.}, pp.82-83.
Ephedrine is an alkaloid drug obtained from various species of Ephedra. This plants are the leafless shrubs with slender green stems. The entire woody plant is used for the extraction of drugs. The Ephedrine is used in the treatment of colds, asthma and hay fevers.\textsuperscript{25}

Aak, the milky latex is obtained from the stem of Calotropis procera of the family Asclepiadaceae. This has a great medicinal value and is commonly available nearly in all parts of India in wild form. This is used in the treatment of leprosy and rheumatism.

Quassia is obtained from the stem of Picrasma excelsa and Quassia amara. This is very bitter in taste and is used as tonic and in the treatment of dyspepsia and Malaria.\textsuperscript{26}

The wood as such and the oil of Chandan is obtained from the stem of the plant Santalum album of the family Santalacear, and are used medicinally. This is aromatic and have a cooling and soothing effect. The powder of the wood is used in gonorrhea and fever. This is also used in external application in many skin diseases. Further, the

\textsuperscript{26} \textit{Ibid.}, p.84.
leaves from the plants are also used as medicine in the Siddha System.

Belladonna is important and old drug, which is obtained from dried leaves of Atropa belladonna of the family Solanaceae. This plant grows wild in Himalayan region and is cultivated in different regions of United States, Europe and India. The leaves are collected and dried during the flowering season. These have several alkaloids. The Belladonna is used externally to relieve pain and internally to check excessive perspiration and coughs. It is also used as an antidote in opium poisoning and in asthma, and colic. An alkaloid atropine present in it is used to dilate the pupil of the eye during eyesight testing.27

The plant Aloe is a medicinal plant in the Siddha system. This plant Aloe has succulent leaves which contain a resinous juice in which there are several glucosides. The juice of leaves is extracted and by evaporation get converted into a solidified viscous black mass known as Aloe. This plant is used chiefly as purgatives.

Cocaine is obtained from the leaves of Erythroxylon coca of the family Linaceae. This plant is a shrub which is native of Peru and Bolivia and is cultivated in South America, Java, Ceylon and Formosa. The leaves of this plant have a bitter aromatic taste due to the presence of the alkaloid cocaine. Cocaine is of great use and has been used as a local anaesthetic. This may also be used as a tonic for digestive and nervous system by the consultation of a physician.

The plant Ocimum sanctum, belongs to the family labiate. It is commonly known as Tulsi. This plant is a sacred plant as well as a plant of medicinal value. It is produced from the plant Herbaceous and is widely found in India. The leaves of the plant are used for stomachic, expectorant, stimulant, aromatic and anti-catarrhal. They are given to arrest malaria, disorder of liver and for cold and cough.28

The plant Azadirachta indica of the family of Meliacear is commonly known as Neem. This plant is quite common in India. It is very useful medicinally. Nearly all

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parts of the plant, i.e. stem, leaf, flower and fruit may be used in medicine. The leaves of the plant are carminative, expectorant and insecticidal. The juice of the leaf is used in jaundice and various skin diseases. This may also be used as an anthelmintic.

Botanical name of Indian Hemp is Vern. It is obtained from the leaves of Cannabis sativa of the family cannabinaceae. This leaves are used after grinding them with a limited account of water. This plants are the annual herbs which are quite common all over the Northern India. The leaves are sedative, narcotic, digestive and diuretic. This is of great use in dysentery, diarrhoea and in-digestion. The charras and ganja are also obtained from this plant which have a good medicinal importance. Seena is a very ancient drug obtained from the dried leaflets of the several species of Cassia of the family Leguminosae. This plant is a native of Egypt and Arabia but is cultivated in India also. This is used as a purgative. And several other drugs are also obtained from the leaves of Stramonium, Worm wood, Hamamelis and Digitalis. Drugs obtained from Flowers are also used as medicine.

Chamomile is a drug which is obtained from the flower heads of Martricoria chamomilia and Anthemis nobilis of the family compositae. This is used as tonic and gastric stimulants. This is also used in poultices for sprains, bruises and rheumatism. Another drug Santonin is obtained from the unopened flowers of Artemisia cina of the family compositeae. This plant is a small semishrubby perennial of Western Asia. This drug is one of the best remedies for intestinal worms.\textsuperscript{30}

Further the drugs obtained from fruits and seeds are very much used in Siddha as medicine. Colocynth is obtained from the dried spongy pulp of the bitter apple which belonged to the family cucurbitaceae. This plant is a perennial vine native to warmer parts of Asia and Africa. The colocynth which is produced from the fruits is a very powerful purgative.

Nux vomica is a valuable drug which is obtained from the seeds of Strychnos mxyomica of the family Loganiaceae. This plants are found in South India, Orissa, Bengal, Gorakhpur in India and other countries. Such as

Ceylon, China and Australia. The ripe seeds of the plant obtained from its fruit are very hard and bitter and contain strychnine and bucine alkaloids. This drug is used as a tonic and stimulant and also used in treatment of nervous disorders and paralysis. This drug is also a powerful poison, so always it should used in small doses and by the consultation of physician.

Psyllium or Isapghul drug is the seed of several species of family Plantaginaceae. They are also grown in India. These seeds contains a tasteless mucilaginous substance which acts as a laxative. These are used in gastro-intestinal troubles, dysentery and dyspepsia.

Caster oil is obtained from the seeds of Ricinus communis of the family Euophorbiaceae. This is a wild plant that is grown all over India. This is also used as a good purgative.31

Black Pepper belonged to the family of Piperaceae. The carminative and aromatic are used for digestive purposes. These are also used as a medicine in the treatment of diarrhoea, dyspepsia, piles, cough and gonorrhoea.

Opium is obtained from the fruits of Papever Somniferum Poppy plant of the family Papaveraceae. It, one of the most helpful and vicicus drug, is the dried juice of latex of unripe fruits of poppy plant. This plant is an annual herb with large showy flowers, which is cultivated in India, China and other countries. For the preparation of opium the unripe capsule (fruit) are incised with a fine needle and the exuded latex hardens to from the opium. This opium consists of nearly 25 alkaloids of which morphine, codeine, nacotine and the baine are of great importance. This is used to relieve pain and induce sleep. Opium being a poison should be used by preconsultation of a good physician.

Besides the above said drugs several more drugs may be obtained by seeds and fruits. Among them the drugs obtained from Barks are used as medicine.

Quinine, the most important Indian drug, is obtained from the bark of various species of Chinchona, the family of Rubiaceae.  

Cinchona bark was known to Indians since 1638, when the wife of the Viceroy of Peru was cured of Malaria after all other remedies had failed. This plants are native of South America and cultivated in India, Java and other countries. In India the plants are grown in Darjeeling, Khasi, hills of Assam, Oatacamund, Nilgris, Sikham, Satpura range and South India. It require 60 to 70°F temperature and 100 to 150° annual rainfall. The bark obtained from the tree roots and stems contain about thirty alkaloids, which are very useful in medicine. The most important use of quinine, prepared from bark of chinchona tree, is in the treatment of Malaria. This is also valuable as a tonic and antiseptic in the treatment of fevers. In addition to these, there are several other drugs such as ascara, Curare and Slippery Elm having a dominant role in the history of Siddha medicine.

There are certain plants products which can help the life processes of human being and greatest enemy to the insects, even to the point of destroying them. Many plant extractives of this nature served as insecticides. Nearly

1200 plant species have been reported as having insecticidal value. The great majority of these are of slight importance and even the better among them tend to be overshadowed by the outstanding synthetic insecticides such as D.D.T. animate, benzene hexachloride, chlorodone, hexaethyl tetraphosphate and others. These synthetic insecticides are not enough, for all purposes. Botanical insecticides are mainly extractives from tobacco (Nicotine) Pyrethrum and rotenone plants. In modern agriculture control of insects has become a problem. Many botanical products find ample use in sprays as emulsifies, adhesives, stabilizers and synergists in combination with rotenone, pyrethrions or other insecticides.

The Pyrethrum insecticide is obtained from flowers of the family compositeae. The flower heads of this plant are the source of commercial pyrethrum. Persist insect powder is derived from Coccineum. The lyrethri volatile oils serves as a contact poison and in parasiticide lotic which quickly paralyzes insects.34

34. Velu,N., op.cit., p.92.
There are some other insecticide yielder plants which are Anabasis aphylla belonging to the Family Chenopodiaceae, Croton tiglium belonging to the Family Euphorbiaceae, Duloisia hapwoodii belonging to the Family Salanaceae, Pinus palustnis belonging to the Family Pinaceae and Seamuminalium belonging to the Family Pedaliaceae.

The invention of some hormonal herbicides from plant growth substances is another outstanding development of botany. The great utility of these herbicides lies not so much in their ability to kill vegetation, for many cheap chemical compounds are able to do that but in their selectivity of the plants affected together with their notoxic effect on animal life. It is proved that 2-4 dichlorophenoxyacetic acid kills most dicotuledonous plant but does not affect most monocotyledous at the same concentration. It serves as a convenien lawn spray, eliminating dandelion plantains and many other weed without injuring the grass. Sprayed by plane in wheat fields, the extract, kills most of the weeds, but leaves the grain unharmed to give higher yield.\textsuperscript{35}

\textsuperscript{35} Velu,N., \textit{op.cit.}, p.86.
The modern hormonal herbicides are juices squeezed from the growing tips of living plants (act seedings) which showed marked characteristics of promoting growth. 2-4D has proved to be one of the most effective of the several growth regulators developed. In its mode of action it offers an entirely new technique in plant control. Agriculturally or horticulturally 2-4-D may be applied in any fashion. 2-4-D may be made by the chlorination of phenol which yield a mixture of chlorinated compounds from which the compound with chlorine in 2-4 position is readily reported by distillation.

Mayiladu pachilai is used for joint pains, red rashes, urinary diseases and rheumatism. It reduces pill, pitham, vatham and phlegm. Murian Pachilai cures cut wounds. It joints the cut wounds immediately.\textsuperscript{36}

Bone setting practices prevailed in siddha. Bone setting was done with much ease by the Siddha Medical Practioners. They obtain X-rays from the patients and sets the fractured bones with the help of slings made up of either Palmyra stems or coconut stems or bamboo strings.

With the help of these strings they apply oil specially prepared for this purpose called Murivu Ennai. Thus sets the fractured bones in any part of the body.\textsuperscript{37}

Treatment for Diabetics is also practised in Siddha. The Siddha Pharmacist makes use of the herbs that are available. One such herbs is sirukurinjan or Chakkaraikolli Ilai which is used to treat sugar patients.\textsuperscript{38}

A teaspoonful of dried Nilavembu leaf powder mixed with water taken orally regularly reduces blood sugar. Thandrikkarai fruit is powdered and taken in warm water reduces the blood sugar level. Naval seed powder if consumed reduces the blood sugar level. Dried young leaves of avarampoo and inflorescence are used as herbal tea to reduce blood sugar. Sirukurinjan powder and arakeerai are useful medicines for diabetics. Aruganpul or dog teeth grass juice reduces blood pressure.

For the treatment of Jaundice, Vallarai juice mixed with sheep milk and Keezhanelli extract is used. Small amount of Etti seed is taken internally. It checks nervous disorder. Cooked nayaruvi leaves cures internal piles.

\textsuperscript{37} Armairaj,K., \textit{op.cit.}, p.110.
\textsuperscript{38} Maruthuva Sanjeevi, Palm Leaf Manuscript, Madras, 1969, p.68.
There are many other herbal medicines in the Siddha system that cures sickness of various kinds.

Preparation of drugs and doses is clearly organised first of all they dry the required drug materials well in shade protecting from direct sunlight. If it is dried in sunlight all the living cells will die and get dried. After sufficiently dried, grind and crush it and sieve through a fine cloth to obtain powder of the desired drug. Other method is that cleaned plant and plant parts are ground with water. The extract is filtered and fresh juice is prepared. In case if the drug is in dry form it should be well soaked in water for some time before it is ground. They also wash the drug to remove the unwanted dirt and dust. After cleaning chop it into small pieces and pound well. Boil the pounded medical plants or leaves in the ratio of 1:8 and reduce it to one cup. Filter the decoction or essence thus prepared before use. In the case of fresh green herbs no water should be used.

The drug doses administered to the patients depended on the body weight, age, severity of disease. For internal

40. Ibid., p.74.
use liquid drug 50ml to 200ml is used. If the medicine is administered in powder form 2 to 10 gram or 1 to 4 table spoon is used. During the herbal therapy certain food shifts, drinks and intoxication are prohibited. Usually chilly, salt and tamarind are avoided for 3 days or seven days.\textsuperscript{41}

For diseases like cold, cough and asthma, alpinia calcarata rosecoe or Chitharathai is used along with ginger and pepper. Mixing all these strong juice is prepared and administered three times daily half a tumbler for three days.\textsuperscript{42} Adathoda leaf paste is taken to cure asthma. The powdered leaf is mixed with water and consumed in the early morning everyday cures cold.\textsuperscript{43} Nalthuladi leaf is consumed for cold and cough. Kandankathiri or Solanum Surattense Burm, plant is powdered and mixed in water and taken internally cures cold and wheezing trouble. Nochi or three leaved chaste tree leaves are boiled and the vapour if inhaled will relieve cold and head ache.\textsuperscript{44} Toothuvalai soup relieve cough and cold.

\begin{flushright}
\footnotesize
41. Maruthuva Sanjeevi, Palm Leaf Manuscript, Madras, 1969, p.76.
42. \textit{Ibid.}, p.78.
43. Government approved Siddha Medical Centres, Tamilnadu, 1985, pp.43-44.
\end{flushright}
Learning Centers & Hospitals for Siddha Medicine in Tamilnadu

Government Siddha Medical College, Annexed with Aringnar Anna Govt. Hospital of Indian Medicine & Homeopathy, Arumbakkam, Chennai. It is very useful and did various services for the Health upliftment of the people of Tamilnadu and Government Siddha Medical College, Palayamkottai, Tirunelveli, National Institute of Siddha, Tambaram, Chennai, Velu Maiyil Siddha Medical College, Sripurumbudhur, Kancheepuram Distrit and Sri Sairam Siddha Medical College & Research Centre, West Tambaram, Chennai, Tamilnadu, India.45

Learning Centers of the Colleges and Other Institutes

National Institute of Siddha (NIS), Tambaram Sanatorium, Chennai, Regional Research Institute for Siddha, (RRIS) Pondicherry, Clinical Research Institute, (CCISS), Palayamkottai, Tirunelveli, Survey of Medicinal plants unit, (SMPU), Tirunelveli, Central Research Institute (Siddha), Aringar Anna hospital Campus, Chennai, Tamilnadu, India, Govt. Siddha Medical College, Palayamkottai, Tirunelveli, Govt. Siddha Medical College, Anna Hospital campus, Arumbakkam,

45. List of Government Siddha Medical Colleges in Tamilnadu, 1985, pp.3-5.
Chennai, Aringnar Anna Govt. Hospital Indian Medicine & Homeopathy, Arumbakkam, Chennai, Velumayil Siddha Medical College & Research Centre, Bangalore main road, Sriperumbudur, Kaancheepuram District, Sri Sairam Siddha Medical College, West Tambaram, Chennai, A.T.S.E. College, Munsirai, K.K.Dist., RVS Siddha Medical College, Soolur, Coimbatore and Siddha Medical College, Munchirai, Kanyakumari Dist. This is the most famous learning centres and siddha colleges in Tamilnadu.

Private Hospitals
Pharmacy Education and Institution

Govt. Siddha Medical College, Palayamkottai, Tamilnadu and Aringnar Anna Govt. Hospital Indian Medicine & Homeopathy, Arumbakkam, Chennai, Tamilnadu, India is most one of the private hospitals in Siddha.

Private Hospitals and Siddha Medical Centres

Kanyakumari District of Tamilnadu is filled with Siddha Medical Centres and private hospitals where treatment is given to all kinds of human diseases. The following are the most conspicuous centres.

46. List of Siddha Medical and Research Centres, Government of Tamilnadu, 1985, pp.1-5.
Branches offered for Post Graduate course in Siddha Medicine

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<tr>
<th>Branch</th>
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<td>Podhu Maruthuvam Department-I</td>
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<tr>
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<tr>
<td>Noi Naadal Department-V</td>
<td>Pathology</td>
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The Mecode Siddha Vaidyasalai and Hospital

The Mecode Siddha Medical Centre is a noted medical centre for Siddha Medical Training Centre and treatment. The centre is noted for treatment to Vatha, Pitha and Kaba, joints dislocation, fracture, diseases connected with spinalcord and all other diseases connected with human body. The medicines are well prepared from the Indian herbals. Physiotherapy, oil massage, Siddha medical steam bath are its speciality.  

Private Vaidyasalas

Mecode Narayana Vaidyasala was established long back. This is one of the noted Vaidyasalas of this district where treatment is given for orthopaedic problems. Treatment is given for all other kinds of diseases too.

47. List of Approved Medical Centres, Government of Tamilnadu, 1982, p.4.
Apart from these two, Kattukadai Asans, Anakuzhi Vaidyasala, Mylady Siddha Vaidyasala and many other Vaidyasalas in this District and other districts of Tamilnadu treat various diseases. These Vaidhyasalas strictly adopt sidda system of treatment and have succeeded.\textsuperscript{50}

The Siddha system of treatment and public health is not the only system of treatment but another system called the Ayurveda was also practised.

\textsuperscript{50} Information of Vaidyasala at Tamilnadu, 2012, p.13.