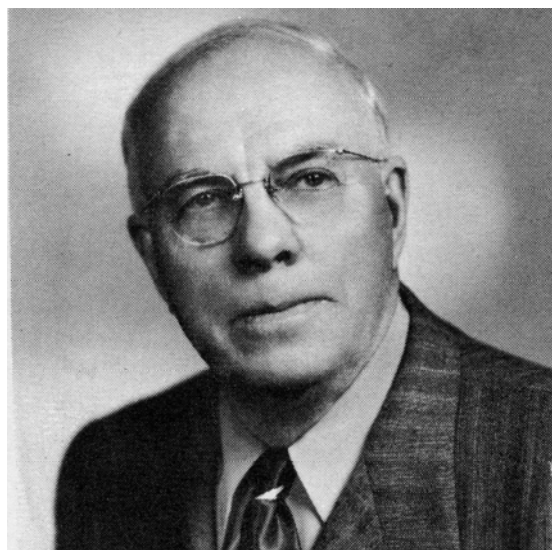


Dr. Edward Shook's

FAMOUS COURSE

IN

HERBOLOGY



For

Home Study

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PREFACE

Of late years there has been a growing demand from all parts of the world, by persons who are interested in Natural means of combating disease, for a book which would give a concise, yet comprehensive treatise on Medicinal Plants, their use and their compatible combinations.

This book has been written to fill that need. It represent years of painstaking accumulations of data based upon practical experience by Dr. Edward E. Shook.

I think it is, however, appropriate to explain with a few introductory words why Herbs are better suited for the treatment of diseases than chemicals and other substances foreing to the human body.

Herbs are the product of Nature, containing many substances

Very finely distributed, which are necessary for building up and maintaining the cells of all the organs of the body, and are of greatest help in the performance of the vital functions.

They contain these substances partly in the same condition

as they are present in the humansystem, allowing direct assimilation, and partly so that they can be readily taken up in the circulation of the blood, after undergoing certain changes in the digestive tract.

All the laboratories of the world will never be able to supplant the remarkably fine process which takes place in living cell; they will never successfully imitate the wonderful methods that Nature used in performing its work in the plants, a well as, in the human body.

It is true that our body contains minerals, but the minerals cannot be taken readily directly by the system they must be obtained from a living cell of either plant or animal life. Plants have the power of taking up mineral substances through their roots from the soil and assimilate and transform them in such a way that they may be utilized as food, as well as, medicine.

The human body, on the other hand, has not the ability of directly assimilating mineral substances and therefore cannot utilize them in any way.

There is nothing mysterious about medicinal plants. They are God's gift to man - for him to use. "...and the fruit thereof shall be for meat and the leaf for MEDICINE." Ezk. 47:12.

Let me also point out that this science of Herbology has many powerful enemies in this country, which are trying to suppress by legislation the use of any food supplement Herbs and even more so as medicine.

This freedom of choice is no longer a right. Many good herbs and vitamin are now restricted.

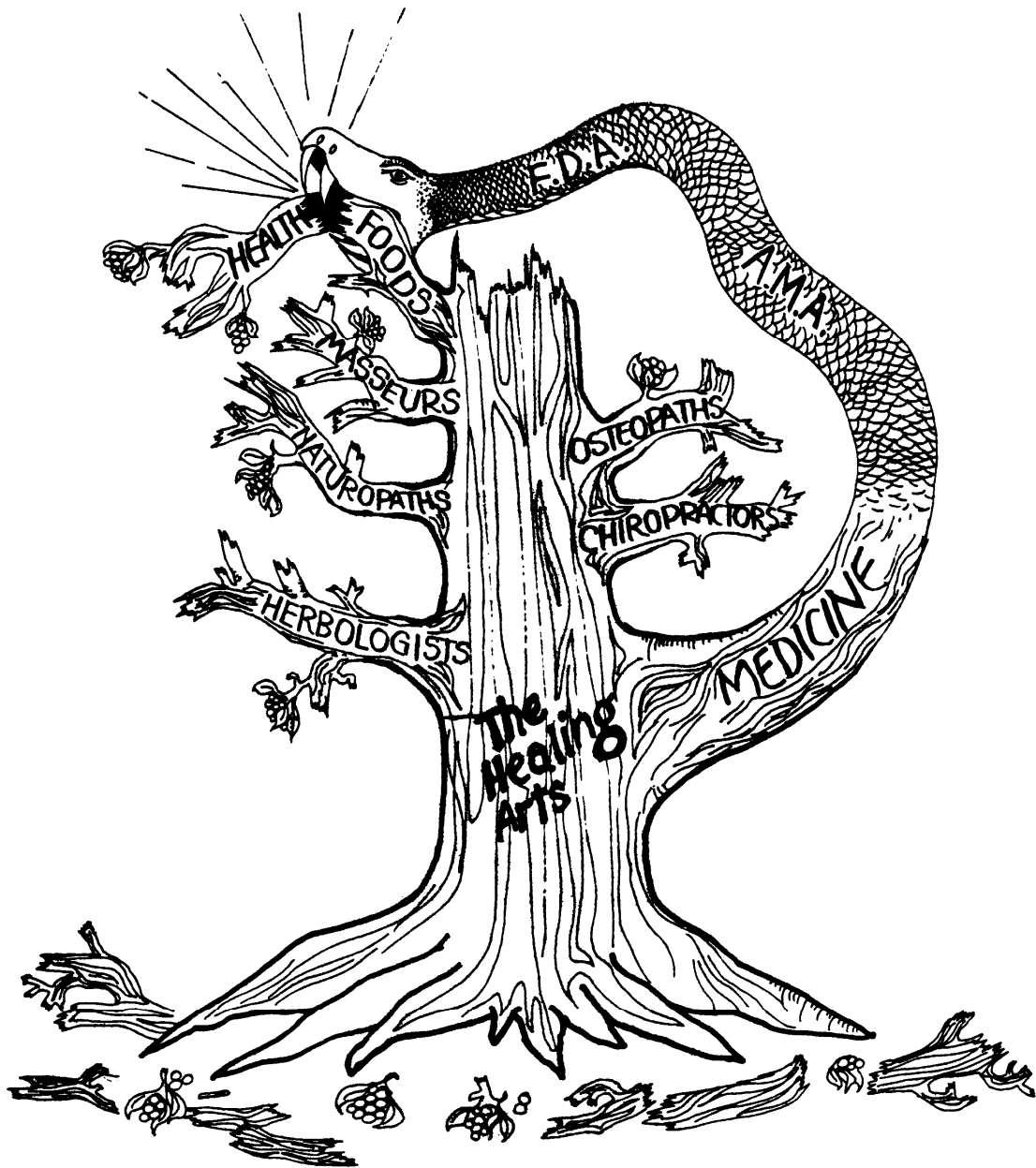
George Cervilla

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Herbology
Dr. Edward Shook
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THE BRANCH THAT BECAME MALIGNANT



Somebody had better –

Do Something QUICK!!!

FOREWORD

By Dr. Edward E. Shook

In the compilation of any work on a subject as old and revered as the study and use of Herbs, it is highly essential that, in addition to formulae, compounds, administration, dosage, etc., we include a certain amount of the Romance and Historical data which surrounds our subject in order to instill into the mind of the reader the glorious heritage of the Herbalist; to make him realize that the reason the use of Herbs in healing the sick has survived for countless thousands of years is, because Herbs are ORGANIC and, therefore, are capable of becoming a part of the living organism; also because they, and they alone are the source and origin of all life on earth.

It is not conceivable or possible that any animal or human cell, organ or body, can be built from inorganic or earthy mineral matter; for the simple reason that, such inorganic matter is merely an accretion. It does not live or grow.

We cannot conceive of a grain of sand, an atom of gold, a molecule of iron, a drop of water, or anything that is inorganic manifest life and growth from within; and not until we thoroughly understand this all important basic fact, shall we be able to appreciate the amazing and truly wonderful life-giving properties and virtues of Herbs.

Now, before we begin to review the remarkable History, and the still more remarkable Histology of Herbs, let us try to get a clearer, and a more logical conception of that essential difference between ORGANIC and INORGANIC matter.

According to Webster, the word inorganic is described as--

1. Not organic; not endowed with, or subjected to, organization; devoid of an organized structure, or the structure of a living being; unorganized; as rocks, minerals and all non living chemical compounds and elements are inorganic.
2. Pertaining to, or embracing, substances or species; as inorganic chemistry; inorganic forces; the inorganic kingdom.

The word organic is described by the same authority as--pertaining to an organ or its functions; consisting of organs or containing them; as the organic structure of the human body or of plants.

It will be seen plainly wherein the difference lies, but it is necessary to go a step farther in order to fully grasp the real difference. The end product of combustion of organic matter particularly, is largely carbon dioxide and both animal and human metabolism is considered today, to be a slow process of oxidation. The human body always contains much more oxygen than any other element. The word OXYGEN is derived from the Greek, meaning "to bring forth."

The only breathable oxygen produced by nature is from the leaves or lungs of plants and given off to the atmosphere in abundance.

Carbon dioxide does not and cannot support the life of the human or animal cell, but it is absorbed into the organism of the plant. The carbon being used for structural purposes and the oxygen being breathed out.

The very breath of Human life is, therefore, dependent upon the vegetable or Herb kingdom. Holy script says, "The fruit thereof is for meat and the leaves for the healing of the Nations" and modern science verifies that fact.

We know well that the Herb can and does assimilate inorganic mineral matter and that through some mysterious and unknown alchemy convert this inert and lifeless matter into living organic material, which, when presented to the animal or human cell is hungrily absorbed, sustaining and renewing its life process.

We also know that the life process of the human cell cannot be sustained by any element or compound obtained directly from the inorganic kingdom.

Even oxygen in the air we breathe, is diluted with 79.07 percent of nitrogen. That is, by volume, or 77 percent nitrogen by weight.

If pure oxygen is inhaled for more than a comparatively short length of time, it will destroy the tissues by burning them. If a mouse be placed into a large jar of oxygen, he will frisk about and be excessively active for 20 or 30 minutes, and then he will drop dead. But, the oxygen from plants, used as food and medicine does not so destroy.

Here we shall give one or two examples of the effect of organic and inorganic compounds or elements upon the human organism, in order to prove beyond doubt, the destructive effect of the one, and the beneficial effect of the other.

Example No. 1. Oxalic Acid ($C-2O_4-H_2$)+ $2H_2O$ does not occur free in nature, but is found in combination with sodium, potassium, calcium, iron and manganese in the juices of many plants, such as Rhubarb, Sorrel, Oak Bark, Cinchona, Yellow Dock, etc.

Oxalic Acid is prepared artificially by oxidizing sugar and starch with Nitric Acid (H-N-O-3), and in this form is one of the most powerful escharotic poisons known. One dram will quickly prove fatal by destroying the organic structure of any tissue it touches; literally eating away tissues of the mouth, esophagus, stomach, duodenum, and finally perforating the peritoneum, and in approximately 30 minutes after swallowing, and after great suffering, will result in death.

The very self same acid in the form of iron oxalate, potassium, sodium or calcium oxalates as found in Rhubarb, Sorrel leaves, etc. is quite harmless and these Herbs are consumed in great quantities by both man and animals.

They are grown and freely distributed to all parts of the civilized world and no one claims they are injurious, in fact, Rhubarb is one of our best laxative and blood purifying Herbs, while Sorrel leaves in the fresh state are extensively used in salads and highly recommended by both ancient and modern Herbalists for Scurvy or Scrofula. Sheep Sorrel, as it is commonly called, has also been used for reducing adipose tissue, in treatment of foul and sloughing ulcers and for Cancer. It belongs to the family known as Polygonaceae or the Buckwheat family.

Several of our very best therapeutic agents are members of this family, such as Yellow Dock (*Rumex Orispus*) and several others. All of them are iron containing and each and every one of them contains oxalates from 2 to 40 percent. They will be dealt with fully in this course of study.

Another remarkable instance of the opposite effect produced by the use of inorganic as opposed to organic matter is seen in Sulphur.

Inorganic sulphur is usually administered in the form of powder called Flowers of Sulphur. In this form, it will circulate through the system and the greater part of it will be thrown out through the pores of the skin unchanged, showing that it has not been assimilated by the cells, but rejected. The injurious effects of mineral sulphur however, is caused by its affinity for iron and also its destruction of ferments and enzymes and too, by its generation of sulphurous and sulphuric acids within the organism.

It steals the iron from food and blood, forming sulphide of iron, which constipates and dries up the several secretions of the digestive tract. It steals nascent hydrogen from the fluids and tissues forming sulphuranhydride or sulphureted hydrogen. This is the foul smelling gas we have all been revolted at, which is always given off by decaying organic matter, animal and vegetable. It is the smell of rotten eggs, putrid sores, fecal matter, decaying flesh, etc.

Now on the other hand, the organic sulphur in onions, watercress, marigold flowers, garlic and asafetida are all used as flavoring agents for food and healthful condiments, and although, certain people have individual antipathies to any or all of them, nevertheless, they are very virtuous, non poisonous forms of

organic sulphur which have, and still do restore the organic sulphur to the cells and organs which has been lost in purulent disease and decay of tissues.--Those also will be fully dealt with in the course of these lessons.

We will take a cursory glance at one more important item of evidence showing the incalculable injury that can be done to the human organism, by the administration of inorganic substances, more especially those elements which have been artificially made or separated from organic matter by the action of violent acids, alkalis, or reduction to ashes by burning.

This universally used and insidious poison is commonly called 'iodine'. This element is found naturally combined with sodium, potassium, calcium and manganese, in sea water, mineral springs, marine plants and animals, but in exceedingly minute quantities. There are only 37 parts of iodine in 100,000 parts of cod liver oil.

The commonly used iodine is obtained from the ashes of burnt kelp, dissolved in water and the solution is then evaporated. The iodine is liberated by the action of chlorine, aided by heat and then condensed.

Taken internally, this form of iodine acts both as a local irritant and as a true poison. It slowly decomposes water, stealing hydrogen, to form hydrogen iodide (H.I.). This in turn gives off white fumes on contact with air and has a powerful acid reaction. Mixed with oxygen, it decomposes in the dark forming water and liberating iodine which again carries on its devastating effects upon the gastric organs, and fluids producing a long chain of disasters.

The gas previously mentioned under sulphur, namely, sulphur anhydride, is decomposed by iodine, once more forming hydrogen iodide and freeing sulphur and we have seen what sulphur does.

This inorganic iodine is a most insidious and injurious substance that upsets and disorganizes all the digestive fluids producing various forms of dyspepsia, severe gastric pain, indigestion, foul gaseous eructations and inability to assimilate food. This so called specific disease is named 'Iodism'. It by no means confines its disruptive action to the gastric organs, nor does it have to be taken internally to poison the body, for if it be painted on the throat or any other part of the body, it can be traced in the urine in from 30 to 40 minutes.

The test and proof is very simple. Paint iodine on the throat-- 40 minutes later urinate into a receptacle containing starch.--If iodine is present, there will be a violet color.

Now to the difference manifested in the action of Organic iodine and what a vast difference there is.

Every Saline Aquatic plant contains iodine in combination with sodium, potassium, calcium and manganese. Also phosphates, sulphates, chlorides, bromides, etc.

They are all non poisonous, nutrient foods anti-scorbutics and vulnerary plants of the highest order.

Here are two in particular that for thousands of years have been used successfully in the treatment and cure of chronic disease.

Bladder Wrack (*Fucus Vesiculosus*). It is an alterative of great virtue, especially in obesity, reducing fatty acids and tending to rid the system of useless waste matter.

Irish Moss (*Chondrus Crispus*) a remarkable demulcent, nutrient and dietetic providing the organism with what are loosely called Vitamins, in the form of Chlorides, Iodides, Bromides, Phosphates and Sulphates of Sodium, Potassium, Calcium and Magnesium. All of them positive organic salts, absolutely necessary to the healthy metabolism of the Human body. This whole family of Herbs is fully described, together with their therapeutic application.

Positively hundreds of instances could be cited to prove the deleterious effect of the application of inorganic matter and the positive curative effect of the intelligent application of Nature's great store of organic remedies--Herbs--in the treatment of pathological conditions of the Human organism, but surely these three examples are sufficient to convince the most skeptical. I sincerely hope I have made that clear without trying your patience.

And now to peep at the romantic and fascinating History of Herbs before we get down to a detailed study of their very great and wonderful restorative and healing properties. Their classification, formulae, and their proper application. These will include also their peculiarities, affinities and incompatibilities when indicated, and their contraindications.

The history of botanical remedies probably dates back to the dawn of man's existence on Earth, but for all practical purposes, that is only conjecture and there is now no way of finding out. We can only reason that primordial man, living close to nature in a wild state, must have observed the habits and instincts of animals and if so, he must have learned much about the curative virtues of Herbs because of the remarkable instinct of present-day animals who unquestionably know the herbs that heal them, and it is logical to suppose that such marvelous instincts which all wild animals possess today, must always have been inherent in their ancestors.

From the highest to the lowest crawling creature, they all seem to know their remedies. Even the snake, the lowest and perhaps the least intelligent of them, knows his remedy.

When he casts his skin, he goes blind, and in that helpless condition he has often been seen to crawl to an old fallen tree or a mossy bank. He rubs his sightless orbs in the moss and eats the rich juice, and with that one herb he restores both his skin and his sight. When hawks and carrion birds peck at the eyes of young birds in their nests, and when the eyes are not totally destroyed, the mother bird has been seen to anoint her babies' eyes with the juice of the leaves of the great celandine Herb (*Chelidonium Majus*), and it has been recorded that the films and opacities have been removed, and the bird's eyes completely restored to sight. Again, when the little mongoose is stung while fighting venomous snakes in India, he immediately leaves the fight, dashes into the jungle, finds an herb, eats it, and rubs the poisoned part in its juice. Then, he returns to kill the snake and, according to testimony of thousands of witnesses, no mongoose has ever died from snake bite.

A description of those three herbs and their therapeutic application will be given later.

These instances are but three out of hundreds of similar incidents denoting the marvelous instinctual knowledge of animals in the selection of their remedies.

We know how wise in Herbal lore are the Indians and Aboriginal tribes, and is it not logical to suppose that animal instincts have been handed down from generation to generation for countless thousands of years, and that man could hardly fail to learn from them?

Interspersed through this course we shall give many interesting instances of both animal's and man's sagacity in selecting the remedy or Herb that healed them.

The Chinese claim that the knowledge of plant remedies originated with them and dates back about 10,000 years.

History points more definitely to Egypt. The so-called mythological "Goddess of Health", Queen Isis, was worshiped by those wise people as the greatest teacher of the laws of life and health who instructed their ancestors in the cultivation of many medicinal and food plants, particularly wheat and barley, the making of rare and virtuous wines., etc.

She was the wife of Horus (The god of light) and the mother of Oseris (the goddess of wisdom).

A tradition that cannot be verified by historical facts is called a "myth" though it often happens that so-called "myths" turn out to be founded on fact, and it is quite within the bounds of reason that Queen Isis did actually exist in the flesh, in some far distant prehistoric age.

Be that as it may, the fact remains that some long lost records have been recently recovered, showing that the ancient Egyptians utilized many herbs

medicinally, which today are numbered among our proven and most valuable remedies.

Among them are Cumin (Umbelliferae), a valuable carminative stimulant;--Caraway Seeds (Umbelliferae), a stimulant, carminative, diuretic, stomachic and local anesthetic (oil); Myrrh (Commiphera), a most valuable stimulant, tonic, expectorant, emmenagogue, astringent, carminative, vulnerary, disinfectant and antiseptic. This Herb was formerly considered to be one of God's greatest gifts to man, and as such was presented to the child Jesus by the three wise men from the East, who traveled far to worship the new-born Savior. It is still one of our most important therapeutic agents. Olive Oil(Oleaceae), nutritious, emollient, demulcent, laxative, bilegenetic (bile former), and Chylegenetic (Chyle former), solvent of Cholesterin (the chief constituent of gall-stones),and a powerful Peristaltic.

Several Cassias (Caesalpinaceae) including Cassia Fistula, Cassia Acutifolia and Angustifolia, (both called Senna), Cassia Obovata (the original Senna) and several others.

Peppermint (Mentha Piperita), carminative, stimulant, nervine, diaphoretic, antiseptic. Juniper, stimulant, diuretic, anodyne, emmenagogue, carminative, stomachic, antiseptic. All these ancient and wonderful Herbs will be fully described, together with their most effective therapeutic applications.

Leaving Egypt, we enter ancient Greece and glance at the great school of Philosophy founded by one of the wisest men of all time. Namely Pythagoras (500 to 600 B.C.). The wisdom of this great Philosopher has seldom been equaled. He is reputed to have taught many branches of natural science, and gathered around him a large number of the most brilliant thinkers of that time; specialists in every subject pertaining to Life and Health.

There is not much doubt that the learned teachings and writings of these great men laid the foundation for the coming of that remarkable genius Hippocrates, (365 B.C.) justly styled, the "Father of Medicine", because the only true science of medicine is the intelligent use of Nature's only real medicinal remedies--Herbs.

Although Hippocrates was born on the island of Cos in Asiatic Turkey, he was a Greek who graduated in the Pythagorean School. He traveled far, and studied Herbs in their application to health and disease, becoming the greatest physician of his time, and perhaps the greatest of all time.

Returning to Egypt, we find the Ptolemies, about the same time (300 years B.C.) founding a medical school in Alexandria. The most famous of the professors of that school were, Erasistratus and Herophilus who dissected the bodies of criminals obtained from the government.

They were opposed to bleeding and poisonous remedies, trusting to simple natural Herbs. Herophilus paid particular attention to the action of the heart, and was the first to give anything like an accurate description of the various kinds of pulse; though Praxagorus of Cos, the last of the Asclepiadac, had before observed the relation which exists between the pulse and the general condition of the system.

Referring to the Asclepiadac, we can hardly pass over them without mention. Tradition says that Aesculapius was worshipped by the Romans as "The God of Medicine", who studied and practiced medicine exclusively. There is no doubt that, as in the case of the Goddess Isis, Aesculapius was actually a man, because we find in Homer's "Iliad", reference to his two sons, Machaon and Podalirius. Both are described as being skillful surgeons in the Trojan War. Also two daughters, Panakeia and Hygeia, quite as famous as their brothers. Hygeia being credited with the invention of many valuable herbal preparations. The success of these, in curing diseases, won her the proud honor and deification as an especial "Goddess of Health." The followers of Aesculapius were called the Ascle_piadac.

It does not matter much which of these schools antedated the other. The thing we are concerned with is, to show the great antiquity and importance of the Science of Natural Healing, by the use of Herbs.

We have not time to treat of the lesser schools, such as the Dogmatics, Empirics or Pneumatics, who, although they all employed Herbs, were involved in theories and doctrines often at variance both with reason and each other.

Entering the Christian Era, we come to a truly great Physician, Claudius Galen (130 A.D.), born in ancient Pergames, which later became a part of the Roman Empire. Like many other men who dared to think for themselves, who wrote and taught what they thought, Galen was much persecuted by his contemporaries, particularly by the Epicureans whose doctrines he totally rejected. He was entirely independent in his opinions, and paid little respect to authority.

Thoroughly educated in all the schools of philosophy, he selected from them all except the Epicurean. He wrote many books and treatises on Herbs and medical subjects. His great skill in the treatment of disease, his profound learning and wisdom, won for him the title of "The Oracle of Medicine"; but so great was his persecution by other physicians, that he left Rome and returned to his native Pergames.

Some time later, the children of the Roman Emperor Aurilius, were stricken with a serious illness. The Royal command was sent to Galen to return at once to Rome. Needless to say, he restored the Emperor's children to health and was thereafter left severely alone by his enemies. The indignities suffered by Galen ? the ? of orthodox physicians has been repeated all through the ages, if at

any time, a brilliant mind dares to disagree with them. We are seeing a great deal of such persecution, even today.

Leaving Greece and Rome, we travel north with the Roman Legions to Angleland (England). During the first few centuries of the Christian Era, we lost sight of the Healing Art except for a few records which show that the Celts; Scots, Saxons, Danes and Angles were all possessed of a knowledge of Herbal remedies and were all of robust and powerful physique. It would not be fair, not to mention that the, Arabians, having conquered a large portion of the semi-civilized world, destroyed an immense Alexandrian Library, but the Arabian physicians soon adopted the opinions of Galen and added them to their own medical knowledge. They produced medical works some of which enjoyed great celebrity without materially adding to the previous medical science. With Averroes terminated, the Arabic or Saracenic School of Medicine, the great reputation of which is mainly owing to the circumstance that, from the eighth to the twelfth centuries, all Europe was sunk in deep barbarism and the slight remaining taste for literature and science seems only to have existed among the Moors and Arabs. This for lack of records.

After the Norman conquest of England (1066 A.D.) some law and order was established and many cathedrals and monasteries were built. Many priests studied the teachings of Aesculapius, Hippocrates and Galen and being men of great learning, soon became famous for their knowledge of Herbs in the treatment of disease. For several centuries, the Benedictine Monks of Mon'e Casino and other countries, together with the traveling Jesuits, enjoyed a great reputation as Herbal physicians. Many Herbs are named after them, and countless thousands of people were healed by them.

The Alchemists originated in Arabia. They sought to transmute the baser metals into gold. They also sought the Elixir of Life and the Philosopher's Stone. The Alchemic art was at length transferred from Arabia to Europe, and Medical chairs were established on the continent during the 13th century. Finally Linacre, who was educated at Oxford, and having traveled in Italy and spent some time at the Court of Florence, returned to England and succeeded in founding Medical Professorships at Oxford and Cambridge, from which circumstance was laid the foundation of The London College of Physicians.

Thus, chemistry, having been applied to various processes, was applied to Physiology, Pathology and Therapeutics. The chemical doctors were very wild and extravagant in advancing unnatural theories, but they had an ever present champion in the name of Galen, who was well entitled to be called the "Prince of Medical Philosophers."

He was a philosopher, a natural philosopher, for he studied nature closely and profoundly, and deduced his indications of cure from an accurate observation of her laws.

His system, however, was destined to be utterly overthrown by an adventurous vagrant, whose ignorant quackery never had its equal on Earth.

This impudent and unprincipled charlatan was none other than PARASELSUS, to whom the Medical world of today is more indebted for the mineral drugging system than to all other physicians who ever lived.

He introduced the Mercurial and Antimonial practice, which still constitutes the great bulk of the Materia Medica of today, and which also continues to pursue its terrible devastating power on all human constitutions that come under its sway and influence.

In the fullness of his pride, pomp and arrogance, Paraeclans, burned, with great solemnity, the works of Galen and Avicenna, declaring that he had found the philosopher's stone and that mankind had no further use for the medical works of others.

He lived a disappointed, miserable life, suffered from a most terrible disease, and died prematurely at the age of forty-eight, his famous ELIXIR VITAE having failed to save him from a horrible fate.

Strange are the incongruities, inconsistencies and inanities of the human mind. Strange indeed, how the ignorant multitude will persist in making heroes out of cruel and inhuman criminals, as in the case of Paracelsus. His very name was fictitious, his real name being Bombastus von Hohenheim, a Swiss alchemist, and the greatest faker who ever lived.

It is almost unbelievable, but his abominable doctrines prevailed and his ignorant, infatuated followers have added several hundred other chemical inorganic mineral substances to the materia medica of the "Quick Silver Quack". At the present time, among a certain class of physicians, there is hardly a disease in the catalogue of human ailments in which mercury, zinc, lead, copper, antimony, arsenic and many other deadly, drastic drugs are not employed, and all they have to do is write a death certificate, to be exonerated of all blame for the death of their patrons.

During the seventeenth century, the doctrines of Hippocrates again rose to some prominence in medical philosophy. Anatomy made progress, Harvey discovered the circulation of the blood, others traced out the absorbent system and explained the functions and structure of the lungs, while Boyle disengaged chemistry from the mystery and bunkum by which it was surrounded and explained its true province to be-- "not the manufacture of solid gold, liquid nostrums or gaseous theories, but, an investigation of the change of properties which bodies or matter show in their action on, or union with each other."

From this time to the beginning of the eighteenth century, notwithstanding, many facts had been accumulating in chemistry, anatomy and physiology. Physicians, as a body knew no more of the true nature of disease or

how to cure it, than was known by Hippocrates nearly two thousand years before. Indeed, it is positively certain that none of the eminent new schools of the present day have been nearly as successful in curing disease than were Hippocrates, Galen, and Sydenham (English Herbalist, 1624-1689 A.D.). Meantime, however, there have arisen physicians who, while they readily receive all the new facts in respect to the structure of the human organism, have still adhered to the teaching of those great physicians and treated disease with most abundant success, by means of Herbal preparations alone. We have today as bright a galaxy of names--scholars, philosophers, philanthropist, and humanitarians--as ever adorned any age of the world, devoting themselves with zeal and industry worthy of all praise to the study and practice of medicine, but who, failing to get the grand results anticipated in their laborious researches after Truth, do not hesitate to admit that their actual information does not increase in any degree in proportion to their experience.

All their learning and their multitudinous writings have only served to make confusion more confounded, and all because they have neglected to follow the dictates of nature and plain common sense, in maintaining the Herbal practice as the only true and philosophical foundation of the Healing Art.

Amidst all the jarrings, conflicts and conflicting dogmas of the medical world, is it any wonder that the great masses are rapidly losing all confidence in medical science? They are afraid of operations, serums, antitoxins. They have seen so many of their dear ones suffer and die in spite of every effort by the reputed most skillful physicians. They are being made aware of the rapid increase of purulent disease such as Cancer and Syphilis and are crying out for a more natural system of treatment. They know that medical science has failed.

It is time that some of us aroused ourselves from our lethargy and entered the field of logical natural medical science in the interests of our long suffering people and the advancement of the Healing Art Divine. Let us equip ourselves with a knowledge of Herbs equal to those great physicians both ancient and modern whose mighty wisdom has saved humanity from pestilential destruction. Now is the time, when the civilized world is looking, seeking, expecting us to come to their aid.

In England, the Herbalists are making great strides. They are rapidly increasing in numbers. They are highly esteemed and have established powerful National and Social organizations for mutual protection and advancement.

Are we, in America, to play second fiddle to them, or, are we going to enter the lists and advance our knowledge to the place where we are second to none; where, our whole nation will look up us as Truly great physicians?

Gentlemen, it is with this end in view that we have left no stone unturned--that we have sought diligently, sparing neither time nor expense to gather together a great mass of data, culled from many sources and reliable authorities in

order to bring you real scientific knowledge and make of each and every one of you, truly great physicians.

We realize most vividly that our own individual efforts can only reach very narrow limits, but that you, the chosen few, can diffuse this most valuable knowledge, and so materially help to establish our own universities, colleges, hospitals, and institutions, in a greater renaissance than has ever before occurred in the history of mankind.

This course of study is not like anything that has gone before. It does not consist of mere folklore, mere repetition of what has been taught before. It consists of the most recent findings of the greatest of living scientists--the clinical experience of the world's most famous physicians both ancient and right up to the present time and date.

This lecture is only introductory serving to foreshadow the joy and delight you will experience in the course which we believe will pilot you quickly to honor and greatness, to say nothing of financial success.

And now, let us give you something more interesting. A pharmacist has to be exceedingly careful and exact in compounding prescriptions, which are often of a very poisonous nature. So, must the Botanical physician be. There are very many peculiarities about plants which are little known to the great majority of Herbalists and that is the main reason for their mediocre results.

What we want is to heal the sick, to restore sight to the blind, hearing to the deaf, to cure the lame, to nourish emaciated bodies, to check the wasting ravages of Tuberculosis, the filthy corrosions and erosions of Cancer and Syphilis. To rid the system of corruption, the cause of Cacoplasis. To dissolve and eliminate all stones and calculi in any part of the human organism without endangering or destroying the organ or tissue affected. No matter what they be called--alternating, arthritic, aural, biliary, blood, breast, bronchial, cardiac, chalky, cutaneous, cystic, dental, encysted, lacteal, laminated, mammary, nasal, pancreatic, parotid, preputial prostatic, renal, salivary, secondary, urethral, uterine, vesical or xanthic,--we want to know how to dissolve them all without failure. We want to stop the awful stench of mercurial salivation, to heal the necrosed bone, restore the heart, liver, lungs, kidneys and glands to the normal healthy function.

All these things have been done by the great Herbal physicians, but it is certain that we cannot obtain these spectacular and miraculous results without an exact knowledge of our remedies, and it is just as certain that, given that exact knowledge, any one or all of us can achieve these magnificent results. This knowledge consists in knowing the peculiarities of medicinal plants in various stages of growth, their changing chemistry while growing their vital curative principles and their poisonous qualities. Without this knowledge, we shall accomplish little. The unripe capsule of the poppy (*papaveraceae*) contains

morphine (from 2 to 22 percent), narcotine (1 to 10 percent), codeine (0.2 to 0.7 percent, narceine, pseudo-morphine, thebaine, papaverine and twelve other poisonous alkaloids all combined with sulphuric acid or meconic acid (4 percent). Also contains glucose, mucilage, pectin, caoutchouc, wax, fat, lactic acid, meconin and meconitin. All these alkaloids are dreadful poisons which lay the foundation for many chronic diseases.

The Poppy allowed to ripen and produce seed, manufactures one of the finest salad oils (Poppy seed oil), which also has great medicinal value. It is of a light yellow color, odorless and has a sweet almond flavor. Its nutrient, demulcent and vulnerary properties are second only to its solvent action on cholesterol and stone deposits in various parts of the organism. This solvent action is dependent on linolic, oleic and linolenic acids, which it contains in abundance; also glycerids of stearic and palmitic acids. These contain no narcotic principle and are quite harmless. Now perhaps you begin to see what I mean by exact knowledge of the peculiarities of plants. True science is exact knowledge. I could go on and on discoursing on this one Herb alone.

Again, the bitter almond (*amygdala amara*) contains a dangerous percentage of hydrocyanic acid (HCN), a most rapid deadly poison, and probably the greatest poison known to man. But the sweet almond (*amygdala dulcis*) contains no poison principle, but it does contain 56 percent of a sweet bland fixed oil which is nutrient, (especially for the lungs), demulcent, vulnerary, laxative (containing no starch, is excellent for diabetes). The meal can be made into Health Bread, cake, puddings, etc., but what is most valuable about it is that it contains phosphate of potassium (brain food), phosphate of calcium (bone food), and phosphate of magnesium (flesh food). Its seed (almond) is a delightful nut, easily digested, and is one of the greatest builders of brain, nerve, bone and flesh discovered by man.

Allopathic physicians use countless poisonous Herbs, and ignore the most virtuous and harmless ones.

In this course we will give you as much information as possible on the chemistry, habitat, peculiarities, therapeutic application, and preparation of Herbs. It is the exact knowledge of these factors which spells the difference between success and failure.

We live in the greatest age of discovery and invention in the History of the World. The human mind has trudged through ages of ignorant guess-work and blind sensual suggestion. Gathering flowers to please the senses and satisfy vanity, Italian ladies gathered the beautiful purple flowers of *Bella Donna* (Beautiful Lady), and also ate the dark cherry-like fruit. They noted in the mirror that their eyes were beautiful (pupils dilated); they rubbed the red juice on their cheeks and behold, they too were beautiful. Inwardly, their nerves were quiet, and their conscience dulled. Encouraged, they ate more "cherries", and what happened? The mouth became dry, throat sore, insatiable thirst, burning pain in

the stomach, deglutition difficult, dizziness, double sight, hallucinations, delirium, fits of laughter, convulsions, cold extremities, coma, and death. Such is the price paid for ignorant guess-work. But, having suffered long and terribly, man begins to think, and today he is able to gather from a vast storehouse of scientific data, exact knowledge, which enables him to overcome obstacles and avoid pitfalls.

Yesterday, he crossed the ocean in from 6 months to 2 years; today he does it in a few hours. Yesterday a message from San Francisco to New York took weeks. Today it takes less than one minute. Yesterday twenty miles an hour was fast traveling. Today two hundred miles an hour is by no means top speed. Yesterday the world was very large. Today it is very small.

So fast does progress, invention, and discovery move along, that to keep abreast of it, one must constantly keep on the qui vive, constantly seek more exact knowledge, wisdom and understanding.

In the chaotic condition of the so-called medical science and in the crying need of the millions, is our grand opportunity to read, learn and understand the truth about the ancient, honorable and benefic science of natural healing--Herbology--, for the wages of error and ignorance are death, but the gift of God is eternal life, which is not inconceivable or impossible.

The voice of ignorance says--absurd, impossible, preposterous--but the voice of wisdom, of reason and intuition says--the day is coming when, through exact knowledge we shall be able to reconstruct our body faster and better than our ignorant guess-work destroys it. In other words, as every living cell has the inherent power to reproduce itself, ad infinitum, it is quite within the bounds of reason that an exact knowledge of the laws of life, will ultimately enable us to so increase and augment the anabolic constructive processes of metabolism that the Catabolic, destructive processes will be so diminished and minimized that ultimately they will disappear entirely.

Nature is ever young and beautiful, ever vibrant with life and more life--why not man? Let us get down to work and make this dream come true, for we shall keep coming back to reap the harvest of what we have sown, until we learn the Truth which alone can set us free. "You shall know the Truth and the Truth shall make you free."

LESSON ONE

Dear Student:

During the course of these lessons, some of your more or less deep seated convictions and beliefs are going to receive some severe jolts.

In a certain limited sense this is to be regretted, but we consider it our duty to point out certain errors which have been misleading all of us. When a conviction becomes deeply seated, it is often difficult, at least for some of us, to change our minds and beliefs, since it might upset some of our present methods and proceedings. But when it is made clear that we have been acting on misinformation, (even though what we believe is almost universally accepted), and we find out that we are evidently wrong, should we not be fools indeed, if we persisted in sticking to those errors?

Science must be built upon the firm rock of Truth, or it is not science, but merely guess-work. Unfortunately, much has been mis-called science, which upon intelligent analysis, turns out to be pure 'bunkum'. This is particularly evident in the medical field, though there are many instances of error found in other branches of science, after which old theories have to be discarded.

It was not so long ago, that our scientists believed water to be an element, and oxygen the cause of acidity; that an atom was thought to be the ultimate particle, and a pathogenic organism was the principal cause of the disintegration of the cell and disease in general. That inorganic matter can be assimilated by animal cells without injury, that the fly was a disease producer and that to alkalize is to promote health. So-called scientific facts (?), which have all turned out to be unscientific non-sense.

Several of these disproven theories are still believed by those stubborn, unreasoning minds who, either through ignorance or through some inferiority complex, would rather die than give up their pet convictions. But time marches on, and every day brings new discoveries and new light to those who honestly seek the Truth, and are big enough and wise enough to admit that they have erred in their past judgments.

Now if some statements made in this course appear at first to conflict with some of your present beliefs, we ask you to please be patient and keep an open mind, until we have had the opportunity to prove them to be correct.

Since we are on this subject, let us start off with a statement that is diametrically opposed to an almost universal belief, and then prove it to be true.

There are no such things as Vitamins A, B, C, D, or any other letter in the alphabet. They simply do not exist, except in the fanciful imagination of unscientific minds, who first originated the idea, or those who believe it, because it is so extensively advertised. The very word is a clumsy misnomer. "Vita" is from the Latin meaning "to live". The word "min" is only an abbreviation of the Latin word "minimus", a minim, or drop of liquid, the smallest liquid measure, the sixtieth part of a fluid drachm. Therefore, literally, a Vitamin is the tiniest drop of liquid life. Strange are some beliefs of man, and gullibility of the multitudes!

No one has ever defined the word "vitamin" nor shown its chemical composition, because life is not a ponderable substance, either solid, liquid, or gaseous; but an inscrutable essence which defies the greatest wisdom to define. You may think this as being unimportant, and a waste of time; but it is of the greatest importance, because soon this foolish, bubble will burst, and its propounders will be held up to ridicule.

It is to be supposed that the word "vitamin" was intended to convey the idea that certain substances are cell foods that support and vitalize the organs and cells of the human body.

But today we are not altogether in the dark as to what those substances are. -- In fact, we have quite an extensive knowledge of them and their chemical constitution; therefore, let us discard all senseless terminology, and find out just what these vitalizing substances are, where we can find them, and how we can use them to promote more life and vigor in the temple we call our body.

About a hundred years ago or so, a group of German, English, French and Italian Scientists made an intensive study of the chemistry of the human body, principally by chemically analyzing the ashes left from the incineration of particular organs, tissues and parts of the body.

Among these scientific investigators were: Dr. Wm. H. Schuessler of Oldenburg, Germany; Dr. Lerbacher of Leipzig; Drs. Grauvogl, Virchow, Moleschott, Italian; Dr. M.D. Walker, Scotch; Dr. J. T. O'Connor, English. The great French scientist, Alfred Binet (18th Century) also contributed a great deal to our present day knowledge of Biologic Chemistry.

Among the findings of these devoted and untiring physicians are the following:

- (1) The osseous structure of the human body is largely built and vitalized by calcium phosphate (57 percent), calcium carbonate (10 percent), and magnesium phosphate (1.3 percent).

- (2) The brain and nerves, by potassium and magnesium phosphate.
- (3) Connective tissue cells, by silica.
- (4) Muscular tissues, by magnesium, potassium and calcium phosphates and chlorides.
- (5) Elastic tissues, by calcium fluoride.
- (6) The blood, by iron phosphate, etc., etc.

It is not our desire or intention to pump you full of chemical formulas and technological extravagance, but it is most desirable and necessary that you know something about the chemistry of the human body, because every disease known to man is primarily a condition of unbalanced chemical constituents, of both elements and compounds which compose the tissues and fluids of the whole organism. (Later on in the course we will prove this to you.)

When those scientists just mentioned, made their important discoveries regarding the almost invariable chemical composition of the ashes of various tissues and organs, they laid the foundation for a new medical science called “Bio-Chemistry” (the Chemistry of Life). But Life is full of paradoxes and contradictions; and while we give these gentlemen credit and admiration for giving us an important key to help solve the problem of disease, we know today, that while they were correct about the chemical composition of dead ashes, they were certainly in error to suppose that these inorganic cell salts, as they are called, could possibly restore diseased human cells to life and health, through the administration of compounded inorganic lifeless matter.

The paradox I have reference to is that though they were right in one sense, they were all wrong in the other. During this long course of study, we shall endeavor to show you where and how you can obtain these famous cell salts in organic forms,--to supply deficiencies, to counteract and modify excesses--to dissolve and eliminate cal-carious and other metallic deposits and restore chemical equilibrium and healthy function.

In our last lecture we gave you an instance or two of the fact that plants contain all the tissue and cell foods, necessary for supplying deficiencies. You will doubtless remember that we told you that Irish Moss (*chondrus crispus*) contained the organic salts of phosphate, of potassium, (brain and nerve food) phosphate of calcium, (bone food) phosphate of magnesium, (found in every cell in the body) together with chlorides, sulphates, iodides and bromides, all beautifully balanced in ideal proportions which could never be equaled by any trituration process man could invent.

It is a knowledge of these great living and life giving principles which we seek to acquire that we may always be sure we are right, and being quite sure, we shall make no clumsy mistake that may endanger the very life of our patient.

Therein, we shall stand out far ahead of our friends of whom Dr. Bostock, M.D. (author of History of Medicine) once said--"Every dose of medicine given by us, is a blind experiment upon the vitality of the patient."

There have been and still are many unprejudiced and honest gentlemen in the regular ranks of the medical profession. We wish we might have some of them in this class, because of their broadmindedness—their earnest desire to know the truth and because of their ignorance of Herbal remedies.

The great Dr. Warren, M.D. says--"There is a large and growing class who have extended their zealous researches over the vegetable kingdom. The list of remedies they have given to the world, drawn from home plants, are a boon of no small value, yet it is mortifying that what these men have given us are not even known by name, by medical men, and moreover, that most Doctors are extremely ignorant of the medicinal plants, even in their own neighborhood."

There has never before been a Scientific Treatise on Herbs that can in any way compare with this one and if we, first thoroughly learn and then diffuse this invaluable knowledge, it will not be long before the honest-element, (which we believe is very considerable) in the regular profession will be seeking us out and conferring honors upon us, to say nothing of the blessings of our people.

So, let us get down to cases.—At the end of this lecture will be found an alphabetical classification of Herbs according to their therapeutic properties, their nature and correct application will be given under each of these headings taken in the order of this alphabetical arrangement.

A quite unique feature of this course consists of:

(A) a description of _____ the avenues by and through which Herbal remedies enter the system.

1. By Stomach:--gastro--intestinal route.
2. By Skin--Epidermic (Epidermatic)
3. By Skin--Enepidermic (Enepidermatic)
4. By Rectum.--Enemas, suppositories, etc.
5. By Lungs.--Respiration, vapors, etc.
6. By external application.--Powders or liquids to abraded surfaces.

(B) The means by which remedies are transmitted through the system, by blood, lymphatics, lacteals, etc.

- (C) Conditions which may modify the action, hence the dose and form of administration, etc.
- (D) Synergists which harmonize and assist action.
- (E) Incompatibles which neutralize or destroy the action of each other or even act as poisons, though separately, they may be harmless.

Thus, it will be seen how thorough is this treatise, which introduces new and extremely valuable features, which hitherto have not been given in any treatise on Herbal Science.

Before we get into the actual study of Herbs, let us learn the difference between the various branches relating to our subject.

BOTANY is the branch of biology dealing with plant life. There are numerous subdivisions such as: cytology, morphology, anatomy, histology, physiology, paleo-botany, ecology, phyto-geography and pathology. Each of the above mentioned divisions deals with important phases of plant life, from the cell to complete fruition and final dissolution. It is unnecessary, in this work, to go into the study of botany, but it is essential that we be aware of the extensive and exhaustive researches that have been carried on in this subject, and which actually is the very foundation of the Science of Herbalism, now more commonly referred to as Herbology.

A Botanist is a student of the structure, habits, habitat, diseases, relationship, etc., of plants.

HERBALISM or HERBOLOGY is that branch of the science which deals with therapeutic properties of HERBS. It can be readily seen that this is quite separate and apart from botany; and yet, the Science of Herbology is dependent upon botany for its source of supply. However, one can be a highly efficient Herbalist without being a Botanist and vice versa.

An HERBALIST or BOTANIC PHYSICIAN is one whose therapeutics is confined to the use of herbs, roots, barks, seeds, flowers and berries. It is self-evident, therefore, that a real herbalist or botanic physician is a true, natural physician. His ministrations are confined to the substances which Mother Nature has so bountifully provided; that are organic in chemistry, that are endowed with life and are harmonious with the chemistry of a man. This is diametrically opposed to the pernicious practice of administering poisons, serums, vaccines, and inorganic drugs, for which cell life has an abhorrence.

An Herb is a seed plant whose stem does not develop woody tissue, as that of a shrub or tree, but persists only long enough for development of flowers and seeds. Herbs are annual, biennial, or perennial, according to the length of life of their roots. While the above definition is substantially correct from a botanical standpoint, the practice of Herbalists has come to include all substances in the

plant kingdom which are in harmony with and conducive to cell growth and rehabilitation.

While a knowledge of the botanical history of the herbs which he uses is well worth having, it is not indispensable for the reason that he will seldom be called upon to gather those which he intends to prescribe. As a matter of fact, we strongly urge that the gathering of herbs by the doctor be discontinued as much as possible because it is highly essential that all of the herbs he uses be as uniform in potency as possible. The gathering and preparation of herbs is a specialty which requires much time, experience and costly equipment and, therefore, this work should be left to those who are prepared to handle it properly. Many herbalists have gotten poor results merely because they were using herbs that were not potent. Improperly prepared and preserved herbs are like a diseased body; they have lost too much of that vital spark. Disintegration has set in, and the potency is gone.

A thorough understanding of the classification of herbs, according to their therapeutic action, is the foundation of success in the treatment of disease by this means. First comes proper diagnosis, upon which important subject we shall speak later. This, coupled with Knowing which herb or herbs are indicated and how best to apply them, is the Alpha and Omega of Herbology.

The definitions of a poison contained in various medical and lay-dictionaries are somewhat at variance with each other. We find in one dictionary by an eminent medical authority, a lengthy list which includes many substances and herbs which we know not to be poisonous, but definitely healing in their action, in or on the human body. Among those listed, we find wild cherry, lobelia, camphor, castor oil, milk, bloodroot, pennyroyal, cubebs, etc.

Can it be possible that every mother who has been administering milk to her loved ones, has been innocently poisoning them? Surely one cannot consider that the above mentioned substances, when intelligently applied to the body or ingested, cause disease? Yet, that is the definition of a poison, taken from a standard, recognized medical dictionary. This depends largely upon dosage.

We shall learn, as we progress, that many of the so-called poisons are in reality highly valuable, and certainly non-injurious remedies, when properly used. Allopathic Medicine is such a conglomerate collection of hodge-podge opinions, pseudo-scientific findings and questionable medieval mental meanderings, that it is no wonder it's practitioners are constantly groping in the dark for curatives, Jumping from one highly advocated serum, vaccine, or inorganic drug to another when each in its turn fails.

The Truth lies in the fact that orthodox medicine has adopted and fostered an erroneous concept of the cause of disease, primarily, and, as a result, its conclusions as to the manner of effecting a cure is likewise erroneous. Their entire premise of cause is the "Germ Theory". Only an uneducated person would deny

the existence of germs. We are prepared to admit that if the human body is in a debilitated condition, and a highly concentrated cluster of pathogenic organisms are placed in contact with a vulnerable portion of the body, certain reactions are apt to occur equivalent to the disease attributed to that type of organism. Right there, however, is the line of demarcation between orthodox medicine and Natural Healing. Orthodoxy attempts to effect a cure by killing the infection with powerful inorganic drugs or by the injection of dangerous serums or vaccines, which no doubt interfere with the efforts of cell-intelligence to stop and destroy the invaders. The Herbalist and Natural Healer, on the other hand, recognizes that disease, excluding trauma, is the result of the violation, intentional or otherwise, of the laws of Nature, that germs cannot exist in harmful numbers for any length of time in or on tissue, the Life and Vitality of which is so high that the only way the disease can be overcome is to aid Nature in the healing process by the elimination of the poisons and toxins through the body's natural channels and allowing the Vitality to return to its normal strength. In other words; disease is not cured by adding poisons to the body, but by eliminating them and observing the laws of Nature, aiding and assisting her in every possible way

Nothing should be added to the body in disease that cannot be utilized by the cell intelligence of that body in its chemical balancing and healing processes. This applies to excess food as well as to dead, inorganic, poisoning substances, misnamed medicines.

Nature has provided in her extensive laboratory the necessary substances which contain the needed ingredients to heal the ills-of mankind, if he would but take the time to study.

Cell-intelligence refuses to assimilate those substances which are poisonous, therefore, poisons cannot be expected to heal.

In Professor Thurston's "Philosophy of Physiomedicalism", we find the following:

"Bioplasm of tissue units everywhere rejects poisons, refusing to assimilate them, and to the utmost of its resistive and eliminative powers, wars against their inimical and disintegrative action upon the unit integrity and tissue continuity."

Some of you may be asking yourselves, "When is he going to tell us what Herbs to use in different diseased conditions?" , but we do not plunge into deep water before learning to swim, nor do we get diplomas by just knowing a few formulas.

A course in Pharmacy, which is the established Science of Compounding Drugs for medical use, takes from three to five years and extremely difficult examinations. This course will be completed in less than six months, but it is at least as thorough and scientific as is any other branch of medical science and it

will enable any one, or all of you who will study it intensively, to achieve great triumphs and honor in your future practice of the Healing Art Divine.

As you progress, you will see how vitally necessary it was to understand every relative statement of connected facts which make up the complete Thesis.

The phenomena of Nature is manifested everywhere by an endless series of changes. Every atom of matter is in motion. Nothing is still, yet ever through this eternal activity, there is law, order and harmony. All bodies are constantly absorbing and giving our radiant energy, constantly exchanging their ions for some other ions to form different substances, molecules or compound bodies. These are called chemical changes. They are brought about by their different chemical affinities, which by recent investigation have been proven to be electrical.

So, there has sprung up another new branch of science called Iontophoresis or Kataphoresis, also known as Medical Ionization. A very short study of this all important and revealing branch of medical science deals the death blow to inorganic medication and, at the same time, proves beyond reasonable doubt that the treatment of disease, by the intelligent administration of the essences and juices of Herbs, is the only logical and sane method of treatment.

There is no known pathological condition that cannot be reached and benefited. There is no disease that can resist their all powerful alterative and curative action. This will be very clearly demonstrated during this course.

It will therefore be greatly to your advantage to possess your souls in patience, so that you may become masters and leaders in your chosen vocation. There is no easy way to greatness. We cannot even play the piano without first learning the rudiments of musical harmony.

The understanding of the phenomena of life and growth is not nearly as difficult today as it was a comparatively few years ago.

The sensational discoveries made in Biological Science recently has revolutionized our ideas of life, and brought light to our dark imaginings. The old idea that an atom of matter was indivisible has gone forever. The Logos--The Voice of Logic or Reason--The Divine Word "Christ" has answered our earnest seeking after Truth and has revealed a vast new panorama of physical and vital phenomena that is rapidly lifting us out of the rut of ignorance and dark despair, into a realm of wisdom and understanding, foreshadowing a full knowledge of the Kingdom of Heaven within. To quote Christ's own words: "It is given unto you to know the secrets of the Kingdom of Heaven."

The discovery of the "ION" heralds the dawn of a new era in philosophy, and opens up a new vista of facts which are destined to reveal the innermost secrets of nature, and clear up some of her deepest mysteries of existence.

This name "ION" was given by Faraday, and means, a traveler. IONS are nascent particles carrying electric charges, either positive or negative, which are split off from molecules of matter in solution when dissociation takes place. They are in rapid motion, and are always seeking to establish equilibrium. Their amazing and wonderful work in all phenomena of life and energy throughout nature will be cited from time to time.

But now I will describe a formula, the first of many to be given in these lessons, yet second to none. I do not believe that any Herbal preparation in the whole history of medical science has been more effective in restoring health to broken down constitutions, in cases of purulent disease, ulcerations, blood and lymphatic dyscrasia, cacomorphosis, cacopraxis of any organ, either syphilitic, cancerous or otherwise, many of which cases seem quite hopeless from the start, having resisted all other known treatment, will in the majority of cases gradually and surely respond to the truly marvelous alterative and restorative virtues of this remarkable formula.

If you gentlemen only received this one formula for the price of this whole course, you would have been magnificently repaid for your expenditure.

It is a harmonious blend of Herbal principles, each of which has it's own specific action upon some part of the economy without, in any way, interfering with the remedial action of any of it's other ingredients.

Because of its great-importance and the large number of pathological conditions it can be beneficially applied to, it will be necessary for us to study each Herb and principle contained in it.

It may be justly described as an alterative, stimulant, discutient, disinfectant, antiseptic, antiputrefactive, antisyphilitic, resolvent, anthelmintic, diuretic, demulcent, nutrient, expectorant, hemostatic and vulnerary.

It contains six of the most virtuous Herbs known to man. All of them tried, tested and approved by long clinical experience, chemical analysis and scientific observation, to be of great therapeutic value in the treatment of chronic disease.

They are---1. MIMOSA GUM. Also called Egyptian Thorn, Bambolah Acacia, Verek Gum, Hashabi Gum, etc. 2. BRAUNERIA PALLIDA. Also called Echinacea, Angustifolia, Black Samson Root, Purple Cone Flower, etc. 3. IRIS VEPSICOLOR. Vegetable Mercury Plant, Blue Flag, Kings Evil Herb, etc. 4. SYMPHYTUM OFFICINALE. Consound, Comfrey, Knitbone, etc. 5. CHONDRUS CRISPUS. Carragheen, Irish Moss, etc. 6. EUGENIA AROMATICA. Caryophyllus, cloves, etc.

Now we will take a quick glance at each of these natural wonders in order to glean some idea of just why they possess such curative powers.

(1) MIMOSA GUM. This is a shrubby tree from 10 to 20 feet high, growing in sandy soil, deserts, forming entire forests along the Upper Nile, almost with no other associated vegetation. It often forms the food of natives and camels.

Constituents.--Arabic Acid (C₁₂H₂₂O₁₁) combined with calcium, potassium, magnesium, non fermentable sugars, Arabin pectinose and pectin sugar (C₅H₁₀O₅).

Properties.--Demulcent, emollient, protective, nutritive. By its viscosity, sheaths inflamed surfaces. Lessens the acidity of irritating medicines.

Uses.--Coughs, laryngitis, gastritis, typhoid fever, dysentery, diarrhea. Fine powder locally stops slight hemorrhage. Thick mucilage protects burns, ulcers, etc.

(2) BRAUNERIA PALLIDA. This member of the aster family was named ECHINACEA by Linnaeus and RUDBECKIA after Rudbeck, father and son who were his predecessors at Upsala. The flowers are a rich purple, root tapering, cylindrical, spiral. Has a faint aromatic odor, sweetish taste, leaving a tingling sensation in the mouth, not unlike aconite; but without its numbing effect.

Constituents.--Oil, resin, inulin, inuloid, sucrose, betaine, two phytosterols with oleic, cerotic, linolic, and palmitic acids.

Uses.--Increases bodily resistance to infection and is used for boils, erysipelas, septicemia, cancer, syphilis and other impurities of the blood. It is a very powerful antiseptic, alterative and aphrodisiac, also used beneficially in diphtheria

(3) IRIS VERSICOLOR.--Blue Flag grows abundantly in swamps and moist places. It is a perennial, bearing purplish blue flowers and sword shaped leaves. Its root and rhizome possesses a slight odor, an acrid, nauseous taste.

Constituents.--Volatile Oil, Gum, Tannin, 25 percent of acrid, resinous matter, isophthalic acid, salicylic acid, oleoresin and a camphoraceous substance.

Uses.--Emetic, diuretic, hepatic, cathartic, alterative. Is one of our most effective remedies for Syphilis, Scrofula, Skin Affections and Dropsy.

(4) SYMPHYTUM OFFICINALE.-- Comfrey (Boraginaceae) is a native of Europe naturalized in America and grows in moist ground in many parts.

Constituents.--Mucilage, tannin, phosphates of sodium, potassium and calcium, allantoin, iron, and a little starch.

Uses. Demulcent, nutrient, astringent, expectorant, hemostatic, cell proliferant and vulnerary. Used internally for ulcers, cancers, hemorrhage, wounds, torn ligaments, ruptures, broken bones. Also for coughs, bronchitis, etc.

(5) CHONDROUS CRISPUS.--Irish Moss grows on submerged rock in the Atlantic Ocean, Irish Coast and New England.

Constituents.--Mucilage 55-90 percent carrageen (pectin), an abundance of sulphur in the form of sulphates of sodium, potassium, calcium and magnesium. Also phosphates, chlorides, iodides and bromides.

Uses.--Demulcent, nutrient, dietetic. Used internally in the treatment of Bronchitis, Dysentery, Diarrhea, Kidney and Bladder disease, Scrofula, etc.

(6) EUGENIA AROMATICA.--Cloves, a handsome evergreen tree cultivated in Indian Ocean Islands, Sumatra, Malacco, Penang, etc.

Constituents.--Volatile Oil--18 percent, gallo, tannic acid, 10 to 13 percent, gum 13 percent, resin 6 percent, caryophyllin, eugenol, vanillin, green wax, cellulose, etc.

Properties.--Stimulant, stomachic, carminative, aromatic, anti-emetic, antispasmodic, germicide, antiseptic.

Uses.--Nausea, vomiting, flatulence, colic, indigestion, etc. Cloves is considered by some investigators to be a more powerful antiseptic than Bi-chloride of Mercury.

Dear student, I ask you, could any formula, regardless of ingredients from which compounded, or how carefully blended, be of more therapeutic value than this scientific masterpiece?

FORMULA No. 1. For All Chronic, Purulent and Dyscratic Conditions.

1.	Mimosa Gum (Gum Arabic)	(powdered)	4	ounces
2.	Brauneria Pallida (Echinacea)	(cut root)	12	" "
3.	Iris Versicolor (Blue Flag)	(cut root)	4	" "
4.	Symphytum Officinale (Comfrey)	(cut root)	12	" "
5.	Chondrus Crispus (Irish Moss)	(bleached)	4	" "
6.	Eugenia Aromatica (Cloves)	(powdered)	4	" "
			<hr/>	
			Totals	– 40 ounces
			(2½ lbs)	

Method of Compounding: Note very carefully.

Process #1

Macerate the 4 ounces MIMOSA GUM with 4 fluid ounces glycerin and 8 fluid ounces distilled water. Let stand until dissolved, stirring from time to time. The glycerin will retard the formation of Acetic acid which would occur if only water were used as a solvent. Strain. There should be 1 pint.

Process #2

Macerate the 4 ounces of CHONDRUS CRISPUS in sufficient ordinary cold water to cover, for 10 minutes. Strain and throw away liquid. Then boil the herbs in 1 gallon distilled water for 15 minutes. Strain while hot and press. Yields 7 pints. In this way you will have a solution free from any unpleasant flavor of saline, or other foreign substances. Add 1 pint of glycerin and blend well. This will gelatinize when cool, and will amount to approximately 1 gallon.

Process #3.

Combine the balance of the dry herbs, Echinacea, Comfrey, Irish Moss, Blue/Flag and Cloves in a large vessel and mix well together. Pour over this 2 gallons of distilled water and let stand for 12 hours. Bring to a boil and simmer for 1 hour, stirring frequently. Watch that it does not boil over. Strain, press, then boil this liquid again slowly till reduced to ½ gallon.

Process #4.

Combine all three fluids, and stir in ½ gallon of glycerin. Blend well, cool, and bottle in brown actinic bottles. Keep in a dark, cool place. You should have approximately 272 ounces.

Dose: For adults, 1 to 2 tablespoonfuls with lemon or orange juice, three times a day, before meals.

Children, less according to age (not suitable for very young children). Increase or decrease dosage with judgment, according to needs and effects obtained.

List of therapeutic properties.

In the following Glossary will be found short definitions of many of the terms employed in the course, to designate the properties of the remedies; Most of the words are commonly employed as nouns, and sometimes as adjectives.

Absorbents	Herbs used to produce absorption of exudates or diseased tissues.
Abstergents	Detergents.
Alteratives	Herbs used to modify nutrition, so as to overcome morbid processes.
Anesthetics	Herbs to produce anesthesia, or unconsciousness.
Analeptics	Restorative herbs or food.
Analgesics	Herbs used to allay pain.

Anaphrodisiacs	Herbs used to allay sexual feeling.
Anodynes	Herbs used to allay pain.
Antacids	Herbs used to neutralize acid in the stomach and intestines.
Anthelmintics	Herbs used to destroy intestinal worms.
Anti-arthritics	Herbs used for the relief of gout.
Anti-hydropsics	Herbs used for the relief of dropsy.
Antilithics	Herbs used for the relief of calculous affections.
Antiperiodics	Herbs used for the relief of malarial fevers.
Antipyretics	Herbs used for the reduction of bodily temperature in fevers.
Antiseptics	Substances which have the power of preventing putrefactions.
Antispasmodics	Herbs used for the relief of nervous irritability and minor spasms.
Antisyphilitics	Herbs used for the relief of syphilis.
Antizymotics	Substances which have the power of destroying disease-producing organisms.
Aperients	Mild purgatives.
Aphrodisiacs	Substances used to increase sexual power or excitement.
Aromatics	Herbs characterized by a fragrant or spicy taste and odor, and stimulant to the gastro-intestinal mucous membrane.
Aromatic Bitters	Herbs which unite the properties of the aromatics and the simple bitters.
Astringents	Herbs having the power of influencing vital contractility, thereby condensing tissues.
Bitters, Simple	Herbs which have a bitter taste, and have the power of stimulating the gastro-intestinal mucous membrane without affecting the general system.
Blisters	Remedies, which when locally applied cause inflammatory exudation of serum from the skin, and are used as revulsants.
Calefacients	Herbs used externally to cause a sense of warmth.
Cardiac Depressants	Herbs used to lower the heart's action.
Cardiac Stimulants	Herbs used to increase the heart's action.
Carminatives	Herbs containing volatile oil, used to excite intestinal peristalsis and provoke an expulsion of flatus.
Cathartics	Purgatives.
Caustics	Herbs used to destroy living tissues.
Cholagogues	Herbs which provoke a flow of bile.
Constringents	Astringents.
Convulsants	Herbs which cause convulsions.
Correctives	Herbs used to correct or render more pleasant the

	action of other remedies, especially purgatives.
Corrigents	Correctives.
Demulcents	Mucilaginous principles which are used in solution to soothe and protect irritated mucous membranes or other tissues.
Deobstruents	(Term obsolete and not very definite.) Remedies which overcome obstruction; aperients.
Deodorants	Substances which destroy or hide foul odors.
Depilatories	Substances used to remove hair.
Depressants	Sedatives.
Depresso-Motors	Herbs which lessen motor activity.
Depurants	Herbs which act upon the emunctories, so as to cause excretion, and thereby purify the system.
Detergents	Herbs which cleanse wounds, ulcers, etc.
Diaphoretics	Herbs which produce sweating.
Digestants	Ferments and acids which have the power of aiding in the solution of food.
Diluents	Herbs which dilute secretions and excretions.
Disinfectants	Substances which have the power of destroying the noxious properties of decaying organic matter.
Diuretics	Herbs which increase the secretion of urine.
Drastics	Purgatives which cause much irritation.
Ecbolics	Herbs which produce abortion.
Eccoprotics,	or Laxatives.
Ectoprotics	
Emetics	Remedies which cause vomiting.
Emmenagogues	Remedies which stimulate menstruation.
Emollients	Substances used to mechanically soften and protect tissues.
Epispastics	Blisters.
Errhines	Herbs which increase the nasal secretions.
Escharotics	Caustics.
Evacuants	Remedies which evacuate; chiefly applies to purgatives.
Excitants	Stimulants.
Excito-Motors	Herbs which increase motor activity.
Expectorants	Herbs which act upon the pulmonic mucous membrane and increase or alter its secretions.
Febrifuges	Herbs which dissipate fever.
Galactagogues	Herbs which increase the secretion of milk.
Haemostatics	Remedies which arrest hemorrhages.
Hydragogues	Purgatives which cause large watery discharges.
Hypnotics	Remedies which cause sleep.
Laxatives	Mild purgatives.
Local Anesthetics	Herbs which when applied locally, destroy sensation.

Mydriatics	Herbs which cause mydriasis, or dilation of pupils.
Myotics	Herbs which cause myosis, or contraction of the pupil.
Narcotics	Powerful anodyne, hypnotics.
Neurotics	Herbs which act upon the nervous system.
Nutriants	Herbs which modify the nutritive processes.
Nutrients	Substances which nourish.
Oxytocics	Remedies which stimulate uterine contraction, and hasten childbirth.
Peristaltics	Herbs which increase peristalsis.
Prophylactics	Herbs which prevent the taking or development of disease.
Protectives	Herbs which protect a part when applied to it.
Ptyalagogues	Sialagogues.
Purgatives	Herbs which produce copious discharges from the bowels.
Refrigerants	Herbs, which by causing irritation, draw nervous blood from a distant diseased part.
Rubefacients	Herbs which cause irritation and redness, and are used as revulsants.
Sedative	Remedies which lower functional activity.
Sialagogue	Herbs which excite the salivary glands to secretion.
Somnifacient	Soporifics.
Soporifics	Herbs which cause sleep.
Sorbefacients	Herbs which cause absorption.
Specifics	Herbs which have a direct curative influence upon certain individual diseases.
Stimulants	Remedies which increase functional activity.
Stomachics	Stimulants to the stomach.
Styptics	Haemostatics.
Sudorifics	Herbs which produce sweating.
Taenicides	Herbs which kill tape-worm.
Tonics	Remedies which permanently increase the systemic tone by stimulating nutrition.
Vermicides	Herbs which kill intestinal worms.
Vermifuges	Herbs which cause the expulsion of intestinal worms.
Vesicatories	Blisters.

LESSON TWO

The science of Bio-chemistry was not invented by Dr. Schussler because Bio-chemistry is the Science of Life or organic phenomena, while Dr. Schussler's Bio-chemic system is based on the premise that inorganic mineral salts are the vitalizers or life giving substances and that organic substances, per se, are quite inert. ---What a paradox!--What a self evident contradiction!--It is very difficult to understand how such a brilliant mind, could possibly have been so blind as not to see that all living matter is organic, growing, developing, reproducing, or propagating.

Although we have the greatest respect for this great man, because he, and others, gave us the key to the renewal of vital energies in the cell, we nevertheless, maintain that animal life cannot be manufactured from lifeless materials, (except by divine intervention) and that the animal cell is entirely and absolutely dependent upon organic, vital, living substance for it's life and substance.

Furthermore, we assert that every so-called 'Cell Salt' is contained in organic plant foods and remedies, and that during this scientific discourse, we shall prove that all important fact, beyond any question or reasonable doubt.

Just as the cells which compose the different organs and tissues select only those elements from the blood which are their natural foods and without which, it would not be possible to constantly maintain their peculiar and particular chemical constitution, which alone makes them what they are, enabling them to perform their special functions in intelligent co-operation with all the other cells and organs composing the whole Macrocosm. So, also, do the Herbs which supply those particular chemical constituents to the animal or human body, select only those elements from the soil which build and maintain their various and peculiar chemical constituents.

This is called Natural Selection. A study of the habitat of plants shows plainly, that they select their location naturally, according to the chemical constituents of the soil, dryness or moisture, elevation, temperature, etc.

There is an immense family of plants called Leguminosae. This includes the pea and bean family, the clovers, etc. All these plants are lime plants, and they cannot thrive and grow unless there is an abundance of calcium in the soil.

Another family is called the Liliaceae or Lily family. These include onions, leeks, garlic, squills, aloes, etc.; and all in this group are called sulphur plants, and cannot thrive without that element in the soil.

Then again, we have the Dock family - Yellow Dock, Water Dock, Sour Dock, etc. These are all iron plants. Thus we see that there is a very intimate connection and association between our body chemistry and that of the wonderful and beautiful vegetable kingdom. In fact, they are the very Life of our Life. "He maketh the green grass to grow and Herbs for the use of man."

In the preceding lesson we told you that, whole forests of the Mimosa Gum Tree grew in the sandy deserts bordering the upper river Nile, it's natural habitat. This plant will not thrive in rich alluvial soil. Neither will Blue Flag (*Iris Versicolor*), Sweet Flag (*Calamus*), or Bog Myrtle (*Menyanthes Trifoliata*), grow in dry sandy soil.

The natural habitat of a plant is apparently the ideal location for its richest growth and the development of its highest medicinal properties. An example of this is seen in the great difference in the European Chamomile (*Anthemis Nobili's*) and the American grown Chamomile (same plant). The European is ten times more virtuous than the American. The same applies to Peppermint (*Menthe Piperita*) and many other plants.

The cultivation of medicinal plants, however, is rapidly making headway. Their chemistry is studied in relation to soil and climatic conditions, with the result, that many plants are successfully grown without soil in chemically treated water. This new industry is growing very rapidly and new facts are being brought to light every day. The new Herbal Philosophy is destined to make veritable Medical Giants of those who become Masters of this most important and valuable branch of science.

It is wonderful to know that the animal cell or body is built entirely of organic matter derived either directly or indirectly, from the plant world, that every moment we live, our bodies are not only disintegrating, but, by the simple natural process of eating the flesh and drinking the blood (juices) of vegetables, fruits, and nuts, we are constantly rebuilding every cell, creating new bodies in which to live and this miracle of metamorphosis is being brought about with practically no knowledge, on our part, of how it is done.

But, it is far, far more wonderful to know how nature brings about this miracle of Life and it is only because we do not know the why and how of Life, that the whole world is full of sickness and disease---that we more often fail to help the suffering and save Life than we succeed in completely restoring health to those who come to us for help.

We are confronted with many ugly facts, all of which point the finger of shame at us. One half of the Human Race dies of colds and fevers, which two

herbs alone would have cured, namely, Elder Flowers and Peppermint, though there are at least one hundred others that could do the same, if we knew them and applied them intelligently.

There are, in the vegetable kingdom, at least one thousand remedies for Cancer, in all its forms, yet Cancer has increased its foul self three times in the last three decades in our so-called civilized world, while we waddle around, looking wise, like the bird that speaks one word, "quack", and we shake our professional heads in remorse and regret for our total absolute ignorance of a remedy for this most terrible and inexcusable holocaust of human lives.

When I was a boy, I got a splinter or sliver in my thumb. The thumb swelled up, became hot and inflamed. My whole body became feverish, my arm began to swell up and my parents decided to take me to a Doctor and have the thumb lanced, but a peasant woman told my Mother to crush some Lily of the Valley leaves and apply it to the thumb. This was done and in great pain, I went to a football match. The excitement of the game made me forget my sore thumb, and when the game was over, to my great surprise and joy, my thumb did not hurt any more. I ran home to tell my Mother the good news. The bandage was removed easily, the swelling had gone down. There, among the crushed lily leaves was the sliver lying in a mass of pus and my thumb was quite all right, except that the streaked skin was shriveled and wrinkled like a knarled oak tree. The simple leaf of a lowly plant had performed a miracle of healing, within three hours.

Such are the marvelous powers of simple Herbs to cure chronic disease and heal all wounds.

Another incident comes to my mind later on in my life which powerfully illustrates the healing virtues in Herbs.

A woman with only one arm came to me in great distress. She had been stung by a bee on the only hand she had left. Several years previously, she had been similarly stung by a bee. That time she had gone to a Doctor because the whole arm was swollen and she was in grave danger.

The Doctor lanced and drained the pus from the infected hand, but still the arm had continued to swell. Ultimately, the arm was amputated. This lady was in abject despair, believing she would lose her other arm.

Outside my door there was some plantain (*Plantago Major*) growing. I picked some of the leaves and gave them to the woman, telling her to wash and crush them, make a poultice and apply to the part where she had been stung. Next day, this lady returned to thank me and pay for my advice. The hand was entirely well. No sign of poison or inflammation was to be seen, where, but twenty-four hours before there was swelling, inflammation, extreme pain and risk of amputation.

It is of this family of Herbs that the mongoose in India uses to cure his snake bites. A full description of these great and ancient remedies will be given in this course, together with their chemistry and their varied therapeutic applications.

These are but two illustrations of the simplicity with which serious consequences can be avoided and toxic conditions changed by the use of nature's great remedies. They also illustrate the appalling ignorance of the Medicos ineptly called Medical Doctors.

The value of such simple knowledge is priceless and scores of like examples will be given to you before this course ends.

We will now turn our attention to those Herbs which have been somewhat loosely classified as "alteratives". This word, though aptly defining some of the virtues of plants, does not describe all of them, in fact, I know of no word that could correctly describe all the virtues of Herbs. However, the word "alterative" is intended to mean that certain Herbs gradually alter and correct a bad condition of the blood, without necessarily producing evacuations of the bowels beyond normal evacuation.

They change the process of nutrition and excretion and restore the morbid organs of the system to healthy action. They promote absorption of inflammatory deposits chiefly by stimulating the lymphatic glands, though this is not all. The purification of the entire bloodstream, by means of better digestion and regular secretion requires the maintenance of a mild alterative influence to be continued for some time. Therefore, it follows that the term "alterative" is properly applied to those agents, which slowly, moderately and steadily expend their influence upon badly functioning organs, thus bettering the condition of the blood.

ALTERATIVES

ALDER, BLACK AMERICAN. (Prinus Verticellatus)

Common names.—Winterberry, Fever Bush, etc. (Holly Family)

Parts used.—Fresh bark and fruit.

This beautiful shrub is a native of America growing from western Florida, northwards. It grows from 6 to 10 feet, bearing oval or lanceolate leaves, white flowers and small bright scarlet berries. The bark is in thin fragments, brownish outside, having whitish patches and black dots.

Constituents and Uses.--Alterative, antiseptic, astringent, bitter, tonic, digestive stimulant, cathartic, hepatic. The bark contains 4 percent tannin, two resins, one is soluble, the other insoluble in alcohol, albumin, gum, sugar, a bitter principle and a yellow coloring matter not yet isolated. (It contains no berberine.) This valuable Herb has proved a most effective remedy in chronic Dyspepsia, Jaundice,

Cachectic deposits, Diarrhea, Malarial Affections, Gangrene, Dropsy, and when the body is devitalized and debilitated by discharges.

The berries are cathartic and with Red Cedar apples makes a wild anthelmintic for children. In a recent Herbal published in England, a case is cited where after eating twenty five berries, a sensation of nausea was felt which did not interfere with appetite. Bile was vomited without retching, painless and profuse evacuation of the bowels and in half an hour a second painless evacuation took place, with the result that a feeling of great lightness and well-being was brought about, with appetite and digestion better than ever.

FORMULAS

No. 2 Put 2 ounces of the cut bark into 3 pints of distilled water. Boil down to 2 pints. Strain and put in a cool place. May be sweetened if desired.

Dose.--A wine glass full 3 or 4 times a day.

This will be found excellent as a tonic, digestive laxative and as a general alterative. Use externally for old sores and skin diseases.

No. 3 Put 2 heaping teaspoonfuls of the powdered Black Alder bark and one heaping teaspoonful of Golden Seal Root (powdered) into 1 pint of boiling water. Stir, cover and allow to cool. Strain and drink during the day a wine glass full at a time.

This is a sure remedy for poor appetite, sour stomach, dyspepsia and indigestion. (These are also called resolvents, discutients and antiscorbutics.

BAYBERRY BARK. (Myrica Cerifera) Bayberry Family.

Common names.--Wax Myrtle, Candle Berry, Tallow Bush

Parts used.--Bark of the root. The wax.

Habitat.--Eastern North America. Grows in thickets near swamps and marshes in the sand belt near the Atlantic Coast, and on the shores of Lake Erie. Height, 4 to 8 feet. Leaves, shining lanceolate, sometimes resinous, dotted on both sides. Flowers unisexual, without calyx or corolla. Fruit in groups of small globular berries, crusted with greenish white wax. These persist for 2 or 3 years. Leaves are fragrant when rubbed.

Constituents and uses.--Volatile oil, starch, lignin, gum, albumin, acrid and astringent resins, tannic and gallic acids, red coloring substance and an acid which resembles saponin.

The Wax.--(Myrtle Wax) consists of glycerides of stearic, palmitic and myristic acids and a small quantity of oleac acid.

Properties.-- The bark is alterative astringent, stimulant, (in large dose, an emetic), errhine, sternutatory, and discutient. Externally, the powdered bark is used as an application to indolent ulcers, as an application for the removal of Polypus, Nasal, Vaginal, Uterine, Laryngeal, Renal, or any polypoid growth on the mucus membrane in any part. Also Leucorrhoea, etc.

Bayberry bark has been very successfully used in both Europe and America for a very long time in the treatment of Diarrhea, Jaundice, Scrofula, Dyspepsia, Sluggishness, Indolent Ulcers, Mucus Colitis and, as before stated, for Polypus. Recently it has proved very effective in ulcerated sore throat as a gargle. Also for catarrhal deafness (snuff) ulcerated gums and as a remedy for Alopecia Areata and dandruff. The following formulas will cover its full therapeutic applications.

No. 4 For internal use, put one ounce of powdered Bayberry Bark into one pint of boiling distilled water. Simmer for ten minutes. Set aside and when cold, take one wine glass full 3 or 4 times a day. Stir well before taking. (Do not strain but take powder and all.)

This will be found effective for Diarrhea, Catarrh of the stomach, Dyspepsia, Sluggish Liver, Weak Digestion, Jaundice, Scrofula, etc.

No. 5 As an Emetic.--One teaspoonful in a teacup full of boiling water and drink hot, including powder.

It is said sometimes to cause some pain as well as nausea owing to the irritating nature of the powder. This, however, is very temporary, while the more lasting stimulant action when the powder is taken, more than makes up for the slight pain suffered in some rare cases.

No. 6 For external use. For indolent ulcers and slow healing wounds or burns, the powder is dusted on and bandaged. Change as often as necessary according to amount of discharge.

No. 7 For nasal or laryngeal polypus. The powder is either snuffed or blown up the nostrils. First there is pain, then sneezing, which will continue to repeat every 20 or 30 seconds for some minutes (5 to 10). Thick viscid and often stringy mucoid matter will be discharged copiously. Repeat 3 or 4 times a day.

No. 8 For vaginal or uterine polypus. The powder must be sprayed on the growth, allowed to remain for six to eight hours. Then, it must be washed away and repeated.

No. 9 For sore throat, inflamed tonsils and catarrhal deafness. A strong decoction made by boiling two ounces of the powder in one pint of distilled water for 15 minutes. Strain, cool and add sufficient glycerin to make up the pint. This solution is sprayed into the throat and nose every

hour or two for one day. Then, gradually extend the time between the applications. For Alopecia and dandruff, the same strength is used and rubbed well in at night. Wash off in the morning, brush the hair thoroughly and apply again. A few drops of lavender oil shaken with the fluid before rubbing it in acts as a pleasant synergist. It quickly stops falling hair and removes dandruff.

NOTE: DO NOT USE ALCOHOLIC STIMULANTS ON THE HAIR, unless you want to go bald at an early age.

Bayberry wax is astringent and somewhat narcotic. It is said that the water in which the wax has been boiled is a sure cure for dysentery. The wax is used as a base for astringent salves.

This most valuable Herb can be combined with other Herbs and later we shall give some of the formulas into which it enters.

Another very wonderful Alterative, in fact, one of our greatest and most versatile Alteratives is the common Burdock.

BURDOCK.--(Arctium Lappa). Natural order Composite

Common names.--Lappa, Fox's Clote, Thorny Burr, Beggars Buttons, Love Leaves, Happy Major and Clot Burr.

Parts used.--Root, Leaves and Seeds (Fruits)

Habitat.--Throughout England, (rarely in Scotland) naturalized in U. S. growing on waste ground, around old buildings by road sides and in damp places.

This is a stout, handsome biennial plant with large wavy leaves and round heads of purple flowers. Calyx consists of imbricated scales with hooked extremities by which they adhere to the coats of animals or anything they touch. Seeds are quadrangular.

Nature has not produced for us many Herbs whose food and medicinal value equal this one. It's ancient history as a reliable remedy for bad blood, ulcers, tumors, and many skin diseases such as what we today call Eczema, Pityriasis, Psoriasis, Furunculosis, Acne, Lupus, etc., to say nothing of internal disorders such as Syphilis, Scrofula, Leprosy, Cancer, etc. and the modern proofs of it's marvelous efficacy in the treatment of humanity's most fearsome and loathsome diseases is proof positive that very few if any Herbs are more virtuous or possess more curative powers.

As a delicate flavored and healthful vegetable, the stalks cut, stripped of their rind and boiled, have the flavor of asparagus. They also make tasty salads, eaten raw with oil and vinegar. They must, however, be cut before the flower is open.

The root is 12 inches to 3 feet in length and often more than 1 inch in thickness. It has a sweetish and mucilaginous taste. The leaves have a bitter taste. The root must be dug in the fall of the first year of it's growth.

Constituents.--Inulin (takes the place of starch, and in the spring and fall, is frequently present to the extent of 45 percent), a bitter principle, resin, fat (9 percent), mucilage, sugar, wax, tannin (phlobaphene) lappin (crystalline glucoside) ash (3 to 4 percent).

Properties.--Alterative, aperient, depurative, diuretic, diaphoretic, antiscorbutic.

Uses.--Rheumatism, Gout, Pulmonary, Catarrh, Chronic Skin Diseases, (Psoriasis Acne, etc.) Syphilis, Scrofula, Cancer, Urinary deposits.

Externally.--Swellings, hemorrhoids, burns, wounds, eruptions.

Throughout the centuries, this majestic remedy for human ailments has stood the acid tests of human inconsistency, prejudice and ignorance and is still today one of the most extensively used Herbs by country folk and Herbalists, throughout the civilized world. To our certain knowledge, it has cured Syphilis after all other treatments had failed. For the successful treatment of chronic Skin Diseases, especially Eczema, Burdock has no equal, while for Furunculosis (Boils) it's quick alterative and curative effect is truly remarkable. Some years ago, a young man in his thirties came to us for help. He had suffered for nearly a year with boils on different parts of the body. He had nine of them on the nape of his neck. Some twenty-nine had been lanced by Doctors previous to this flock of nine. His neck presented a most horrible sight. He had several more boils on different parts of his body. Two under one arm and one under the other. Several more were scattered about on his wrists, buttocks and legs. It was the worst case of Furunculosis we had ever seen. Fortunately, this happened in the early fall and we knew of a very thick growth of Burdock not far away.

The young man was instructed to gather a large sackful of leaves that were not faded, and to dig up the roots also of those which had not developed seeds (first year's growth). We told him to have his wife wash the leaves and chop them up or put them through a meat mincer, while the roots were to be cut or chopped into small segments.

Without heating, the crushed leaves were to be made into a poultice sprinkled or sprayed with Eucalyptus Oil and applied to the neck and other parts where possible.

The roots were to be boiled, four ounces to one quart of water, for twenty minutes. Strained and reduced to one pint. This strong decoction was to be taken in wine glass full doses until the whole pint was consumed in one day. No stimulants or alcoholic liquors were to be taken.

In three weeks, the boils were all gone and in one month this young man was completely well and up to seven years ago, that is, over a period of eight years, this young man had had no recurrence of boils but had enjoyed perfect health.

It may be thought that the Herb in this case, being fresh, was the reason for the quick cure. There is no doubt that the fresh Herb is best, but we have known the driest leaves, roots and fruit to cure bad cases of Furunculosis in a great many cases. We devote the most time and detailed information on those Herbs we consider most virtuous and important. So, shall we treat fully of this one. If later, during your study of this lesson, you refer back to the constituents found in Burdock, you will note that its principle ingredient is Inulin. This substance, also called Alantin, is very important. It was first found in Elecampane (Inuia-Helenium) to the extent of 25%, but in Burdock, it often reaches 40% or more. It is very similar to starch. It is a resinoid or camphoracious, double compound hydro-carbon that is aromatic, stimulant, expectorant, tonic, stomatic, antiseptic.

It is upon this remarkable substance, we believe, that much of the curative action of Burdock depends because when separated from the Herb, it has the above named effects upon the system and is most remarkable in its beneficial action on the lungs. Again, there is 15 % of an oil which is principally contained in the seeds. It is owing to the influence of this oil upon the skin that skin diseases are so effectively cured. It affects both the sebaceous and the suderiferous glands restoring that soft smoothness to the skin which is a sign of normal healthy action.

The antiscorbutic properties of the root make the decoction very useful for Scurvy and Rheumatic affections. By many, it is considered superior to Sarsaparilla on account of its mucilaginous and demulcent nature. The following Formulas will cover its therapeutic applications without admixture of other herbs.

No. 10 BURDOCK FORMULA.

For Syphilis, Scrofula, Skin Diseases, Furunculosis, Tumors, Abscesses, Acne, and a general Cachectic condition of the system.

Put 4 ounces of the dried cut root into 3 pints of distilled water. Boil 30 minutes slowly. Strain, cool and keep in a cool place.

Dose for Adults. A wine glass full 3 or 4 times a day. For children, less according to age.

If it is desired to keep this decoction for length of time, it should be boiled down to one pint. Then add 8 ounces of glycerine when cold and shake well together.

In this form, an equal quantity of water should be added to each dose when taken. The dose is from one to two tablespoonfuls though more can

be taken in severe and difficult cases, or, if the stomach is not nauseated by the heavier dosage.

No. 11 A strong decoction of the seeds will often effect a cure of difficult skin diseases such as Eczema, Pityriasis and Psoriasis made as follows:

To 4 ounces of the crushed or powdered seeds, add 2 quarts distilled water. Boil slowly for 30 minutes, strain and reduce to one pint. Add 8 ounces of glycerine when cool. Shake together. Bottle and keep in a cool place.

Dose for Adults. One dessertspoonful to one tablespoonful in a little water, 3 or 4 times a day between meals.

Dose for Children. For children 5 to 8 years, half a teaspoonful. From 8 to 15 years, one teaspoonful. Very young children, from 5 to 10 drops in water.

For Outward Application in Skin Diseases, etc. Use No. 11 Formula undiluted, or diluted with equal parts of water. Where possible, in the case of large sores or swollen glands, joints, etc., apply on saturated lint or cotton. Cover with wax paper or oil silk to prevent evaporation and strap or bandage on. Allow to remain until almost dry. Then, cleanse and repeat with a clean new application.

No. 12. A most virtuous salve can be made by beating together mucilage of Irish Moss, 1 part, Anhydrous Lanolin, 1 part, and Burdock Seed Formula No. 11, until all are thoroughly mixed and uniform. Apply on lint and cover. Change as often as required. The finely powdered seed of Burdock can be dusted on moist surfaces and ulcers.

Further information can be obtained about any Herb or Formulas given in this course, during question time. In describing formulas, it is quite usual to give several Herbs combined in one formula as in the first formula we gave you in Lesson #2. Many such combined formulas will be given towards the end of this treatise, but we have departed from the usual procedure somewhat in your own interest, specifically because we want you to study and know each individual Herb and it's particular therapeutic properties. Then, when you have mastered their individual actions and influence, you will be able to make your own blend of mixed Herb formulas. We believe this will give you a much more thorough knowledge of each Herb's particular virtues, and enable you to scientifically put together and construct formulas in all difficult pathological conditions you may meet.

Your suggestions will be given fair and unbiased consideration, and if of value, will be incorporated in our bulletins from time to time.

LESSON THREE

It has been truly said that knowledge is power. Before a man can design and build a dam, a sky scraper, an ocean liner or an airplane he has to be equipped with a great deal of exact scientific knowledge of the laws involved in carrying out his project.

So should it be in the case of one who attempts to reconstruct the human body, which has become disorganized through ignorance of the laws of health. It is most regrettable that so-called Medical Science is not really a science, but a disgraceful jargon of contradictions. It is the only science known to man that is not scientific.

A famous English physician, Dr. Rush, M.D., once said after years of practice with mineral medicines, --"Such is my confidence in the benevolence of Diety, that I believe He has placed on earth remedies for all the maladies of man, but so conflicting are the opinions of medical men, so arrayed are they against each other, that the Science of Medicine is like an unroofed temple, cracked at the sides and rotten at the foundation. There are two reasons why we cannot cure the sick. Want of the knowledge of disease and want of a remedy." The well known Dr. Cheyne, M.D., says, Mineral medicines are so destructive to human bodies, that malice could not invent anything more deadly, beyond gun-powder itself."

Dr. Blane, M.D., says, "The History of Medicine so teems with delusive, inefficient and capricious practices, fallacious and sophistical reasonings, as to render it little more than a chaos of error--a tissue of deceit, unworthy of admission among the useful arts and liberal pursuits of men."

Dr. John Mason Goode, M.D., F.R.S., author of "Book of Nature", "System of Nosology", "Study of Medicine", etc., says, "The science of Medicine is a barbarous jargon and the effects of our medicine on the human system, is in the highest degree uncertain, except that they have destroyed more lives than even War, Pestilence and Famine combined."

On the other hand, one of the greatest tributes paid to the Herbal methods of treating disease, was from the lips of one of the greatest physicians of modern times. No less a man than Sir Anthony Carlisle, M.D.,L.R.C.S.,L.R.C.P., consultant and advisor of The King's Physician in Ordinary,-- This great and noble man said, "There is more virtue in a handful of Herbs, than in all the remedies of the Pharmacopeias."

Gentlemen! Let us ask ourselves the questions: Are we worthy of this great man's opinion? Do we really know how to treat chronic disease scientifically with Nature's great remedies? Is Herbalism or Herbology a true science, or are we still guessing and experimenting on the vitality of our patients.

The truthful answer is that the great majority of us are still guessing, still depending on the teachings of Pseudo-Scientists who have merely copied from books the statements contained in them, and arrogated to themselves the right to teach, without any intimate or practical knowledge of the subject.

Thousands of modern printed publications are ignorantly misleading both physicians and the general public. We have been hearing the slogan, Alkalize--Alkalize--Alkalize! Eat alkaline foods. Take alkaline salts. But the truth is that alkalis, though necessary to balance acidity, are all depressing, liquefying, relaxing and debilitating beyond the neutralizing point. As a matter of fact, common bicarbonate of soda destroys the hemoglobin in the blood in a very short time. A 10 per cent solution destroys the hemoglobin in about two and a half minutes. If you want to prove it, take some mammalian blood and add to it 10 per cent of bicarbonate of soda. You will quickly see for yourself.

Merely knowing that ginger tea is good for the stomach-ache, that juniper increases the flow of urine, that cascara evacuates the bowels, that capsicum is good for sore throat, does not constitute the Science of Herbology, though it is useful information.

The true Science of this important subject consists of knowing the chemistry and corrective therapeutic effects in every Herb we use. Their peculiarities, and how best to administer them. Whether they are depressants or stimulants; solvents or builders; their effect on the brain, nerves, glands, heart, lungs, kidneys, liver, bone, skin, stomach, pancreas, spleen, etc.

Unless we know these things, we are in no wise better than the drug doctors whose nostrums more often destroy than they restore.

So, let us get down to an intensive study of Herbs, so that we can eliminate all guess work, and avoid mistakes. Thus an honorable prestige will be our reward.

Now, let us pick up where we left off in our last lesson, namely ALTERATIVES. Of all the Herbs given us by Nature to use in the treatment of disease, there probably is none greater or more versatile than the common ELDER.

ELDER: Sambucus Nigra (Linn.)

NATURAL ORDER: Caprifoliaceae.

COMMON NAMES: Black Elder, Fever Tree, Pipe Tree(Fourteenth Century), Hylde, Hylantree(Anglo-Saxon), Eldrum (Low Saxon), Ellhorn (German), Hollunder, Sureau (French).

From the time of Hippocrates, this noble tree has been highly esteemed as one of Nature's greatest remedies. There is more romance, folklore, tradition and superstition recorded in History about this remarkable plant, than about any other Herb known.

Because of its great importance to us today, because it is so often indicated, and because of its safe, speedy and remarkable effect in alleviating practically every known fever, we are going to spend a considerable part of this lesson on its romantic history, folklore and tradition, before describing its amazing properties and virtues.

The generic name, SAMBUCUS, occurs in the writings of Pliny and other ancient writers, and is derived from the Greek word, Sambuca, a musical instrument used by the Romans. Pliny records the belief held by country folk that the shrillest pipes and horns were made of Elder trees. At the present time, Italian peasants construct a simple pipe which they call Sampogna, from the branches of Elder.

In most European countries, especially in Denmark, the Elder was intimately connected with magic. In its branches was supposed to reside a dryad, Hylde-Moer, the Elder-tree Mother who lived in the tree and watched over it. Should the tree be cut down and made into furniture, Hylde-Moer was believed to/haunt the owners.

Lady Northgate, in the "Book of Herbs", relates: There is a tradition that once, when a child was put into a cradle of Elder-wood, Hylde-Moer came and pulled it by the legs, and would give it no peace until it was lifted out. Another tradition says, that permission to cut Elder-wood must always be asked for, and not until Hylde-Moer has given consent, by keeping silence, may the chopping begin.

Arnkief relates, "Our forefathers also held the Ellhorn (Elder) holy, wherefore, whoever need to hew it down, (or cut its branches) has first to make request--"Lady Ellhorn, give me some of thy wood and I will give thee some of mine when it grows in the forest, the which, with bended knees, bared head and folded arms, was ordinarily done as I have often seen and heard in my younger days."

"The Russians believe (says Lady Northcote) that Elder trees drive away evil spirits and the Bohemians go to it with a spell to take away fever." In England, it was thought that the Elder was never struck by lightning and a knotted sprig carried in the pocket was a charm against rheumatism.

In Coles' "Art of Simpling" (1656) we may read how in the latter part of the seventeenth century--In order to prevent witches from entering their houses, the common people used to gather Elder leaves on the last day of April and affix them to their doors and windows.

The use of Elder for funeral purposes was an old English custom referred to by Spencer. Canon Ellacombe says that in the Tyrol, "An Elder bush, trimmed into the form of a cross is planted on a new made grave, and if it blossoms, the soul of the person lying beneath is happy," Green Elder branches were also buried in a grave to protect the dead from witches and evil spirits.

Apart from all these and many more traditions and superstitions, the Elder has had from earliest days up to the present time, a firm claim on popular affection for its many sterling virtues.

The leaves have an unpleasant odor, when crushed, which is offensive to most insects and a decoction of the young leaves is sometimes employed by gardeners to sprinkle over delicate plants and the buds of flowers to keep off the attacks of aphids and small caterpillars.

The leaves of Elder, bruised and worn in the hat, or rubbed on the face prevent flies settling on the person. An infusion of the young leaves dabbed on the face, neck and exposed parts, protects the parts from the attacks of mosquitoes, midges and other troublesome flies. The leaves are said to be valued by old English farmers for driving away mice from granaries, and moles from their usual haunts.

The bark of the older branches has been used in the Scotch High-lands as an ingredient in dyeing black. The leaves yield, with alum, a green dye. With alum and salt, a lilac color.

The botanist finds in this plant an object of considerable interest, for if a twig is partially out, then cautiously broken and divided by pulling apart, the spiral air vessels may be distinctly seen. Linnaeus observed that sheep and cows eat the leaves, but that horses and goats refuse it.

If sheep that are suffering with foot-rot can get at the bark and young shoots, they will cure themselves. Elder berries are eaten greedily by young birds and pigeons, but are said to have serious effects on chickens. The flowers are reported to be fatal to turkeys, and according to Linnaeus, also to peacocks.

Elder flowers and berries have long been used in the English country-side for making many home-made drinks and preserves. They are almost as great favorites now as they were in our great-grandmother's time.

The berries make an excellent home-made wine and winter cordial which improves with age. Taken hot with brown sugar, just before going to bed, is an old-fashioned well-proven remedy for a cold.

In Kent, England, there are entire orchards of Elder trees, cultivated solely for their fruit, which is brought to market and sold for the purpose of wine-making. The berries, aside from being used for making Elderberry wine, are also largely used in the manufacture of so-called British wines, and in the adulteration of foreign wines. They give a real color to raisin wine, flavored with vinegar, sugar and a small quantity of Port wine..... Elderberries are often the basis of spurious clarets and Bordeaux. Men of nice palates have been imposed on by Elder wine being sold them as French Claret. But as the berries contain valuable medicinal properties, this adulteration gives no harmful effects.

The circumstances under which this was proved are rather curious. In 1899, an American sailor informed a physician in Prague that getting drunk on old dark red port was a sure remedy for rheumatic pains. This curious incident started a long series of investigations, which ended in the discovery that, while genuine port wine has no anti-neuralgic properties, the addition of Elderberry juice often banishes the pains of sciatica and other forms of neuralgia, though, of no avail in genuine neuritis. Cases of cure have been attested to by many tests carried out by leading doctors in Prague and other places. The dose recommended being 30 grains of Elderberry juice mixed with 10 grains of port wine.

The Romans made use of Elder, as Pliny records, as well as the dwarf Elder (*Sambucus Ebulus*). Both Kinds were employed by ancient English and Welsh leaches, and in Italy, it was used in the medicine of the School of Salernum.

Elder still keeps its place in the British Pharmacopeia. The cooling effects of Elder flowers being well known. In many parts of the country, Elder leaves and buds are used in drinks, poultices and ointments. Ettmueller called it the Medicine Chest of the country people. It is said that the great physician, Boerhaave, never passed an Elder without raising his hat, so great an opinion had he of its curative properties.

The extent of its popular estimation in Shakespeare's time may be gauged by the line in "The Merry Wives of Windsor", Act II, Scene III, "What says my Aesculapius? My Galen? My heart of Elder?"

John Evelyn writing in praise of the Elder says, "If the Medicinal properties of it's leaves and berries were fully known, I could not tell what our countrymen could ail, for which he might not fetch a remedy from every hedge, either for sickness or wounds. He also recommends Elder flowers infused in vinegar as an ingredient of salad. Again he says, "Tho the leaves are somewhat rank of smell and so not commendable in sallet, they are of the most sovereign virtue, and an extract made of the berries greatly assists longevity. Indeed, this Herb is a catholicum against all infirmities whatever."

About 20 year's before Evelyn's eulogy, there had appeared in 1644 a book entirely devoted to its praise. "The anatomic of the Elder" translated from the

Latin of Dr. Martin Blockwich, by C. de Iryngio, an army Doctor. This book contained 230 pages that in Latin and English went through several editions. It deals very learnedly with the medicinal virtues of the tree, its flowers, leaves, berries, middle bark, pith, roots, and Jew Ears (a fungus found on the Elder.)

Evelyn speaks of this remarkable book in terms of admiration of its full description of every part of the Elder tree and the many diseases which it will cure. The book clearly states that as every part of the tree contains medicinal properties, so virtually every ailment of the body is curable by it, from toothache to the plague. It was used externally and internally and in amulets (these were considered especially good for epilepsy and also for rheumatism.) It was used in many forms. In syrup, tincture, mixture, oil, spirit, water, extract, salt, conserve, vinegar, sugar, decoction, bath, and powder. Some of these were prepared from one part of the plant, and others from several or from all parts. Their proper ties are summed up as desiccating, conglutinating, and digesting, but are extended to include everything necessary to a universal remedy.

The book prescribes in more or less detail for some 70 diseases or classes of diseases, and the writer is never at a loss for an authority from Dioscorides to the Pharmacopeias of his own day, while the cures he adduces are drawn from all classes of people, from Emylia, Countess of Isinburg, to the tradesmen of Heyna and their dependents.

I could go on and on, but with one more short historical reference, I believe I have given you sufficient folk-lore and tradition to show how great this remedy has been regarded through all ages from the time of Hippocrates up to the present, and it still stands out as one of Nature's greatest therapeutic agents.

Culpepper states: "The first shoots of the common Elder boiled like asparagus, and the young leaves and stalks boiled in fat-broth, doth mightily carry forth phlegm and cholor.

The middle or inward bark, boiled in water and given in drink worketh much more violently; and the berries either green or dry expel the same humor and are often given with good success in dropsy. The bark of the root boiled in wine, or the juice thereof drunk, worketh the same effects, but more powerfully than either the leaves or fruit. The juice of the root taken causeth vomitings and purgeth the watery humors of the dropsy."

In classifying the different therapeutic properties of Elder, it will be necessary to deal individually with its several parts, bark, leaves, flowers, etc. because of the difference in their chemistry, and therefore, their therapeutic effects.

The Inner Bark:--It is alterative, purgative, diuretic, emetic, anti-rheumatic, anti-spasmodic, diaphoretic, anti-septic and antisiphilitic.

Chemical Constituents: A soft resin, viburnic acid (identical with valeric acid), a volatile oil, albumen, resin, fat wax, chlorophyll, tannic acid, grape sugar, gum, salts of sodium and potassium sulphate, pectin, etc. The bark should be dried and kept for several months before use. The fresh bark, like cascara bark, is violently irritating and poisonous to children.

In the treatment of cardiac and renal dropsies, as an emetic in biliary disorders and for spasmodic asthma with copious phlegm and stringy mucoid matter. Also for epilepsy, the infusion or decoction of the bark is most excellent giving ease very quickly.

FORMULA No. 13. Make an infusion of the cut or granulated bark, one ounce to the pint. Stir well, cover and let stand until cold. Strain, bottle and keep in a cool place.

Dose.---One wineglass full every 3 hours until bowels are evacuated and in severe dropsy until urine is voided. If emesis is desired and this dosage does not bring it about, increase the dose till the desired effect is produced. After evacuation and micturition has been established; reduce the dose to suit the case. Watery stools are to be avoided where there is no dropsy. For asthma, one tablespoonful when threatened and more if necessary. Then, one or two tablespoonfuls several times a day. To avoid excessive vomiting, add one level teaspoonful of powdered cloves to the infusion when made. To avoid excessive cramps in the bowels, add one heaping teaspoonful of powdered ginger to the infusion then made. As an alterative and aperient for continued use, regulate the dose to bring about a soft, molded stool 2 or 3 times a day.

An emetic action is often very effective to give prompt relief in epilepsy.

Flowers.---Alterative, diaphoretic, diuretic, aperient, sudorific, emetic, relaxant, calmative and soporific.

Chemical Constituents.---Volatile Oil, pectin, potassium, chloride, potassium sulphate, sodium, magnesium, calcium salts and a small quantity of potassium nitrate.

For the treatment of colds, influenza and fevers of all kinds, there is no remedy that is so safe, sure and speedy as Elder flowers. Aside from being anti-febrile, Elder is an all around alterative, blood purifier and a general systemic cleanser.

When taken alone, Elder flowers are inclined to be emetic, and somewhat nauseant to some people. This effect can be prevented by combining them with Peppermint (*Mentha Piperita*). Peppermint is stimulant, nervine, calmative and anti-emetic, which offsets the undesirable effect of Elder. This combination is world famous as a great fever remedy.

Considering the fact that right after the first world war, six million or more people died of influenza, and millions more have died of it since, is it not a great privilege and blessing to be in possession of this wonderful remedy?

The great Herbalist, Henry Box of Plymouth, England says, “For colds, influenza, fevers, inflammation of the brain, pneumonia, (inflammation of the lungs), stomach, bowels or any part, THIS IS A CERTAIN CURE. I have never known it to fail, even when given up, and at the point of death. It will not only save at the eleventh hour, but at the last minute of that hour. Besides, it is so safe and harmless that you cannot use it amiss.”

This wonderfully wise old man practiced Herbalism for nearly 60 years, and is known all over the civilized world as having been one of the greatest physicians of all time.

FORMULA No. 14. Infusion of Elder and Peppermint (For colds and fevers)

2 ounces Elder flowers

2 ounces Peppermint leaves (crushed)

1½ pints boiling water

Pour boiling water over herbs, cover and allow to steep in a hot place for 30 minutes. Strain, sweeten with honey, and drink the whole as hot as possible while closely covered in bed. Cover a hot water bottle with a cloth or towel dipped in vinegar and place to the feet. In a few minutes there will be a copious perspiration, the pulse will slow down and the patient will sleep peacefully for hours. The cold infusion of Elder flowers alone is a very fine remedy for sore and inflamed eyes. The cold infusion as a general treatment for acidity, scrofula, and glandular enlargements taken internally in wine glass full doses 3 or 4 times a day and applied outwardly for sprains, bruises, swollen glands, muscular soreness, stiffness, rheumatic pains, etc. will be found a most efficacious remedy.

FORMULA No. 15. Where there is pus either internally or externally, take 4 ounces of Elder flowers and 4 ounces of cut Echinacea root. Put into one quart of water. Boil 5 minutes. Then let steep for another 30 minutes in a hot place. Allow to cool and when cold, strain and bottle and keep in a cool place. If it is desired to keep for any length of time, add 25 percent glycerine and shake together.

For internal ulcers or cancers-- also for skin diseases.

Dose. One tablespoonful 3 or 4 times a day in a wine glass full of water.

For outward application. In skin diseases, boils, tumors, cancer, etc. apply on lint or cotton, cover with waxed paper and again cover to keep in the heat. In the case of boils, it is advisable to sprinkle a few drops of Eucalyptol on the saturated lint before applying.

LEAVES.---Discutient, resolvent, emollient, antiseptic.

The leaves of the Elder plant, although very effectual in dropsy, are not recommended because of their nauseous taste and somewhat drastic purgative properties. We find that we get ideal results with the bark and berries and that, therefore, the leaves for internal use are not necessary. They are, however, extremely valuable made into salves or oils for outward application to wounds, burns, sunburn, bruises, contusions, sprains, and for many skin affections, acne, itch, etc.

CHEMICAL CONSTITUENTS: Elder leaves contain an alkaloid called SAMBUCINE, a purgative resin, a glucoside called SAMBUNIGRIN, cane sugar, invertin, a considerable quantity of potassium nitrate, and a crystalline substance called ELDRIN.

Sir Thomas Brown (1655) stated: "The common people keep as a good secret for curing wounds the leaves of the Elder which they have gathered the last day of April. The leaves boiled soft in linseed oil, for the relief of piles."

An ointment concocted from the green Elder berries, with camphor and lard was formerly ordered by the London College of Surgeons for the same purpose.

The leaves of Elder crushed and the juice expressed, are said by the old Herbalists to be good for inflammation of the eyes; snuffed up the nostrils, Culpepper declares, purgeth the brain.

We do not offer the above as /formulas, but that you may know that the leaves are very virtuous for outward application, in a large number of surface and semi-surface conditions.

Our own formulas, we feel, will cover all conditions we need ever use them for.

FORMULA No. 16. Ointment of Elder Leaves.

4 oz. fresh Elder leaves, 6 oz. melted lard, 2 teasp. Eucalyptol. Crush or bruise the leaves in a mortar, combine with the lard and place in moderately heated oven, or on a hot stove. Stir frequently, until leaves are crisp and have lost their color. Strain through muslin with pressure, then add the Eucalyptol, stirring it in thoroughly. Pour into jars of suitable sizes--either 2,4,8 or 16 ozs.

This is a very fine salve for purulent sores, ulcers, infected wounds, etc. Applied on lint and covered.

FORMULA No. 17. Oil of Elder leaves (Olium Viride)--Green Oil or Oil of Swallows, is an old formula used for hemorrhoids, burns, wounds and as an excellent treatment for my lady's skin. Said to remove freckles, discolorations,

wrinkles, etc. It is made by digesting (with heat) fresh Elder leaves one part in three parts of raw linseed oil. Boiled till leaves are crisp. Strain while hot with pressure. (We recommend the addition, while still warm and liquid, of one teaspoonful of Oil of Lavender, (*Lavandula Vera*) to each 4 ounces of the Green Oil.)

FORMULA No. 18. The following salve is very highly recommended to be made and kept on hand for ready use in a variety of conditions. It is very fine for tumors and swellings, muscular rheumatism, stiff and aching back, etc. Take of Elder leaves $\frac{1}{2}$ pound, Plantain leaves $\frac{1}{4}$ pound, Ground Ivy 2 ounces and Wormwood 4 ounces. All these must be cut or granulated but all green. Boil in 4 pounds of lard in the oven or over a slow fire. Stir them until the leaves become crisp. Strain and press out. While hot, stir in $1\frac{1}{2}$ ounces of Eucalyptol. Pour into suitable size jars for use.

ELDER BERRIES. ---Alterative, diaphoretic, diuretic, aperient, emetic, resolvent.

Chemical constituents.--An odorous oil, viburnic acid, tyrosin, malates of potash and calcium. They were highly esteemed by our forefathers to be efficacious in rheumatism, syphilis and particularly for erysipelas.

FORMULA No. 19. The inspissated juice pressed from the fresh berries.

Dose.---One to two drams in a little water as a gentle laxative and cleanser of stomach and bowels. For increased action in doses of half an ounce or more. Taken in hot water at night promotes perspiration and is excellent for recent colds, with sore throat, chill, etc. Also recommended for nasal, bronchial catarrhs and asthma.

FORMULA No. 20. Almost from time immemorial, a "Rob" has been made as follows:

Take of fresh crushed Elderberries, 5 pounds; put into sufficient water to cover. Simmer slowly for 15 minutes. Strain and press. To the juice add 1 pound of brown sugar. Evaporate in a double boiler to the thickness of honey and pour into wide mouthed jars which have been heated. It is cordial, aperient, and diuretic. One or two tablespoonful mixed with a tumbler full of hot water taken at night promotes pleasant perspiration and is demulcent to the chest.

We have occupied nearly one whole lesson with this wonderful Herb and we have given you several very valuable formulas.

If any of you would like to have recipes for making Elderberry wine or syrup, or jam, preserves, pickle or Elderberry vinegar, chutney, ketchup, etc., we shall be glad to give you the formulas when we have a sufficient number of requests to warrant our printing them. Please register your name and request and when ready, we shall be happy to give them to you.

There are about 200,000 known Herbs and 9,000 growing in the ocean.

Needless to say, it would be quite impossible to describe even one hundredth part of them, especially as our descriptions are very lengthy and very complete.

However, we believe that these Herbs described in this treatise are more than sufficient to cover every pathological condition we shall ever be called upon to treat.

It is much better to know a few and know them thoroughly than to have a smattering of knowledge of hundreds of them which we shall never be called upon to use.

LESSON FOUR

The mysterious Goddess of Life, ELECTRA, is responsible for all the Life and activity in Nature. Her dominion is over all the elements of the Materiel Universe. The Lord or Law of Creation is Her Master whom she must, and always does obey--eternally creating and destroying all forms of Life; re-creating, changing, altering, adapting, correcting all errors and balancing all things.

In Lesson No. 2, we promised to give you some valuable up-to-date information on the subject of the electro-chemical nature of life and substance as understood by modern physicists and medical scientists, through the study of IONTOPHORESIS, or the Science of IONIZATION.

Chemistry, per se., is nothing more or less than the potential electrical nature of matter in molecular or atomic form. But before we can understand that, we must get a clear picture of each word used in the treatment of the subject.

The Apostle, John, who is credited with writing the last of the four Gospels, opens that Gospel by saying: "In the beginning was the WORD and the WORD was with GOD, and the WORD was GOD. All things were made by him (the WORD) and without him was not anything made that was made. In him was Life and that Life was the Light of Man."....To put it in another way, the word is the definition of the thing or condition. It, therefore, becomes absolutely necessary that we get a clear idea of any and every word and, it is my belief that there is no word used by man that is so indefinite, and as clumsily used as the word ELECTRICITY.

The word ELECTRA is from the Greek, and was understood by Greek philosophers to mean Life. Modern science has found that ELECTRICITY enters into and composes the form and energy of all matter and it's manifestation in phenomena. The only difference between the ancient and the modern interpretation of the word is that the Greek philosophers personified the principle and called it ELECTRA--the Goddess of Life. While in modern science it is defined as the Principle of Life and Energy entering into, and causing all phenomena. So, we find a unity between the ancient and modern philosophers.

One hundred and fifty years ago, the great Scientist, Benjamin Franklin, stated that: "There is only one kind of ELECTRICITY". Modern facts and observations prove this to be true. The dissimilar manifestations of it's actions indicate, an excess or deficiency of charge. All matter, organic or inorganic, is

charged with ELECTRICITY, and the amount of that charge determines its character.

A minus charge is called negative--a plus charge is called positive.

Formerly we thought that the unit of matter was the ATOM, but an English Scientist, J. J. Thompson, discovered that the ATOM was not the smallest part of matter--that each ATOM is composed of ELECTRONS, which are the real units of matter and energy.

This discovery has revolutionized modern science and cleared the way for a much better understanding.

Man is now able to measure the approximate number of ELECTRONS, or units composing a given substance, whether it is an element, or a compound of elements.

For instance, HYDROGEN (The positive element in water) is the lightest element known. It is composed of ATOMS. Each ATOM is made up of 770 ELECTRONS.

The element CARBON (called the basic element of Life) is composed of ATOMS. Each ATOM is made up of 9,240 ELECTRONS.

The element OXYGEN (called the breath of Life) is composed of ATOMS. Each ATOM is made up of 12,320 ELECTRONS. It is clear, therefore, that each element is composed of a definite number of ELECTRONS, or units of electric charge.

Two or more ATOMS of elements compose a MOLECULE. All compounds exist in molecular form.

An "ION" is an electrically charged particle, consisting of one or more ATOMS carrying a unit charge, or a multiple.

The "IONS" of Hydrogen and the metals are positive charged, and are called KATIONS.

The "IONS" of acids and hydroxyl (OH) are negative charged, and are called ANIONS.

All molecules are divisible into two "IONS" whether they are in simple unions, as in common salt (sodium chloride) or in unions of many ATOMS, as in a large number of organic substances, and they are all joined together by their ELECTRONIC constitution.

Salts are molecules formed by the union of a metal "ION" (positive) and an acid "ION" (negative). As long as the salt is dry, these oppositely charged

"IONS" are held together by an almost irresistible force, but a salt is no longer a union of two "IONS" when it is dissolved in water.

As soon as solution takes place, the electronic bond weakens and large numbers of the "IONS" become dissolved and separated from their partners, though they still retain their IONIC charges.

The positive charged "IONS" or metals travel through the fluid to the negative pole, or CATHODE. The negative charged "IONS" (either HYDROXIL (OH) or ACID) travel towards the positive pole, or ANODE. These "IONS" are the carriers of ELECTRICITY--Life. (They are the only "Vitamins" in nature, which we shall prove later, though they are also destroyers. So, the word is a misnomer.)

An electric current, driven through water, is conducted ONLY BY THE "IONS" in solution.

The CATHODE, or negative pole in ELECTROLYSIS, produces an ALKALINE--soft water lesion, with no hemostatic effects, but with evidence of an action similar to Caustic Soda. It favors hemorrhage, causes hyperemia and therefore, quickens NUTRITION.

The ANODE, or positive pole in ELECTROLYSIS produces a hard, dry ACID lesion. It is hemostatic, and its immediate action is CHEMIC and sedative.

Without going into tiresome and minute technical details, we may deduce from the foregoing facts that, ALKALIS generally are softening, relaxing, liquefying, diffusive and expansive, while ACIDS are tensing, astringent, hardening, solidifying and contractive. Both acids and alkalis tend to bring about ELECTRONIC equilibrium.

An unbalanced condition, either acid or alkaline, manifests as disease. All cell foods are presented to the cells as "IONS". The cells themselves, select only those "IONS" necessary to replace the "IONS" given off in the process of living, breathing, assimilation, elimination and reproduction.

When, for instance, purulent disease is in evidence, the diseased tissues are losing Sulphur and Hydrogen in the form of a gas called Hydrogen Sulphide (See Lesson #1, page 5)

Therefore, the logical thing to do is, to supply nascent Sulphur and Hydrogen by administering those Herbs (the Lily Family) which contain these missing elements, and restore the organic equilibrium of the affected cells.

In this way, and in this way only, all pus forming diseases, (and remember that pus is only formed by the decay of the cell, which means the loss of one or more elements composing it) such as ulcers, boils, pimples, abscesses, tumors,

cancers, etc. can all be cleared up by the intelligent administration of those Herbs which contain the missing elements or "IONS".

It is our business to find out which particular Herbs contain the missing elements in specific pathological conditions, and then proceed to apply or supply them intelligently.

We wonder how those great physicians of ancient times acquired their knowledge? Whether by intuition, or close observance of clinical experience. The fact remains that they did accomplish much more than we are achieving today. However, we can offer some real and logical excuses for our failures. For instance, people in their day were not exposed to poisonous mineral drugs. Furthermore, they were generally robust and strong and therefore, responded readily to simple treatment. Their vital organs had not been undermined and disorganized by the use of such terrible destroyers as Mercury, Lead, Zinc, Antimony, Copper, etc. Disease in those days did not eat into the organism as rampantly as it does today. Our race has been so maltreated by the present medical methods that it has lost fifty percent of its natural vitality and resistance. Therefore, we are up against a much more difficult situation.

But let us not despair, for the whole Earth is covered with remedies. God is not mocked, and ample provision has been made to meet, and successfully combat every destructive force devised by blind guess-work and ignorant conjecture.

You have taken up this study, principally, expecting to acquire a knowledge of tried and tested Herb formulas for immediate use, and you will not be disappointed. When you have become acquainted with, and digested the scientific facts regarding the Electro-Chemical nature of Herbs as remedial agents, you will be much better equipped to use them successfully.

First, your diagnosis will be 100 percent improved, and this I will show you later. Second, you will not make the disastrous mistake of administering calcium in excess to old people, which is frequently the cause of Arteriosclerosis and premature death. Third, you will not mix iron compounds with astringents containing tannic and gallic acids, which are incompatible and destroy the effectiveness of each other.

In fact, there are so many mistakes that one can make when one is ignorant of, or disregards the above scientific facts.

In the study of Botanical Remedies, we are concerned with their Vital Principles. Just how do they operate on the human organism? Their effects are so many, so varied and so marvelous, that the human mind cannot yet fathom and elucidate these mysteries. Our nearest approach to a solution lies in understanding, in so far as possible, their electro-chemical composition.

Owing to the incompleteness of chemical analysis, we can only partially approximate the so-called Vital Principles in anything. However, the answer to the question, "What is the Vital Principle?" is to be found in Organic Chemistry; the Chemistry of the CARBON COMPOUNDS.

This brings us to the point of a basic premise, or statement--namely--"That the element CARBON is the BASIC ELEMENT OF LIFE on this physical plane of existence."

I believe that everyone will agree to this fact, because it is being so continually and invariably demonstrated in the advances made in the study of modern chemistry.

More than one fourth of the total weight of the Human body is composed of CARBON. It enters into every process of cell life, both vegetable and animal. No food can enter into the cell that does not contain CARBON; but this CARBON is always in combination with other elements. The greatest number of food compounds by far, are the HYDROCARBONS, PROTEINS AND FATS in their order.

I shall not attempt to elaborate on the chemistry of the CARBON Compounds. (Their name is Legion.) I shall simply point out a few outstanding facts connected with the metabolism of CARBON, HYDROGEN and OXYGEN, because these three are the greatest builders and sustainers of all living bodies, both animal and vegetable.

This will help to clear the way to a better understanding of the therapeutic effects of Foods, Herbs and Extracts upon the life processes of the Human Cell. The most common and most plentiful of the many compounds of CARBON is the gas, CARBON-DIOXIDE. Everyone knows that animal life is largely a process of combustion, and that this gas is the end product of that combustion. It has the simple formula CO-2, showing CARBON has entered into the very basic process of metabolism, namely OXYGENATION.

I Know that we all learned this long ago, but even so, where has it taken us? Have we built a real medical science upon our chemical Knowledge? The fact is, we have either underestimated, or misunderstood the simple base of chemical science in its relation to life, and now we have to go back to that base and start again. If we do not do this at once, (I mean, learn something about that chemistry of Life), we shall be left far behind in the rut of ignorance. Others will take our place and the world will forget that we ever existed. Why do we have to constantly fight for the right to practice Natural Healing? There is only one answer: We have not demonstrated a superior scientific knowledge. When we can prove to all opposition that our method is a real true science, that is never at a loss, and never fails, then we can enact laws to protect us from continuous harassment that we have been subjected to. The Herbalists of England have already done this, and they are now a vast and powerful organization, highly

honored and respected by the people, and rapidly increasing in numbers and power.

If you are real searchers after Truth, if you are really desirous of becoming physicians who are second to none, then let's go! I have spent nearly 40 years in accumulating a vast store of scientific data and facts, which I am now willing to pass on to you. If you will follow me patiently, I will lead you to the top of the hill, and show you a view of Life and Health that you have not dreamed of.

The breath of life is OXYGEN; from the Greek, meaning "I bring forth." This element composes more than three quarters of the weight of all the waters and vapors of the earth; and more than one half of the total weight of the earth itself. This breath of Life comes to us from the leaves of the trees and herbs. As before stated, CARBON-DIOXIDE, which we breathe out and throw off as waste material, is absorbed by plants, which use the CARBON for structural purposes, and breathe out or throw out the OXYGEN, our breath of Life. OXYGEN has more universal and energetic affinity than any other element, and it combines with every other element except FLUORINE. Because OXYGEN composes three fourths of our bodies, and enters into the life process of every cell, and since we are concerned with metabolism, it behooves us to know something about it.

It is the chemical action of OXYGEN on many Herbs that makes them so virtuous and curative. The bitter principles found in Herbs are made evident or produced by OXYGEN. For instance, Cascara bark increases in virtue the longer it is kept by a slow process of OXIDATION. The odors and flavors of plants are produced by the action of OXYGEN. It is the Spirit of Fire, the body of water, the breath of Life, the cause of light and heat and I shall refer to it repeatedly during these lectures. Individually, the element HYDROGEN comes up next for consideration. A very large number of foods and Herbs are made up of CARBON, HYDROGEN and OXYGEN. As before mentioned, they are called Hydrocarbons, Carbohydrates, Proteins and Fats. Let's take just a glance at these chemical wonders, for they are the life blood of the great majority of our best foods and Herb remedies; and therefore, the builders of our own bodies. Please let me interrupt myself for a moment or two, to say, that owing to our ignorance of these masterpieces of Vital energy, we, nine times out of ten, make some fool mistake in diagnosis and, consequently, in our treatment of pathological conditions.

First, we will consider STARCH (a much misunderstood compound) (C-6, H-10, O-5). This important Carbohydrate exists in the roots and stems of nearly all plants. It is commonly called AMYLUM, and is contained plenteously in rice, wheat, potatoes, beans, peas, sago, tapioca, corn, arrowroot; barley and also in many medicinal Herbs. Starch is not found in health in any part of the system except the digestive tract. Much mystery or misunderstanding has been written into standard works on physiological chemistry with regard to how, where and why starch is converted into GLYCOGEN, DEXTROSE, GLUCOSE, etc. It is very simple. Glycogen is soluble STARCH (C-6, H-10, O-5). DEXTROSE is GLUCOSE (C-6, H-12, O-6). It simply means that an atom of water (H-2, O) by

attaching itself to Starch converts it into first GLYCOGEN (Soluble) then into GLUCOSE. The two formulas prove this, and it happens in fruits as they ripen. The starch in unripe bananas is hard to digest. The GLUCOSE in ripe bananas is already digested. GLYCOGEN is constantly being manufactured in the liver, distributed by the white blood corpuscles to the various parts of the body, but principally to muscular tissues where, by exercise, it is converted into sugar. This, in turn, is oxidized in the body into CARBON-DIOXIDE (CO-2) and WATER (H-2, O) and we all know how these are carried out of the system.

The PROTEINS will be frequently referred to when we consider those Herbs which contain them. They are not, strictly speaking, either HYDRO-CARBONS or CARBO-HYDRATES because, they all contain the element NITROGEN and, some of them also contain SULPHUR.

Now we will take a quick glance at the FATS which seem to be very little understood. All animal and vegetable fats are composed of GLYCERINE (C-3, H-5, (OH)-3) and fatty acids. Remember, these elements and compounds are all contained in Herbs, and a little knowledge along this line will show us WHY HERBS ARE WHAT THEY ARE and WHY THEY DO WHAT THEY DO.

Beef and mutton fat contain GLYCERID of STEARIC ACID; pork, GLYCERID of OLEIC ACID; butter, BUTYRIC ACID. Of the vegetable fats and oils, olive, oil contains OLEIC ACID; flax-seed oil, LINOLEIC ACID; castor oil, RICINOLEIC ACID, and so on through the whole range of fats and oils.

GLYCERIN is a TRI-ATOMIC ALCOHOL. It is non-toxic, and is the greatest solvent known to us. Its varied and versatile action upon various cells and tissues of the human organism makes it, if not the greatest, at least one of the greatest curative principles in Nature. Alone, GLYCERIN is laxative, solvent, emollient; when diluted, it is nutrient, lubricant, anti-fermentative, parasiticide, vermicide (ascarides). Externally, it is most valuable in skin diseases (eczema, herpes, lepra, pityriasis, psoriasis, lichen, prurigo), in lotion for incrustated lupus, chapped skin, excoriated surfaces, fissures of anus and nipple, wounds, boils, carbuncles, abscesses, coryza, pharyngitis, otorrhoea, deafness, allays itching, dryness of the mouth, etc. Internally, it is most valuable in phthisis, diabetes, typhoid fever, dysentery, hemorrhoids, leucorrhoea, constipation, etc. It is a solvent of iodine, bromine, tannin, alkaloids, salicin, alkalis, etc. Prevents extracts from molding; keeps them soft and does not evaporate.

Glycerids of stearic, oleic, palmitic and other acids are so important to the human body, that in health, they amount to nearly five percent of the total body weight. The percentages of fats and oils found in various parts of the healthy living adult, according to Dr. R. A. Witthaus, A.M., M.D., (recognized as one of the greatest chemists of our time) are as follows:

Bone marrow	96.0%	Crystalline Lens	2.0%
Spinal Cord	23.6%	Bile	1.4%
Nerve Tissue	22.0%	Bone	1.4%

White Brain Matter	20.0%	Cartilage	1.3%
Brain	8.0%	Blood	.4%
Cortex of Brain	5.5%	Mucus	.4%
Milk	4.3%	Chyle	.3%
Hair	4.2%	Amniotic Fluids	.2%
Muscle	3.3%	Synovial Fluids	.6%
Liver	2.4%	Lymph	.5%

They are also found in minute quantities in SALIVA, PERSPIRATION, VITREOUS HUMOR, URINE, etc. This plainly shows how vitally important it is for us to have an understanding of the chemistry of the Herbs we are using, and particularly GLYCERIDS of the many different ACIDS which compose the oils and fats contained in them.

We will encounter many pathological conditions, which, without a knowledge of these vital substances (oils and fats), we shall not be able to cure, and in some cases, even to alter or change a condition from morbidity, even to a degree.

The amount of fat, under normal conditions, is usually greater in women and children, than in men. In wasting diseases and in starvation, the fats are rapidly absorbed, and are again rapidly deposited when normal conditions are restored.

Many people have a tendency to corpulence, which, in some cases, amounts to a pathological condition. As a result of morbid changes, fat accumulates in certain tissues, which is due to either degeneration or to infiltration. Muscular tissue degenerates from long disuse, or lack of exercise. The muscular tissue disappears, and fatty acids takes its place.

In fatty infiltration of the heart, oil globules are deposited between the natural morphological elements. The oil globules may be of an unstable nature and subject to rancidity. If so, then more acids are formed than can be held by the glycerine contained in them, with the result that these acids attack the metals, calcium, magnesium, etc., in the surrounding tissues and form insoluble soaps. In this way, fatty degeneration of the heart takes place; also inflammation, pyaemia, and perhaps embolus.

There are a great many people suffering with some form of heart disease, and it behooves us to know what to do in these cases. And so now, we turn to the Herbs that remedy these as well as other conditions.

The great Teacher once said, "Consider the Lillies." Then let us consider one or two of them.

ALLIUM SATIVUM: Natural order, Liliaceae (Linn.)

COMMON NAMES: Garlic, Poor Man's Treacle.

PARTS USED: The Bulb.

DESCRIPTION: The leaves are long, narrow and much like grass. The bulb (the only part used), is compound, consisting of numerous bulblets, commonly called "cloves" grouped together between the membranous scales, and enclosed within a whitish skin which holds them as in a sac. The whitish flowers are placed at the end of stalks growing directly out of the bulb. They are grouped together in a globular umbel, with spathes around them.

It will pay us handsomely to consider this Lily because, it is one of Nature's great masterpieces as a safe and certain remedy for many of man's serious and devastating diseases.

GARLIC has been used from very ancient times, both as a food and as a medicine.

THEOPHRASTUS, the Greek philosopher (372 B.C.) relates that GARLIC was placed by the ancient Greeks on piles of stones at the crossroads as a feast for Hecate. (Literally, a feast for the Gods.)

VIRGIL, the Roman Poet (70 B.C.), in his eclogues states that GARLIC was consumed in large quantities by the ancient Greeks and Romans.

PLINY, (The Elder), Roman Naturalist and writer, states that GARLIC was invoked as a DIETY at the taking of Oaths by the ancient Egyptians; although this plant was known and honored long before that.

HOMER, the Epic Poet of ancient Greece (1,000 B.C.) says that GARLIC was part of the entertainment served up by Nestor to his guest Machaon. He also tells us that it was owing to the virtues of GARLIC that Ulysses owed his escape from being changed, by Circe, into a pig like each of his companions.

GALEN, speaks very highly of it, eulogizing it as the rustics "THERIAC" or "heal all".

Chaucer calls it "Theriac", as also do several old English Botanists and Herbalists.

Pliny gives an exceedingly long list of complaints in which it was considered beneficial.

The name garlic is of very ancient Anglo-Saxon origin being derived from Gar (a spear) and Lac (a plant) in reference to the shape of its leaves. It is one of the oldest medicinal remedies known to man, which has been cultivated and used from time immemorial in the treatment of many very serious diseases. Both its romantic history and its very remarkable curative virtues are vastly interesting and educational to all earnest and honest physicians and it is notable that it stands out today as one of our very greatest and most important therapeutic agents.

It is alterative, diaphoretic, diuretic, expectorant, antispasmodic, antiasthmatic, stimulant, antiseptic, disinfectant, tonic, norvine, antiphthisic, germicide and vermicide.

Chemical Constituents. Volatile oil (25 percent) mucilage (35 percent albumen, sugar, starch, fibrin and 60 percent water. The oil is a rather complex substance, of a strong, intensely penetrating odor and consists of sulphides and sulphates of ALLYL (C-3, H-5). In their order, they are (C-6, H-10, S-2) (C-6, H-10, S-3))C-6, H-10, S-4) and (C-6, H-12, S-2) which is not strictly an Allyl-sulphide. It will be seen that this remarkable Herb is heavily laden with organic sulphur, but no Oxygen is found in the oil. Yet, it is the action of Oxygen when the skin is taken off the cloves that releases the sulphur by uniting with Allyl to form Allyl-oxid which is also a pungent liquid having a sulphur odor.

Many marvelous effects and healing powers have been acclaimed for garlic. It is probable that none of them are exaggerated. I, myself, have seen it completely overcome tuberculosis, asthma, bronchitis, several skin diseases, stomach ulcers, leg ulcers, athlete's foot, furnunculosis, abscesses, epilepsy, worms, and restore health to many broken down constitutions. It has a special affinity for the respiratory tract, lungs, brochi, etc., though it diffuses itself through the whole system; and wherever there is pus it is a certain and safe remedy.

The use of garlic in the world war as an antiseptic was most sensational. In 1916 the British government asked for tons of the bulbs, offering one shilling (25¢) a pound for as much as could be produced. A great quantity of it was used for the control of suppuration in wounds. The raw juice was expressed, diluted with water, and put on swabs of sterilized sphagnum moss which was applied to the wounds. Where this treatment was given, it was reported that there has not been one single case of sepsis or septic results. Consequently, the lives of tens of thousands have been saved by this one miraculous Herb.

That was many years ago, and still we do not find garlic as an official remedy in the American Pharmacopoeia. This is one of the most disgraceful facts connected with the so-called "regular" practice of medicine; and proves beyond all doubt that, their practice is neither ethical, moral, or even humane, or such a miracle of healing power would not have been discarded as it was, nearly 50 years ago.

In olden days, garlic was employed as a specific for Lepra, Psorissis, and several forms of exanthematous skin diseases. It was also believed to give most beneficial results in small-pox when applied to the soles of the feet, in a linen cloth and renewed daily.

Those unacquainted with garlic might think that this was merely superstition but, as a matter of fact, it is quite true. If chopped or minced fresh garlic is placed on the soles of the feet and allowed to remain there for some time,

it will not be long before the odor of garlic can be detected on the breath; and cases of purulent disease in different parts of the body have been reported completely cured by simply keeping an application of garlic to the soles of the feet, and renewing it once or twice a day.

We positively know that organic sulphur is a universal antiseptic, whether taken internally or applied outwardly to any part of the body. It has been authoritatively reported that tuberculosis has been successfully treated by inhalation of the freshly expressed juice of garlic, diluted with equal quantities of water.

Garlic was the principal ingredient in the famous "Four Thieves Vinegar" which was adapted so successfully at Marseilles for protection against the plague when it prevailed there in 1722. This originated, it is said, with four thieves who confessed that, while protected by the liberal use of aromatic garlic vinegar during the plague, they plundered the dead bodies of the victims with complete safety. It is stated that during an outbreak of infectious fever in certain poor quarters of London early in the last century, the French priests who constantly used garlic in all their dishes visited the very worst cases with impunity, while the English clergy caught the infection, and in many instances, fell victims to the disease. Another instance of the remarkable penetrating power of garlic is the fact that the expressed juice of fresh garlic mixed with lard and rubbed on the chest, throat, and between the shoulder blades gives great relief in whooping cough, asthma, bronchitis and dyspnoea, according to an English physician who has used it with success for many years. It also has a reputation for safely reducing high blood pressure, and in this relation we have an exceedingly valuable formula.

Boiling garlic reduces its active virtues considerably. Vinegar and water both extract its curative principles, though vinegar alone seems to be more effective for that purpose. Expressed fresh juice of garlic contains all of its many virtues. The following priceless formulas will cover its therapeutic applications completely for: --- asthma, bronchitis, catarrhal conditions of the mucus membranes, phthisis, tuberculosis, coughs, dyspnoea, heart weakness, internal ulcerations, etc.

FORMULA No. 21. Garlic Syrup.

Peel 1 pound of fresh garlic, then chop or mince. Put into a wide mouthed jar and add equal parts of vinegar and distilled water to just cover the garlic. Close tightly, shake well, then let stand in a cool place for 4 days, thoroughly shaking once or twice a day. Now, add 1 pint of glycerine, shake well and let stand another day. Strain with pressure, then filter liquid through a muslin or linen cloth. Add 3 lbs of pure honey, and stir till thoroughly blended. Put into jars, seal tightly and store in a cool place.

In order to cover the pungent odor of the garlic, in case it is objectionable, do the following:

In place of macerating the garlic in equal parts of vinegar and distilled water, as directed above, use 1 quart of vinegar in which 3 ounces of powdered caraway seed and 3 ounces of sweet fennel seed have been slowly boiled, for 15 minutes, while closely covered. Strain, and when cold add 1 pint of glycerine. Use this in the above formula instead of the vinegar and distilled water mixture.

This is much more acceptable to those who have an antipathy to the smell and taste of garlic. Of course, the 3 lbs of honey are also added after the filtering process. This deviation in no way affects the curative properties of the garlic, while it helps materially to disperse gas and flatus. We use aromatic vinegar in our own preparation of this formula, which is one of the most meritorious and useful remedies to have on hand. It is harmless, and very effective in the above mentioned cases, and will please and astonish both you and patient.

DOSE: For asthma and coughs: 1 teaspoonful with or without water every 15 minutes until spasm is controlled; then 1 teaspoonful every 2 or 3 hours for the rest of the day. After that, 1 teaspoonful 3 or 4 times a day, is usually sufficient.

For tuberculosis, cardiac asthma and dyspnoea: 1 dessertspoonful to a tablespoonful 3 or 4 times a day between meals.

Children: (8 to 15 years) one half of the above dose; (5 to 8 years) one quarter dose; (from 1 to 4 years) one eighth in a little water or honey.

Garlic has also been used successfully in dropsy. The above formula may be used with benefit, but the following will be found to be much more prompt and effective, especially where the heart is much involved.

FORMULA No. 22. Dropsy with Heart Involvement.

Boil 8 ounces of powdered parsley seed (*carum petroselinum*) and 2 ounces Lily of the Valley Root (cut) (*Convallaria Majalis*) in 3 pints of distilled water for 20 minutes. Strain, then boil slowly till reduced to 1 pint. Set aside to cool, and while still warm, add 8 ounces of expressed garlic juice, 8 ounces of brown cane sugar, and 1 pint of glycerine. When cold, bottle and keep in a cool place.

This is one of the most potent remedies for dropsy and heart disease ever devised.

DOSE: 1 teaspoonful to a dessert spoonful in water, as required. The dose should be regulated and given every 3 hours to bring about diuresis. Also, a slowing of the heart action, and an increase in the tone of its contraction. After this effect has been produced, administer 1 teaspoonful in water 3 or 4 times a day.

Garlic for outward application: For eczema, pityriasis, psoriasis, ulcers, cancers, swollen glands, tubercular joints, necrosis and all purulent conditions that are accessible, we recommend the following formula:

FORMULA No. 23. For Outward Application. (Garlic)

To eight ounces of expressed fresh garlic juice, add 8 ounces of glycerine and mix thoroughly. To this add 1 pint of Formula No. 11, on page 14, Lesson No. 3.

Directions: Saturate lint or cotton and apply to the affected parts. Cover with waxed paper or plastic and bandage or strap on securely. Change 2 or 3 times a day. Also take same formula internally, a teaspoonful 3 or 4 times a day.

This is a master formula for the above conditions, and should be taken internally for some time after the local affections have disappeared.

Of course, it goes without saying that the diet must be carefully regulated. Excessive amounts of proteins and nitrogenous foods, starches, etc. must be avoided. A mixed diet of vegetables, fruits and nuts (no peanuts) will be found to help materially in all such cases. Stimulants, such as brandy, whiskey, wines and beer must be strictly avoided if a recovery is to be effected. The only stimulants indicated in these cases are peppers (not black pepper), carminatives and condiments, such as cinnamon, cloves, ginger, etc.

These garlic formulas we have given you are priceless. It will pay you to study them, and utilize them with confidence whenever occasion arises.

In our next lesson we will discuss the chemistry of iron, phosphorus and calcium.

LESSON FIVE.

Last week, we drew your attention to the endless chain of vital activity enacted in the ceaseless changes taking place between three basic life elements, namely: carbon, oxygen and hydrogen in the phenomena of Life. It is only possible to isolate a very few apparently important findings at a time; and when we have thoroughly clarified and memorized these, we can seek another group and make comparisons.

In this way, we avoid confusion, so; from time to time, we shall endeavor to clearly state a limited number of observations of vital importance recently made in the study of ELECTRO-CHEMICAL phenomena.

Oxygen is now well known to be the best cardiac and respiratory stimulant. It's inhalation, for a limited time, has proved most successful in heart failure, Bright's disease, septicemia, as an anti-dote to poisoning by chloroform, morphine, opium, strychnine, cyanide, carbon monoxide, nitrous oxide, all kinds of infections, in pneumonia, bronchitis, asthma, and angina pectoris. Most valuable for resuscitation after partial drowning and for many other conditions.

Ozone is a TRI-ATOMIC form of Oxygen (O₃) which is very active. It's third atom is in a labile condition, through the absorption of electric energy. Dyspnea, breathlessness and exhaustion, due to excess of CO₂ in the tissues and carried to the brain, is almost instantly relieved by the inhalation of ozone.

We have not finished with oxygen and we never shall finish with it, because, oxygen is the very BREATH of LIFE, and sticks it's nose; as it were, into almost every other element's business. We shall have more to say about oxygen from time to time, but now; we must speak of other vitally important elements.

We are not going to tire you with intricate and difficult chemistry, but it will add much to understanding if you will memorize these few outstanding facts.

Phosphorus is probably the next most important element to oxygen in the processes of metabolism. It exists principally as phosphates in the various tissues and fluids of the body. In the bone it exists as calcium phosphate. In the plasma, as sodium phosphate. In the brain and nerves, as potassium phosphate. In combination with iron in the red corpuscles, as iron phosphate, and as magnesium phosphate in muscular tissue. In fact, magnesium phosphate is found in almost every part of the body. Since this element—phosphorus—is so intimately

associated with every function of the whole organism, it would be well to learn all we can about it. Comparatively large quantities of phosphoric acid are manufactured and lost in the body. The daily total average loss of phosphoric acid in health, is estimated at three grams in the urine and 1.5 grams in the feces, or a total of 4.5 grams. It is therefore, absolutely necessary to consume foods containing sufficient organic phosphates to replace that amount.

This is of the most vital importance, because the brain and nervous system cannot function normally without a sufficiency of potassium phosphate. No new bone cells can be built without sufficient calcium phosphate. No new blood cells can be built without iron phosphate, nor can the tissues and fluids be properly oxidized without iron to carry it to every part. Furthermore, lactic acid and other acids cannot be split into carbon dioxide and water, and so carried out of the system without the aid of sodium phosphate and, finally, the muscular and epithelial tissues cannot perform their functions without an adequate supply of magnesium phosphate.

The remarkable feature of phosphorus is its versatility. It enters into both acid and alkaline reactions as well as being contained in both acid and alkaline foods. In some fairly well known pathological conditions, we are able to determine whether there is excess or deficiency of phosphorus; and the approximate nature of its combinations.

This is exceedingly valuable information, because it enables us to introduce foods and herbs of a truly corrective character in specific conditions.

For instance, in the usual vegetarian diet, the excess of alkalis appearing as carbonates in the urine produce an alkaline reaction. This is called hypo-acidity, or less than the required amount of acid (which in health is 4.55 per liter). When this hypo-acidity prevails, there is a pathological deposition of calcium or lime salts, not only in the renal organs, but often around the joints, which goes by the name of arthritis.

Rheumatic gout, arteriosclerosis, etc. are other names given for those deposits of lime

Whenever these lime deposits are in evidence, we have to raise the acidity and to do so, phosphoric acid is required, because other acids coagulate the albumin, and so make matters worse. Many physicians treating those conditions, and not knowing just what to do, either give alkalis or recommend alkaline foods. Very often they use stimulation in the form of heat—either deep therapy lamp, short wave, diathermy or some electrical heat-producer. Although these methods often temporarily relieve pain and congestion, they, none of them, supply the missing acid to dissolve and liquefy the lime deposits, so of course, they do not cure.

In white cheese, haricot beans, mutton, beef, eggs, cereals, whole wheat, oats, whole rye, whole rice and watercress, we have a plenteous supply of phosphates to generate the required amount of phosphoric acid. Wheat-bran contains approximately 17 percent of acid phosphates.

Although all the phosphates generate phosphoric acid ultimately in the system, some of them are strongly alkaline. For instance, there are three sodium phosphates. The TRI-SODIC phosphate (NA-3, PO-4) is alkaline. It is called BASIC Sodium phosphate. The DI-SODIC phosphate (H, NA-2, PO-4) is neutral, (that is neither acid nor alkaline) It is the commonly used sodium phosphate. MONO-SODIC phosphate (H-2, NAP O-4) is acid. It is called ACID sodium phosphate, and is the greatest solvent of stone, (calculi) gravel and lime deposits generally. All the sodium phosphates exist, (accompanied by the corresponding potassium salts) in the animal and human economy. The DI-SODIC and DI-POTASSIC phosphates are the more abundant and of these two, the sodium is more than the potassium.

In the blood plasma, the sodium salt predominates, while in the blood corpuscles, the potassium is most abundant. They serve to maintain a slightly alkaline or neutral reaction. With strictly vegetable diet (as before stated), the proportion of phosphates in the blood diminishes, and that of the carbonates increases.

The MONO-SODIC and MONO-POTASSIC phosphates exist in the urine, (the sodic predominating) and it is largely owing to their presence that the acid reaction of that fluid (urine) is due. They are produced by the decomposition of the neutral and alkaline salts through the action of uric acid.

The principle Herbs containing these master builders and vitalizers are, blue vervain, broom tops, buchu leaves, damiana leaves, capsella leaves, doggrass, elecampane, hydrangea, scullcap and uva ursi leaves. Later in this lesson, we shall treat of hydrangea, a wonderful radio-active Herb with powerful stone solvent properties. And now we must speak of the great magnetic element--IRON. So much has been written about IRON that some might think the subject overdone or exhausted, but it is not so.

IRON is such a universally necessary and versatile element that it's usefulness in the economy of Life and Health is of the greatest value. It exists in almost in every soil, in almost every natural water, and in the atmosphere. It is found throughout the vegetable kingdom, and it is an absolutely essential basic element of red blood in all living red-blooded creatures. Besides all this, IRON is the magnetic principle manifest in electric phenomena, both organic and inorganic. It's powerful attraction, and it's almost endless combinations with oxygen, hydrogen, carbon, nitrogen, sulphur, phosphorus, iodine, bromine and nearly every other element, makes it, if not the most important element, certainly the most important METALLIC element in the whole of nature.

It is IRON that enables us to live; because without it, we could not utilize oxygen, which is the BREATH of LIFE. The dynamic power of IRON is proven by the fact that, although nearly three parts of the body's weight is composed of oxygen, there are only approximately two ounces of IRON in that body; and yet, not an iota of this vast amount of oxygen could be kept working, sustaining, purifying, vitalizing and renewing the body, were it not for those TWO SMALL OUNCES OF IRON.

Again, in the vegetables and fruits we eat to replace lost energy and material, we find those which contain even small percentages of IRON, are among the most nourishing and vitalizing foods. In many pathologic conditions, there is evidence of IRON deficiency, and it is simply amazing how potent and powerful this element is as a curative principle in many diseases.

In anemia, leukemia, chlorosis, in splenic, myelogenic, lymphatic and many other malnutritional diseases. In fatty degeneration, dropsy, brain and bone diseases, there is an IRON starvation. It may be that there is no deficiency of actual weight of IRON in the body, but still there may be IRON STARVATION; and as this sounds like a contradiction, let me explain: We told you in our last lesson that when certain soluble substances are dissolved in water, they are "IONIZED". We also pointed out that 'IONS' are the carriers of electric or Life energy and that they, and they alone, are cell foods. Any substance or matter that is not soluble in water is not 'IONIZED' INORGANIC IRON is not soluble in water, therefore, it cannot be utilized in the life process of the cell. Get this clearly in your mind and memorize it, because it is of the most vital importance; and the lack of knowledge of this fact has been, and still is, responsible for the loss of countless lives that might have been saved, had we but known. The word "WE" is used to mean physicians generally. IRON, as before stated, has many affinities, and therefore, is often stolen from solutions by other elements and compounds to form inorganic and insoluble substances.

Sulphur has a very powerful affinity for IRON and forms insoluble sulphides of IRON. All acids unite with IRON, and some of them form insoluble substances, while others form styptic astringents that dry up secretions and shrink the parts attacked.

For instance, in the case of habitual, or chronic constipation, there is an excess of sulphides in the intestine, which actually steal organic IRON from the foods containing it, thus robbing the blood of its ability to carry oxygen and other elements to the tissues. Remove the sulphides from the intestinal canal, and administer foods containing IRON, such as berries, egg yolk, lean meat, whole wheat, etc., and away goes both constipation and the anemia, and the system quickly passes from lethargy to activity.

The life giving oxygen is carried to every cell, promoting heat and energy everywhere. The eyes grow bright, the cheeks become rosy, and soon there is life abundant in every cell.

In considering IRON from the standpoint of metabolism, we are confronted with such an immense amount of data, (much of which is not true), that it behooves us to check carefully on the information we receive in order to avoid errors.

Although IRON is so important, it is nevertheless dangerous when used indiscriminately. Here is an example: Suppose your patient drinks tea and coffee, or is taking some astringent Herbs, and you recommend an IRON tonic for the blood. As we mentioned before, IRON and tannic acid are incompatibles, and the product of their union is tannate of IRON, a very powerful syptic which dries up secretions and contracts the mucosa of the intestines. You can plainly see how ignorance or carelessness in administering IRON can easily produce disaster. This is what often happens: The intestine is loaded with toxic fecal matter. The bowels do not work. A purgative is taken and the toxic matter is liquefied and absorbed into the bloodstream, from which some of it is thrown out into the lungs, the kidneys or any other organ, and disease of the whole system is set up, which may ultimately end in death from chronic toxemia. All this because of ignorance of simple chemistry.

We have a solution to this problem, however. There are ways and means of making IRON solutions compatible with tannin. In fact, nature produces these two incompatibles in harmony with each other in many foods and Herbs. The element PHOSPHORUS plays an important part in this relation. Remember this: Without PHOSPHORUS all your IRON compounds are incompatible with astringents containing tannic acid.

PHOSPHORIC ACID is produced by the oxidation of PHOSPHORUS. It is the only acid that does not coagulate albumin, that blends perfectly with IRON producing a soluble IRON Phosphate that is compatible with tannin and astringents.

Later in this lesson, we will give you full information on how to prepare organic IRON compounds with other elements in harmonious combination.

Meanwhile, we must just touch on the subject of the element CALCIUM, which also is most vital and necessary to healthy metabolism. First, let us say that in our opinion, there is no element that is less understood and more ignorantly applied than the metal CALCIUM and its compounds. CALCIUM IS THE GREAT BUILDER of the structural parts of the body. Not only of the bones and ligaments, but the walls of the arteries, the heart, the walls of the veins; the teeth, the epithelial and connective tissues, while it is also an integral and necessary element in both blood and lymph. We know that many malnutritional diseases, such as rickets, cretinism, (though of course, there are other causes) etc. are usually the result of a deficiency of CALCIUM.

At the same time, we know that excess of this metal is responsible for arteriosclerosis, or hardening of the arteries, also for sclerema or sclerosis of

tissues, liver, skin, eyes, etc. In fact, we know that old age, itself, is brought about by a gradual hardening of the whole structural system, through deposition of CALCIUM compounds that are insoluble and inorganic.

What we mean, when we say that CALCIUM is little understood and often ignorantly administered is, that while the young growing organism can use relatively large amounts of CALCIUM, when the body is fully matured and solidified, the amount of CALCIUM required decreases; and past middle age, comparatively less than half the amount is necessary, and in old age, a very small amount is required, and over that small amount, CALCIUM becomes a very dangerous thing to use, often bringing about most disastrous results, and yet never being thought of as the cause of the chronic suffering and sometimes death of the patient.

When freed from compounds, CALCIUM will unite powerfully with carbon, oxygen, hydrogen, nitrogen, chlorine, fluorine, sulphur, phosphorus and silica. Of course, inorganic CALCIUM cannot be used in the life process of the cell, but instead forms by far the greatest number of obstructions to the normal life processes of the human organism.

Organic CALCIUM as found in some foods and Herbs, is distinctly alkaline in reaction as lemons, limes, oranges, cabbage, cauliflower, celery, lettuce, string beans, onions; while others have an acid reaction upon certain fluids and tissues as milk, cheese, peas, beans, lentils, cucumbers, radishes, fish, meat, potatoes, etc.

Green and leafy vegetables contain CALCIUM chloride, as do many berries and Herbs. Organic CALCIUM chloride is found in red clover, wheat bran, rhubarb, yellow dock, watercress, blue vervain, motherwort cactus, hawthorn berries, comfrey root, marshmallow, and many others. It is as though the Good Lord knew that millions of us would suffer with some heart trouble, and so made the remedy easily available, because CALCIUM chloride is a great heart tonic. In fact it is so potent and effective in its action upon weak hearts, that the great English Scientist, Sir Lauder Brunton said that, "Heart failure, which so often follows influenza and pneumonia, may be averted by the extended use of CALCIUM chloride."

As some of you already know, we recommend a strong decoction of hawthorn berries and motherwort for heart failure. In hemorrhage; CALCIUM Chloride is most effective and we always depend on comfrey root and geranium maculatum for both internal or external hemorrhage. We have never known this remedy to fail and we have used it in hundreds of cases. Comfrey root alone is sufficient in slight passive hemorrhage, but when it is severe and alarming, we add the more astringent geranium and recommend, in those cases, a teacupful of the strong decoction (two ounces of each Herb to 11/2 pints water, boiled 20 minutes, strained and administered cold), every hour till the hemorrhage stops. Then; every three or four hours, till all danger is past. It is well to follow up with

one teacupful three times a day for a few days. CALCIUM lactate, CALCIUM phosphate and CALCIUM carbonate in organic form are all coagulants and as such; are often very remarkable in their quick effect. All three of these forms of CALCIUM are found in milk and cheese. The phosphate of CALCIUM in fish is very high.

We do not want you gentlemen to forget and so we repeat, that in the early part of Life and right up to middle age, CALCIUM is an indispensable and important body building food, but as we grow older, we require much less, unless (as in rare cases) we suffer from an actual shortage. Therefore, to recommend, or administer Herbs or diet largely composed of CALCIUM is detrimental to people past middle age, and especially so to the very old. For growing children and pregnant women, it is the remedy par excellence, especially in rickets and kindred diseases.

Nature seems to have provided a remedy for old folks who hemorrhage, in the many Herbs containing tannic, gallic, and phosphoric acids such as geranium, walnut leaves, shepherd's purse, dandelion and oak bark. Also iron plants—yellow dock, watercress, etc. These act upon the tissues affected to astringe and contract them, more than as a coagulant of the blood. We could say a great deal more about CALCIUM, but there are other important elements we must know about, in order to co-ordinate our knowledge of them all.

Next week, we will speak of POTASSIUM, but now, we go back to the study of some more valuable Herbs. We have spoken in this lesson about PHOSPHORUS, IRON, and CALCIUM, and under the heading of PHOSPHORUS, we promised to treat of the marvelous radio-active Herb HYDRANGEA, which we stated possesses stone solvent properties and we chose this Herb for treatment in this lesson because it contains all three of the elements named. PHOSPHORUS, IRON, and CALCIUM. Before we give you the therapeutic virtues of HYDRANGEA, we think [?] should say something about radio-activity.

If electric sparks passed between the poles of a highly exhausted glass tube (Crookes¹) a faint, straight-lined radiation (negative rays) emanates from the cathode which consists of a stream of very minute particles, moving rapidly and negatively charged.

These rays impinge on the walls of the tube, producing a brilliant fluorescence. At the same time, roentgen, or x-rays, which are invisible, pass out in straight lines from the walls of the tube. They are marvelously active. They cause many substances to light up, or become luminescent. They pass through bodies which are opaque to ordinary light rays. They affect photographic plates. They produce physiological and chemical effects on living tissues, and they change insulating substances, (air, gases, paraffin, etc.) into conductors when passing through them. These, as we all know, are called x-rays and because the

tube lights up, or fluoresces, while they are emitted, it was at first thought that these rays were given out by certain fluorescent substances.

Uranium Salts, well known for their fluorescence after being exposed to sunlight, were found to affect sensitive plates that were covered with black paper which fully protected them from ordinary light. The famous scientist, Becquerel, was experimenting with Uranium salts, and just as he was about to expose them to sunlight to make them fluorescent, a sudden storm obscured the sun.

He carefully laid away the uranium salts on the sensitive plate (which he was going to test them with), in a dark drawer. Some days later he examined the plate for possible changes, and much to his surprise, found that it had been affected greatly, and thereby discovering the remarkable radiation - Becquerel Rays, or radio-activity.

This discovery comes nearer to being the key that opens the door to the understanding of what goes on inside?, not only of the body, but of the cell itself. Many substances have been shown to be radio-active, and their radio-activity is rapidly revealing to investigating scientists the Electro-chemical changes that take place both in the production of disease, and the death of the cell; also in the cure of disease and the Life of the cell itself.

If this part of our course bores you now, there will come a day in the near future, when you will thank us for the information now being given you. The radio-active substance known as CALCIUM SULPHIDE (CA.S.) is a specific for phosphaturia, and that is where HYDRANGEA comes in.

HYDRANGEA. Common names: Seven Barks, Blue Bush, Chinese Herb, Hydrangea Vulgaris, etc.

Natural Order. Saxafragaceae.

LATIN NAME. HYDRANGEA ABORESCENS (Line)

History and Habitat. The HYDRANGEAAS are marsh or aquatic plants. The name is derived from a Greek compound signifying, water-vessel, as the roots contain an abundance of vital water. Four of the known species are natives of America. The common garden Hydrangea (Hydrangea Hortensis) is extensively cultivated in the gardens of China and Japan. It is one of the Herbs they use medicinally. Several methods are employed in America for imparting the beautiful blue tinge to the flower. The oak-leaved HYDRANGEA (Hydrangea Quercifolia) is a native of Florida and is also cultivated for its beauty. The name Seven Barks was given by the Cherokee Indians to HYDRANGEA ARBORESCENS, because the bark, which is rough and has a tendency to peel off in layers, each layer being of a different color. The old Cherokee Indians, and later the settlers, used a decoction of it with great success for calculous diseases.

There is much disagreement among the Medicos about its stone-solvent properties. Some say it does dissolve calculi, while others maintain that it does not. But we know that it does, and in a few minutes we will tell you how to make it into the greatest stone solvent in the world. Dr. S. W. Butler demonstrated its stone and gravel solvent properties to the medical profession, but they have taken little notice of it. Dr. Butler hails from Burlington, New Jersey. He says, "HYDRANGEA removes gravelly deposits and relieves the pain of their passing. As many as 120 calculi have been known to come from one person under its treatment.

CHEMICAL CONSTITUENTS. The root contains two resins, gum, sugar, starch, albumin, calcium sulphide (radio-active), potassium sulphate, sodium acid phosphate (the stone solvent), magnesium phosphate and sulphate, a protosalt of iron, a glucoside (Hydrangin). It contains no tannin, but two oils, one fixed and the other volatile.

Dear student, you will never find a more remarkable Herb. And you see, it contains within itself a chemical laboratory of curative principles second to none in the whole of nature. So far as we know now, this Herb is the most powerful solvent of stone and calculous deposits, not only in the renal organs, but in every part of the organism, wherever they may be located. Therefore it is destined to become a universal remedy for phosphaturia, cystitis, alkaline urin, stony deposits, deposits of oxalate of calcium (which form many calculi), chronic gleet, mucus irritation of the bladder in old people, back-aches caused by kidney trouble and rheumatism of long standing, arthritis and gouty affections, arteriosclerosis and many other conditions very frequently met with in ordinary practice.

THERAPEUTIC PROPERTIES: Diuretic, tonic, laxative, antiseptic, stone solvent, diaphoretic, anti-lithic, anti-rheumatic, sialagogue, cathartic.

<u>FORMULA No. 24.</u>	HYDRANGEA ROOT (cut)	3 ounces
	Acid Sodium Phosphate	3 heaped teaspoonfuls
	Distilled water	3 pints

PROCESS: Dissolve the phosphate in the water, stir in the HYDRANGEA root and let stand for 6 hours with occasional stirring. Boil for 15 minutes. Strain, cool and add 25% of glycerine. Bottle and keep in a cool place.

DOSE: One dessertspoonful to a tablespoonful 3 or 4 times a day.

NOTE: This preparation is not suitable for young children under seven years of age; from 7 to 12 years, the dose is one-half teaspoonful in honey or syrup, 3 times a day between meals; from 12 to 17 years, three-quarters to one teaspoonful 3 times a day.

When used as a diaphoretic and purgative, it should be taken at night, in hot water, making it a teacupful all together.

This dosage has been carefully worked out so as to produce/best results, and overdoses will not be beneficial, but detrimental.

This formula will be found to be of great benefit in all the conditions named, but it is an exceptional remedy for very old people, and those past middle age, who suffer with kidney and bladder trouble.

We have told you that the Cherokee Indian Doctors thought HYDRANGEA the greatest and best remedy for calculous diseases. We will also quote a few other scientists and doctors regarding this Herb: The famous Eclectic Physician, Dr. Ellingwood, M. D., - he says: "Hydrangea is a most valuable remedy with which to exercise a general influence in relieving congestion, irritation and pain in the kidneys and bladder. I consider it nearly indispensable in acute inflammation of the kidneys. It is important in cystitis and gonorrhoea. In lithemia, where the urin, on standing, assumes a cloudy appearance, and where the alkaline, phosphatic, or uratic precipitates are excessive, it should be used. It favors the elimination of those crystalline bodies, soothes local irritation in the renal tubes, and assists in overcoming a tendency towards this condition. The urin in these cases is scanty, and the specific gravity is high. It should be given freely with water, especially if there is some blood in the urin accompanied with deep-seated pain in the region of the kidneys. It has been claimed to dissolve stone, BUT THIS CLAIM HAS NOT BEEN PROVEN. It is, however, a most important remedy in any form of renal calculi, because of its permanently soothing influence."

Dear students, it is truly amazing the manner in which some really great men reason. This great scientist whom we honor for his wonderful knowledge and contribution to science, nearly, if not quite, contradicts himself. Please forgive this criticism, but he says, "It is important where the phosphatic, or uratic precipitates are excessive, it favors the elimination of these crystalline bodies," and yet, he practically denies the claim that it dissolves them.

The sharp lancinating pains, and the blood found passing in the urin, are both caused by the sharp points of these crystals, piercing the kidney or ureter, where the crystals are located or lodged. When these sharp points are even partially dissolved, the pain, hemorrhage, and inflammation all subside, and the stone or stones frequently pass with just a stretching of the tubes. How therefore, is it possible to account for the fact that when these stones pass easily, after the administration of HYDRANGEA, they are found to be smooth and round, while X-Ray pictures revealed their sharp points piercing the tissues?

It is our conviction that an aqueous solution of HYDRANGEA alone, made with one ounce of the herb, to one pint of distilled water, and taken in wine-glassful doses, is distinctly solvent in its action on renal calculi. And since we

know that renal stones are carbonate and calcic in their chemical composition, and that the action of free sodium 'IONS' tends to liquefy fixed calcium within the organism, then, when we augment that solvent action by the addition of acid-sodium phosphate, we positively know, and clinical evidence proves, that our Formula IS A REAL STONE SOLVENT.

If the student would like to see the fluorescence, or radio-activity of HYDRANGEA, boil some of the root in water to which has been added a small amount of either sodium bicarbonate, sodium or potassium carbonate. You will distinctly see, especially in the sunlight, the greenish fluorescence emitted from the solution. Through a piece of dark blue glass, it is still more brilliant.

This radiant energy indicates a re-arrangement of the particles or 'IONS' taking place in the chemical reaction, and when brought into contact with calcic and carbonic solids, tends to liquefy them. This can be demonstrated in Vitro as well as in Vivo.

Be that as it may, we know that HYDRANGEA is one of the most effective remedies in cystitis, calculi, renal irritation, hemorrhage, pain and inflammations. We can confidently recommend it's use for this purpose. It will quickly give freedom from pain, and give peace and comfort in those distressing and agonizing conditions. "When HYDRANGEA comes, back-ache goes," is a slogan we have been using for years, regarding this beautiful and wonderful plant.

LESSON SIX

Following a short discourse on that dynamic and important mineral-salt, POTASSIUM, we shall give you some priceless information regarding a few Herbs which possess some of the most amazing healing virtues. In works on Materia Medica, they are referred to as astringents.

POTASSIUM is found in many vegetables, fruits, nuts, leaves and roots, in combination with many other minerals such as chloride, iodide, fluoride, phosphate, sulphate, nitrate, carbonate, oxalate, etc. It enters into the life-processes of approximately 80 per cent of all the cells and organs of the human body. Its powerful electric energy and dynamic vitalizing nature, make it a most effective builder of many cells and tissues.

POTASSIUM CHLORIDE, (K, CL) is a salt very similar to sodium chloride (NACL), but very different in its chemical effects upon the various cells and tissues of the body. It is found in the blood and lymph. By its action on collagen (which is a particular gelatinoid) it forms fibrin. This fibrin is the builder of muscular and ligamentous structures, but unless there is sufficient POTASSIUM CHLORIDE in the blood to keep it in solution, the fibrin is thrown out as a stringy, insoluble mass which forms an excess of phlegm and catarrhal mucoid matter. All forms of catarrh are caused in this way, as are fibroid tumors and adhesions. Fibrin is a viscid, sticky substance which coagulates the blood when it is exposed to air or oxygen.

POTASSIUM, united with phosphorus in the form of phosphate (K-2, HPO-4), is probably the greatest brain and nerve food; so, whenever there is insufficient POTASSIUM PHOSPHATE, neither the brain nor the nerves can function properly. According to the bio-chemical philosophers who are the followers of Schuessler, no new brain cells can be made without this salt. Again, POTASSIUM, united with sulphur, in the form of POTASSIUM SULPHATE (K2, SO-4), activates and feeds the skin and mucus membranes. Technically, these are known as epidermis and the epithelium. In these tissues, POTASSIUM SULPHATE acts similar to iron, as an oxygen-carrier, and an oil-former to lubricate and feed the sebaceous glands and the epithelial covering of the mucus membranes.

Therefore, it is evident that POTASSIUM is an all important mineral salt in many metabolic and other vital processes.

All three of these Life-giving POTASSIUM compounds are found in the Elder plant, which was described fully in Lesson No. 4. POTASSIUM CHLORIDE and SULPHATE are contained in its inner bark. The phosphate, chloride and sulphate are found in the flowers; the sulphate and nitrate in the leaves. The fruit contains a number of POTASSIUM compounds such as tartrate, citrate, etc., besides the three above-mentioned POTASSIUM compounds. POTASSIUM CHLORIDE and SULPHATE are also found in Cramp Bark (*Viburnum Opulus*), Cranesbill (*Geranium Maculatum*), Black Haw (*Viburnum Prunifolium*), Echinacea (*Braunera Pallida*), Black Walnut (*Juglans Nigra*), Burdock (*Arctium Lappa*), and many others. The most important and potent of these have either been described, or will be, during these studies.

ASTRINGENTS:

There are so many astringents of varying strength and applicability that it will be possible for us to deal with only a few of the most potent ones. Astringents are generally defines as those remedies which contract the tissues, and thereby tend to check or arrest discharges.

Some astringents arrest excessive discharges from the intestinal canal, as in diarrhea and dysentery; while others arrest the discharges of blood in hemorrhages from the lungs, renal organs, bowels, etc. Some few of them are very effective in toning and astringing the glands and tissues of the skin, thereby inhibiting excessive perspiration, as in night sweats.

They are as varied as the color tints in nature, and so valuable for so many purposes as to merit being considered to be among the greatest of natural Herbal remedies. W3 might here mention that most of them depend largely on tannin, tannic acid and/or gallic acid for their astringency, although, we have seen that acids generally are tensing, astringing, contracting, and hemostatic. (See Lesson No. 5, Page 4.) When their astringent action is powerful enough to stop hemorrhage, they are called styptics. Some of them have selective action that may be applied to particular organs and parts, as in the case of Hawthorn berries which acts on the heart muscles in such a manner as to contract and strengthen them. Nearly all astringents coagulate albumin, tone up a relaxed or debilitated condition of muscular fibro, contract both arterioles and capillaries, restrain peristalsis, contract gland ducts, and repress excessive secretions. Some are stimulant, while others are sedative.

Among the most valuable of vegetable astringents is the well-known wild Geranium called:

GERANIUM MACULATUM (Linn)

Natural Order: GERANIACEAE.

Common Names: Cranesbill, Crowfoot, Alum Root, Stork's-bill, Dovofoot, American Kino, American Tormentilla, Spotted Geranium, etc.

Habitat: North America. (Canada and United States)

Chemical Constituents:

Tannin--10 to 28 per cent, gallic acid, resin, starch, pectin, sugar, calcium, potassium sulphates, etc.

Parts Used: Root.

MEDICINAL PROPERTIES: Astringent, styptic, tonic.

This wonderful Herb is a favorite remedy of the Eclectics. The well-known Eclectic Physician, Dr. King, says: "Geranium(Cranesbill) is a powerful, non-irritating astringent, adapted to the relief of conditions exhibiting relaxed, atonic, and enfeebled mucus tissues, with copious debilitating discharges.

It is of value in chronic diarrhea with mucus discharges, chronic dysentery, menorrhagia, and diarrhea of a sub-acute character with constant desire to evacuate the bowels. Passive forms of hemorrhage are often controlled by it. It is said to be useful in night-sweats, and the diarrhea of phthisis. It exerts a good influence in hematuria, and is of considerable value in catarrhal gastritis. It should not be employed during active inflammation."

"Geranium is a powerful astringent when used in the second stage of dysentery, diarrhea, and cholera infantum as an infusion with milk. It may be used both internally and externally, whenever an astringent is indicated. It may also be used in hemorrhages, indolent ulcers, aphthous sore mouth, ophthalmia, leucorrhoea, gleet, hematuria, menorrhagia, diabetes, and excessive chronic mucus discharges, also to cure mercurial salivation. Relaxing of the uvula, as well as astringing aphthous ulceration of the mouth and throat may be benefited by gargling a decoction of the root. Due to its freedom from any nauseous qualities, it is well adapted to infants and persons with fastidious stomachs.

In cases of bleeding piles, a strong decoction of the root should be injected into the rectum and retained as long as possible. Troublesome epistaxis (nosebleed), wounds and other small vessels, and hemorrhages from extraction of teeth, may be checked effectively by applying the powdered root to the bleeding orifice, and if possible, covering with a compress of cotton." This is a quotation from the works of Professor Myers, famous American Herb Specialist.

Ladies and Gentlemen: Even the enthusiasm of these two authorities added to the testimony of European and American scientists which we could go on quoting to the Nth degree, does not fully describe the many wonderful properties of this marvelous Herb. Alone or combined with other synergistic Herbs, it is certainly one of the most potent remedies to be found in the whole Herbal kingdom. Perhaps the most valuable of all its virtues is one of quite recent discovery: Namely, that when carefully combined with Star Grass (Alettris Farinosa), Lily of the Valley root, (Convallaria Majalis), Echinacea (Brauneria

Palida) and Sacred Bark (Rhamnus Purshiana), it comes nearest to being a specific for diabetes and Bright's disease of the kidneys, called nephritis, than any other known remedy ever discovered by man.

This priceless formula will be given to you later. Its administration in those terribly distressing and often fatal conditions will quickly bring honor and fame to those who administer it, to say nothing of the merciful relief from pain and hopelessness afforded the patient. Here, let us remark, that the giving of INSULIN in diabetes is an error, because of the law of Nature: "THAT USE DEVELOPS ALL ORGANISMS." The pancreas, when given INSULIN artificially, will gradually but surely lose its ability to produce the natural secretion of PANCREATIN which is absolutely necessary to the metabolism of starch. This wonderful secretion, (PANCREATIN) is a complex compound of amylopsin, myopsin, trypsin, steapsin, and rennin. It converts 25 times its own weight of starch into substances soluble in water. It converts albuminoids into peptones(myopsin, tripsin) and starch into sugar (amylopsin); emulsifies fats; (steapsin); and coagulates milk (rennin). The pancreas is a very active and important organ of digestion so if we bolster it with artificial ferments, it will most certainly atrophy because it has no work to do. We are most anxious that you should understand this and thereby avoid the disastrous effects, including fatalities, produced by such fool remedies as INSULIN.

FORMULA No. 25. Infusion of GERANIUM.

Put one ounce of cut or powdered Geranium root into a jug or earthenware jar. Pour on this one pint of briskly boiling water. Stir well and let stand until cool. Strain and bottle.

Dose: From one wineglassful to a teacupful when required. This is an excellent remedy for insipient diarrhea, relaxed mucus membranes, bleeding piles, leucorrhoea, sore mouth, relaxed uvula, and slight internal hemorrhage. It may also be applied outwardly as a lotion for sagging and relaxed skin.

It is suitable for children. Dose: From one teaspoonful to a tablespoonful, according to age. May be sweetened with honey or black molasses, if desired.

FORMULA No. 26. Decoction of GERANIUM.

Put two ounces of cut or powdered Geranium root into 1½ pints distilled water. Boil, while closely covered, for 20 minutes. Strain and let stand until cold. Bottle and keep in a cool place.

NOTE: If it is desired to keep this decoction, the strained fluid must be reduced to 12 ounces by further slow boiling, and then, add four fluid ounces of glycerine. Shake well together and keep in a cool place.

This decoction is more powerful and effective than the infusion in the more severe hemorrhages and chronic discharges from mucus membranes, such

as purulent leucorrhoea, menorrhagia, chronic catarrh, dysentery, purulent sore throat, and outwardly, for indolent ulcers.

It will be found to be about four times as strong as the infusion and therefore, the dosage is proportionate:--namely, from one teaspoonful to one dessert spoonful in a little water.

One tablespoonful in a cup of warm water is very effective for severe bleeding piles if injected into the bowels.

Diluted by three times its weight or quantity of water, its strength will be equal to the infusion.

FORMULA No. 27. Special strong decoction for hemorrhage of the lungs, internal wounds, excessive menorrhagia, etc.

Put four ounces of cut Geranium root and four ounces of cut [?] [?]mfrey root into two quarts of distilled water. Stir and let stand for six hours. Boil slowly for 30 minutes, strain and press. Return the liquid to the saucepan and slowly reduce, by boiling, to 1½ pints. When it is cold, add ½ pint (8 ounces) glycerine. Shake, bottle and keep in a cool place.

This is a most amazing remedy for hemorrhage from the lungs, lacerations, and wounds, both internal and external. Broken and torn tissues are quickly healed by it. The dose, in severe cases, for bleeding surfaces is from a dessert spoonful to a tablespoonful in water. As a local styptic, it should be applied on lint or cotton without being diluted.

Following is another master formula that contains this wonderful Herb.

For ulcerations of the stomach, intestines, bladder, genito-urinary organs, or any mucus membrane; in gleet, gonorrhoea in both sexes, leucorrhoea, purulent ophthalmia, gastric and other forms of catarrh. the Formula No. 28 will be found to be the remedy "par excellence."

FORMULA No. 28. Put four ounces of cut Golden Seal root (*Hydrastis Canadensis*), four ounces of cut Echinacea root (*Brauneria Palida*), and two ounces of cut Geranium root into three quarts distilled water. Let stand for six hours. Boil for 30 minutes and strain. Return the fluid to the saucepan and reduce by boiling, to 1½ pints. When cold, add eight ounces of glycerine. Shake, bottle and keep in a cool place.

Dose. One teaspoonful to one dessert spoonful in water three or four times a day. For injections or douche in gonorrhoea, one tablespoonful in a large cup of warm water. For ophthalmia, one teaspoonful in two ounces of water. Saturate lint or cotton with this solution and bandage on the eyes. If this strength is at all painful, dilute with more water. Keep on for one or two hours. Rest for one hour, and then apply a fresh bandage.

It will not be possible to finish with Geranium in this lesson because there are other Herbs with which it blends to produce other most valuable formulas. There is one in particular that we feel should be described before giving you any more formulas.

We urge you to become thoroughly acquainted with this great and potent Herb: GERANIUM MACULATUM; as to its indications and applications both alone and in combination with other Herbs. It is so frequently indicated that it is wise to always have some on hand for emergencies. To do so will increase your clientele as well as your reputation as a true physician.

Before we temporarily leave this natural marvel, let us point out that our women of today spend vast sums of money annually on their complexions.

At present, the beauty parlor and cosmetic manufacturers are reaping this exceedingly rich harvest. None of them, however; to our knowledge (and we have studied considerably along these lines), are using GERANIUM MACULATUM in any of their preparations or treatments.

We say, without fear or favor, that for removing wrinkles, astringing enlarged pores, checking the over-activity of the suderiferous and sebacious glands in the skin, contracting enlarged and engorged capillaries in the skin that are caused by excessive stimulation with hot packs, steaming, massage, and irritants which are employed in the usual procedure in so-called beauty parlors, there is no remedy equal to GERANIUM MACULATUM when properly combined and compounded into creams and lotions and perfumed with non-irritating and astringing oils, gums, resins, etc.

If an enterprising chemist, versed in compounding cosmetics, would incorporate this wonderful Herb into a cream, a lotion and a face pack, he could make a fortune.

GERANIUM MACULATUM has a perennial, horizontal, thick and knotty root containing many small fibbers. It sends up annually an Herbacious stem with several radial leaves. It is erect, round, and branched, from one to three feet high; of a grayish-green color, and thickly covered with reflexed hairs, as are its petioles and peduncles. The leaves are deeply divided into 3, 5 or 7 lobes which are variously incised in their extremities, hairy, and of a pale green color, mottled with still paler spots. Those which rise from the root are supported on stems 8 or 10 inches long. Those of the stem are opposite. The leaves are petiolate, the upper nearly sessile with lanceolate or linear stipules. The peduncles spring from the stem and generally support two flowers upon short pedicles.

We shall now consider and study another remarkable and wonderful astringent Herb, that has been used as food, medicine, and for other purposes from almost time immemorial.

Long before the time of Hippocrates, this beautiful and virtuous plant was brought to Italy by the ancient Persians. (This is according to Pliny.) Varro, (B.C. 116-28) a Roman scholar and writer says it grew abundantly in his time in Italy.

The Romans called the tree *Nux* on account of its fruit. The name *WALNUT*, by which it is known today, is of Teutonic origin. The Germans named the nut *Wallnuss*, or *Welsche Nuss*, signifying foreign nut. Tradition says that in the golden age, when men lived on acorns, the gods lived on *WALNUTS*.

ASTRINGENTS. (Continued)

JUGLANS NIGRA. (Linn)

Natural Order. JUGLANDACEAE.

Common Names. Walnut, Walnoot (Dutch)

Synonyms. *Carya*, Jupiter's Nuts, *Carya Persica* (Greek), *Nux Regia* (Roman).

Habitat. Probably native of ancient Persia, but naturalized in many parts of the world.

Dr. Royle says, "*Juglans Regia* extends from Greece and Asia Minor over Lebanon and Persia, all along the Hindu-Kush, to the Himalayas. It is abundant in Kashmir, and is found in Kumd on, Sirmore and Nepal." Dr. Hooker states that in the Sikkim Himalaya, the *WALNUT* grows on the mountain slopes at an elevation of from 4,000 to 7,000 feet. The *WALNUT* was known in England from very early times. Gerard (sixteenth century) says it was very common in fields, by roadsides, and in orchards.

A curious and interesting reference to *WALNUTS* is found in a book written by William Cole (1657) called "Adam and Eve". It says: "Walnuts have the perfect signature of the head: The outer husk or green covering represents the pericranium or outward skin of the skull, whereon the hair growth, and therefore, a salt made of those husks is exceedingly good for wounds in the head. The inner woody shell, hath the signature of the skull and the little yellow skin that covereth the kernel is like the hard *Meninga* and *Pia Mater*, which are the thin skarfes that envelope the brain. The kernel hath the very figure of the brain itself. It is very profitable for the brain and resists "poysons", for if the kernel being bruised, and "moystned" with wine and laid upon the crown of the head, it comforts the brain and head mightily." Culpepper and several other Medieval Age Herbalists make reference to this plant as being of great virtue.

In recent years, it has fallen into disrepute for no apparent good reason. Our own clinical experience and the testimony of the Eclectic Physicians, (with whom it is a great favorite) prove it to be one of Nature's most valuable remedies in a large number of pathological conditions.

Dr. Hawes (an Eclectic Physician) speaks very highly of it. He says: "JUGLANS" is a remedy of the greatest importance in the treatment of many skin troubles. It exerts a very marked influence upon this class of affections, either in the acute or chronic stage. It also acts in a favorable manner in all irritations arising in the intestinal tract, and tends to bring about a return to the normal condition, intestinal diseases that show signs of irritation, with a tendency toward inflammation. In irritation of any mucus surface or skin affections, both acute and chronic, it is most efficacious. The chronic condition will require treatment for a considerable time to produce the desired results."

That quotation is the honest and straightforward testimony of a Doctor writing to Doctors of his own school about his own Clinical experience of one of God's best gift's to man. This man is to be honored for his invaluable contribution to Medical Science in this age of Medical chaos and the criminal drugging of helpless sufferers from disease.

Holy Script says "The leaves of the tree shall be for the healing of the Nations, and the fruit thereof shall be to you for meat." The long history of this most noble tree (WALNUT) and the testimony of its superb healing virtues extend back for countless thousands of years and come from almost every part of the earth. It may be conservatively estimated that what has been said and written about it would fill more than 10,000 large volumes. It has removed millions of tapeworms and other worms. It has cured syphilis, cancer, scrofula, old ulcers, boils, itch, all kinds of skin diseases, eye diseases, liver and bowel diseases, hemorrhoids, prolapsis uteri, prolapsed and ballooned intestines, varicose veins, and, in fact, it seems to be almost a panacea for human ailments. Yet, it was discarded as an official remedy by the allopaths nearly fifty years ago.

In the near future, when it is again brought to the attention of masses, this great remedy will do much to condemn the Medics as extremely cruel and inhuman monsters who have hidden nature's greatest remedies from our people and traded upon their self-appointed power to destroy their poor misguided patients.

Any man who knows of a harmless remedy to relieve pain and restore sufferers to health, and does not use it, is a criminal of the worst type, a danger to all who patronize him, and unworthy to be called by the name Physician.

Parts Used: The inner bark, leaves, fruit, and unripe husk.

Chemical Constituents: Juglone. A brownish red crystalline principle (C-10, H-6, O-3) called Nucin. It is a glucoside containing a distinct type of tannic acid that is not found in other Herbs. The kernels contain oil, mucilage, albumin, cellulose, potassium, calcium, magnesium, and sodium phosphates, sulphates, iodide, and silica, together with gallic and ellagic acids. The leaves contain inosite (C-6, H-12, O-6) called muscle sugar because it is chiefly found in muscle. The inner Park contains potassium chloride (fibrin solvent), calcium chloride, (heart tonic),

potassium sulphate (skin remedy), magnesium phosphate muscle and nerve food), and silica (food for the hair, nails, skin, nerve sheath, and periosteum).

THERAPEUTIC PROPERTIES. Astringent, tonic, antiseptic, vermicide, parasiticide, hemostatic, styptic, antisyphilitic, alterative, laxative, detergent, and vulnerary.

It is used for internal ulcerations, inflammations, mucus and hemorrhagic discharges, bleeding piles, leucorrhoea, diarrhea, dysentery, relaxed and ballooned intestines; outwardly, for ulcers, tumors, cancers, abscesses, boils, acne, eczema, itch, shingles, etc. It is also used for sore throat, tonsillitis, aphthous sore mouth, relaxed uvula, epistaxis, nasal catarrh, falling hair, ringworms, hoarseness of the voice, etc., there is no better remedy known.

FORMULA No. 29. Strong infusion of WALNUT leaves.

Put two ounces of cut or powdered WALNUT leaves into 1½ pints boiling water. Stir, cover, and keep in a hot place for 15 minutes. Strain, bottle, and keep in a cool place.

DOSE: For adults, a wineglassful three or four times a day. For children, a teaspoonful to a tablespoonful, according to age. May be sweetened if desired.

For Outward Applications: Saturate lint or cotton and apply. Keep moist by adding more of the fluid as it dries.

For Gargle and Mouthwash: Use undiluted two or three times a day.

For Epistaxis, Catarrh, etc. Spray the nasal passages and if necessary, insert a saturated tampon of cotton.

For Falling Hair, Itching Scalp, Dandruff, etc: Use as lotion and rub in well twice a day. Do not use soap on the hair. Hot water will keep it clean.

For Leucorrhoea, Hemorrhoids: Diarrhea etc. One pint of the undiluted infusion should be injected and retained as long as possible. Continue the injections every three or four hours in severe cases, and in the case of children's diarrhea, the infusion should be diluted with two or three parts warm water to 1 part of the infusion.

Long experience has proved that a strong infusion of the leaves (as in Formula No. 29) is the ideal preparation for obtaining the best results, though the powdered leaves applied to bleeding surfaces and moist skin diseases have proved very efficacious, especially in bleeding cancers.

The green husk of the unripe kernel contains POTASSIUM IODIDE, a recognized universal remedy for scrofula, syphilis, and other forms of bad blood. The husk and brown skin covering the inner kernel or nut when it is green or unripe have powerful antiseptic, germicide, vermicide, and parasiticide properties. No insect will touch the leaves or husks of the WALNUT tree. The brown stain,

found principally in the green husk, contains organic iodine which is much more antiseptic and healing than the usual poisonous iodine, so commonly used to paint on infections, cuts, etc.

So powerful is the parasiticide and insecticide property of these husks and leaves, that if they be macerated for an hour in warm or hot water, they will impart an intense bitterness and this liquid is poured onto lawns that are infested with worms and other insects, it will destroy them all without injuring the grass. A strong infusion of the husks, shell, and peel of unripe WALNUTS drunk hot is powerfully sudorific, producing profuse perspiration and the lowering of the temperature in fevers.

A strong infusion of the powdered bark made in the same way and in the same strength as the infusion of the leaves (Formula No. 29) is either gently laxative, or purgative according to dose. A wineglassful can be given to start with, and then increased or decreased, so as to bring about a soft, molded stool twice or three times a day. Diarrhea, or watery stool, should always be avoided, except in dropsy or when it is urgent to quickly empty the colon. Then, of course, there is nothing that is more quickly effective than a properly administered colonic.

Gentlemen: We now respectfully point out a mistake that is frequently made through lack of knowledge of the condition as well as the remedy to be used.

You will remember that we told you what Dr. Rush said about medicine. "There are two reasons why we cannot cure the sick, want of the knowledge of disease, and want of a remedy." This applies to all of

Liquefied fecal matter is immediately absorbed by the intestinal villi into the bloodstream, and if there be excess, some of it will be thrown out of the bloodstream into the lungs, skin, kidneys, or other organs, producing a chronic toxemia, thus laying the foundation for chronic disease. Most doctors will probably treat this condition locally, all unconscious of the fact that it has been produced by the incorrect use of laxatives and purgatives.

Later in these Lessons we will give you other valuable information on the correct use of Nature's many laxative Herbs. Meanwhile, we urge you to exercise great care and caution in the use of purgatives, and to avoid whenever possible the producing of watery stools.

We will complete our study of JUGLANS (Walnut) and its several synergists in our next Lesson, giving you a number of master formulas, for specific conditions, incorporating this wonderful Herb.

Let us hope that you have enjoyed these Lessons thus far, and that you will aim to assimilate and digest as much of it as possible. And we assure you that, if you will apply the principles and truths given here, you will be rewarded with a rich harvest.

LESSON SEVEN

The big showdown is coming soon, between the great army of druggers, and the rapidly increasing number of drugless physicians. Time marches on, and almost daily new discoveries are being made which are revolutionizing our old ideas, and bringing us new light in dark places.

In this twentieth century, more wonderful inventions and discoveries have come to light, than in the previous two or three hundred years. Medicine is the only branch of science in which there has been no noticeable improvement nor advancement.

It is sad to relate that purulent disease marches on unchecked today, and that amid the hosts of licensed medical physicians in all parts of the world, none has found the cause or cure for cancer. Japan is the most vaccinated country in the world today, yet small-pox rages alongside of vaccination. Syphilis is on the increase. Seventy percent of our high-school girls are suffering with thyroiditis and female trouble. A very large number of our young boys and girls are terribly disfigured with acne, furunculosis and skin diseases. Many are mentally, morally and physically debauched through unlicensed drinking, smoking carousing, and aspirin taking. Drugs are available to all, both young and old. A great part of Europe is drunk with the lust for blood; all because their body-secretions are poisoned with serums, and their brains unbalanced by ale, kummel, absinthe, vino, morphine, opium, alcohol, dried meat, sour pickles, etc. Insanity and bestial criminality saturate our so-called civilization, which is rapidly degenerating into a bacchanalian orgy of perverted indulgence.

Since that branch of science we call medicine is a disgraceful and ignominious failure, and has done more than any other agency to bring about the chaotic and pitiful unbalance of the human race today, it is time something was done about it by someone who is clear-headed enough to see the hand-writing on the wall.

The signs of the times indicate that there is actually on foot a counter movement to stem the tide of international disaster. This movement consists of the study and investigation of Nature's way of balancing all things and bringing about an equilibrium between the catabolic and anabolic processes of metabolism in the human organism.

It has been found that in both the vegetable and the animal kingdom, the chemical nature of the juices or blood of each individual, approximates their

character. Many plants have acquired the habit of assimilating from the soil in which they grow, such poisonous elements as copper, arsenic, lead; aluminum, etc. which by their powerful chemical affinities, generate many poisonous compounds within the plant. Others have acquired the habit of feeding on insects, ants, flies, etc. with the result that they become carnivorous plants. When the juices of such plants are assimilated by the human or animal organism, those poisons are transmitted to that animal or human that absorbs them. The flesh of poultry and the herbivorous animals such as the cow, and sheep, etc. are all practically innocuous to the human cell; but the carnivorous animals and birds impart their brutal, cruel, and poisonous nature to those who partake of their flesh. Wolves, coyotes, mountain lions, etc. have been shown to develop their vicious and merciless nature in those who eat of their flesh, while the flesh of carrion birds, has proved to be very poisonous.

So, it is clear that not only is it true that, "As a man thinketh, so is he," but also "What a man eats, he is."

An increasing number of men and women are now investigating natural herbs as well as foods, and analyzing them chemically and electrically with the findings that the wholesome herbs and foods are nature's remedies for all ills, supplying deficiencies, and dissolving and eliminating all excess matter which is useless, and in fact injurious to the human body.

This new movement is growing so rapidly and is making such important discoveries that it bids fair to ultimately solve the great problem of human balance - - mentally, morally and physically.

You and I, who compose this small group or branch of this movement, are daily becoming more enlightened and hopeful that we ourselves may discover a remedy or remedies that will be of some value to suffering humanity. Therefore, let us pursue our studies.

In our last lesson we told you of the wonderful healing virtues of the common walnut tree, and the equally wonderful Wild Geranium, or Cranesbill Root. We promised to give you a formula which has proven highly effective as a remedy for diabetes and nephritis, and here it is:

FORMULA No. 30. For Nephritis and Diabetes.

Put 1 oz. Glauber's Salt (sod. sulphate) into 2 qts. hot water and stir until dissolved. Then take of -

Geranium Root (Cranesbill)	2 oz.	Mix all together and put into the above solution and boil slowly for 30 minutes. Strain, and return to saucepan and boil till reduced to 1 pint. Add 12 fluid ozs. Glycerine and shake well. When cold,
Lily of the Valley Root	2 "	
Star Grass (Alettris)	4 "	

Echinacea Root	4 ”	bottle and keep in a cold place.
Sacred Bark	4 ”	

Dose: 1 teaspoonful to a dessert spoonful in water 3 or 4 times a day until the bowels are eliminating perfectly; then regulate the dose to suit the needs, either increasing or decreasing it.

This is truly a remarkable remedy for the above conditions, either acute, chronic or desquamative.

Desquamative nephritis is characterized by the shedding of the epithelium of the secreting tubes, either entire or in broken particles. Their debris blocks up the tubes and when washed into the urine, forms what are called the "tubes casts". This process may be either acute or chronic.

In non-desquamative nephritis, the cells are not shed but become atrophied and the tubules are blocked up by simple albuminous deposits which forms what are called small "hyaline casts". This may also be acute or chronic.

In every curable case, this marvelous Herb remedy will clean out the debris and restore tone and health to the affected tissues. Its great antiseptic power immediately checks decay. Its cleansing and laxative action cleans every inch of the colon and either gently or drastically forces out all fecal matter according to the dose taken. The diuretic action of the Lily Root and Star Grass does not permit any useless waste to long remain in the tubules. Echinacea takes care of pus and Geranium restores tone to the epithelium. The Lily Root is not only a cleansing diuretic of great power, but is also a great heart tonic, slowing and toning its action much more effectively and safely than the deadly digitalis. We strongly recommend that you make up some of this great Master Remedy and keep it by you for emergency. Then, when some case that looks hopeless from the start of either diabetes (dysfunction of the Pancreas) or nephritis (dysfunction of the kidneys), comes to you just try this formula. In all curable cases, you will be amazed at the results you will get.

And now, to return to a further study of that wonderful Herb, Walnut.

There are so many pathological conditions in which that Herb can be beneficially used if in combination with other virtuous Herbs, that we feel it worth while to give you several more formulas into which it enters. In lesson No. 2, page 17, we gave instructions for making mucilage of Irish Moss (*Chondrus Crispus*). We also pointed out that walnut leaves possessed great antiseptic and germicide powers. When it is desired to keep a remedy in close contact with the skin or mucus membrane, a simple solution, such as an infusion or decoction, is often found somewhat difficult, because it has no adhesive properties. For outward application, this is overcome easily by incorporating the Herb or solution with oil or fat, (usually lard). When, however, it is to be used for internal

administration, as in purulent sore throat, ulcerated stomach, etc., it will be found much more effective if it is Combined with a mucilage that has some adhesive property. Such a mucilage as Chondrus Crispus is ideal for the purpose. As has been pointed out, it is soothing, demulcent, nutrient, and most easily absorbed into the deeper tissues, carrying with it the virtues of the Herb or Herbs with which it is mixed.

Chondrus, as we know, contains potassium sulphate which is so necessary for the proper functioning of the skin; and calcium sulphate which quickly checks decomposition and putrefaction. Doctor E. L. Berry, M.D. one of the most enthusiastic followers of Schuessler's Bio-chemic System says, "Calcium sulphate is used to clean out an accumulation of heteroplasm in the interstices of tissue; to cause the infiltrated parts to discharge their contents readily, and to throw off decaying organic matter, so it may not lie dormant and continue to decay and thus injure the surrounding tissue. A lack of this salt allows suppuration to continue too long. It controls suppuration. A decay of epithelial cells, after the infiltrated parts have discharged their contents, indicates a lack of this salt. The third stage of catarrhs, lung troubles, boils, ulcers, carbuncles, or abscesses; needs this salt."

Chondrus also contains sodium sulphate. The same authority says, "This inorganic salt is found in the intercellular fluids, and its principal office, is to regulate the water in the tissues, blood, and fluids of the body. A deficiency of this salt prevents the elimination of such water from the tissues as is produced by oxidation of organic matter, while sodium chloride distributes the amount of water in the tissues. Sodium sulphate has the power to eliminate any excess of water, that may, from any cause be present: First: Decomposition of lactic acid with sodium sulphate leaves a residue of water to be gotten rid of, and sodium sulphate must be present in proper quantity to carry off this water, or a hydrogenoid condition will arise. Second: where water is present, it is held in solution by the heat of the sun, in the atmosphere, and thus enters the blood, through the lungs.

Those who are weakly, whose digestion is in any way impaired, are then liable to malarial troubles, because the circulation is unable to eliminate the excess of water from the blood, owing to a lack of sufficient number of sodium sulphate molecules to do the work. One molecule of sodium sulphate has the power to take up and carry out of the organism two molecules of water."

We have inserted these several quotations from the work of this eminent gentleman for the purpose of respectful criticism, to clear up a popular error, and to shed some light on the subject of dropsy. with a view of dealing more intelligently and effectively with this very prevalent and distressing condition, which manifests in many forms, and proves fatal in the majority of cases because of the lack of true understanding of its nature, its cause, and the proper method of handling in order to bring about a recovery.

It will be worth while for us to delay our study of herb-formulas temporarily, and take time to go more thoroughly into the subject of Bio-chemistry as it pertains to dropsy.

In Lesson No. 1, Page 4, we pointed out that inorganic sulphur was most poisonous and deleterious to the human organism, not only because of its powerful affinity for iron, forming iron-sulphide and its destruction of ferments and enzymes, but more particularly, its generation of sulphurous and sulphuric acid within the organism. Sulphuric acid has a tremendously powerful affinity for water, and when these two compounds unite, there is expansion and an elevation of temperature. Here then, is the principal or primary cause of inflammation. In all inflammatory processes, the serum or white corpuscles are pushed, by expansion, out through the walls of the capillaries into the surrounding tissue or interstices. This process is the origin of dropsy, and of so-called serum exudations. This chemical change takes on many names, according to the parts affected. If it occurs in the peritoneal cavity, it is called peritonitis; in the chest, hydro-thorax; in the flesh, anasarca; in the kidneys, hydro-nephrosis; in the joints, hydrops articuli; in the testicles, hydro-cele in the uterus, hydro-metra, etc.

These all amount to the same thing -- when sulphuric acid is generated within the organism, it immediately unites with water and swells up. This action produces heat, which expands the capillaries. The osmotic pressure forces the serum through the walls of the blood-vessels, producing inflammation and dropsy. Hence, the insanity of using inorganic sulphur in any form. This is one of the best proofs that inorganic matter is always poisonous to the human organism.

Referring to Dr. Perry's statement (quoted above) that each molecule of sodium sulphate has the power to take up and carry out of the organism 2 molecules of water, we feel called upon to respectfully point out that as the tissues in dropsy often contain much water,/(gallons of it) therefore, if this were true, it would take 4 pounds of sodium sulphate to get rid of each gallon of water from the organism. As a matter of fact, in the dry crystals of sodium sulphate, each molecule contains ten atoms of water of crystallization.

The formula is $Na_2SO_4 \cdot 10H_2O$ (plus $J.OH?$) and when it is dissolved in water and administered in doses of one dram in one ounce of water, it produces copious watery stools and copious urination and sometimes copious perspiration, but it is very nauseating, very drastic and dangerously debilitating. Is rarely used except in veterinary practice, the milder acting magnesium sulphate (?epsom? salts) having taken its place. (The doctor must have gotten his chemistry mixed up in some way.) nevertheless, it is absolutely true that sodium sulphate actually does carry excess water out of the system, and the organic sodium sulphate in Chondrus does it without pain, inconvenience, or injury to the organism

Now we feel called upon to comment on Dr. Perry's statement that calcium sulphate causes tissues that are infiltrated with dead cells and decaying organic matter to discharge them. This is very true, but it so happens that

inorganic calcium sulphate is commonly known as plaster of Paris and requires 378 parts of water to dissolve one part of the salt. Mixed with half its weight of water, it rapidly hardens into an insoluble mass like cement. We may be ignorant, but we fail to see how this practically insoluble inorganic substance can eliminate dead cells and cacoplastonic matter. Rather, it appears to us, it would tend, by its hardening propensities, to fix such matters in the tissues, producing hard, bony, and stony deposits. However, that may be, we know that the organic calcium sulphate in Chondrus and other Herbs is perfectly soluble in water and does actually check and prevent decay of the cells, and formation of pus-so-once more we return to Walnut.

In relaxed and atonic conditions of the muscular structure of any organ, the astringing, contracting, and toning properties of Walnut leaves or bark are most remarkable. Let us take, for instance, the ballooned condition of the intestines, so frequently met with in our practice. A little knowledge will enable us to rectify this condition through the wonderful virtues of Walnut. As we stated before, a simple infusion or decoction does not produce its best effects, but if we combine a strong decoction of Walnut leaves with a mucilage of Chondrus Crispus, we shall get, not only the full effect of Walnut, but also the effective virtues of Chondrus and the other Herbs contained in the formula. Formula No. 31, on the next page will be found to be most effective for relaxed and atonic conditions of the walls of the intestines, veins, arteries, and the general tubular system; also for various forms of dropsy, enlarged heart (variously named aneurisms), asthma, bronchitis, menorrhagia (excessive flow just before or at the time of the menopause), prolapsus uteri, prolapsus ani, or any prolapsed condition in any part of the body.

Do not get the impression that Walnut alone will produce the spectacular and truly remarkable results that can be obtained by the use of this formula; but Walnut is the principal contracting influence; however, without the other Herbs, it would be only one-half as effective.

We do not believe in using any Herb without some knowledge of its therapeutic qualities, and therefore, we shall briefly describe the virtues of the other Herbs which enter into this most valuable formula, before giving you the formula itself.

LYCOPUS VIRGINICA: Commonly called Bugle Weed. Is a small Herb growing in low watery places in North America. Possesses tonic, astringent, and mildly narcotic properties. Diminishes the frequency of the pulse, thereby quieting irritation and toning the contraction of the heart. It has been used and proved beneficial in hemorrhage from the lungs, bowels, and other organs; also in diarrhea, dysentery, etc. It is an exceedingly valuable Herb for many conditions.

BLACK COHOSH (*Cimicifuga Racimosa*). Also called Macrotis, is a tall, leafy perennial Herb, native of America, and growing abundantly in northern woods and on hillsides.

PROPERTIES: Alterative, diuretic, diaphoretic, expectorant, antispasmodic, sedative (arterial and nervous), slightly depresses the rate, but increases the force of the pulse. Contracts the uterus, increases menstrual flow when sluggish, reduces arterial action. Very useful in palpitation and cardiac affections generally. Used extensively in fatty heart, chorea, acute and chronic bronchitis, rheumatism, neuralgia, tic douloureux, hysteria, epilepsy, phthisis, dyspepsia, amenorrhoea, dysmenorrhoea, etc.

NOTE: Large doses cause vertigo, tremors, reduced pulse, vomiting, prostration.

HAWTHORN BERRIES: Have been mentioned in Elem. Course, as a remarkable cardiac tonic.

LILY OF THE VALLEY ROOT: (*Convallaria Majalis*), Is a powerful diuretic, antiseptic and heart tonic.

FORMULA No. 31. For all atonic or prolapsed conditions.

6 ounces Walnut Leaves (cut). (*Juglans Nigra*)

4 " Bugleweed Herb " (*Lycopus Virginicus*).

2 " Black Cohosh Rt." (*Cimicifuga Racimosa*)

4 " Hawthorn Berries " (*Crataegus Oxycantha*)

2 " Lily of the Valley Root (cut) (*Convallaria Majalis*)

2 " Irish Moss(whole) (*Chondrus Crispus*)

Process: Heat one gallon of distilled water, and when fairly hot, dissolve in it 1 heaping teaspoonful calcium chloride. Then add all the above Herbs, and boil slowly for 30 minutes. Strain and press. Put strained liquid back into saucepan and slowly reduce to 1 quart. Add 4 pounds of brown sugar, bring to a boil and simmer for 5 minutes, stirring until sugar is dissolved. Skim off all froth as formed. Let stand until lukewarm, then add one liquid pint of glycerine. Stir till thoroughly mixed. When cold, bottle and keep in a cool place.

Dose: One or two teaspoonfuls in a little water three or four times a day, between meals.

Dose:—For Children. From five to ten years, 10 drops. From ten to fifteen years, 20 to 30 drops. From fifteen to twenty-one years, one teaspoonful. (Not suitable for children under five years of age.)

In extreme cases, three teaspoonfuls or even a tablespoonful may be administered safely, but for all purposes mentioned, one dessert spoonful will be found to be most efficacious.

Treatment with this formula must be continued until the desired effect is brought about. Then, the dose should be gradually diminished until the patient is restored to good health, with no symptoms of the disease remaining.

An extremely valuable salve can be made with walnut leaves, echinacea root, eucalyptus leaves, and marigold flowers. So, after giving you a description of eucalyptus and marigold, we will give you the formula for making this most valuable unguent.

EUCALYPTUS GLOBULUS or Blue Gum Tree, is well known for its pungent antiseptic oil which is obtained by aqueous distillation of the leaves. Though the oil is so commonly used for inhalation for cold in the head, there remains an appalling ignorance of its importance and effectiveness in the Herbal kingdom.

It is one of about three hundred species that are nearly all indigenous to Australia and Tasmania, though several of them have been introduced and grow successfully in Europe, Africa, (both North and South) India and America, particularly California. Californians are justly proud of their enormous Redwood Trees (*Sequoia Gigantea*) and believe them to be the tallest trees in the world, This is not true. There are many species of eucalyptus that grow to immense heights. One in particular, (*Eucalyptus Amygdalin*) attaining a height of 480 feet, which exceeds the height of the tallest known sequoia or redwood tree. Not only is the eucalyptus majestic in size, but it is probably the greatest healer in the Herb kingdom. We have lauded the mighty oak as the King of the Forest, Its wood so strong, its bark so full of tannic acid (the great preserver), its leaves and fruit (acorns) so virtuous for both medicine and food for man and animal, but even the ancient oak, considered sacred and worshipped by the Druids, cannot compare in healing virtue and usefulness to the still more virtuous and wonderful eucalyptus tree.

It was Baron Ferdinand von Muller, the famous German Botanist and Explorer (1857-1873), Director of the Botanical Gardens in Melbourne, Australia, who made the properties and qualities of the eucalyptus tree known all over the world and thus led to the introduction of this King of Trees into Europe, North and South Africa, and the non-tropical districts of South America and California. He was the first to suggest that the perfume of the leaves resembled the oil of cajaput (*Melaleuca Leucadendron*), which is also a native of Australia and world famous for its healing virtues. In fact, it belongs to the same natural order as the eucalyptus, namely, myrtaceae.

It would take several volumes to fully describe the virtues of eucalyptus, but there are a few out-standing facts of supreme importance to all practicing physicians, which we must take time to learn, in order to prepare us to put this grand and virtuous plant to work in our profession of healing the sick.

Baron von Muller suggested that the perfume of the leaves might be of use as a disinfectant in fever districts and marshy areas infected with mosquitoes. This

proved to be true, and is today considered by scientists to be one of the most important medical discoveries in the history of medicine.

Some eucalyptus seeds were sent to France in 1857, and were then transported to Algiers and planted there. A French Botanist named Troltier, discovered that the fragrant antiseptic exhalations of the leaves, although most valuable, were not the most valuable property of the tree, but the drying properties of the roots on wet and marshy soil far exceeded in health value the exudations of the leaves.

Five years after planting the eucalyptus seeds in one of the most unhealthy and marshy districts of Algiers, the region was converted into one of the healthiest and driest regions in the world. As a result of this important discovery, the rapidly growing eucalyptus trees are now cultivated in many temperate regions, with a view to preventing malaria.

One of the most remarkable examples of this is, the Monastery of Saint Paolo a la tre Fontana, which was situated in one of the most fever stricken districts of the Roman Campaign. Since 1870, when the tree was planted in its cloisters, it has become habitable throughout the year. Its remarkable ability of absorbing large quantities of Water from the soil, converts malarial fever districts into healthful places in which to live. Mosquitoes invariably disappear, and so does malaria. Not only does this noble tree rid a place of malaria and other deadly diseases, but it also prevents many thousands from contracting the fatal disease. It is one of the greatest antiseptics and disinfectants known to man, and for good measure, it brings profit commercially wherever it is cultivated. It has been said that "One ounce of prevention is worth a pound of cure", and eucalyptus is proof positive that this old saying is true.

In these days of polluted atmosphere through millions of varied vehicles pouring their exhaust gasses into the air, to say nothing of the huge amount of decaying garbage in the cities and towns, the eucalyptus would be very welcome and beneficial in every area where it would grow, because its leaves convert the oxygen of the air into ozone, and ozone is the quintessence of the breath of life. It is the great Life giver, purifier, vitalizer and sweetener of all organic matter.

The oil distilled from the leaves is composed principally of eucalyptol, also known as cineol (C-10, H-18,0) at least 50%. Cymene (C-10, H-20) 20%; eucalyptene, terpene, pinene, and also valeric, butyric and capronic aldehydes.

Eucalyptol, which is also found in cajuput oil and several other Herbs, is a staple substance, but the oil of Eucalyptus is not. This is on account of its being a mixture of oils from different species.

EUCALYPTOL is anti-periodic, anti-pyretic, expectorant, stimulant, astringent, diuretic and disinfectant. Like quinine, it arrests white blood corpuscle movement, increases the flow of saliva, gastric Juices, appetite digestion and heart action.

Large doses produce indigestion, diarrhea, vomiting, muscular weakness, low temperature, brain and kidney congestion, paralyzed respiration and death. It destroys low forms of life and reduces arterial tension and enlarged spleen. Caution: Internally it should be given in very small doses, 1 to 3 drops; but for external use, it is highly recommended as an application, because of its antiseptic qualities, in cases of ulcers and open wounds, and as a preventive of infection and putrefaction.

MARIGOLD FLOWERS. CALENDULA OFFICINALIS, is so well known that it needs no description. Its beautiful orange-gold flowers adorn many of our gardens, their very brightness is cheering when we stop to look at them, but how much more should we adore them when we learn that they soothe the dreadful pains of cancer and check its growth. They contain a gummy substance analogous to Bassorin (C-12, H-20, O-10), found in tragacanth and other gums, also volatile oil, fat, resin, Sugar, Potassium Chloride, potassium sulphate, calcium sulphate, and sodium. The flowers are stimulant, tonic, antiseptic resolvent, febrifuge, and anthelmintic. They were formerly much used in Jaundice, amenorrhoea, scrofula, low fevers, vomiting, etc. The tincture is much used by a large number of Herbalists in preference to tincture of arnica or myrrh, as an embrocation in sprains, rheumatism, etc. The powdered flowers make the very best application in chaffing. The strong decoction (2 ounces to 1 1/2 pints) boiled, 10 minutes and strained has proved very successful in cancer, ulcers, wounds, otitis media, etc. Dose: Internally, one tablespoonful to a wineglass full three times a day. A wineglassful in a teacupful of boiling water, drunk while hot, promotes perspiration and reduces fever.

FORMULA No. #32. Antiseptic healing salve for cancers, ulcers, septic wounds, swollen glands, skin diseases, etc.

2 ounces Walnut Leaves	(cut)
2 ounces Echinacea Root	"
2 ounces Eucalyptus Leaves	"
2 ounces Marigold Flowers	"

First: Put into 1 quart distilled water. Bring to a boil and simmer for fifteen minutes. Strain and press. Return liquid to saucepan and slowly reduce to one half pint (8 ounces).

Second: Heat 1 pound of anhydrous lanac (sheep's wool fat containing no water) until melted. Stir in one dessert spoonful of eucalyptol, until thoroughly mixed.

Third: Allow both the Herb liquid and the wool fat to cool until both are nearly cold. Then, beat both together until the liquid has become thoroughly incorporated with the wool fat. Put into Jars to suit.

This salve is worth its weight in gold, and should not be sold cheaply. An 8 ounce jar for \$5.00 is a very reasonable price, because of its great healing virtue. No other salves can compare with it for local treatment of cancers, with suitable Herbs administered internally. It is not only the cost of the ingredients, but the knowledge and care in the correct making of it. It is somewhat tedious and difficult to make it just right. We ask you to get your price for it, and suggest that the price be stabilized for all at \$3.00 for 4 ounces, \$5.00 for 8 ounces, and \$8.50 per pound.

The method of using it is the same as for any other salve. Either apply directly by smearing on the affected part, then cover; or by spreading a thin layer on lint and covering with waxed paper. For swollen parts, congestion, sprains, bruises, etc., it should be well rubbed in once or twice a day.

LESSON EIGHT

All Earth life depends upon the Herb Kingdom. Long ages before the advent of man's life on Earth, the whole world was covered with plant life in endless variety and beauty, from of the lowest form of plant (algae) growing in water, to the highest and most complete developed plants (the compositae) or thistle family. Alongside of this magnificent flora grew and evolved the animal or fauna, from the simplest amoeba (the lowest and first) to the highest and most complete of God's creations -- Man. Let us stop and reflect for a few minutes on what this means.

It means that for eons of years, the countless billions of living creatures, (including the countless generations of man) have been developed, fed, and sustained by Herbs, and by Herbs alone. For, if we eat the flesh of animals, we are but eating chewed and digested grasses. If we drink milk or eat butter, it is the same thing; namely, chewed grass; only that in such cases, we get the vital, or life principle second-hand, because much of the life has been used by the animal whose flesh we eat. This is a good argument for the vegetarian, and a strong point in their favor is, that wherever you cut through the flesh of any animal, you have as much venous blood as arterial blood. And the venous blood contains the waste matter and debris of that animal's cells. Another vegetarian argument is, that animal flesh is subject to putrifaction and produces very poisonous alkaloids, while vegetables in process of decay do not produce alkaloids or putrifaction.

The main point we are trying to illustrate is, all life on Earth has always been dependent upon the vegetable or Herb Kingdom -- is now, and forever will be, while there is any life on this Earth. This means that every cell in every creature, including all those that are most robust, healthy and beautiful that inhabit this earth, or ever have, or ever will inhabit it, is absolutely dependent for its life growth, health and strength upon the Herbs these creatures eat, or the medicines they take to correct the errors of ignorance in eating or body care.

Therefore we know that when we study Herbs in relation to their life-giving or life-destroying properties, we are on the right track, in trying to find out how Nature works, that we may co-operate with her in order to produce health and beauty, instead of disease and death.

Considering the above facts, which were understood by a few observing men and women long before the Christian Era, and have been attested to and demonstrated in every century for thousands of years, it is almost unbelievable that tens of thousands of men and women who call themselves physicians, are

actually opposed to this theory, and every day of their lives work against it, deliberately defying the Law of Nature, and flaunting their infernal mineral drugs in the face of God Almighty.

HIPPOCRATES, the Father of Medicine, was an Herbalist pure and simple. According to botanical history, only 235 Herbs were known on the Island of Cos in Asiatic Turkey; but with a selected few of these, he treated and cured his entire nation, and the surrounding nations.

When Rome beheld the wonders accomplished by this great healer, with a few Herbs, she banished her physicians for 600 years, and historical tradition says, that after that, their sick people quickly recovered their health and maintained it during that entire era.

What a sublime character was Hippocrates! He knew nothing about anatomy and physiology. He did not even know that the blood circulated in the body; yet to this day, he is honored and almost worshipped as the greatest physician that ever lived.

What an insult to Hippocrates to put his picture on the diplomas of physicians who sneer at, and condemn as useless, the very Herbs he used to cure many thousands! These arrogant followers of Paracelsus; these so-called honorable and ethical gentlemen ??? who are not one whit less human destroyers than their quack predecessor, still continue his pernicious ways. They turn the sweat, salivary, and other glands, into foul cesspools of mercurial salivation. They persist in turning healthy bone into a stinking mass of necrosis, by the use of the same metal. They paralyze and destroy the human heart with digitalis and morphine and with adrenalin depress the circulation, causing loss of flesh with its accompanying wrinkles and changing the skin from a healthy to a pale and sallow hue. They wreck the brain and nervous system with quinine; destroy the glans-veneri with potassium iodide; and the red blood corpuscles with bicarbonate of soda and potassa. They produce cancer by administering inorganic potassium and cruelly supply opium to mothers to give their children to drug them to sleep with paragoric. The liver is wrecked with copper, lead, zinc, gold and silver, while the eye is made to run with belladonna and atrophine. They cut out tonsils, adenoids, appendix, cancers, tumors and pieces of intestine; remove gall-bladders kidneys, uterus, ovaries and varicose veins, and amputate fingers, toes, hands, arms, feet, legs and other infected parts because they have no remedy for any disease whatsoever. Little children are inoculated with diseased horse's blood for diptheria, syphilitic-pus for smallpox, and so on all through the whole miserable chicanary and wicked, asinine practice. Why do we take your time rehearsing these facts? Why? Because it is time something was done about it. Time spent in learning the truth is never wasted and any man who has a mother, father wife, or child who, in sickness, is forced by law to call in and depend upon licensed poisoners and destroyers, and meekly condones this most terrible and horrible condition of things, is a weakling, much worse than the poor dopey Germans, Italians, Japanese, and Russians who are all drugged and doped into obedience to

their Devil Dictators, ready to exterminate even their own mothers and all others who dare to question their drunken philosophy that Might is Right, and to Hell with the other fellow.

No, you are not wasting your time in contemplating facts as they are. You are becoming more aware of something that should put the fire of enthusiasm into your mind, to strike a death blow to all enemies of God and Nature, and to restore to your people the God-given right to live in the free enjoyment of mental and physical health and strength, vitality and beauty, that was the original intention of the Father of Life and Love.

We have said, that in every century, for thousands of years, the great healing virtues of Herbs has been demonstrated. Consider Galen, who lived in the 2nd Century. This great man was not one whit behind Hippocrates. He wrote 300 volumes on the use of Herbs. Again, Culpepper was equal to either of them. He sacrificed everything for the good of mankind, and kept himself poor. Sydenham was another wise and noble character who gave to the world a collection of most valuable information. The Jesuits and Benedictines, and a host of others down through the ages might be mentioned; and today many are doing the same. Some of them have spent fortunes in making known the fact that the Herbal Kingdom is one vast storehouse of remedies which are so effectual, that no one need ever be sick. Without doubt, some of the Herbalists of today are restoring greater numbers of people to health than Hippocrates himself. Some number their cures by tens of thousands. Consider the American plowboy, Samuel Thompson. He who received gold medals from the Crowned Heads of Europe, is reputed to have cured upwards of 3,000,000 people. The great Quaker Herbalist, Henry Box of Plymouth, England, restored to health many thousands suffering of cancer, blindness, deafness, asthma, arthritis, rheumatism, ulcers, skin conditions, lung, heart, kidney, liver and other diseases. Even in his ripe old age, continued to administer God's wonderful remedies to thousands of sufferers from all parts of the civilized world.

Are we so weak and spineless that we cannot do what he did? He fought his persecutors (the regular physicians) in the English courts and won every case that was brought against him. It was reported in the Leeds Mercury, a paper with a very large circulation, that one of England's most famous Judges, namely, Mr. Justice Grantham, once said in a case brought before him of an Herbalist who was charged by the doctors with practicing medicine without a license, "The Doctors are a jealous people. They call these men (the Herbalists) quacks. But, IT IS A FACT THAT THESE MEN DO THINGS WHICH THE DOCTORS COULD NOT DO. IT IS A MATTER OF COMMON KNOWLEDGE THAT A COMMON COBBLER HAS CURED THOUSANDS OF CASES THE DOCTORS HAVE NEVER BEEN ABLE TO TOUCH."

A great number of honest men who joined the ranks of the so-called "proper" doctors, believing that they were going into an honorable profession,

have come right out and denounced drugs and medical practice, and supported the Herbalists.

The famous Dr. D. B. Waterhouse, M.D., said, "I am indeed so disgusted with learned quackery, that I take some interest in honest, humane and strong-minded Herbalists, for they have DONE MORE FOR OUR ART in all ages and all countries than all the universities since the time of Charlemagne. Where, for goodness sake, did Hippocrates study? The great BOOK OF NATURE (The Herbal Kingdom) instead of the little books of man."

The medical doctors are so totally ignorant of Nature's remedies that not one of them could stand before you in a court of Law after you have acquired the knowledge of Herb Therapy embodied in this course. Your answers to their questions or plaint would make any one of them appear to be so ignorant before the Judge or Jury that you could not lose your case, and if you won, you would be famous overnight and could easily obtain an injunction against them which would make you free to practice Herbalism in any of the United States. So, we urge you to put all fears out of your mind and study hard to digest and memorize these lessons. Remember, we are a free born people and the people will always defend a Natural Healer who has the intestinal fortitude to stand up for his rights as a free citizen; who shall not be prevented by any law or statute from freely following his chosen vocation and worshipping God in his own way; providing he does not endanger or misuse that divine gift: The Constitutional Law of the Peoples Rights. So, let's get down to work to fit ourselves to defend that Divine Right.

ASTRINGENTS, Continued.

There are just two more Herbs we must mention under the title Astringents. They are both too important to be passed without description.

WILD RED RASPBERRY. Rubus Idacus (Linn)

Natural Order. Rosaceao.

This natural wonder needs no description. Every one has eaten delicious pies and preserves made from its fruit, but everyone does not know that its leaves produce painless child-birth. The world famous Quaker Herbalist of England, Henry Box says, "A tea made from red raspberry leaves is the best gift God ever gave to women. Its utility in travail is surprising. As a drink before and after confinement, it is unequalled by any other agent. If the pains of child-birth are premature, it will make all quiet. When timely, it will occasion a safe and easy parturition. If the mother is weak; it will abundantly strengthen her, cleanse her, and enrich the milk. It is perfectly safe under all circumstances. Raspberry tea with a little composition powder in it will effectually remove the afterpains, from which some suffer so severely. It is also most excellent in flooding, uterine hemorrhage, and to prevent miscarriage. For disorders of children, it is no less effectual. In thrush and its attendant disorders, during teething, sore throat and mouth, bowel complaints,

diarrhea, dysentery, urinary complaints, colds and fevers in all their stages, it is one of the most reliable remedies, to which employment can be given."

An elderly nurse who recently called on me for some raspberry leaves bore testimony to the efficacy of raspberry leaf tea. She said: "I have been a nurse and midwife for 37 years and during that time, I have taken two thousand children without losing a single case. The only medicine I give during labor is raspberry leaf tea with a little composition powder in it, which is very precious as you know and even if the child is not coming right, it will cause it to turn and produce easy and speedy delivery. Dr. Skelton, the great Herbal Doctor, told me of it, and advised me always to use it, which I have done with beautiful and complete success."

This is the testimony of long clinical experience and as such, is most valuable to all who are really concerned in learning the true virtues of Herbs, their particular and peculiar action on particular organs and tissues.

Here is a splendid proof that some Herbs have a specific attraction for specific organs. Raspberry leaves act upon the procreative organs of the woman, stimulating, toning and regulating them more effectively than any other known Herb. Dr. Box says that "Just as woman was Heaven's last and best gift to man, so, of all nature's remedies, this plant is Heaven's best gift to mothers and babies, and it behooves every mother to rest not, until this great gift is known from pole to pole."

That this great Herbalist was speaking the truth, we actually know from our own clinical experience. Following is an example of raspberry leaf tea and its marvelous efficacy in dysmenorrhoea and a amenorrhoea: Some few years ago, a young woman came to us. She was a resident of West Los Angeles, 29 years of age, married and somewhat overweight. She had suffered with intensely painful menstruation every month from the age of fourteen years, each month having to go to bed for one or two days, and be medically treated. We recommended one of our intestinal tonic laxatives and a cup of raspberry leaf tea to be taken at every meal or three times a day, for 2 or 3 months, or until those distressing symptoms had completely disappeared. After two months of this simple treatment, she reported that she was entirely free from all pain or any other distress during this monthly flow, and up until two years ago, when we last heard from her, this lady had never again had a recurrence of this trouble. Incidentally, her digestion and elimination had wonderfully improved, and she had lost 17 pounds of weight, bringing her to about normal. This is not an isolated case by any means. We have received reports and letters of gratitude from many women, whose menstrual troubles completely disappeared after taking raspberry leaf tea for a few weeks.

This Herb grows plentifully in Canada and almost all parts of northern and middle United States. Its leaves are collected immediately after fruiting carefully freed from dead leaves, dried in the shade, and broken into granulations a little finer than black tea. tea.

CHEMICAL CONSTITUENTS.

Both the leaves and berries contain a very wonderful citrate of iron (FE-2, (C-6,H-5, O-7) -2, 6H-20). Upon this depends the remarkable blood-making and regulating properties as well as the astringing and contracting action on the female genitalia and other internal tissues and membranes. The leaves also contain pectin malic and other organic acids, calcium and potassium chloride, and sulphate. The fruit contains citric, malic and tartaric acid in the form of citrate, malate and tartaric acid of iron and potassium, and calcium. NOTE: Is there any wonder that this great remedy is so remarkably and sensationally virtuous for the Mother's of our Race and their Progeny?

MEDICINAL ACTION AND USES. Astringent, tonic, hemostatic, antiseptic, anti-abortion, parturient, anti-gonorrhoeal, anti-leucorrhoeal, and anti-malarial.

It has been used extensively and successfully in all female disorders, diarrhea, dysentery, cholera, infantum, leucorrhoea, prolapsus uteri, prolapsus ani, hemorrhoids, the vomiting of pregnant women, dyspepsia, and vomiting of weakly children, etc.

FORMULA No. 33. RASPBERRY LEAF TEA. (Infusion)

Put one heaping teaspoonful of cut or granulated raspberry leaves into a large teacup. Fill the cup with boiling distilled water. Cover and let stand in a hot place for 5 to 10 minutes. Strain and drink, either hot or cold. The usual method is to drink a teacupful with each meal, hot, just as tea is drunk at meals.

As Injection for Hemorrhoids and Prolapsus Ani.: A teacupful injected and retained as long as possible.

As Douche for Leucorrhoea, Gonorrhoeal Discharge, Etc.: Use 1½ pints of a strong decoction made as follows:

FORMULA No. 34. (Compound of Raspberry Leaves.)

Put 2 ounces raspberry leaves (cut) into 1½ pints distilled water. Boil for 15 minutes while closely covered. Strain and add 1 ounce of glycerine, 15 drops of sandal wood oil (Santalum Album), and 8 ounces of mucilage of Irish Moss (Lesson 2, Page 17). Shake all together thoroughly, and use as a douche. Use once, twice or three times a day, according to the severity of the case. Make fresh each time. This is a most remarkable and speedy remedy for leucorrhoea, gonorrhoea, inflamed mucus membrane, prolapsed or enlarged uterus, etc. It should be adopted by every woman who desires to retain youth, health and strength in the genitalia, as well as to prevent possible contagion. For those purposes, once a week is considered to be a sufficient application, though that is left to the discretion of the individual.

Another wonderful member of this family is the well-known and delicious berry-bearing bush.

BLACKBERRY. (*Rubus Vilosus*) Natural Order (Rosaceae)

This natural order of plants (Rosaceae) is a very large one, composing some 1,200 species, in which are to be found some of nature's greatest and most potent remedies.

This particular Blackberry is commonly called The American Blackberry, though it grows in almost all parts of the world, but far more abundantly in Australia than in any other country.

It is used in every country for its succulent and deliciously flavored berry, though its virtues as a medicinal plant have been known for ages. A modern English Herbalist states: "We read of it as far back as the days of Jonothan, when he upbraided the men of Shechem for their ingratitude to his father's house, relating to them the parable of the trees choosing a king, the humble bramble (blackberry) being finally selected, after the olive, fig tree, and vine had refused the dignity."

The ancient Greeks knew the blackberry well and considered it a remedy for gout, which no doubt it is.

Even the regular American Pharmacopeca recognizes this plant and two other varieties, (*Rubus Nigrobaccus* and *Rubus Cuncifalius*) but according to the U.S.P. authorities, it is dependent upon tannic acid for its virtues. We do not criticize any truthful statement made by any authority but when compilers of standard medical works, either willfully or ignorantly overlook or do not mention the principal medicinal ingredients of a plant, which we know to be there, we feel it our duty to both the doctors and the people to point out the oversight or error, no matter how great is the reputation of that authority.

So, right here we give you some very valuable chemical information about this remarkable plant (blackberry) and other acid fruits, together with astringents, herbs, barks, roots, and leaves generally. This information is probably the most valuable, therapeutically, of all the information contained in this entire course. It is inserted here because we are right in the midst of studying astringents and astringents are nature's greatest curative Herbs.

All acid fruits contain an abundance of oxygen and as before said, oxygen is the greatest of all life-giving elements. Citric fruits contain citric acid, (lemons, limes, grapefruit, etc.) The chemical formula of citric acid is (C-6, H-8, O-7 plus H₂-O). This shows that in 21 parts of citric acid, apart from its water, there are about 7 atoms of oxygen or exactly one third of available oxygen. In apples, blackberries, raspberries, dewberries, thimbleberries, etc., we find, among other acids, malic acid (C-4, H-6, O-5) which gives us one third or 33 1/3% of oxygen. That, is why "An apple a day keeps the doctor away." In grapes, elderberries,

cherries, prunes, plums, sloes, etc., we find tartaric acid (C-4, H-6, O-6) which gives us 6 in 16 parts of available oxygen, together with potassium, calcium, magnesium, and iron.

In almost all astringent Herbs, (leaves, berries; nuts, barks and roots) we find tannic acid (C-14; H-10, O-9) which carries slightly less oxygen than the preceding acids. Tannic acid, however, is converted into gallic acid. This we know tones and astringes the mucus membrane and therefore is very virtuous; as a preservative, but it is not to be compared with any of the preceding acids as a curative agent because it does not contain as much available oxygen. Furthermore, tannic and gallic acids do not contain any iron, but all the berries, plums, cherries; etc., do contain various percentages of iron which, as we have previously pointed out; is so necessary to the building of the blood; functioning of the lungs and carrying oxygen to every cell, clean up, or burn up waste matter and debris and sweeten and renew the life of every cell in the whole organism. So, though you may not immediately see how vital and all important this chemical information is, you will by a little study and comparison, at last see that a knowledge of these important chemical facts will enable you to understand why certain Herbs perform apparent miracles in the organism; which, without this information, would be impossible to know, and now; back to---BLACKBERRY.

Parts Used. Bark, leaves, bark of the root and berries.

CHEMICAL CONSTITUENTS (The bark and the root bark.) Tannin-7 to 10 percent. Gallic acid 0.4 percent. Villosin 0.8 percent (a bitter glucoside), which with the sulphur contained, gives the violet-blue color to the berries. Resin 7 percent. Volatile oil, fixed oil, wax, potassium, and calcium sulphate.

MEDICAL ACTION AND USES. Powerful astringent, styptic, antiseptic, germicide, tonic. Used principally for atonic and relaxed conditions of the stomach, intestines, larynx, and mucus tissues generally. Also for hemorrhoids, leucorrhoea, etc.

Formula No. 35. Decoction of Blackberry Root Bark.

2 ounces Blackberry Root Bark (out)

1 quart distilled water

Boil the above for 15 minutes, strain, cool and bottle. Keep in a cool place. DOSE: One wineglassful 3 or 4 times a day, between meals. Children: Less according to age.

CHEMICAL CONSTITUENTS (of leaves) are about the same, but much weaker in their action, and are therefore, better suited to children.

An INFUSION is made by pouring 1 pint of boiling water over one ounce of Blackberry Leaves, cover and steep in a hot place for 10 minutes. Strain and

add brown sugar or honey. Give in tablespoonful doses for cholera infantum, and children's diarrhea.

CHEMICAL CONSTITUENTS (of juice and ripe berries) Citrate, malate, tartrate of iron, potassium, calcium, sugar, gum and coloring matter.

MEDICINAL ACTION AND USES: Cordial, tonic, astringent, oxygen carrier, blood maker, cardiac tonic, solvent of calcareous deposits, antiseptic, anti-arthritis.

FORMULA No. 36. Blackberry Vinegar.

Put 4 pounds of fresh blackberries (that have been washed in cold running water) into an earthenware or glass vessel. Cover with filtered malt vinegar and allow to stand for 3 days, stirring it once a day. Strain through a sieve, and drain thoroughly by placing a plate on top, and putting a weight on the plate. Let drip all 1 day. Measure the Juice, and allow 1 pound of sugar to each pint of Juice. Put into a preserving pan (not aluminum) and boil gently 5 to 6 minutes, removing the scum as it rises. Set aside to cool, and when cold, bottle and cork well.

DOSE: 1 dessertspoonful in a cup of water, is an excellent and delicious drink in fever, and will quench the thirst when other beverages fail For gout and arthritis, one tablespoonful in a large cupful or more of distilled water taken three or four times a day will be found to ease the pain and slowly dissolve the deposits. For anemic conditions with weakened heart action, it is very beneficial.

For outward application to swollen joints either gouty or arthritic, the following formula should be used in place of above formula.

FORMULA No. 37. Blackberry glycerite.

Make exactly the same as above (blackberry vinegar) except that instead of adding sugar to the strained vinegar juice, add 8 fluid ounces ($\frac{1}{2}$ pint) of glycerine to each pint of juice. Boil 5 minutes and skin. Cool and bottle and keep in a cold place.

DIRECTIONS FOR USE. Rub in to the affected parts and also apply on lint and cover. Remove and bathe the parts in hot water. Then, make another fresh application, two, three or four times a day, according to requirements. Persist in the treatment both internal and external until the desired affect is obtained. A calcium-free diet is recommended in severe cases. All meats, game, highly seasoned foods and alcoholic or fermented liquors should be avoided as also potatoes, baked beans, navy beans, etc. The diet should consist only of leafy and juicy vegetables and fruits. If constipation is in evidence, prune juice, flaxseed tea, olive oil or psyllum seed tea should be taken to overcome that condition and restore peristaltic action.

We know this plant to be an extremely valuable one and that the formulas given will prove very effectual. Next week, we shall study two other most virtuous astringents. One for the heart, (*Lycopus Virginicus*) and the other for disease of the intestinal mucosa and other organs (*Potentilla Tormentilla*) or tormentil root. Then, we pass to the consideration of those most valuable plants, demulcents.

We trust this lesson has been to your complete satisfaction.

LESSON NINE

There is an old proverb that says, "It's a long lane that has no turning." We are at the turning of a long lane of oppression, chicanery and brutality. The Kings and Queens of England are no longer murderers of their kin, nor worshippers of their bloody ancestry. The colored race in America are no longer slaves. The Indians are no longer scalp hunters. The Christian bishops are no longer inquisitors and the New Englanders no longer burn witches at the stake. There is left only one ogre with any power to oppress and hamper the freedom of the people who live in the Western Hemisphere, and that is the American Medical Association. This giant ogre is the beastial son of the British Medical Association. The father (M.B.A.) has had his wings clipped. The so-called American (though English born), Thomas Paine, expounded "The Rights of Man" and "The Age of Reason." This great man, even though we may not altogether agree with his philosophy, has so influenced British thought, that Englishmen with their famous bulldog nature, have banded together to expel and cast out the evil influence of the B.M.A., which sought strenuously for more than 20 years to stop the practice of Herbalism by the inaction of laws that would make all Herbalists criminals, and liable to various terms of imprisonment. The great Herbalist, Henry Box, however, defied them and exposed their practice as the most devilish thing that has ever cursed this earth.

He published and distributed a book called "The Famous Bird That Speaks One Word--'Quack' ." in which he exposed their dreadful practice. He picked them out individually, one after the other, and exposed them all in his book which he mailed to many thousands for the sum of six pence. They took him into court, but no judge would grant an injunction against him, because he had cured thousands. He was England's greatest hero. Finally both the doctors and the judges became so afraid of him, that he was left severely alone to heal his people with Herbs. This he has continued to do for more than half a century, and today his name is famous throughout the civilized world.

England has been freed from intolerable oppression of her many Herbalists (from the British Medical Association) principally through the brave and noble fight put up by Henry Box.

America, who is never far behind in any movement for the greater freedom of her people, is now gathering together her forces, to bring about the great showdown we spoke of in Lesson 8, between the American Medical Association and the Natural Physicians, which are composed of several thousands of Naturopaths, Chiropractors, and a few pioneer Herbalists. We hope to be

among those pioneers when the real showdown comes. We have a lot to learn, however, before we can meet our enemies at the Bar of Justice, and defeat them by our superior knowledge, and the evidence of our thankful clients whose lives we have saved, and whose health we have restored, by the scientific use of Nature's great master remedies. So, let us get down to further and more detailed study of HERBOLOGY.

We have learned that Herbs belonging to the same family or species, have very decided selective action upon different parts or organs of the body. Raspberry leaves, for instance, in their particular selection of the female genitalia, correct dysfunction of those organs, and restore them to health and strength. Even those that have not functioned normally and naturally for years.

Again, we learn that the blackberry plant, a member of the same family, is a remarkable solvent of calcareous deposits around the joints. It is also a blood purifier and carrier of oxygen, owing to its content of iron and the abundance of organic oxygen contained within its berries.

We positively know that these peculiar selective actions of Herbs on the various organs and tissues, are due to their chemical nature rather than to their accepted classifications such as astringents, alteratives; etc. And if there be any who need further proof of this, try the following simple experiment which will demonstrate it beyond all doubt: For one month or less, take any or all of Schuessler's 12 Cell Salts, but do not eat either carbohydrates, fats, proteins or starches. At the end of one month, about one-fifth of your body will be dead, and the vital organs will be so weak that it will take more than a year to restore the organism to normal health and strength.

We are going to prolong this lesson slightly in order to discuss this important subject more thoroughly, because without a complete understanding of it, we can never become true scientific thinkers, let alone true Natural Physicians, nor will we ever be able to meet and defeat our arch enemies until we can answer all their questions, either in the courts, in the press, or in our future publications, books, etc.

If we appear to become too enthusiastic, it is because we see the handwriting on the wall. A short time ago, 25,000 people met in the famous Hollywood Bowl, for the purpose of establishing a new world movement, known as the M.R.A. (Moral Re-Armament). Delegates, statesmen, and world leaders from all parts of the civilized world came to speak and support the movement. Some traveled more than 5,000 miles to be there, and the meeting was a huge success. What is there in the world today that is more immoral than the drugging of our people with arsenic, lead, zinc, mercury, etc.? The brutal cutting out of inflamed vital organs, that have been poisoned by these mineral drugs, or the various serums cultured from disease and decay?We recently sat through a movie picture, that, to us, was one of the most indecent portrayals of medical ignorance that has ever disgraced our American Screen. It was the portrayal of a

baby in New York who was suffering from pneumonia. The anguished young parents were told by the attending physician (?) that there was only one possible thin hope of saving the baby's life. A rare serum that would kill the streptococcus and the only supply of it was in a far western city. A blizzard of snow and hail made it almost impossible for an airplane to make the journey, but at last, one brave ace offered to try it for \$5,000.00. The baby's parents were poor, but a convenient millionaire showed up at the right moment. The plane took fire in the mountains, the pilot bailed out in his parachute and fell unconscious on the doorstep of a country house. The serum was finally dispatched to the New York Hospital and the baby was saved.

This miserable and disgraceful picture shows that the doctors have convinced the people who make pictures that there is nothing in the world that can cure pneumonia except expensive serums, when we know that a simple tea made with one ounce of elder flowers and one ounce of peppermint would have cured that baby in a few hours. And, furthermore, we know that no one has ever died of pneumonia where elder and mint have been used.

We have taken this added time in our lecture to show you that it is part of our work to stop this wholesale brutal lying to the people by exposing them in the columns of our newspapers and other forms of publicity. We must band together and publish our own newspapers and other publications, to expose this inhuman fraud and save the lives of all those who cannot afford expensive serums and even more expensive specialists in this greatest Murder Agency in history.

It takes only a few hours to convince any one who uses elder flowers and mint in any fever, that it is safe to use, and an absolute specific that is certain to cure in every case. With the proper publicity, it would not be long before countless thousands of our people would become our regular clients and friends, willing to support such a movement with written testimonials, and money that would enable us to carry on the great work of emancipation and regeneration of America. We intend in the very near future, to publish a newspaper largely for the exposure of medical charlatans, and education of the people to the truth about Herbs. We intend to broadcast to the whole world that here, in Los Angeles, there is a small seat of learning which, through the co-operation and constant dissemination of more knowledge of Nature's infallible remedies, will quickly restore people to health, and rid America of its greatest enemy. And now, with this off our chest, so to speak, we return to our further study of Herbs.

Astringents. (Continued)

BUGLEWEED. Latin name, *Lycopus Virginica* (Linn)

Natural Order. Labiatae.

Other Names: Water Bugle, Sweet Bugle, Virginian Water Horehound, Gipsywort, Heartsease, Bloodweed, etc.

Parts used. The whole Herb.

This small plant is native to the United States, and grows in low and swampy places. It has a square stalk, leaves elliptic, (2 inches long) with purple flowers, a mint-like odor, and a bitter taste. CHEMICAL CONSTITUENTS. (NOTE): This Herb is closely related to Skull-cap (*Scutellaria Lateriflora*) and its chemistry is very similar:

Contains volatile oil, a very complicated and virtuous oil containing acetic and valianic acids, aldehyde, dimethyl sulphide, menthol, (C-10, H-19, OH) resin, tannin cymene, (C-10, H-14). (Two bitter principles,) calcium chloride, potash and magnesia.

MEDICINAL ACTION AND USES. Astringent, tonic, sedative, anti-spasmodic, hemostatic and mildly narcotic. This wonderful Herb possesses selective sedative action upon the cardiac plexus, affecting beneficially the cardiac branches of the cervical sympathetic ganglia and the pneumogastric nerves.

It is one of our very best remedies for giving prompt relief in tachycardia (excessively rapid pulse in nervous women and children). It is very beneficial in cardiagra and cardialgia, diminishing the frequency of the pulse, allaying irritation and is calming and quietening in all spasmodic conditions of the chest. It is also very valuable in spasmodic asthma and persistent coughs, tending to quiet and relax the pulmonary branches of the pneumogastric and sympathetic nerves that supply the involuntary muscles of the lungs and bronchi.

The extremely great value of this lowly Herb cannot yet be told in its fullness. It is worthy of the deepest and most intensive study by medical scientists, but, like all the rest of nature's greatest natural remedies, it has been discarded by the allopaths as practically useless. Whenever their attention is drawn to a truly valuable Herb, they make a pretense of trying it out and if it has no poisonous principle, they discard it for fear it might cure somebody and ruin their drug practice.

The gypsies introduced this Herb as a great heart remedy, which it truly is. It is a real favorite of the Eclectics, and Lloyd Brothers manufacture a fluid extract that is highly recommended in heart disease. Some Herbal authorities believe it to be the greatest of all heart tonics, greater than digitalis, cactus, hawthorn, motherwort, black cohosh, lily of the valley, or any other Herb having a beneficial action on the heart. One or two eminent scientists believe that LYCOPUS has a far reaching effect upon the whole body through its toning and regulating influence upon the great sympathetic nerve (the trisplanchnic) which we know is not strictly speaking one nerve, but a series of ganglia joined together by nervous filaments, and connected by branches of communication with a majority of the spinal nerves, and also with some of the cranial nerves. The great French scientist Bichat considered it (the trisplanchnic) to be the nervous system

of organic life, as contra-distinguished from the brain and spinal marrow, which, with their appropriate nerves, constitute the nervous system of animal life.

Be that as it may, we all know that the great trisplanchnic supplies the three great body cavities and their viscera and we also know that LYCOPUS quiets the cranial nerves, the thoracic nerves and also the abdominal nerves thereby effectively and quickly relieving pain and curing diarrhea and dysentery. But, we are not prepared to say that these various wonderful effects are brought about through its direct action upon the crisplanchnic nerve. We leave it an open question, because we do not know until some new investigator brings us proof that it is, or is not, so. However, we are convinced that LYCOPUS is one of nature's greatest and most beneficent gifts to man. It is as harmless as distilled water and as effective as it is harmless. It enters into several valuable formulas given in this course of study.

FORMULA No. 38. Decoction of LYCOPUS.

Put one ounce of LYCOPUS Herb (cut or granulated) into 1 ¼ pints of distilled water. Boil slowly while closely covered for 5 minutes. Strain cool, bottle and keep in a cool place.

DOSE: One wineglassful, or half a teacupful 4 times a day or until the whole pint has been consumed during the day. Children: Less, according to age, from a teaspoonful to a tablespoonful mixed with a little honey.

FORMULA No. 39. Strong Decoction of LYCOPUS.

Put 4 ounces LYCOPUS (cut or granulated) into 1 quart distilled water. Boil 20 minutes. Strain and add 2 pounds brown sugar and 8 ounces glycerine. Bottle.

DOSE. One tablespoonful three or four times a day or whenever the heart troubles.

This is a very fine remedy for tachycardia, nervous and weak heart, coughs, passive hemorrhage, etc; also for diarrhea and dysentery.

Astringents: Continued.

TORMENTIL. Potentilla Tormentilla (Neck).

Natural Order. Rosaceae.

Common Names. Septfoil, thormantle, biscuits, ewe daisy, bloodroot, five fingers, flesh and blood, shepherd's knaperty, shepherd's knot, English sarsaparilla.

Parts Used. Root, Herb.

This Herb is native of Europe, but has become naturalized in America. It is particularly well known to Herbalists in England and Scotland for its powerful astringent properties and has been used medicinally for thousands of years. It was used in battles by the early Saxons for healing wounds, staunching blood, and resisting infection and gangrene. The great sage of the 16th century, Culpepper, says: "Tormentil is most excellent to stay all fluxes of blood, or humors, whether at nose, mouth, or belly. The juice of the Herb and root, or the decoction thereof, taken with some Venice treacle and the person laid to sweat, expels any venom or poison or the plague, fever, or other contagious disease, as the pox, (syphilis) measles, etc., for it is an ingredient in all antidotes or counterpoisons. It resisteth putrifaction. The root taken inwardly is most effectual to help any flux of the belly, stomach, spleen or blood and the juice wonderfully opens obstructions of the spleen and lungs and cureth yellow jaundice. Tormentil is no less effectual and powerful a remedy against outward wounds, sores and hurts, than for inward and is, therefore, a special ingredient to be used in wounds, drinks, lotions, and injections. It is also effectual for piles. The juice or powder of the root, put into ointments, plasters and such things that are applied to wounds or sores, are very effectual."

The name **TORMENTIL** is said to be derived from the Latin word *Tormentum*, because it relieves griping pains in the stomach and intestines, and also certain forms of headache and toothache. **TORMENTIL** root is about as near to geranium root in its therapeutic action as any two Herbs can be alike, though it does not belong to the same family.

CHEMICAL CONSTITUENTS: It contains 20 to 30 percent of tannin, (gallic and tannic acid) 18 percent of **TORMENTIL** red, a product of tannin, which, when mixed with potassium hydroxide, yields protocatechuic acid (C-7, H-6, O-4) also called dioxybenzoic acid, and phloroglucin (O-6, H-3, (OH)3) found in many plants and particularly in the bark of rosaceous trees and several varieties of resin. Phloroglucin is used as a test for hydrochloric acid with which it gives a deep red color. It is also used as a decalcifying agent. The root also contains kinovic acid (C-24, H-38, O-4) ellagic acid (C-14, H-6, O-8) resin, cerin, myricin, gum, lignin and a trace of volatile oil. A slight study of the chemistry of this remarkable Herb will show that it is laden with oxyacids which are probably nature's greatest vitalizers. In Lesson No. 9, Page 12, we gave you the chemistry of tannic, gallic, ellagic and other organic acids, pointing out their abundance of oxygen. All of these are contained in the rest of **TORMENTIL** besides the oxyacids described above. Its most remarkable chemistry is very evidently the reason for its most wonderful effect upon relaxed and tonic mucus membranes, for which it has a special affinity.

MEDICINAL ACTION AND USES: Astringent, tonic, hemostatic, styptic, antiseptic, antiputrid, nervine, sedative, discutient, resolvent, solvent of calcareous deposits, (warts), etc. Doctor Thornton, a famous English physician, who believed in and used Herbs quite extensively speaks very highly of this Herb.

He gave to the world several very valuable Herb formulas, among which is the following:

FORMULA. (Dr. Thornton)

1 dram (teaspoonful) of powdered TORMENTIL root in 1 teacupful of infusion of hops ($\frac{1}{2}$ ounce hops to 1 pint boiling water.) Stir powder into the infusion and drink cold, 4 times a day. Dr. Thornton states that in all fluxes of blood over a period of years, this remedy worked wonders.

He tells of a poor old man who made wonderful cures of ague, smallpox, whooping cough, etc. from an infusion of TORMENTIL root and became so celebrated locally, that Lord Von Russell gave him a piece of ground in which to cultivate it. This he did and kept it a secret for a very long time.

FORMULA No. 40. Decoction of TORMENTIL Root.

2 ounces of TORMENTIL root (cut or granulated). Put into 3 pints distilled water and boil to slightly more than 1 pint. Strain, cool and add 15 drops of chloroform and 5 drops of coumarin (tonka bean extract) or 20 drops of ordinary vanilla extract (1 dram of powdered cinnamon can be used in place of the coumarin if preferred. Add this during the last 10 minutes of boiling). This decoction will keep indefinitely if kept in a cool dark place

DOSE: One wineglassful 3 times a day between meals. This is a valuable remedy for diarrhea, cholera, dysentery, leucorrhoea, prolapsus uteri, prolapsus ani, excessive menstrual flow, atonic intestines, protruding or internal hemorrhoids, bleeding hemorrhoids, gleet, recent gonorrhoea, prostate enlargement, hernia, tonsillitis, laryngitis, relaxed and elongated uvula, hemorrhage from the lungs, stomach or other internal organ or tissue, epistaxis, inflamed eyes, purulent ophthalmia, varicose veins and ulcers and bleeding cancers. It reduces tumors, heals wounds, relieves pain of toothache and griping pains in stomach and bowels. Also heals venereal warts. In fact, it is the safest of all astringents in inflammation of any mucus membrane.

SPECIAL DOSAGES: For diarrhea, dysentery, cholera, leucorrhoea, menorrhagia, hemorrhoids, hemorrhage, etc., one wineglassful of the decoction as often as is necessary, according to the nature and severity of the case.

For Outward Application: For sore throat, relaxed uvula, spongy gums, etc., use the decoction undiluted as a gargle and mouthwash.

For Sore and Inflamed Eyes: Saturate cotton and bind onto the closed eyes.

For Leucorrhoea, Bleeding and Internal Hemorrhoids, etc. Use undiluted, and inject 3 or 4 ounces and retain as long as possible.

For Prolapsed Uterus or Anus: Apply a saturated tampon and allow to remain as long as possible.

For Warts, Varicose Veins, etc. Apply a piece of saturated lint, cover with waxed paper and bandage. When dry, or nearly so, repeat the application. The same applies to bleeding cancers and wounds. It should also be taken internally in every case, in order to effect its healing work through the bloodstream as well.

FORMULA No. 41. Fluid Extract of Tormentil:

Put 1 pound of **TORMENTIL** root (cut or granulated) into 1 gallon of distilled water. Bring to boil, then slowly simmer for 1 hour (covered). Strain, and add to the strained Herbs another gallon of water and boil again slowly for 1 hour. Strain, and combine the two liquors, then simmer slowly (open) till reduced to 1 pint. Remove from fire and allow to stand for an hour or so for sediment to settle on bottom. Then pour off clear liquid of which there should be 1 pint. To this pint of strong fluid add 8 ozs. of glycerine. Put into a double boiler and reduce to 1 pint.

In order for it to be absolutely pure and free from sediment, this fluid extract should be filtered through a filter paper in a glass funnel. This usually takes from one to 3 days, according to how the fluids were previously strained.

This is full strength, and is generally recognized as grain to minim, or minim to grain strength. It will keep almost indefinitely, in full strength, if bottled in actinic brown bottles and kept securely corked or capped. If put into white glass and kept in the light, the X-rays, Bequerel rays and ultra violet rays of the sun will gradually cause its radio-activity to pass off into the atmosphere. In three months, it will have lost half its virtue, and in six months, it will be practically useless as to imparting life-energy to the cells and tissues.

This fluid extract is 8 times stronger than the decoction, which means that 1 teaspoonful of the extract is equal to 2 tablespoonfuls of the decoction. Applied to bleeding surfaces, it acts as a powerful styptic. It is a most convenient and valuable remedy to always have on hand. The DOSAGE, of course, is one eighth of that of the decoction, except where greater astringency or styptic action is desired, and for all purposes for which the decoction is recommended.

This extract can be used by simply diluting with distilled water. We shall make no mistake if we remember that 1 dram (teaspoonful) of the extract is equal to 1 ounce (2 tablespoonfuls) of the decoction;--1 wineglassful (2 ounces) of extract is equal to 1 pint of decoction; and 1 pint of extract is equal to 1 gallon of the decoction.

As in the case of other astringents, it is sometimes desirable to combine this Herb with mucilaginous Herbs, such as Irish Moss (*Chondrus Crispus*), comfrey, acacia, Marshmallow, etc. And that brings us to the study of **DEMULCENTS**, Emollients, Nutrients, Vulne:-raries.

MARSH MALLOW. *Althaea Officinalis*. (Linn)

Common Names: Mallards, sweetweed, wymote, mauls, cheese plant, mortification root, Guimauve, Schloss Tea.

Natural Order. Malvaceae.

Parts Used. Leaves, roots, flowers.

This natural wonder Herb is a perennial plant.

Habitat. Practically all tropical and semi-tropical parts of the world. Europe, Western Asia, Northern Africa, naturalized in salt marshes of Australia, New England, New York, and cultivated in Europe. It grows from 2 to 4 feet high, has several woody stems. The leaves are 1 to 3 inches long, separate, both sides pubescent. The flowers are large, 1 to 2 inches in diameter, and of a beautiful purple color. The root is slenderly tapering, from 6 to 12 inches long, and from 2 to 4/5 inches thick, yellowish-white; odor, faint, aromatic; taste, sweetish, mucilaginous. The generic name ALTHEA is derived from the Greek ALTHO (to cure) from its healing properties. The name of the order (Malvaceae) is derived from the Greek Malake (soft) due to its special softening and healing qualities.

SPECIAL NOTE: The large and important family of mallows is most abundant in tropical regions, where it forms a large proportion of the vegetation. Towards the poles, north and south, it gradually decreases in number and size. Lindley states, that about 1000 species have been discovered, all of which contain an abundance of mucilage, but none of them contain any unwholesome or poisonous properties. Apart from the valuable medicinal properties of so many species, some of them are employed as food. The bark of others are a good substitute for hemp.

Probably the most valuable member of this natural order (Malvaceae) commercially, is the well known cotton root (*Gossypium Herbaceum*) from which we get our cotton. It is used in place of ergot, and as an ecbolic to hasten labor. We shall treat of it later. The mallows, from very ancient times, have been known and used as food and medicine. They are mentioned in the Bible, Book of Job, as being eaten in the time of famine. Mallow was considered an esculent vegetable by the ancient Romans. A dish of MARSH MALLOW was one of their delicacies. Dioscorides extols its virtues as a remedy, and also tells us that the musk mallow (*Malva Meschata*) was used in ancient days to decorate the graves of friends. (Perhaps, owing to its large rose-colored flowers which are much larger than those of MARSH MALLOW) (Ed.).

Eliny says of MARSH MALLOW: "Whosoever shall take a spoonful of mallow, shall that day be free of all disease that may come to him."

All the mallows contain an abundance of mucilage, and the ancient Arabian physicians used the leaves as poultices for inflammation. The Chinese, Assyrians, Egyptians, Greeks, and Armenians, in times of famine or failure of

crops, subsist for months on wild Herbs, and the MARSH MALLOW is one of the principal Herbs used. All through the centuries, MARSH MALLOW has held an important place as a valuable remedy for local inflammations, but we know that it is much more.

CHEMICAL CONSTITUENTS: Asparagine (C-4, H-8, N-2, O-3) also called asparamid found in asparagus, is contained in mallow from 1 to 2 percent; and to identify its source, is called ALTHEIN. Its chemical name is amidosuccinic acid. It is a diuretic, containing 35% mucilage. This is the wonderful BASSORIN (C-6, H-10, O-5) upon which most of the virtues of mallow root depends, containing 37% starch, 11% pectin. (Pectin is a valuable principle which forms the base of vegetable jelly. It exists in many ripe fruits and vegetable juices).

Here we must explain something which is of great importance. Pectose is a most vital proximate principle which is abundant in unripe fruits and roots. The action of weak alkaline water on pectose produces pectosinic acid, which carries an abundance of oxygen. Its formula is (C-64, H-48, O-62). It is plain to see that more than one third of this acid is composed of oxygen; hence, its great life-giving and vitalizing properties, unrecognized by medical scientists. Mallow root also contains fat 1.25%; calcium phosphate, 4 to 5%, and sulphur.

MEDICINAL PROPERTIES AND USES: Demulcent, emollient, nutrient, vulnerary, laxative, diuretic.

FORMULA No. 42. Decoction of MARSH MALLOW Root.

Put 2 ounces of MARSH MALLOW root (cut or granulated) into 3 pints of cold distilled water. Let stand 1 hour. Bring to boil and simmer down to 1½ pints. Strain, press and bottle.

DOSE: One teacupful taken warm, 3 times a day. May be sweetened with honey or brown sugar.

This is an excellent remedy for all inflamed surfaces and organs, either internal or external; stomach, intestines, lungs, bronchi, skin. It is especially good for burns by fire, acid or strong alkali, inflamed or swollen joints or muscles; dry and hacking cough; inflammation of the chest; inflamed and swollen glands, and infected wounds. It is a fine builder of bone and flesh in rickety and weakly children. A most remarkable treatment for chronic constipation with hard, dry stools. Gives prompt relief in gravel, inflammation of the kidneys and bladder. In fact, there is scarcely any form of inflammation in any part of the organism for which it is not beneficial. MARSH MALLOW has no astringent action. The powdered root applied to moist surfaces draws out and absorbs all moisture.

FORMULA No. 43. Special Infusion of Marshmallow, For Inflamed Eyes.

1 oz. Marshmallow Root and

1 pint Boiling distilled water

Pour boiling water over herbs, cover and steep until lukewarm, then strain. Bathe the eyes frequently with this infusion. In severe cases saturate cotton and apply to eyes, binding it on loosely; allow to remain on for 15 minutes, then make fresh application. Repeat several times.

MARSHMALLOW combines well with other herbs which are used for other purposes.

FORMULA No. 44. A Marshmallow Specific, for WHOOPING COUGH.

2 ounces MARSH MALLOW ROOT

2 “ GARDEN THYME (Thymus Vulgaris).

1 qt. Distilled Water

Slowly boil the herbs in the distilled water until reduced to 1 pint. Strain, press, return liquor to saucepan and add 2 lbs. brown sugar. Bring to boil and simmer 5 min. Skim as scum rises, cool, bottle and keep in cold place.

DOSE: For young children, 1 teaspoonful when cough troubles.

Older children 2 or 3 teaspoonfuls, according to age.

Adults, 1 tablespoonful every 2 or 3 hours.

This is a merciful remedy in paroxysmal whooping cough. It gives almost instant relief; and if the child is kept on a diet of mostly fruit juices, and especially pineapple, and is given no eggs, starchy or greasy foods, and this remedy is persisted in, it will eliminate the cough quickly and effectively.

For SPASMODIC ASTHMA, add ½ ounce Lobelia herb to above formula, and a little more water, but ending with the same amount when boiled down (1 pint).

In special cases of intestinal atrophy, or where the intestinal mucosa has practically lost its softness and resiliency from taking drastic purgatives, such as mineral salts (Glauber’s salts, Epsom salts, etc.) the following formula will be found most effective in nourishing and softening, and actually rebuilding the mucus membrane of the intestines, and will restore perfect health to them. No eulogy or enthusiastic acclaim could overstate or over estimate the value of this amazing remedy for this purpose.

FORMULA No. 45.

To 1 pint of Decoction of MARSH MALLOW Root (Formula No. 42, Page 16) add 1 ounce of fluid extract of TORMENTIL Root (Page 12.)

DOSE: One wineglassful 3 or 4 times a day between meals. This wonderful remedy is also very soothing and healing for bleeding piles, blood in the urin and slight hemorrhage of the lungs (where the sputum is colored). It is excellent for people who are called “bleeders,” owing to a shortage of calcium in the blood. The dose may be increased or decreased according to the peculiar case.

Considering that the intestinal tract is probably the most maltreated and ignorantly abused part of the whole organism, this remedy will be found to be a most beneficial and merciful remedy.

DEMULCENTS. Continued.

In Lesson No. 2, Page 14, we mentioned a demulcent which entered into our Formula No. 1, and on page 15, we gave a brief description of it.

It is MIMOSA GUM. Natural Order, Leguminosae Mimosaceae.

Mimos plus aceae is from the Latin Mimus, and the Greek Mimie, namely the leaves of mimic animal sensibility, moving by slight impulse, partly closing when touched, etc.

Synonyms or other names: Egyptian Thorn, Bambolam, Acacia, Gum Arabic.
Latin Names: Acacia Senegal (Wild) Acacia Nilotica (Linn).

Gum Acacia is the result of the transformation of the cell contents (cellulose) in the inner bark. It forms small pouches, most abundantly in hot dry seasons. It occurs in roundish tears of various sizes or broken fragments, whitish yellow, translucent, glasslike sometimes iridescent fracture, nearly inodorous; taste insipid and mucilaginous. The tears or lump gum, contain 14 percent moisture and are slowly and completely soluble in water, forming an odorless acid mucilaginous liquid. It is not colored blue by iodine, showing that it contains no starch. This is important to diabetics (see later). It is not colored red by iodine, showing it contains no dextrin. There are a number of different qualities of acacia on the market, due to the enormous amount used in confectionery, paper making, medicine, etc., and there are many adulterations.

ADULTRATIONS: Inferior, dark colored, opaque and insoluble gums. B-dellium, rock salt, ligneous and earthy substances and dextrin in, the lumps. Flour, rice, starch, dextrin (powdered). These are all recognized by the above iodine test and the microscope, but unless we are aware of this, and use care in our purchases, we shall probably be using rubbish, believing it to be the real gum acacia.

The best gum is white and opaque. The largest producers of it being Acacia Senegal (Verék) and Acacia Vera (Hashabi). Acacia gum must lose 10% moisture before it can be finely powdered. This process makes it less soluble, and more lumpy when dissolved in water. To make a perfect solution in hot or cold water, the gum should be first worked with cold water and allowed to drain. (See

Lesson No. 2, Page 17 for making.) There are several methods for making. We believe this one to be the best.

CHEMICAL CONSTITUENTS: Arabic Acid (C-12, H-22, O-11) (Gummic Acid, Arabin). A glucoside, which is combined with calcium, forming calcium arabate; with magnesium, forming magnesium arabate; and with potassium, forming potassium arabate. Upon these three wonderful acid salts depend the great building and nourishing properties of acacia. Also contains sugar, but no astringent tannic or gallic acids, nor starch.

It is, therefore, of great value in diabetes as a nourishing, non-starchy diet.

MEDICINAL PROPERTIES AND USES. Demulcent, Emollient, Protective, Nutritive, Vulnerary.

USES: Coughs, laryngitis, gastritis, typhoid fever, dysentery, diarrhea, diabetes. Fine powder stops slight hemorrhage. Thick mucilage protects burns, ulcers. Specially nourishing for weakly babies and young children, also for under-nourished, emaciated, and tuberculous people. Very easily digested and assimilated. Used in pharmacy to suspend insoluble substances in water. To emulsify oleoresins, volatile, and fixed oils. For adhering pill mass and combined with other Herbs when it is desired to make them adhere to the affected parts.

DOSE: Of the mucilage (of washed gum) ad libitum.

Mucilage of Mimosa Gum (Acacia Gum)

FORMULA No. 46. Wash 4 ounces of lump acacia gum. Drain and put into 4 ounces lime water (liquor calcis) Add Q.S. of distilled water to make 1 pint. Stir in ½ ounce (4 drams) glycerine. Let stand while covered, until the gum is dissolved stirring occasionally. Filter and keep in a cool place.

DOSE: Half a teacupful several times a day.

Next week we shall give you more formulas into which this lifesaving and healing Herb enters.

There is a great deal of important educational matter in this Lesson which we hope will add substantially to your previous knowledge. We trust you will spend as much time as is necessary in the study and digestion of this valuable subject matter, memorizing as much as you can, because you may, at any time, be called upon to use it therapeutically or to defend your practice of the great science of Herbology.

LESSON TEN

The healing of the sick is considered to be the highest and most necessary calling in the world. But its problem today is greater than ever before. It is a strange paradox or contradiction, that the principal cause of more than 70 percent of all disease today is brought about by licensed physicians, backed up by the Governments, who have believed, and apparently still believe, that these "honorable gentlemen" are doing their best to heal the sick. It is not that the educated people are an ignorant class generally, but that vast sums of money are spent in propaganda, to boast and advertise the "great, good work" the doctors are doing for humanity. The people, without a knowledge of anatomy, physiology, chemistry and bacteriology, are quite incapable of disputing the statements made by the doctors, and so they remain in power, unchecked, causing the whole civilized world to suffer untold agonies, mentally and physically, through their devilish practices. If the general public knew the truth, these men would be punished for their crimes, and laws would soon be passed to prevent this most terrible of all crimes in the history of the world.

To prove that this broad statement of facts is absolutely true, we shall first quote a few reliable opinions on the subject. Then we shall endeavor to show the way out, by pointing out the only possible remedy for this state of affairs. If we can do this, we shall have conferred a great benefit upon humanity.

To heal a disease is, to remove the cause. What a wonderful world this would be to live in if 70 percent of all sickness were eliminated.

Serum treatment, or vaccination was started by Edward Jenner, an English Physician (1749-1883). Dr. Gifford, while addressing the International Congress in Paris in 1889 used these words: "To Edward Jenner, a great monument has been erected in memory, and upon its columns, future generations will inscribe 'Accursed be the man by whose cunning device the blood of nations has been poisoned.'" Doctor William Hitchman, Consulting Surgeon to the Cancer Hospital, Leeds, and formerly Public Vaccinator to the City of Liverpool, England, expressly states that "Syphilis, phthisis, scrofula, cancer and erysipelas and almost all diseases of the skin, have been conveyed, occasioned, or intensified by vaccination." Doctor Edward Houghton, B.A.M.D., M.R.C.S. English gold medalist in Natural Science, says: "Cancer and other vile diseases are daily inflicted on virtuous families by vaccination."

We could go on quoting, ad libitum, to show that the hellish practice of vaccination is one of the greatest curses that ever hit Humanity, but we have not

space to elaborate, and we have to deal briefly with other equally fiendish and destructive preparations which are debilitating, degenerating and destroying our people at an enormous rate.

If we can get a knowledge of these damnable things and then discriminate that knowledge to our people, it will not be long before the might of public opinion will abolish them and we shall be held up as the greatest benefactors of all time. So, we will take time to learn how disease is brought about by the common use of deadly protoplasmic poisons. This will enable us to write, talk and expound the truth about the virtues of natural Herbs and how they rid the system of all deleterious, poisonous matter and restore perfect health to every creature. We will take these universally used poisons in alphabetical order and prove that the doctors who are supposed to protect the Public Health are the biggest liars and frauds in the world today.

ARSENIC: The following was not formulated by us, although we know it to be true. It is quoted from a standard manual of chemistry for medical students by Dr. R. A. Witthaus, A.M., M.D., formerly professor of chemistry, physics and toxicology in the University of the City of New York. Also the University of Vermont. Member of the Chemical Societies, Universities and Academies of Medicine and the American Association for the Advancement of Science., etc.

Action of Arsenical Compounds upon the Animal Economy: "The poisonous nature of many of the arsenic compounds has been known from great antiquity and it is probable that more murders have been committed by their use than by that of all other toxic substances combined. Even at the present time, notwithstanding the fact that detection of arsenic in the dead body is certain and comparatively easy, criminal arsenical poisoning is still quite common, especially in rural districts.

The poison is usually taken by mouth, but it has also been introduced by other channels. The skin, either uninjured or abraded, the rectum, vagina, and male urethra. The forms in which it has been taken are (1) Elementary Arsenic, which is not poisonous as long as it is dry. In contact with water or with saliva, however, it is converted into an oxide, which, when dissolved, is capable of abortion, producing the characteristic effects of arsenical compounds. Fly paper is coated with a paste containing arsenic, a portion of which is oxidized by the action of the air and moisture. (2) Hydrogen Arsenide, the most actively poisonous of the inorganic compounds of arsenic, has been the cause of several accidental deaths, among others, that of the chemist Gahlen who died in consequence of having inhaled the gas while experimenting with it. In other cases, death has followed the inhalation of hydrogen made from zinc and sulphuric acid which was contaminated with arsenic. Arsenic trioxide is the compound most frequently used by criminals. It has been given by every channel of entrance to the circulation. In some instances, concealed with great art. In others, merely held in suspension by stirring in a transparent fluid, given to an intoxicated person. If the poison has been in quantity and undissolved, it may be found in the stomach

after death in the form of eight-sided crystals. The lethal dose is variable, death having occurred from 2½ grains. It is more active when taken fasting, than when taken on a full stomach, in which latter case, all or nearly all the poison is expelled by vomiting, before there has been time for the absorption of more than a small quantity.

Sodium arsenate is sometimes used to clean metal vessels, a practice whose natural results are exemplified in the death of an individual who drank beer from a pewter mug so cleaned and in the serious illness of 340 children in an English institution in which this material (sodium arsenite) was used for cleaning the water boiler. The arsenical pigments also produce disastrous results by being incorporated in ornamental pieces of confectionery, by being used in dyeing of textile fabrics, from which they may be easily rubbed off, from their use for the destruction of insects and by being used in the manufacture of wallpaper. Many instances of chronic arsenical poisoning have resulted from inhabiting rooms hung with paper whose whites, reds or greens were produced by arsenical pigments. From such paper the poison is disseminated in the atmosphere of the room in two ways: either as an impalpable powder, mechanically detached from the paper and floating in the air, or by their decomposition, and the consequent diffusion of volatile arsenical compounds in the air."

This quotation, from such an eminent authority, calls for some constructive and educational comment and, as we pointed out last week, the time taken to give you this important extra knowledge is added to our usual lesson on the Science of Herbology.

Dr. Witthaus draws a mild picture of the grave dangers of even breathing arsenical dust or fumes, just mentioning that it is used as dye in the manufacture of cloth and wall paper. To draw a fair picture relative to these two common uses of arsenic, he should have said that billions of yards of cheap cretonne, ginghams and calico are annually bought by poor people to be made into window curtains and other drapes, to say nothing of dresses, aprons, babies and adult bathing suits, sweaters, socks, stockings, neckties, colored hats, ribbons, and towels. This method is also used to dye paper napkins, toilet paper, etc. He did not tell us that arsenical treatment of hair for the making of felt hats is the principle cause of baldness; that arsenic is used (unchecked by medical health boards or doctors) in one thousand and one industries. In paint, varnish, printing; (blue, green, red, brown, pink and other pigments). Fireworks, aniline dyes, ceramic enamels, fly poisons, rat poisons, insecticides, sheep dips, bullets and shot, so-called medicinal soaps, soap coloring, hide preservative, boiler compounds, depilatories for removing hair, clarifying agent for decolorizing glass, for spraying our foods, vegetables, fruits, wheat, etc. (Paris Green) and for many other purposes.

Even all this is not the gravest or greatest danger to the human race as far as arsenic is concerned. Dr. Witthaus carefully re(?)rained from mentioning that probably a million so-called physicians in the so-called civilized world daily and hourly recommend and use amounts of arsenic in various forms which total many

hundreds of tons per annum. These hellish preparations are used internally for malaria, skin diseases (eczema, psoriasis, prurigo, lepra, cancer, furunculosis, acne, lupus), intermittence, nervous debility, chorea, chronic rheumatism, gout, constitutional syphilis, frontal neuralgia, hemicrania, obesity, gastralgia, anemia, spasmodic asthma, amenorrhoea, dysmenorrhoea, menorrhagia, leucorrhoea, diabetes, albumenuria, chronic diarrhea. Externally for cancers, tumors, epithelial tumors, lupus, sarcoma, warts, malignant ulcers, carious teeth, etc.

The doctor also failed to tell us that over fifty large chemical corporations and companies in America buy and sell arsenical compounds in casks of 500, 550, and 600 pounds, while several thousand smaller chemical companies and wholesale druggists in America buy and sell it in lesser quantities, from 1 to 200 pounds, to say nothing of retail druggists.

We are only dealing with one out of several hundred similar deadly poisons which are universally distributed and used by our "proper" doctors, and then we wonder why the poor innocent human race is cursed by so much suffering and disease, and why all our efforts so frequently fail to help them. Now, do you think it is a waste of time to learn the awful truth about some of the real basic causes of disease? We have not yet quite finished with arsenic. All arsenical compounds produce symptoms strongly resembling those of cholera.

Constriction and heat of fauces, faintness, nausea, burning abdominal pain and tenderness, thirst, violent retching, vomiting, (brown matter, often streaked with blood), bloody stools, constant desire to go to stool or to urinate, great straining at both with little result (tenesmus), cold skin, small and feeble pulse, spasms, great difficulty of breathing and death in collapse. When any or all of these symptoms are present, there is no time to be lost. First: Make an elaborate and complete report on every symptom. Next, call in an M.D. as soon as possible. Notify him that you suspect arsenical poisoning Then proceed to treat promptly as follows:

FORMULA No. 47. Special, for Arsenical Poisoning.

¼ teaspoonful powdered Lobelia (*Lobelia Inflata*)

½ " " powdered Mustard (*Sinapis Nigra*)

½ " " powdered Ginger (*Zingiber officinale*)

Bring to boil in a 1/2 pint of water, and simmer for 1 minute. Strain. When lukewarm, give half to 1 teacupful until free vomiting has been established, or until contents of stomach has been emptied.

For further safety (in case some unabsorbed arsenic has been retained in the stomach), make a strong decoction of yellow dock root (*Rumex Crispus*) and bugle weed (*Lycopus Virginicus*) as follows:

FORMULA NO. 48. Special, Iron Compound.

3 ounces Yellow Dock Root (cut)

3 “ Bugle Weed (cut)

Put into 1 pint distilled water and boil 10 minutes. Strain, and let stand till cold.

DOSE: One wineglassful to half a teacupful every hour until the whole pint has been taken.

In arsenic poisoning, this life-saving remedy serves two purposes: The iron in yellow dock and the tannic acid in bugle weed (forms tannate of iron) picks up any soluble arsenic that may be in the stomach or intestines and immediately converts it into insoluble iron arsenite, or arsenate, which cannot be absorbed into the system. The Lycopus (bugle weed) supports the heart and acts as a sedative to the sympathetic nervous system, thus conserving energy until the danger is past. Consult with the doctor. Lay your cards on the table --that is, tell him what you used and why. He will be astonished, and you will make a friend out of an enemy. The fact that you called him in, exonerates you from all blame, no matter what the consequences may be; while your prompt first aid, marks you as a physician who really knows what to do in an emergency.

Incidentally, for your edification, the astringent action of both these Herbs will stop the hemorrhage and diarrhea. The iron will bring oxygen to the parts and clean up any toxic matter that may be left over from the destructive action of the arsenic.

We are studying DEMULCENTS, and this is right where demulcents fit in. Arsenic leaves the system devitalized, weak and exhausted, owing to its drastic purging, emetic and diuretic action, together with the almost intolerable pain and depression it produces.

In Lesson #1, page 20, we made the statement that the sweet almond (*amygdalus dulcis*) was one of the greatest brain, bone and flesh builders known. And now we are going to prove it by giving you its chemistry, before telling you how to use it; not only after arsenical poisoning, to restore vitality and strength, but in almost all devitalized emaciated and mal-nutritional conditions in persons of all ages, from babyhood to old age.

DEMULCENTS: Continued.

SWEET ALMOND: *Amygdalus Dulcis* (De Candolle)

Synonyms: Jordan Almond, Greek Nuts, French--Amandes Douces; German--Mandeln.

HABITAT: West Asia, Persia, Syria, Barbary Morocco. (Naturalized in the Mediterranean Basin). Cultivated in Europe, and in recent years, in Southern California.

Parts Used: The ripe seed.

CHEMICAL CONSTITUENTS: Fixed oil, 56 percent, consisting of triolein 75 to 85 percent, tripalmitin and trilinolein 15 to 25 percent.

SPECIAL NOTE: When we consider that pure cod liver oil contains 70 percent triolein and 25 percent tripalmitin, while trilinolein (found in flaxseed mixed with phosphates, sulphates, chlorides of potassium calcium and magnesium), we shall at once see how wonderful the fixed oil of almond is, but the ripe almond seed also contains myosin, (a proteid found in muscle), vitellin, (the chief vital constituent of the yolk of eggs), conglutin, (a very valuable proteid containing calcium phosphate). These three proteids compose from 24 to 30 percent of the sweet almond, and contain potassium phosphate (brain and nerve food), calcium phosphate (bone and sinew food), and magnesium phosphate (muscle food, and food for every cell in the body); Emulsin (an albuminous ferment and digestive agent, mucilage 3 percent, sugar 6 percent, ash 3 to 5 percent, potassium, calcium and magnesium phosphates.

Now, perhaps, you can believe that we did not exaggerate when we said that sweet almond was one of the greatest builders of brain, bone and flesh that is available to us.

This fact is not generally known, and it is our business, not only to use it in our practice, but to spread this information, for it can save the lives of countless thousands who suffer and die prematurely from tuberculosis, diabetes, and many other fatal diseases. It enters into several of our most valuable formulas for the treatment of various chronic diseases, and its value as a nutrient is unsurpassed.

FORMULA No. 49: Emulsion of Sweet Almonds.

1 ounce Almond Meal	1 ounce Glycerine
1 " Sugar	2 ounces Distilled water
1 dram (teaspoonful) powdered Acacia Gum	

Mix the dry ingredients thoroughly. Combine glycerine and water and shake well, then add to dry mixture slowly, and beat into a paste, using a bowl or mortar.

This paste will keep fresh for several days, if bottled at once, is well corked, and kept in a cool place. The above formula provides a sufficient amount of paste to make quart of emulsion. This is done by slowly adding a little more

than a pint and a half of distilled water, and stirring continually until thoroughly incorporated.

This is a pleasant nutrient vegetable milk for delicate children, and is very soothing and healing to mucus membranes. It may be flavored with anise, caraway, peppermint, cinnamon, honey, etc.

DOSE: Ad libitum, or according to patient's ability to digest.

Returning to arsenic for a moment. Arsenic steals oxygen, iron and sulphur from the tissues. It is therefore necessary to restore these elements to the tissues after poisoning, and for this purpose, the following will be found very effective.

To each cupful of the above strong almond emulsion, add 1 ounce of Formula No. 48. (Special Iron Compound. See pg. 7 of this lesson)

DOSE: One half to 1 teacupful 3 times a day. Make fresh each day. Do not mix until ready to use. This will also be found very beneficial in diabetes, tuberculosis, weak heart, shortness of breath and in all wasting diseases. For purulent disease with general emaciation, internal ulcers, cancers, vitiated blood with cacoplastic deposits, acne, skin diseases, coughs, etc.

FORMULA No. 50. Restorative Compound, after Arsenic Poisoning.

To every teacupful of strong almond emulsion, add 1 teaspoonful of Formula No. 21 (See Lesson No. 5, pg.17).

DOSE: One teacupful 3 times a day between meals. This wonderful compound will restore the lost sulphur, stop the formation of pus, feed the brain and nerves with potassium phosphate, the blood and bone with calcium phosphate, and the flesh with magnesium phosphate.

DEMULCENTS. (Continued)

We will now consider another valuable demulcent closely allied to the almond, but belonging to the Rose family.

QUINCE. *Pyrus Cydonia* (Linn) N. O. Rosaceae.

Synonyms: *Cydonia Vulgaris* (Persh.)

Common Names: Quince Seed, Old English Coyna.

The quince has been cultivated from very ancient times, and has always been considered to be a most valuable medicinal agent. It is a native of Persia, Anatolia, Greece and probably the Crimea. Its name cydonia is derived from cydon in Crete where the Greeks cultivated it. This "golden apple" (quince) is

mentioned in the Bible. It is the fruit alluded to in the Canticles. "I sat/down/under His shadow with great delight, and His fruit (quince) was sweet to my taste." And again in Proverbs--"A word fitly spoken is like 'Apples of Gold' (quince) in pictures of silver." Pliny, who treats at length on the medicinal virtues of the quince says, that the fruit wards off the influence of evil. In the wall paintings and mosaics of Pompeii are almost always to be seen quinces, usually held in the paws of a bear.

By the Greeks and Romans, the quince was held sacred to Venus, who is often depicted with a quince in her right hand. A gift she received from Paris. The "Golden Apples" of Virgil, are said to be quinces, as they were the only "golden" fruit known in his time. (Oranges having been introduced into Italy at the time of the Crusades.)

The fruit, having been dedicated to Venus, was regarded as the symbol of Love, Health and Happiness. Plutarch mentions the bridal custom of a quince being shared by a marriage pair. Quinces sent as presents, or shared, were tokens of Health and Love. This custom was handed down, and throughout the Middle Ages in Europe, quinces were used at every marriage feast.

Some may consider this tradition and folklore irrelevant to our study, but when we learn of the great virtues of this fruit, we shall see why the quince was given such honor, symbolizing harmony, peace and love because of its influence upon the sour acid conditions of the human organism.

Parts Used: Seeds and fruit.

When the seeds are soaked in distilled water, they swell up and form a heavy mucilaginous mass. This mucilage is analogous to, and has practically the same properties as that which is formed from the seeds of flax--linseed.

The seeds somewhat resemble apple-pips in size and appearance. They are of a dark brown color, flattened on both sides, owing to mutual pressure and frequently adhere to each other by a white mucilage which is derived from the epidermal cells of the seed coats. The seed contains two firm, yellowish-white cotyledons which have a faintly bitter taste, resembling that of bitter almonds.

CHEMICAL CONSTITUENTS. The seed contains cydonin, a mucilaginous principle, (C-18, H-28, O-14)--20 percent. Fixed oil, mostly trioleon and tripalmitin-15%, malic acid (C-4, H-6, O-5) carrying, as will be seen, an excess of oxygen, 3 to 4 percent. Proteids containing phosphates, sulphates and chlorides of potassium, calcium and magnesium. All these principles are so intimately associated that the mucilage made with 1 part powdered seed in 50 parts of distilled water contains practically all of the virtues of this plant.

Is there any wonder that the ancients gave such honor and paid so much tribute to the virtues of the fruit and seed of this noble tree.

Malic acid carries its own life giving oxygen and delivers to any part of the organism that needs it. Being non-toxic or poisonous, it may be consumed in quantities sufficient to overcome any shortage without, in the slightest, endangering the tissues as in the commonly used potassium chlorate (K, CL, O-3) which is frequently administered by doctors for the treatment of mercurial salivation, ulcers of the mouth, ulcerated stomach, aphthae, buccal and pharyngeal diphtheria, hemorrhoids, thrush, croup, ozaenae, fetid breath, dysentery, vaginitis, cystitis, scrofula, scarlatina, typhoid fever, cardiac cyanosis, dropsy, blood poisoning and malignant fevers.

This deadly poison converts hemoglobin into methemoglobin, disintegrates red blood corpuscles, producing diarrhea, dyspnea, heart failure, cyanosis, nervous disturbance, jaundiced skin, delirium, coma, acute nephritis and death.

Why in the name of common sense should anyone want to use such a deadly destroyer in order to deliver inorganic oxygen, when malic acid delivers organic oxygen without any danger to the human organism?

MEDICINAL PROPERTIES AND USES: Demulcent, nutrient, emollient, antiseptic, nervine, laxative, vulnerary.

FORMULA No. 51 Mucilage of Quince Seed.

Put one ounce of quince seed (powdered) into 3 pints of distilled water, bring to a boil, then remove from fire and allow to cool. Stir thoroughly, then filter through cheesecloth, using pressure. Bring to boil again and add 2 ounces glycerine stirring it thoroughly till blended. Allow to cool slightly then pour into wide mouthed sterile jar and cover tightly. Keep in a cool place.

DOSE: Adults: A wineglassful to a teacupful 3 or 4 times a day between meals. Children: One tablespoonful to a wineglassful.

NOTE: This mucilage is used extensively for creating bulk in the intestines, in cases of habitual constipation. If a more laxative effect is desired, it may be blended with Cascara Sagrada Bark, by using the following formula:

FORMULA No. 52. Cascara Extract. (half strength) 1 in 2.

4 ounces Cascara Sagrada bark (cut or ground)

1 qt. Distilled water.

Bring to boil, then simmer slowly, covered, for 1 hour; strain, return bark to clean saucepan, add enough water to cover bark, then simmer slowly another 10 min. Combine the two liquors and boil till reduced to 8 ounces. Add 4 oz glycerine and reduce again to 8 ounces. Cool, bottle and keep in a cool place. (This equals 1 in

2). To combine with Formula 51, use 1 teaspoonful of Cascara Extract to a teacupful of Quince Mucilage. Stir well.

DOSE: In chronic constipation, 1 teacupful 2 or 3 times a day, half hour before meals. Regulate dose to suit condition, using more or less Cascara Extract as the case requires. This will be found to be an excellent tonic laxative for chronic cases of long standing, and if persisted in for 3 or 4 months, will completely restore peristalsis. It can do no possible harm in any case, and will correct every curable case of intestinal atrophy and chronic constipation. It will gradually but surely restore health and strength to the intestinal mucosa.

Another remarkable nutrient and restorative for the peristaltic muscles and intestinal mucosa is -

FORMULA No. 53. Acacia and Cascara Compound.

1 pint of Formula No. 46 (Lesson 10, pg. 19), calcined acacia

1 Tablespoonful of Formula No. 52 (Lesson 11, Pg 13 & 14)
Cascara Extract;

This preparation supplies much more calcium than the mucilage of Quince Seed, for two reasons: (1) Mucilage of Quince Seed is 98 percent water, and although extremely valuable it contains much less calcium than acacia. (2) Acacia is much more adhesive and, therefore, clings to the mucosa, giving out its abundance of calcium arabate.

DOSE. One wineglassful 2 or 3 times a day until bowels work freely. Then reduce dose to suit needs.

In our next lesson we will take up the study of Symphitum Officinale (Comfrey), the great healer of bone and flesh, and cell proliferant.

The subject matter in this lesson regarding Arsenic and its antidotes is extremely valuable, and we trust that you will find it helpful in diagnosis and treatment.

LESSON ELEVEN

The question is often asked, "What is the best form in which to administer a remedy?" Since there are many thousands of Herbs and they all differ from each other, either slightly or greatly, this question is not easy to answer. In fact, it cannot be satisfactorily answered by any direct statement, and here are a few reasons, out of hundreds, that might be adduced to prove that this is true.

Many are insoluble in water, others are insoluble in alcohol. Some are soluble only in acids; others in alkalis. Oils, waxes, resins and fats are insoluble in water, but are soluble in alcohol, ether, etc. Some are electrolytes (carriers of electric charges), others are non-electrolytes (do not convey electric charges). It is generally supposed that an ordinary infusion or decoction is the best method of treatment with Herbs, and in many instances this is true. But frequently, it is not so. It will pay us well to give some further consideration to this most important phase of our study.

In Lesson No. 5, Pages 3 and 4, we spoke briefly about the subject of ionization, pointing out that when two or more elements are found in combination in one substance (such as common salt, NaCl) or any other substance containing more than one element--that, while in a dry state, its positive and negative ions are bound together by a tremendous force. But the moment it is put into water (providing it is soluble) the ions separate from each other, and electrolysis takes place. These ions, as we know, are charged particles of oxygen, hydrogen, carbon, nitrogen, calcium, magnesium, potassium, sodium, iron, chlorine, iodine, etc., in endless varieties and combinations.

While the plant is growing, this enormous amount of electric or vital energy is absorbed into the different parts or organs of the plant. It is first generated by the sun, diffused through the atmosphere, the water and the earth, and the plants select what is necessary for their requirements to build acids, alkalis, phosphates, carbonates, chlorides, glycerides, oils, fats, waxes, etc.

In this profoundly wonderful vegetable kingdom that covers the whole earth with beauty, perfume and flavor, there is every conceivable requirement for every living creature, even to the Breath of Life. They arrange themselves into families, choose their own habitation, select their own food, and at present, this is the part we are most vitally interested in. Through a long and tortuous study of the chemistry of the soil and the chemistry of plants, we are able to approximate what we shall find stored away in the leaves, roots, barks and fruits of plants for the purpose of supplying our own bodies with specific material and specific energy

for the replacement of lost elements, heat, etc., to continue a constant renewal of life as fast as we exhaust it. This has not yet been done, and consequently we decline and die. But with more exact knowledge, we shall be able to both live more vitally, and prolong life considerably. Therefore, let us get down to a more thorough study of how to use the stored vital energy in Herbs correctly, and to the greatest advantage.

For a long time it was thought, that electricity caused ionization. By many experiments this has been found to be untrue. There is no chemical change in substance without ionization. Without chemical reaction or change there is no life. Water is the best known medium for causing compounds to split into elements or simpler compounds. (Except possibly peroxide of hydrogen.) This splitting releases the ions, as we explained in Lesson No. 5, and by eating, drinking and breathing them, we either restore and regenerate the life of our bodies, or we poison and destroy them. The reason for this is that the ions we get from some plants or Herbs are non poisonous foods, while others are deadly protoplasmic poisons. We have already given one or two instances of this difference in Lesson No. 1 where it was pointed out that the unripe capsules of the poppy contained many poisonous ions (opium, morphine, etc.) while the seed of the same plant when ripe, contains a nutrient oil but no poison. Again we cited the fact that hydrocyanic acid (HCN) is a deadly poison produced by the action of water on bitter almonds while sweet almonds are non poisonous.

It is the act of solution and not the electric current that causes ionization, and so every solution of an electrolyte (soluble substance) such as salt solution, sea water, urine, or any secretion of the body, contains a greater or less number of free ions. In what is called physiological salt solution (its strength is 0.58%) the amount of dissociation is so great that 84% of the molecules of salt (NaCl) have been changed into the ionic form and but 16% remain as molecules at ordinary temperature. Evidently, since it is the solvent (various) that causes the dissociation (ionization), the nature of the solvent will make a great difference in the amount of dissociation. Water is the best ionizer while alcohol and chloroform are very weak in this respect. The amount of dissociation is also increased by heat. The great importance of this process of dissociation or ionization lies in the fact that no chemical reaction can occur while the substance is in the non-ionized state. The chemical properties are produced by the ions they liberate on dissociation. Acids owe their character to the hydrogen ion, alkalis owe theirs to the hydroxyl ion. (HO). We can appreciate the difference between the ions and the same substance in the non-ionized form if we consider the chemical inertness of hydrogen gas, as compared with a solution of acid which owes its powerful effects to hydrogen ions. Perfectly dry sulphuric acid is absolutely free from the acid properties that characterize it when it contains a little water because, it is not ionized when dry. It is for the same reason that we can have two or more substances together in a dry condition, without reaction, that would immediately react if moist. It is by means of the electrical charges of the ions, that chemical reactions occur; hence, ions must be present to have reactions. Also, it is owing to the presence of ions in the cells of the body, that their chemical processes are

brought about. Now, with one more statement regarding ionization: Not all substances ionize with the same readiness, which indicates a great difference in their properties. The reason why acetic acid is a weaker acid than hydrochloric acid is, that it does not ionize to the same extent, and therefore, an equal quantity of it does not introduce as large a number of hydrogen ions into a solution. Larger molecules, as a rule, ionize less than smaller ones of a similar nature. NOTE: ... Stearic acid ionizes less than acetic acid, and therefore, is a weaker acid.

TO SUM UP: All compounds, both organic and inorganic, are made up of positively and negatively charged ions. When in a dry state, the ions are held together and compose molecules in electrical equilibrium. When dissolved in water or other liquids, the ions are released This is called DISSOCIATION or IONIZATION. No chemical reaction occurs until the ions are released. Electric or vital energy is conveyed through liquids only by ions. The positive charged ions are hydrogen, and the metals, sodium, potassium, etc. The negative charged ions are the radicals, or residues (OH, SOp4, etc.). Water is the greatest ionizer. Alcohol and chloroform are very weak ionizers. Some ions are foods and vitalizers (phosphates, carbonates, etc.) Other ions are protoplasmic poisons (arsenides, cyanides, etc.) Therefore, a thorough knowledge of the chemistry of Herbs is most necessary in order to avoid using any injurious or poisonous ions which they might contain. It is through the lack of this knowledge that many doctors make their outlandish mistakes, and thereby create approximately 70 percent of all diseases.

We will endeavor to guide you along this line, and show you the best methods of preparation and administration of Herbs for maximum results.

Last week we started to give you a description of some of the poisons being used by medical doctors in their treatments. Our purpose is, to make you aware of the symptoms produced by these poisons, then give you the best known method of treating these cases. Without some knowledge along this line it is easy to make mistakes and, perhaps treat for the wrong condition.

ANTIMONY: A metallic element. Latin name, Stibium. Chemical symbol, SB. It is brittle, bluish-white and has a crystalline structure. It forms antimonous and antimonic compounds. Its name is derived from the Greek Monk's Bane, meaning "poison's Monk." It is used extensively combined with potassium-tartrate, called tartar emetic, for the treatment of many diseases, as a sedative, diaphoretic, expectorant, anti-phlogistic and emetic; for febrile complaints, first stage of bronchitis, pneumonia, pleurisy, acute rheumatism, tonsillitis, mammary abscess, hernia, ophthalmia, mumps, skin affections (urtica, eczema, psoriasis) dropsy, salivation, meningitis, epilepsy, chorea, mania, convulsions, rigid os uteri, dislocations naevi, varicose veins, etc.

EXTERNALLY: When applied in strong solution or ointment causes pustular eruptions as in small-pox, producing scabs and indelible scars.

POISONING: Similar to arsenic but less marked. Metallic taste in mouth, abdominal pain, incessant retching, praecordial cramps, burning heat, distended epigastrium, colic, frequent watery stools, dry throat, difficult deglutition, salivation, skin cool, clammy; muscles relaxed, pulse feeble, thready; slow respiration, scanty bloody urin, death may be preceded by stupor, mild delirium or convulsions. The fatal dose ranges from 2 to 5 grains. (This is according to Dr. David M. R. Culbreth, PhD. M.D., Professor of Botany, Materia Medica and Pharmacognosy in the Maryland College of Pharmacy, Department of the University of Maryland, and author of Standard Medical Works.) In spite of the statement made by this eminent authority (that 2 to 5 grains of tartar emetic have killed), this wise (?) gentleman recommends this hellish invention of Paracelsus, and that it be administered as an emetic in doses of ½ grain, every 20 minutes in warm water until vomiting occurs. This means that a lethal dose is given in from one to two hours, and that because of it many people are annually doomed to an agonizing death. His holiness, (the man who makes no mistakes) is then called in to sign the death certificate, which reads "acute bronchial pneumonia" or "acute meningitis" or "acute tonsillitis" or whatever comes first into his callous mind. Then with a professional sigh, he raises his saintly eyes to heaven and says as he pockets a fat check, "so sad", "too bad". "You should have called me in earlier." Nobody thinks of questioning his veracity, his honesty or his knowledge. He is an orthodox licensed M.D., and quite above reproach.

Are we wasting your time, or are you learning the horrible truths, you should have known long ago? We are teaching you how to recognize the symptoms of this so-called disease, which is nothing more than chronic poisoning brought about by methods we have just described.

If our scathing, sarcastic and condemnatory remarks seem to be far-fetched and unnecessary, let me remind you that your own mother, father, wife or child may be next to come under this damnable influence, to suffer and die just as thousands are doing at this very moment.

Gentlemen, something must be done to stop this horrible holocaust of wholesale murder by a group of soulless criminals whom we have placed in power and allowed to pass laws that prevent anyone from interfering with them.

There is a law of retribution which the great Emancipator (Jesus) explained: "As a man soweth, so shall he reap." We urge you to align yourself with that law. First learn all you can about the poisons used by this infernal Brotherhood, then talk about it, write about it, expose it through the columns of the press, magazines, books, etc. Freedom of speech is your privilege and God-given birth-right. Don't be afraid. All honest thinking Christians will be with you. All honest-thinking attorneys, judges, politicians, educators, even honest doctors, and the people in general will be glad and happy to support you when they know the truth, as taught in these lessons; and you will inevitably become an emancipator yourself, even as Jesus, Gustave Bohme, Hippocrates, Pythagoras,

Plato, Machiavelli, Galen, Culpepper, Washington, Lincoln, Samuel Thompson, Henry Box, etc, etc.

Fear is the result of ignorance, the constant companion of the craven; and fear is in the hearts of 90% of the doctors today because they know that human nature can stand only so much, and they have had their day; even as Rome and Spain and other great powers all have had their day. They are deadly afraid of publicity because they know that when it comes, their number is up.

How are they going to compete with you when the people come to know the truth? They have no science. You have the science of the ages. The Science of Natural Healing, by natural methods and natural remedies -- Herbs -- which every animal and uncivilized native knows to be infallible, and which will overcome even the poisoning practice of the arch enemies of mankind.

Study the symptoms produced by antimony, arsenic, etc., as given you in this lesson (pg. 5 and 6) thoroughly until you know them. Use the Herbal remedies recommended, and you will not be disappointed.

Now let us continue our study of - DEMULCENTS.

COMFREY: Latin name, SYMPHYTUM OFFICANALE.

Natural Order: Boraginaceae. This is one of Nature's great master-pieces, and one of the most important therapeutic agents even discovered by man. It has been used for thousands of years, and during that time by millions of people.

SYNONYMS: Comfrey, consound, knitbone, bruisewort, yalluc (Saxon), slippery root, black root, etc.

HABITAT: A native of Europe, but has become naturalized in America and grows in moist soil and low ground in almost all parts of U.S.

PARTS USED: Roots and Leaves.

CONSTITUENTS: Mucilage 70 to 80%, tannin, asparagine, sodium, potassium, calcium, phosphorus, and from 0-5 to 0-7% of Allentoin. Iron and a little starch.

ALLANTOIN, (C-4, H-6, N-4, O-3), is a most remarkable substance found plentifully in the urine of pregnant women and animals, also in the urine of newly born babies. It has been found in the germ of wheat, in French peas and several other legumes. Allantoin is undoubtedly a cell proliferant, having something to do with genesis of cells, and it seems to act on both animal and vegetable cells. It has been injected into hyacinth bulbs and caused them to flower more rapidly.

PROPERTIES: Demulcent, nutrient, astringent, vulnerary, expectorant, haemostatic.

The reputation of comfrey as a vulnerary, from ancient times right up to the present is unique, and it will be worth our while to spend a few minutes glancing at its history and folklore.

In an old book written by the English Herbalist, Baker (1567), occurs the following short reference to comfrey: "The water of the greater comfrie druncke helpeth such as are bursten and that have broken the bone of the legge."

The world famous English Herbalist, Culpepper of the Middle Ages says, "The great comfrey root boiled in water or wine and the decoction drank, heals inward hurts, bruises, wounds, and ulcers of the lungs and causes the phlegm that oppresses him to be spit-forth. A syrup made thereof is very effectual in inward hurts and the distilled water for the same purpose also and for outward wounds or sores in the fleshy or sinewy parts of the body and to abate the fits of agues and to allay the sharpness of humours. A decoction of the leaves is good for those purposes, but not so effectual as the roots. The roots being outwardly applied, cure fresh wounds and cuts immediately, being bruised and laid thereto and is specially good for ruptures and broken bones. So powerful to consolidate and knit together that if they be boiled with dissevered pieces of flesh in a pot, it will join them together again. The roots of comfrey taken fresh, beaten small and spread upon leather and laid on any place troubled with the gout, presently gives ease, and applied in the same manner it eases pain in the joints and tends to heal running ulcers, gangrenes, mortifications for which it hath by often experience been found helpful."

So, all through the Middle Ages and right up to the present, comfrey has been extolled for its great curative properties. Dr. MacAlister, an English chemist and scientist was quoted in the English Medical Journal, January 6th, 1912, as saying, "Allantoin (from comfrey root) in aqueous solution in strengths of 0.3%, has a powerful action in strengthening epithelial formations and is a valuable remedy not only in external ulceration, but also in ulcers of the stomach and duodenum."

The discovery of allantoin in comfrey root and the investigation of its cell proliferating action has led to the belief that comfrey root owes its powerful healing virtues to allantoin. The Chemist and Druggist, of August 13th, 1921, published an interesting article on comfrey as follows:

"Allantoin is a fresh instance of the good judgments of our rustics, especially of old times, with regard to the virtues of plants. The great comfrey, or consound, though it was official with us down to the middle of the 18th Century, never had a prominent place in professional practice, but our Herbalists were loud in its praise and the Country Cullers of Simples held it almost infallible as an external and internal remedy for wounds, bruises and ulcers, for phlegm, for spitting of blood, ruptures, hemorrhoids, etc. --- for ulcers of the stomach, and liver especially, the root was regarded as being of sovereign virtue. It is precisely

for such complaints as these that allantoin obtained from the rhizome of the plant is now prescribed."

The world famous English Herbalist, Henry Box, in his book says, "A question often asked--What is the best thing for spitting of blood from the lungs?". "Comfrey root. I have never known it to fail. I am glad to learn that several private persons are distributing it among those suffering from bleeding of the lungs and stomach or the bursting of other blood vessels and they too state that it never fails." Again he says, "My consumptive mother had a large cavity in her left lung. The hemorrhage was often alarming and there was no hope. I had the happiness of curing her with comfrey root and clowns woundwort, a strong decoction almost as thick as treacle was taken freely. It wrought a complete cure."

The following short quotations are from the English Medical publication called "The Lancet" (1/99 910) "Symphytum Officinale"-- The comfrey plant and root boiled, as a poultice for sarcomatous or cancerous tumors: One such cured, and in the same issue on page 939 --for haemoptysis and kidney disease with blood in the urine, as a decoction or syrup.

I have taken up this valuable time in order to firmly impress upon your mind some facts regarding this truly remarkable Herb, Comfrey. And now to its uses, formulas, methods of preparation and administration.

FORMULA No. 54: Mucilage of Comfrey Root.

Into 2 quarts of distilled water, put 2 ounces of sodium phosphate. Stir until dissolved. Heat if necessary. Put 4 ounces of comfrey root (cut) into above fluid and let stand for 4 hours, stirring occasionally. Boil slowly for 10 minutes. Strain through a fine strainer, put into wide mouthed bottles or jars and keep in a cool place. Add honey or molasses if desired.

DOSE: From a wineglassful to a teacupful. For wounds, bruises, broken bones, torn ligaments, sprains, hemorrhage of the lungs, stomach, bowels, kidneys or any internal or external part, comfrey has no equal. It is perfectly harmless and may be taken as often and as much as seems necessary. In hemorrhage of the lungs it should be given often, and in large doses. It will soothe and heal when everything else fails. For delicate children with diarrhea, summer complaint, cough, give sweetened with honey, and in tablespoonful doses, frequently. It will be found wonderfully strengthening, nourishing, soothing, and quickly and effectively healing without danger. For tuberculosis and wasting diseases, when combined with garlic, is the best remedy ever discovered. It will cure all curable cases, and in the incurable ones will soothe, comfort, support the heart, check hemorrhage, ease cough, help breathing and check diarrhea. It is not contra-indicated in inflammations as most astringents. In cases of internal injury, broken bones, torn ligaments, lacerated tissue, it is the quickest, safest and most certain healer. It causes broken bones to knit together in one half the usual time. Combined with Burdock Root, it is a certain and speedy cure for ulcerated stomach, intestines,

larynx, mouth, tonsils or any part of the whole organism. For old ulcers, varicose veins, old wounds that will not heal, it is Nature's greatest and most beneficial remedy.

FORMULA No. 55. Consumption Remedy.

To every pint of Formula No. 54 (Mucilage of Comfrey) add one tablespoonful of fresh garlic juice. Stir well or shake into a uniform mixture.

DOSE: From a wineglassful to a teacupful every 4 hours, according to the severity of the case and the ability of the patient to assimilate. When there is hemorrhage and an antipathy to garlic juice, use the following. Consumption Remedy No. 2.

FORMULA No. 56. 4 ounces Elecampane Root (cut)

1½ pints distilled water

Boil vigorously for 15 minutes. Strain and press and allow to cool. Mix one pint of comfrey mucilage, and one pint of elecampane and 1 tablespoonful of garlic juice. Shake well and sweeten with honey.

DOSE: 1 teacupful 3 or 4 times a day. More may be taken, but only this much is necessary to master the disease. Either formula 55 or 56 will cure most cases of tuberculosis, and cannot possibly do any harm in any case.

The insulin in elecampane, is an aromatic substance resembling starch. It is stimulating, expectorant, and antiseptic. Tends to cover the odor of garlic, and has a strong affinity for the lungs. It is exceedingly virtuous in coughs and all pulmonary complaints.

FORMULA No. 57. For ulcers in any part of body.

4 ounces Burdock Root (contains an abundance of inulin)

1 quart distilled water

Boil briskly for 15 minutes. Strain and reduce to 1 pint. When cool, add 1 pint of comfrey mucilage (Formula No. 54), shake well. Sweeten.

DOSE: 1 wineglassful to half a teacupful 3 or 4 times a day. For outward application, saturate lint or cotton and apply. Should be changed often and repeated. Keep moist. Do not allow it to dry before removing. The degree of heat and inflammation will determine the length of time it will take to become dry. Many cancers have been cured by this remedy. Also many bad cases of syphilis and skin diseases.

Comfrey enters into several other remarkable formulas which will be given later. But, right here, we will give you a formula into which it enters, and we believe this formula to be far more nourishing, emollient and healing than cod-liver oil or any food extract or concentrate ever discovered. For weakly and delicate children with poor digestive powers, as a bone and flesh builder, and as a general body nutrient, it is without doubt the best there is.

FORMULA No. 58. Nutrient, for the Undernourished, or Wasting diseases.

2 ounces Elecampane Root, (cut); 1 pint Sweet Almond Oil. Combine the two and let stand in a fairly warm place, covered, 4 hours. Do not allow to boil.

An easy way to do this is to use a double boiler. Keep the water hot but don't boil it. Stir thoroughly every hour, and add to the water if necessary. After 4 hours, allow the water to boil for 10 minutes. Then remove the oil and filter through a fine cotton cloth. (A clean sugar bag is ideal). Allow to drip until cool enough to handle then squeeze out all the oil. Let stand until cold.

NOTE: Elecampane contains Helenin (a bitter yellow crystalline principle (C-6, H-8, O) which is not soluble in water but is soluble in oils and alcohol). It is stomachic, antiseptic and germicidal and has been used with great success as a local application in diphtheria, and internally in the same disease. It has proved very successful in tuberculosis and whooping cough. Elecampane also contains an aromatic oil, wax and resin. When we boil the root in water, we do not extract these valuable principles, but in this way we do. To each pint of this oil, (Formula No. 58) add 1 qt. of Formula No. 54 (Mucilage of Comfrey). Shake well until the oil is uniformly suspended in the mucilage.

DOSE: One tablespoonful to a wineglassful according to patient's ability to digest. It forms a pleasant aromatic emulsion which, when sweetened with honey and well shaken, is very acceptable to delicate stomachs and the strength it imparts is almost immediately felt. The dose for children is from 1 teaspoonful to a dessert-spoonful or more (according to age), several times a day. The bottle should be well shaken each time before using.

In no case can this remedy do any harm, and in all cases of wasting diseases, malnutrition, rickets, glandular insufficiency, nervous debility, lassitude and muscular weakness, it will be found to be amazingly beneficial. After severe and exhaustive illness, while a patient is convalescing, this magnificent formula is the remedy par excellence: It is primarily a cell-multiplier (due to allantoin), and as it contains glycerophosphates of calcium, potassium and magnesium, it will be seen why it is such an extraordinary nutrient.

If this divinely wonderful remedy could be given to every child or adult suffering from tuberculosis and malnutritional diseases, within one year, millions of lives could be saved, and untold suffering could be avoided.

DEMULCENTS. (Continued)

It has often been said, that out of the ocean commeth all Life, and this is true. The ocean contains every element that manifests as life on earth; and because this great body of water is the ionizer, and that everything soluble in it is ionized, (and remember, no chemical change is possible without ionization), and though this is a repetition, it is necessary here to emphasize the fact, that every element that can be utilized in our life process is to be found in the ocean; and the Herbs growing therein are most necessary to the process of healthy metabolism.

One of the wonder herbs which grows in the ocean has already been pointed out as being a most valuable food, as well as a therapeutic agent. Since thus far we touched on it only briefly, we will now con- [?] and [?] on it. This herb is - IRISH MOSS.

IRISH MOSS: Latin Name, Chondrus Crispus (Linn.)

SYNONYMS: Carrageen, chondrus, carrahan, pearl moss.

NATURAL ORDER: Algae.

HABITAT: Atlantic Ocean, New England, Irish Coast.

Chondrus: From the Greek - Cartilage, Gristle.

Crispus: From the Latin - curled, crumpled.

Grows on submerged rocks, being attached by a small disk. When fresh, the frond is from 6 to 12 inches long. More or less greenish, but purplish upon drying, unless bleached. Consists of a slender, somewhat flattened base, one half the length of the entire frond, which, after repeated forking, terminates in several palmate, emarginate or two-lobed segments; usually in light yellow or yellowish white matted masses, less than 6 inches long, translucent, sometimes with fruit bodies imbedded near the apex of segments. Cartilaginous, elastic; odor seaweedlike. Taste, mucilaginous, saline. One part boiled in 30 parts water yields a solution which gelatinizes upon cooling. It is not colored blue by iodine, showing it does not contain starch.

CHEMICAL CONSTITUENTS: Mucilage 55 to 90%. Organic minerals 14%, carbon, oxygen, hydrogen, nitrogen, sulphur, chlorine, bromine, fluorine, iodine, phosphorus, sodium, potassium, calcium, silica and magnesium. NOTE: There are only about 18 elements composing the human body, so far as we know now, and it will be noted that this Herb contains 15 of them. They exist in the forms of chlorides of sodium, calcium, potassium and magnesium; also as sulphates, phosphates, iodides, bromides and fluorides of the same metals. (The last three only in minute quantities). It also contains albuminoids 9%, cellulose 2%, and water 18%.

NOTE: So far, chemical analysis has not found any iron, lithium or manganese in this Herb, but please note that they are the only missing three to complete the chemistry of the whole human body.

It should be plain to all that, truly, all life comes from the ocean. The mucilage found so abundantly in chondrus (which is the name we prefer) contains a kind of pectin which exists in ripe fruits and vegetable juices generally, and it is called carrageenin or carrageen. 9% of it is soluble in cold water, and practically all of it in hot water. It differs from gum, because alcohol does not precipitate it from aqueous solution, from starch, because iodine does not turn it blue. With diluted sulphuric acid, it yields galactose (sugar). It has only slight adhesive powers, and is frequently substituted for acacia (in powdered form) under the name of "imitation gum arabic".

PROPERTIES AND USES: Chondrus is heavily laden with sulphates, all of them in soluble form. Its calcium sulphate does wonderful work in the organism, through its power to clean out any accumulation of heteroplasm or abnormal growths in the interstices of normal tissue. It causes the infiltrated parts to discharge their contents readily, so that they may not lay dormant, and slowly decay. This is the main cause of cancer, which feeds on decaying organic matter. Epithelial cells cannot remain healthy without calcium sulphate in sufficient quantity for their need.

Its potassium sulphate is an oxygen carrier, with a powerful affinity for the skin, and tends to keep the skin supplied with material for its healthy functioning.

Its sodium sulphate is truly a dropsical remedy, because it tends to eliminate water, produced by the oxidation of organic matter which lodges in the intercellular fluids.

Its phosphates of calcium, potassium, sodium and magnesium, feed the bones, brain, liver and flesh respectively.

Its chloride of potassium, dissolves fibrin, and so relieves all catarrhs, while its chloride of sodium regulates the necessary amount of water in the system, which we know is the great ionizer and producer of vito-chemical changes in the fluids of the body. Finally, its magnesium phosphate supplies material for the nourishment of muscle. Its iodides and fluorides require more elaboration. (See later.) When we get through we have covered 5/6 of all requirements of the body, so far as physical substance is concerned.

There is such an immense amount of subject matter concerning this Herb, that volumes could be written without exhausting it. Only in recent years has it received any particular attention and that, of course, has not been by medical doctors, but by private chemical investigators, with the result, that it has come into pure-food stores and drug stores under proprietary names such as Kelp-O-Malt, and several other copyright names, and is extensively recommended for a

thousand-and-one affections. Its advertisers state that it contains Vitamins A, B, C, D and P, D, Q, which of course, does not tell us anything except that it is good for whatever ails you, from foot and mouth disease to bunions; but joking aside, chondrus is a very wonderful Herb, and some of the claims made for it are quite true. Its chemistry reveals that it is strongly alkaline, and that its alkalinity is not dependent upon bicarbonate of soda, or potash and citric acid, like the much-advertised alkalizers are. They only serve the purpose of temporary relief of acid stomach, and if they get into the blood, they destroy its hemoglobin. Chondrus, on the other hand, presents every cell in the body with sweet organic alkaline salts of four out of seven metals which nature uses to build and vitalize the human body. It does not lower or devitalize. On the contrary, it purifies, strengthens and vitalizes nearly nine tenths of the cellular structure and vital fluids of the whole organism. Let us look a little closer into its chemistry and we shall find several very good reasons for this. It is well known that the thyroid and other glands require minute quantities of iodine for their healthy functioning. Chondrus supplies just such minute quantities in the form of sodium and potassium iodides. (NA-1) and (E-1). For some inscrutable reason, this mere trace of iodine works wonders on the glandular system, often changing the whole chemistry from disease to health.

Again that mysterious element fluorine unites with the metal calcium to form calcium fluoride (CAF-2). This is found in the surface of bone, the enamel of teeth, the walls of blood vessels, in all connective tissues and elastic fibers. The tensile strength, resiliency, and elasticity of the muscular system, the vascular system, the lymphatic system, the osseous system and the connective tissues of the nervous system all largely depend upon relatively minute quantities of calcium fluoride. Just a fractional part of the whole, but nevertheless, absolutely necessary. When there is the least shortage of calcium fluoride, a long series of disastrous effects are started. If the shortage occurs in the periosteum, periostitis sets in (nature is trying to supply the deficiency.) The next stage is periosteosteomyelitis. Usually this results in abnormal bone growth, periosteophyma. When the shortage occurs in the enamel of teeth, decay quickly results. If in the vascular system, a very large number of so-called diseases arise which would take months to describe. A few examples will suffice: enlarged and flaccid heart, aneurisms, varicose veins, veinules, capillaries, etc., apoplexy, hemorrhage of the lungs or any other part, relaxation of the abdominal walls with sagging of the whole abdominal viscera, prolapsed uterus and anus, flaccidity of the whole muscular system. Chronic wrinkling of the skin, particularly on the face and neck. Indurated glands, lumpy exudations and growths on the surface of bone, encysted tumors, hard swellings, great weakness and hundreds of other dreadful conditions too numerous to mention.

All this is principally brought about through a deficiency of that dynamic, super radio-active element, FLUORINE, combined with its great stabilizer, CALCIUM.

When we think that a simple marine plant like chondrus (Irish Moss) contains this mighty compound, even though in minute quantities, we are compelled to almost stand in awe of it. And we wonder where the 99 9/10 per cent of the brains of the millions of medicos could have been all through the years, and down to this present time, to have overlooked or ignored this important fact.

Dear student, you have received in this lesson information that is not possessed by even one per cent of the medical scientists of today, and yet, we have but scratched the surface for the time being, regarding this magnificent therapeutic agent.

In our next lesson, we will take up the thread, and give you the many uses to which chondrus can be put, in the treatment of chronic disease.

LESSON TWELVE

In the opening chapter of Genesis, we read -- "In the beginning the Earth (matter) was void and without form, and darkness was upon the face of the deep. The Spirit of God (life) moved upon the face of the waters, and God said (sound vibration) Let there be Light and there was light (visibility)." It goes without saying that the human mind cannot grasp the real meaning of this profound occult statement, but there is a phenomenon in nature which, when seen, brings the above statement to minds with a tendency to meditate on the mystery and grandeur of the great panorama of natural phenomena.

Those of you who have crossed the ocean, have probably looked over the immense deep on a dark night, when visibility from the above is almost nil, and have seen a soft phosphorescent glow of light moving on the face of the waters. It is the Spirit of Life (minute living creatures in countless numbers) moving upon the surface and creating light and darkness; giving out radiant energy (ions of phosphorus and fluorine) into the womb of life (the ocean), and the breath of life (the atmosphere).

Since we are studying marine plants that absorb and store this radiant energy, for us and all living creatures, we thought the simile or similitude of this natural phenomenon, with the Biblical story of Creation in a limited sense, was relevant to our subject.

As a matter of fact, this transmutation of radiant energy or fluorescent light radiation, is constantly going on in every realm of life on Earth, but like the Aurora Borealis, it can be seen plainly only in darkness. And, as we know, that the beginning of genesis of life on Earth originates in the ocean; in other words, the ocean is the mother of all life on Earth. It is an inspiring sight to the thinking mind to actually see the essence of the milk of life coming out from the mighty bosom of the ocean.

In Lesson No. 12, we gave you much detailed information regarding that most extraordinary thalphyte, *chondrus crispus* (Irish moss), and its remarkable chemistry.

So varied and important are its applications and uses, that we had, perforce, to bring it over to this lesson, and continue where we left off. One of the most amazing things about it is its simplicity of structure, and its complicated chemistry. It is one of the simplest and lowest orders of vegetable life, there being very little or no difference between root, stem, or leaf. In fact, it has no root,

leaves or flowers. It is attached to the rocks on which it grows beneath the surface of the ocean, by small disks. No one would suspect that in those simple branching stems or fronds, there are stored away more elements and compounds used in the normal process of animal and human life, than is found in any plant growing on land. In the last lesson we elaborated on its chemistry, and here we are going to tell you how to use it and for what.

When disease is caused by the shortage of one or more of the elements or compounds that make up the human body, which it frequently is, a knowledge of the chemistry of the body in health will enable us, with a considerable degree of accuracy, to read the symptoms of various diseases caused by the deficiency. A knowledge of the chemistry of Herbs will enable us to supply that deficiency and eliminate the disease. There is no other way, either to understand these forms of ill health, or to eradicate them, except by first recognizing the lack, and then supplying the missing material. Just as a rose collapses without sufficient water, so will bone collapse without sufficient calcium phosphate; blood without sufficient iron, brain without sufficient potassium phosphate, heart without sufficient calcium chloride. All cells will decay and produce pus without sufficient sulphur. The lungs will collapse without enough oxygen. The hair will die without silica. The glands will cease to function without iodine. The skin will shrink and die without potash sulphate and finally, the connective tissues throughout the whole system will atrophy and die without calcium fluoride. Last week we picture a long chain of disastrous afflictions caused by a deficiency of this last named compound, calcium fluoride, and we also informed you that *chondrus crispus* (Irish Moss) contained it in minute quantities. No chemical analysis, to date, has found calcium fluoride in *chondrus*, so how can we know it to be there? The answer is "by inference". How do we know that matter is composed of atoms? No one has ever seen an atom, and probably never will, but we know that matter is atomic by studying the phenomena of chemical change. The results obtained prove the presence of atoms; and by the same process of reasoning, we know the presence of calcium fluoride in *chondrus*. Here are a few reasons for our belief:

1. The ocean is the natural home of the halogens (chlorine, iodine, fluorine and bromine).
2. Fluorine unites with every element except oxygen, and is found in many of the tissues of the body, as is calcium fluoride.
3. Every life element is found in seawater and marine plants.
4. *Chondrus* contains more elements than any other plant.
5. The very name "*chondrus*" means cartilage, or gristle.
6. Torn ligaments are quickly healed by *chondrus* and comfrey.

7. Varicose veins and many other symptoms of weakened and collapsed connective and elastic fibers have been restored to health and strength by chondrus.

Therefore, in view of these several facts, we must infer that calcium fluoride in exceedingly minute quantities exists in chondrus. It is evidently too fractional to detect by chemical analysis.

FORMULA No. 59.

1 ounce of chondrus crispus (cut)

1 ounce of cetraria (Iceland moss) (cut)

Put into 3 pints of distilled water and boil for 15 minutes. Strain and add to the liquid 1 pound black molasses and 8 ounces glycerine. Boil slowly for 5 to 10 minutes. Skim as the seum arises. ? from heat and while still warm, pour into wide mouth bottles or jars and keep in a cool place.

DOSE: One wineglassful or more every 2 or 3 hours. Children less according to age. This is one of the very best alkaline and nutrient tonics that nature produces. Chondrus, itself, is very wonderful but cetraria contains fumaric acid (C-4, H-4, O-4), which is even a greater oxidizer than malic acid, besides which, it contains cetrarin, a bitter tonic, which augments the reaction of the cells to all the other valuable ingredients contained in this simple and remarkable formula. For an acid condition, (acidosis), dyspepsia, sour stomach, halitosis, coated tongue, decaying teeth, catarrh, internal ulcerations, tumors, cancers, exudations from any part, swollen joints or glands, weak lungs, coughs, internal injuries, dysentery, diarrhea, kidney and bladder affections, tuberculosis, scrofula, goitre, varicose veins and ulcers, arthritis, rheumatism, prolapsus uteri, muscular weakness, enlargement of the heart, (with lycopus, See Lesson #10, Page 8), tonsillitis, appendicitis, (elder and mint also in acute appendicitis, -see Lesson #4 and a tonic during convalescence from chronic disease and general exhaustion.

FORMULA NO: 60. Electric nerve stimulant, vitalizer.

1 ounce chondrus crispus (whole)

1 ounce bayberry bark (*Myrica cerifera*) (cut)

4 ounces prickly ash bark (*Xanthoxylum fraxineum*) (cut)

Put all into 2 quarts of distilled water. Stir well, then let stand for 2 hours with occasional stirring. Boil for 30 minutes and strain while still hot. To the strained liquid add 1 pint of black molasses, and 1 pint glycerine. Boil slowly for 5 minutes, with constant stirring. Cool and bottle.

This is a powerful vitalizer of the nervous system; particularly a stimulant and sialagogue to the nerves controlling speech, salivation, and deglutition. Also stimulant, digestive, hepatic and peristaltic. Excellent for partially paralyzed nerves of the mucus membrane. Has proved successful in chronic indigestion, lethargy, and atrophy of the stomach and digestive system in general. Exceedingly good for poor circulation, cold hands and feet, spasmodic affections, epilepsy, Saint Vitus dance, ague, etc.

NOTE: On account of its energetic stimulant properties, prickly ash bark produces, when swallowed, a sense of heat in the stomach, with a more or less general excitement, and tendency to perspiration. It is a prompt remedy for nervous headache and toothache. (This herb will be fully described later.)

DOSE: One wineglassful 3 or 4 times a day, between meals. Children, less according to age.

DEMULCENTS: (Continued)

Iceland Moss. *Cetraria Islandica*. N. O. Lichenes.

In spite of its name, *Cetraria* is not a moss, but a lichen. It is found growing on barren stony ground, in the northern hemisphere (North America, Iceland, etc.) The thallus is from 2 to 4 inches long, foliaceous, fringed and channeled lobes, brownish above, whitish beneath, brittle, inodorous, taste - mucilaginous, bitter.

CHEMICAL CONSTITUENTS: Lichenin (lichen starch) (C-6, H-10, O-5). Lichenoid 30 to 70 percent. Lichen stearic acid, (C-14, H-34, O-30) 2 to 3 percent. Thallochlor (a greenish coloring matter), Cetrarin, a bitter principle, splitting into cetraric acid, (C-18, H-16, O-8). Sugar 3.6 percent, gum 3.7 percent, fumeric acid (lichenic acid) (C-4, H-4, O-4), tartaric acid, (C-4, H-6, O-6). Oxalic acid (C-2, H-2, O-4) is the most powerful oxidizing acid in nature and in inorganic form is very poisonous. (See Lesson #1, pg 3).

It is evident that *cetraria* (Iceland moss) is quite different in chemical composition to *chondrus* (Irish moss), carrying, as it does, several oxy-acids which rouses the system to activity much the same way as bitters do; also gentian and horehound. *Cetraria* is a fine demulcent, nutrient, tonic and expectorant. It is best given as a decoction.

FORMULA No. 61. Decoction of Iceland Moss (*Cetraria*)

1 ounce Iceland Moss (cut)

1½ pints distilled water

Let the Iceland moss stand in the water for 1 hour. Stir and boil for 15 minutes. Strain, cool and add 25 percent glycerine.

DOSE: A wineglassful 3 or 4 times a day. Children, 1 dessertspoonful to a tablespoonful with honey.

Used with success in pulmonary affections, chronic catarrh, bronchitis, consumption, chronic diarrhea and dysentery.

While dealing with mucilaginous Herbs, it will be in order to acquaint you with some facts regarding a universally used mucilage. It is commonly called ----

TRAGACANTH GUM. Astragalus Gummifer. Natural order: - Leguminosae.

Parts used: Gummy exudations. HABITAT: Asia Minor, Persia, Kurdistan. This plant is a small branching thorny shrub, the stem of which exudes the gum. Vertical slits giving off flat ribbon-shaped pieces, and punctures giving tears. These have a horny appearance, are nearly colorless or faintly yellow, marked with a number of concentric ridges. The flakes break with a short fracture, odorless and nearly tasteless. Only about 8 to 10 percent is soluble in water.

CHEMICAL CONSTITUENTS: We are not going to elaborate the chemistry of this gum in detail for two reasons. 1. Because its chemical analysis is of such a technical and complicated nature that it would not be understood. 2. Because it produces salts of barium and silver, both of which are true poisons, and therefore we do not either use or recommend it for internal or external treatment. (See later information on silver and barium salts). NOTE: An example of its complicated nature, according to recognized chemical analysts, is the following complicated nonsense. It contains 29 letters. Polyarabinaubrigatac-tangeddic acids, alpha tragacanthanxylan-bassoric acid, beta-tragacan-thanxylan-bassoric acid. Please note that the first of these acids contains 29 letters and tells us nothing. The second contains 25 and the third 24 respectively, yet not one of them conveys the slightest idea of what it's all about. The thing we are most concerned about is that when it contacts with alkalis it produces, sparingly, soluble salts of silver and barium. Let's see just what this means.

SILVER: SYMBOL--AG (ARGENTUM). Silver is well known as a white metal. very malleable and ductile. It is the best known conductor of heat and electricity. It is not acted upon by pure air, but is blackened by air in which there is a trace of sulphur-anhydride, commonly called sulphuretted hydrogen, (H₂S). Silver combines directly with chlorine, iodine, bromine, sulphur, phosphorus, arsenic, nitrogen, etc. It not only exists as a white metal, but in several allotropic forms, like phosphorus and sulphur. In one of these forms, it is a brilliant metal bluish green in color and dissolves in water producing a deep red solution. In another allotropic form, it is of the color of burnished gold when dry, and in still another form, it has a bluish green color, but is insoluble in water.

Very dilute mineral acids, hydrochloric, sulphuric, etc., immediately convert these modifications into the normal greyish-white silver without any evolution of gas.

Any of the silver salts are deadly protoplasmic poisons, though silver nitrate, cyanide, argyrol and iodide are all favorite so-called remedies of the doctors, and are used all over the civilized world wherever there is an allopathic physician. Thousands of tons of silver salts are used every year, both internally and externally, in the treatment of many diseases. According to a well-known Standard Textbook on Materia Medica and Pharmacology (Culbreth), silver nitrate is an alterative, stimulant, astringent, haemostatic, escharotic and sedative. It is used for epilepsy, chronic spinal inflammation, locomotor ataxia, spasmodic tabes, ulceration of the alimentary tract, subacute gastritis, pyrosis, ulcers of the stomach, chronic diarrhea, catarrh of the gall-duct, typhoid fever, neuralgia, dysentery, cholera, vomiting in pregnancy, chronic jaundice, abnormal heart action, bronchitis, syphilis, gonorrhea, etc. Externally: Diphtheritic exudations, croup, chronic ulceration, simple inflammation, chronic laryngitis, aphonia, whooping cough, speakers' sore throat, tubercular tonsillitis, syphilitic tonsillitis, enlarged lymphatic glands, abscesses, iritis, conjunctivitis, sciatica, hemorrhages from leech bites, corneal ulcers, bed sores, poison and other wounds, mercurial sore mouth, chancre, small pox, herpes, intertrigo, burns, erysipelas, gonorrhea, leucorrhoea, otorrhoea, inflammation of the neck of the bladder, vesical catarrh, urethral strictures, involuntary seminal emissions, enlarged prostate, corns, and rectal ascarides.

Also used for making indelible ink and dyes for the hair. When used on the hair for a long time, the system absorbs sufficient silver to produce poisonous symptoms with permanent constitutional weakness. What an admittal! What a stupendous and ridiculous contradiction! First this leading light in the medical world says it is an alterative, stimulant, astringent, haemostatic and sedative. Next he admits its common use, both inside and outside, by doctors in the treatment of no less than 55 different diseases. Then, this magnanimous individual (a magnificent example of the mental aberrations of the medical mind) calmly goes on to state that even putting this foreign preparation (silver nitrate) to the system, on the hair for some time, is absorbed by the system causing poisonous symptoms and permanent constitutional weakness. Can the spheres breathe after this? Can human intelligence stand by and allow such a condition of things to exist in civilization and in the name of medical science?

You, Ladies and Gentlemen, who aspire to become true physicians to relieve the suffering and heal the sick, must be made aware of this horrible thing, because if you do not know the symptoms and what causes them, how are you going to treat them correctly and intelligently?

So, do we urge you to pay particularly close attention to the following indisputable facts:

SYMPTOMS PRODUCED BY SILVER NITRATE AND OTHER SILVER SALTS.

Intense abdominal pain muscular spasm, vomiting, purging, face livid, skin moist, black vomit containing coagulated mucus, coma, convulsions, paralysis, respiratory disturbances, gastric ulceration, mucus membrane and conjunctive of a permanent slaty color. These are the almost invariable symptoms of silver poisoning. So, what are we going to do in case we have a patient come to us with any of these symptoms? The following procedure will do all that can be done in the case of poisoning by silver nitrate, or any silver salt.

FORMULA No. 62. For Silver Poisoning, Special Emergency Remedy.

Put one ounce of Sodium Chloride (common table salt) into 1 quart of distilled water. Stir until dissolved. Into this put 1 ounce prickly ash bark (cut) (*Xanthoxylum Fraxinium*) and 1 ounce Bayberry bark (cut) (*Myrica Cerifera*) and 1 ounce chondrus crispus (cut or whole) and 1 dram (teaspoonful) capsicum annum (ground). Boil 10 minutes, strain, and when lukewarm, give 1 wineglassful every half hour. Do not sweeten. After distinct signs of improvement and no further vomiting ensues, reduce dose to 1 tablespoonful every 3 or 4 hours. Give hot bath of sulpholine as follows: Dissolve 1 lb. of sulpholine in 1 gallon of boiling water. Put this into a tub half full of hot water. Immerse the patient and rub the body briskly for a few minutes. Dry and put to bed. Administer Formula No. 60, page 4.

When symptoms have completely subsided, give Formula No. 52. See Lesson No. 11, Page 13. This procedure will save life when everything else fails. It is simple, safe, and most effective.

And now, to the other poisonous metal found in tragacanth gum, namely barium.

Barium occurs as heavy spar ($BA-SO_4$). Its symbol is BA. It unites with oxygen, hydrogen, carbon, nitrogen, sulphur, chlorine to form poisonous compounds which are used by doctors as medicine. In the standard text-books of modern science, these preparations are described as alterative, diuretic, cardiac, tonic, and are used for scrofula, skin diseases and many other diseases. They produce the following symptoms, which when grouped and noted, clearly indicate barium poisoning, though by careless diagnosis, they can easily be mistaken for arsenic, antimony, silver or mercurial poisoning.

SYMPTOMS OF BARIUM POISONING. Salivation, thirst, vomiting, purging, abdominal pains, cramps, feeble pulse, dilated pupils, excessive urination, difficult breathing spinal paralysis, convulsions, death. The following are the preparations given in barium poisoning. Emetics, magnesium sulphate (Epsom Salts), Sodium Sulphate (Glauger's salts), albuminous drinks, diffusible stimulants, digitalis, opium, heat. These are the doctors best attempts to correct their mistakes, and strange to say, they sometimes prove effective. Our own recommendations are somewhat similar, but much more specific, and often succeed when others fail.

FORMULA No. 63. Antidote to Barium Poisoning.

2 ounces Lobelia Herb (cut) (*Lobelia Inflata*)

1 ounce Irish Moss (*Chondrus Crispus*) (cut)

1 " Prickly Ash Bark (*Xanthoxylum Fraxinium*) (cut)

1 dram (teaspoonful) Cayenne Pepper (*Capsicum Annum*)

Put all into 1 quart of distilled water, in which has been dissolved 1 ounce of sodium sulphate. Boil 15 minutes, strain and when cool enough, bottle and keep in a cool place.

DOSE: Give 1 teaspoonful every hour until free vomiting is brought about. Then reduce the dose to 1 teaspoonful in warm water every 3 hours, until patient has completely recovered.

You will see now why we do not recommend the use of gum tragacanth, because, as we said before, it contains salts of silver and barium. The only reason why it does not poison seriously is, that only 8 to 10% of it is soluble in water, and therefore, at least 90% is not ionized. Tragacanth makes a good adhesive mucilage, but why use a possible poisonous substance, when there are many other mucilaginous Herbs that are equal, and perhaps superior and non-poisonous.

DEMULCENTS. (Continued)

SLIPPERY ELM BARK. Latin name, *Ulmus Fulva* (Mick.)

SYNONYMS: Red Elm, Moose Elm, Indian Elm.

Parts used. The inner bark.

NATURAL ORDER: Urticaceae.

HABITAT: United States and Canada.

Slippery Elm is a small tree, abundant in various parts of North America. It is so well known that it needs no description.

The inner bark, as it appears in commerce for medicinal use is sold in flat pieces, 2 to 3 feet long and several inches wide. It is very tough and flexible, of a fine fibrous texture. It has an odor somewhat like fenugreek and a very mucilaginous, insipid taste. The strips can be bent double without breaking. A section moistened with water and examined shows large swollen mucilaginous cells.

The powdered bark is sold in two forms; a coarse powder for making poultices and a fine powder for making mucilaginous drinks. The disintegrated

bark forms, when moistened, a flexible and spongy tissue which is easily molded into pessaries, teats and suppositories.

It is recommended that ten year old bark be used. The powder should be greyish or faun colored. If dark or reddish, good results will not be obtained. It is often adulterated with damaged flour and other starchy substances.

CHEMICAL CONSTITUENTS. The principal constituent of the bark is the mucilage which is very similar to that found in flaxseed, (C-12, H-20, O-10) starch, and calcium oxalate (CA, C-2, O-4) and acid sodium phosphate, (H-2, NA, PO-4).

MEDICINAL ACTION AND USES. Demulcent, emollient, expectorant, diuretic, nutritive. This is one of the most valuable remedies in Herbal practice The abundant mucilage it contains has wonderfully strengthening and healing qualities.

It not only is most soothing and healing to all parts it comes in contact with, but in addition, possesses as much nutrition as is contained in oatmeal and when made into a gruel, forms a wholesome and sustaining food for young children and invalids.

FORMULA No. 64. Mucilage of Slippery Elm.

Mix one heaping teaspoonful into a thin and perfectly smooth paste with cold water. When thoroughly mixed, pour on one pint of boiling water (distilled), steadily stirring meanwhile. It can, if desired, be flavored with cinnamon, nutmeg, lemon rind, etc. This makes a very excellent drink in cases of irritation of the mucus membrane of the stomach and intestines; and if taken at night upon retiring, will induce sleep.

Another method of preparing slippery elm bark is: to beat up an egg with teaspoonful of the powdered bark, pouring boiling milk over it and sweetening it. Taken three times a day, in either form, according to condition, it will be found to give great relief in gastritis, gastric catarrh, mucus colitis and enteritis. It is tolerated by the stomach when all other foods fail. It is also of great value in bronchitis, bleeding from the lungs and consumption; being healing to the lungs, soothing and checking cough, building up the tissues and preventing or checking the wasting of tissue.

One of the very best preparations of slippery elm bark is made as follows:
(Compound of 8 Herbs)

FORMULA No. 65 INDIAN BALM, Asthma Remedy.

2 ozs. Slippery Elm Bark (*Ulmus Fulva*)(powdered) (See note below)

1 " Horehound (*Ballota Nigra*) (cut)

- 1 " Garden Thyme (*Thymus Vulgaris*) (cut)
- 1 " Red Clover Tops (*Trifolium Pratense*) (cut)
- 1 " Yerba Santa leaves (*Eriodictyon glutinosum*) (cut)
- 1 " Lobelia Inflata Herb (cut)
- 1 " Grindelia robusta leaves (cut)
- 1 dram(teasp.) Cayenne pepper(*Capsicum minimum*) (powd.)
- 1 oz Potassium Phosphate (K-2, HPO-4)
- 2 qts Distilled water

Put all into 2 quarts of water, in which the Potassium Phosphate has been dissolved, stir well and let stand for 2 hours. Boil slowly, well covered, for 30 minutes. Strain and press. Return to clean saucepan and boil till reduced to 1 pint. Add 1½ lbs of black molasses and 8 ounces glycerine. Bring to boil, simmer slowly for 5 minutes, cool and bottle.

SPECIAL NOTE: Slippery Elm Bark powder will mix more uniformly with the other ingredients if first made into a paste with a solution made with 1 qt. of the water and the potassium phosphate brought to a boil, and then poured over the other ingredients. Stir well, and proceed.

This is, without doubt, the most effective remedy for asthma, bronchitis, chronic cough, lung trouble, etc., ever devised by man. It allays all irritation and gives almost instant relief in dyspnoea caused by heart disease, spasmodic asthma and cough, including and especially whooping cough. Soothes and heals inflamed mucus membrane, calms and feeds the nerves in the inflamed and affected areas. It also gives prompt relief in cystitis and catarrh of the bladder. It also proved successful as a local application in poison oak and ivy, burns, genito-urinary catarrh, etc. In fact, it is a most extra ordinary remedy which should be carefully prepared, and always kept on hand by every physician interested in giving prompt relief from pain, spasms, distress and exhaustion from that most debilitating and cruel affection called asthma.

We sincerely believe that the use of this remarkable formula will overcome almost any form of chest trouble, including tuberculosis, the great whit plague which kills off countless thousands every year. And let us remember that GARLIC (*Allium sativum*) plays a most important part in conquering this terrible disease, and should always be administered in cases of tuberculosis. But our Formula No. 65 is equally important as a helper. We must also remember that only a small percentage of chronic cases of tuberculosis ever recover completely. Sometimes a little oversight on the part of the physician can result in failure. So, let us not leave one stone unturned in our effect to bring about the best results

possible. Again we urge you to make up this most virtuous formula, and always have it ready for immediate use.

DOSAGE AND APPLICATION: For spasmodic asthma, bronchitis, whooping cough, etc.:

Adults: 1 tablespoonful every hour until absolute relief and relaxation is brought about. After that, 1 tablespoonful 3 or 4 times a day.

Children: One teaspoonful to a dessert spoonful according to age.

For tuberculosis, with distressing cough and difficult expectoration, one tablespoonful frequently according to case.

As outward application in rhus poisoning: Apply to parts affected and allow to remain on for one hour. Wash off with warm soapy water, rinse and re-apply until all itch and symptoms disappear. In cystitis and genito-urinary inflammation, it will sometimes produce signs of renal irritation, but no alarm need be felt. It is merely the poison passing out of the system and will subside as soon as all poisons have passed. Then the healing commences, and when complete, will be more or less permanent, according to the thoroughness of the treatment and future care on the part of the patient as to diet, etc.

We feel that we have given you in this lesson an abundance of subject matter for study and thorough digestion. To give you more in one lesson would not only be crowding or cramming, but would tend to hinder rather than advance your understanding of each and every vital point. If there are any questions in your mind, please do not hesitate to drop us a line, and we shall be happy to clarify any point that may still puzzle you.

LESSON THIRTEEN

Science moves with rapid strides, and only those who are on their toes, so to speak, can keep pace with it. The most pleasing and encouraging phase in the advancement of scientific knowledge is that Medical Science, which has lagged behind, and stayed in a rut for centuries, is now coming around on the outside, as we enter the home stretch, and gradually but surely overhauling other sciences in the race for knowledge; and it looks to us as though it will be, at least "in the money." In other words, Herbalism or Herbology is fast becoming an established science.

The American and other governments have established experimental stations for the growing and testing of Herbs, principally for medicinal purposes. Of course, we expect the medicos to disparage, and if they can, nullify any attempt to prove the value of simple Herbs in overcoming disease, because if they acknowledged it, it would automatically cause them to go out of business. Bacteriological nonsense, serum therapy (so-called), senseless operations which bring the principal grist to their mill, will naturally be condemned as a remedial procedure, and people will at last begin to understand why the doctors operate. Operations and extirpations of tonsils, uterus, appendix, ovaries, kidneys, gall bladder, adenoids and other vital organs, first of all, bring big money into the coffers of surgeons, and lay the foundation for future medical treatment, which is again a prolific source of income for this genteel and ethical racket. When a man sticks a gun into your back and takes all your money, he is a criminal according to law; but when he sticks a knife into your abdomen, takes all of your life's savings, plus your appendix, he is a doctor according to law. There is only a slight difference between these two. One takes your pocket money and leaves you whole; the other takes everything you've got, and leaves you minus on or more of the necessary organs, or wheels of life with which to live and carry on.

It is a strange anomaly, but one is a blaggard, and the other is a gentleman. That is one of the principal reasons why we welcome the advance of medical science. So, let's get on our toes and keep pace.

There is another remarkable herb growing in the ocean, with which we should become acquainted, and that is Bladderwrack.

DEMULCENTS (Continued)

BLADDERWRACK: Latin name, Fucus Vesiculosus (Linn)

SYNONYMS: Sea wrack, fucus, kelp ware, black tang, quercus marina, cutweed, French fucus vesiculeux.

Parts used: The dried thallus--root, stem and leaves. This aquatic plant closely resembles chondrus, but is larger and more developed, having root-like woody extremities developed from the base of stalk. The perennial frond, or thallus, is coarse, light yellow or brownish-green in color and grows from 2 to 3 feet high. It grows on submerged rocks, in the north Atlantic ocean, near the east coast of North America, and on the west coast of Europe, and north of the Mediterranean. The frond is almost fan-shaped, narrow and strap-shaped at the base. The rest flat and leaf-like in form, wavy, many times divided into two, with erect divisions having a very strong broad, compressed midrib running to the apex. The margin is entire, tough and leathery, mainly olive brown in color, the younger portion, yellow and shining.

It is easily recognized from other species, though there are several of this species (Fucaceae), by air vesicles developed in pairs in the substance of the frond or thallus. Are placed one on each side of the midrib and usually one at the fork of the division. They are broadly oval or spherical and when the plant is full grown they measure approximately half an inch in diameter. The fruit is contained in globular vehicles or conceptacles, having firm walls lined with many jointed hairs and sunk into the surface of large swollen, blunt, oblong receptacles, filled with transparent mucus. These are from one half to one inch long, and are situated at the ends of the branches or divisions of the fronds.

We have given you a full description of this most valuable marine plant, because it also grows on submerged rocks off the California coast, and may be collected there in the fresh state. But we wish to warn you that there are several conditions which make it worthless, and if these are not known, and it is purchased in the ordinary way, it is ten to one that its valuable properties might have been destroyed, and the results obtained will be disappointing.

If the following facts are kept in mind when collecting, drying and storing this plant, you will find it to be one of the most valuable remedies in your Herbarium:

The whole living plant must be gathered from the rocks on which it grows during the summer or early fall, and dried rapidly in the sun or by artificial heat. Care must be taken to turn it frequently, otherwise it will develop a putrid odor. Dried in the sun, it becomes brittle, but if dried by artificial heat it retains its hygroscopic qualities and is more pliable. It is in perfect condition only when it is gathered in a living state, and not later than the middle of September on the western coast, and not later than the end of July on the eastern coast. The younger plants are best. When too fully matured, it quickly undergoes decomposition, and loses nine tenths of its virtues. That which is washed up on the shore by the tides, is altogether unfit for medicinal purposes, as the soaking of the detached plants in

sea-water causes a loss of important properties, by diffusion from the cells containing protoplasm which has lost its vitality. (ions)

Here is where we advance another step in our understanding of ionization, to let in more light on the vito-chemical nature of life and growth, and also on the phenomenon of decomposition and death. We know that many plants contain oxygen in a combined form, such as oxy-acids, while others contain little or no oxygen (hydro-carbons); but we know that this plant contains in its vesicles or pods a free oxygen, or air which contains a very much higher percentage of oxygen than is contained in the outer air.

It may be that nature stores oxygen in this way, so that when the plant becomes detached from the rocks, this oxygen is freed for the purpose of vitalizing the water of the ocean, so that the innumerable living creatures, both animal and vegetable, may be enabled to breathe in the life-giving oxygen, which thus, is diffused through the water, for we know that every living creature, great or small, must have breathable oxygen in order to live. Thus, we can glean some important information as to how myriads of living creatures in the ocean are able to obtain enough oxygen in order to live and exhibit the immense amount of vitality we see in marine animals and plants.

Fish and mammals that habitually live near the surface, are often exposed to low tides for their supply of nascent oxygen. Literally speaking, there is such an abundance of 'near the surface' aquatic plant life that gives up its oxygen to the ocean, that near the shore, and during certain seasons and in certain climates, the ocean water is practically or nearly peroxide of hydrogen, which is the greatest known ionizer; much greater than just ordinary water. Then, it naturally and logically follows, that if we can gather and dry Fucus (Bladderwrack) in such a way as not to lose all of its nascent oxygen, we shall get results that could not be obtained from it in any other way.

We are not immediately concerned with the oxygenation of sea water only that now we know why sea bathing, especially in the fall, is so invigorating. Nature takes care of sea life and stores an abundance of oxygen in fish, principally in the form of phosphates of SODIUM, POTASSIUM, CALCIUM and MAGNESIUM.

This can be plainly seen in the chemical formula of each of these marvelous life-giving salts. Vis., SODIUM PHOSPHATE (NA-2, HP; 0-4); POTASSIUM PHOSPHATE (K-2, HP, 0-4); CALCIUM PHOSPHATE (CA-3, P0-4) 2; MAGNESIUM PHOSPHATE (MG-HP, 0-4 plus 7-H-2, 0).

All analytical, discriminating minds will see that the great vital influence of all the phosphates is dependent, mainly, upon their superabundance of oxygen. And please try to get the following clearly set in your minds:

SODIUM PHOSPHATE: Contains 4 atoms of oxygen to 4 atoms of other elements;

POTASSIUM PHOSPHATE: Contains 4 atoms of oxygen to 4 atoms of other elements;

CALCIUM PHOSPHATE: Contains 8 atoms of oxygen to 7 atoms of other elements;

MAGNESIUM PHOSPHATE: Contains 4 atoms of oxygen to 3 atoms of other elements plus water.

Now, you can see why the phosphates are such marvelous restoratives and life-giving compounds. But, to return to our study of Fucus Vesiculosis, not only does it contain free oxygen, but many other vital principles.

CHEMICAL CONSTITUENTS: Mucilage 62 percent, containing mannite, (a white substance (C-6, H-14, O-6) called sugar of manna), which is the U.S.P. name for a sugary exudation from a European ash tree (Fraxinus Ornus). There are several other mannas obtained from different Herbs.

FUCUS VESICULOSIS also contains POTASSIUM CHLORIDE (fibrin solvent), POTASSIUM PHOSPHATE (brain and nerve food), POTASSIUM IODIDE (alterative, thyroid gland stimulant), POTASSIUM BROMIDE (sedative), POTASSIUM sodium phosphate (liver salt and alkalizer), sodium iodide, (stimulant antiseptic) sodium bromide (antispasmodic). These valuable salts combined equal 25 percent. A trace of volatile oil, fat and sodium sulphate (cathartic, diuretic).

It is plain to see that this living marvel is a veritable storehouse of medicinal virtue. Charcoal, obtained by burning Fucus has been used for nearly 2 centuries. It was introduced in 1750 by Dr. Russell, an English physician, as a treatment for goitre and scrofulous swellings under the name of aethiops vegetabilis, or vegetable aethiops. He also used a Jelly made from Fucus and was successful in curing many cases of goitre, and in dispersing scrofulous tumors by rubbing in the mucus obtained from the pods or vesicles of Fucus, and afterwards washing the parts with sea water.

In 1862. Dr. Duchesne Duparc, a French physician, while experimenting with Fucus in the treatment of chronic psoriasis, found that the patients weight was reduced without injuring health, and used it with great success. From then on, history gives us many instances of the fact that Fucus does actually reduce adipose tissue. Dr. Godfrey, an English physician, experimented on himself losing 5 ¼ pounds in one weekly taking, before meals, three times a day, several pills made from a concentrated extract of Fucus. Later experiments by Drs. Hunt and Seidell indicated that this result is brought about by the iodine and bromine, stimulating the absorbent glands to increased activity, without causing an atrophied wasting of the glands.

We cite these historical facts, because Fucus has fallen into desuetude and is today completely ignored by the doctors. Formerly it was the principal source of iodine, but other kelps having been found to contain a higher percentage of iodine, causing it to be disregarded and it is now claimed that Fucus, or bladderwrack, has no effect in reducing adipose tissue.

It is more than probable that the samples used by the doctors who condemn it as useless was that which is washed up on the shore, and as we explained, has suffered partial decomposition, and therefore, of course, it is quite useless. How the medical doctors can discard such a marvelous curative agent, which its chemistry reveals that it must positively be, is quite beyond understanding. Not only is it one of the most valuable remedies that nature produces for man, but horses, cattle and sheep have been fed upon it, and it has been proven to be a most nourishing food for domestic animals, as well as being successfully used for some of their diseases.

Fucus Vesiculosus is, as we shall show later one of the most versatile remedies, and can be most beneficially employed in a large number of diseases without danger to health in any way. It will pay us to study it closely and thoroughly, because it is destined in the very near future, to become one of the great sensations of modern times. It will accomplish remarkable cures in many difficult cases. Furthermore, it will cure some cases that have been thought to be hopelessly incurable.

No physician, worthy of the name, can afford to be without this miraculous plant and its several preparations. It combines perfectly with many other wonderful Herbs, which we shall show in the several remarkable formulas into which it enters.

MEDICINAL PROPERTIES AND USES: Demulcent, alterative, antiscorbutic, antisyphilitic, antiseptic, antiarthritic, glandular stimulant, nervine, laxative, antidyscratic, anticatchetic, antiputrifactive, antirheumatic, anti-toxic, nutrient and vulnerary.

FORMULA No. 66. Infusion of Bladderwrack

1 ounce Bladderwrack (cut)

1 pint distilled water

Boil the water and pour over the Herbs; cover and let steep until cold, stirring once or twice. Strain and bottle. Sweeten if desired.

DOSE: One wineglassful or more 3 or 4 times a day, between meals.

Children: One tablespoonful with honey before meals.

FORMULA No. 67. Decoction of Bladderwrack.

2 ounces Bladderwrack (cut)

1½ pints of Distilled water

Boil slowly for 15 minutes while closely covered. Strain, cool and bottle. Keep in a cold place.

DOSE: 2 fluid ounces (4 tablespoonfuls) 3 or 4 times a day, between meals. May be sweetened with honey or black molasses in all cases (except diabetes), or it may be flavored with cinnamon, nutmeg, lemon peel, juice or any other aromatic flavoring.

Children: One teaspoonful to a dessert spoonful 3 or 4 times a day, before meals.

NOTE: Fucus is rather nauseating, taken alone and unsweetened. It is advisable, therefore, to sweeten with honey and flavor with some spice, especially for children.

TO REDUCE ADIPOSE TISSUE WITHOUT DANGER TO HEALTH.

Fast one day, and at night take a good Herb laxative. Commence next day to take decoction of Fucus (Formula No. 67). Start with one wineglassful 4 times a day, one dose before each meal and at bedtime. Eat sparingly of meat and bread. No pies, pastries, candies, puddings, milk or buttermilk, cheese, pickles, peppers or vinegar. No peas, beans or lentils, except string beans. No coffee, beer, wine or liquor of any kind. Eat plenteously of green and leafy vegetables such as lettuce, carrots, turnips, squash, spinach, onion, leeks, celery, cabbage, broccoli, cauliflower, etc. Also apples, pears, peaches, prunes, figs, raisins, fresh berries. Seafood as, shrimps, fish, prawns, lobsters, crabmeat, but no oysters or clams.

After one week, increase the dose of Fucus to one half a teacupful. Note change in weight and if not reasonably satisfactory, gradually increase the dose until results are obtained. Do not be over anxious to accomplish the desired effect too quickly or you will fail to attain your goal. Remember, it took quite a long time for you to accumulate excess of weight and it cannot all be broken down and eliminated in either a week or a month without injuring your health. These are the specific instructions which every physician treating obesity should give to his patient. Insist on your patient keeping in reasonably constant touch with you, so that you can watch progress and act accordingly. Very stout patients should be advised to take an alkaline sulph-ozone bath 3 times a week.

Sulph-ozone is a proprietary article of very great value. When it is put into hot water, it releases ozone which not only acts as an invigorator of the skin glands and nerves, deodorant and antiseptic, but it bubbles up out of the water and is breathed directly into the blood through the lungs. The alkaline principles contained in it neutralize acids and particularly fatty acids, promote free perspiration and so reduce adipose tissue. It contains, among other ingredients, the pure essence of eucalyptus leaves, bay-myrcia leaves and marygold flowers.

These give eucalyptol eugenol and organic sulphur respectively. It is stated to contain 35 percent oxygen and 12 percent sulphur combined in non poisonous alkaline salts. Does not contain bicarbonate of soda, potash, or sulphate of magnesia (Epsom salts). We highly recommend the following mixed salts to be dissolved in half a bathtub full of hot water and the patient is to remain immersed for 10 to 15 minutes, the water to be reasonably hot but not hot enough to depress or debilitate.

FORMULA No. 68. Phosphate and sulphate bath salts.

½ pound disodic phosphate (H-NA₂, PO-4) U.S. sodium phosphate

½ pound disodic sulphate (NA₂, SO-4) Neutral sodium sulphate

Mix and dissolve in half a bathtubful of hot water, if tub is full size; or have tub 2/3 full if tub is small.

DIRECTIONS FOR TAKING BATH:

Immerse the lower part of the body first, by sitting 3 or 4 minutes. Then lie down and immerse the rest of the body up to the neck. Rub body well with hands while in the water. Use no soap. 10 to 15 minutes of immersion is sufficient, then a good warm shower, or if/not/ available, empty tub and again half fill, rinsing well with friction.

Best time to take bath is just before retiring, so that perspiration may continue all night. Next morning a lukewarm shower will wash away the poison acids which have exuded during the night. The window of the bathroom should be open while taking the bath, and afterwards. Sodium phosphate splits lactic and other acids into carbon dioxide gas and water, both of which are drawn or carried out through the skin by the combined action of sodium sulphate and moist heat.

This is a safe and sane procedure, and will prove most beneficial to those who wish to reduce safely. In combination with the internal treatment, using the decoction of Fucus, this scientific reducing program is worth considerably, and should not be sold cheaply. It must not be regarded in the same class as the many advertised nostrums on the market. It is also a mistake to let your patient know what you are using, as they will straightway go to the drug store for supplies, and you will lose your patient.

Fucus has many uses, and if collected fresh from the rocks on which it grows to full maturity, and is quickly dried by artificial heat, it is one of the most valuable Herbs known to medical science, for the successful treatment of chronic disease. When it has been kept properly dry and in a cool place, it can be easily converted into an almost fresh state by adding sufficient distilled water to thoroughly moisten it. Its hygroscopic powers are great, and when it is in the moist state, it exerts a greater healing power. The best method is to spray or sprinkle sufficient water upon it, turning or stirring until it is thoroughly saturated.

This takes from one to two hours. If it has been over-moistened, put it into a strainer and let drain for one hour. Next, put it through a fairly fine meat mincer and squeeze out all the moisture.

This makes an ideal application to swollen or hardened glands when used as a cold poultice or compress. The same treatment applies to treatment of rickety children, bad sprains, bruises and contusions. It has proved most successful in hipjoint disease, tuberculous joints, osteo-myelitis, combined with mucilage of comfrey and garlic. As an outward application to exophthalmic goitre, also taken internally, its equal has never been found. It has been found in scientific analytical and experimental tests that the iodine content in bladderwrack is from 80 to 100% more active on the thyroid gland than any other known form of iodine, and, it is no doubt true that principally upon this fact depends its remarkable effect in reducing adipose tissue. We must not overlook the fact that its heavy content of POTASSIUM and SODIUM also have their effects on the reduction of weight due to their powerful solvent and alterative action on fatty acids. The following formulas will fully cover the effective treatment of these several conditions.

FORMULA No. 69 Expressed essence of Fucus (Bladderwrack)

Moisten dried cut Fucus with distilled water as directed above. Mince and express juice. Thoroughly saturate a thick layer of cotton by repeated dipping and squeezing. Apply cold to the joints of rickety children or adults. Allow to remain on until nearly dry, then repeat the application. It should be covered with waxed paper or plastic.

INTERNALLY: Give 1 teaspoonful to a dessert spoonful in twice the amount of honey 5 or 6 times a day. This is remarkably strengthening and nourishing to the bones and ligaments.

For hip-joint disease, osteo-myelitis, etc., use the following:

FORMULA NO. 70. Fucus, Comfrey and Garlic.

1 pint Expressed Essence of Fucus (Formula No. 69)

1 " Mucilage of Comfrey Root (Formula No. 54; L.No.12, pg. 11)

1 ounce expressed Fresh Garlic juice, made by peeling, mincing and squeezing out the juice.

Put all into a bottle or jar and shake well till thoroughly blended. Apply as directed in Formula No. 69.

INTERNALLY: Dose: For adults, 1 or 2 tablespoonfuls 3 or 4 times a day. Children, from 3 to 7 years, $t\frac{1}{2}$ to 1 teaspoonful; from 7 to 12 years, 1 to 2 teaspoonfuls. Always sweeten when giving to children, with twice as much honey, or more.

As a treatment for goitre, the expressed essence of fucus is applied outwardly in the same way as directed above, and given internally in tablespoonful doses 3 or 4 times a day between meals.

Fucus is very valuable in all cases of chronic acidosis, rheumatism, gout (taken internally and applied outwardly). Also in cases of high blood pressure, arteriosclerosis and calcic deposits; relieves arthritis, reduces swelling, etc. Use the outward application on local areas whenever possible, as well as the internal dosage.

In internal tumors and ulcerations of the stomach, intestines and renal organs, Fucus combined with flaxseed is very effective. Flaxseed (*Linum Usitatissimum*) is one of nature's best demulcent and healing agents. It will be fully described in our next Lesson No. 15.

FORMULA No. 71. Bladderwrack and Flaxseed.

1 ounce of flaxseed (ground)

1-¼ pints distilled water

Boil the water and stir in the flaxseed. Simmer for 5 minutes, and while hot, strain through a strainer (passes with great difficulty through linen or cloth, though it can be made to do so by considerable pressure, and is/then/ stronger and better.) To this add 1 pint of Expressed Essence of Fucus (Formula No. 69). Return to saucepan and add 1 pound of honey, then bring to a boil (stirring). As soon as it boils, remove from fire and allow to cool. When cold, pour into wide mouthed bottles and keep in a cool place. May be flavored with cinnamon, nutmeg, etc.

DOSE: For children (seldom needed), 1 dessert spoonful to 1 tablespoonful. Adults, 1 wineglassful 3, 4 or more times a day, accordingly.

May we add, in connection with the Herbs we have been discussing, and the conditions for which they are recommended that - In fibrous tumors, exuded fibrin is the principal cause of the trouble. First, an irritation is set up by some foreign substance; this may be arsenic, copper, zinc, bismuth, antimony, aluminum, iodine, sulphur, mercury, gold, silver, anti-toxin, tin acetate (from tin food containers), arsenate of lead, used for spraying fruit trees and vegetables in their growing state, Paris green, used for the same purpose, or any of the inorganic poisonous preparations commonly used by doctors. This irritation, if allowed to continue, will cause inflammation in the part affected, due to the chemical imbalance created in the blood, fluids and tissues. It is a well known fact that the organic salt, POTASSIUM CHLORIDE, is the most natural solvent of fibrin; and in health, is a constant constituent of the blood. Whenever there is inflammation, particularly of mucus membrane, POTASSIUM CHLORIDE is drawn to the part and, consequently, a deficiency is the result. The fibrin left without POTASSIUM CHLORIDE exudes into the tissues. The leucocytes rush

to enclose the poisons and form a wall, or sac protecting the rest of the system. The result is, a tumor.

The reason why this formula is so valuable and effective in such cases is, that flaxseed contains, among other corrective salts, a considerable quantity of POTASSIUM CHLORIDE, and therefore, immediately restores the chemical equilibrium, so far as this salt is concerned. It also contains CALCIUM CHLORIDE which supports and feeds the heart during the process of healing. At the same time, linseed, or flaxseed contains from 30 to 35 percent of oil, which consists, in turn, of linolean and palmitin; very soothing, nourishing, lubricating and emollient, together with other augmentative properties. Add these, which will be fully described in our next lesson, to the great virtues of bladderwrack (*Fucus*), and you will understand why this cleverly devised formula is so valuable and effective in cases of enlarged and inflamed prostate, a most distressing and common complaint.

In such cases, this formula should be injected locally, using a small rubber bulb syringe, which is commonly called an infant syringe, and may be purchased at any drug store, in sizes ranging from 2 ounces to 6 ounces. Three or four ounces should be injected after stool, 2 or 3 times a day, and the remedy also taken internally.

We believe we have given you enough subject matter for study in this lesson, and trust that, you will benefit by it.

LESSON FOURTEEN

It seems to be an extraordinary fact, that in spite of the astuteness, cleverness and the profound analytical powers of deduction of those great scientific minds which originated, elaborated and unfolded the complicated science of chemistry, that they, the greatest of them, should still be in disagreement as to the actual difference between the chemical constitution or dividing line, between the inorganic and organic matter. Yet, it is true. It is an amazing fact that the real scientific mind, in all ages, has made more mistakes than all others put together. That, no doubt, is the reason why the great collective kind of the allopaths, still sticks to the insane idea that they can introduce any or all of the ninety-odd elements into the human organism, with benefit, while it is universally admitted, even by themselves, that not more than 21 of the 90 odd elements as yet discovered (and probably not that many) have been found to exist in a perfectly healthy human body.

Our concern is, to learn the truth about the difference, if any, between the inorganic and the organic. We shall make every effort to point out, from all scientific knowledge available, that only organic compounds should be used in healing the sick. That is what nature does. It is her only method of healing; and every wild animal, and every primitive human being knows this method, and uses it to greater effect than any specialist alive, or ever lived.

Perhaps one of the best examples of the fact that scientific minds are subject to mental aberrations, is exemplified by the late Charles Darwin, who was, undoubtedly, one of the greatest naturalists that ever lived. In his ‘The Origin of Species’ he propounded the theory that nature took thousands of years to evolve one species from another. Yet, this same man spent over 20 years in breeding worms in the hope that he might evolve something different. But, to return to the question of inorganic and organic matter. There are so many conflicting opinions among chemical scientists, and therefore, when we read the text-books of chemistry, we are liable to be so confused, as not to know what to believe. In fact, we recently heard a medical gentleman who has spent some years in the study of medical subjects, remark that there really is no difference between organic and inorganic matter or substance. How can we place any onus or blame on this gentleman, when the established and accepted text-books of chemistry plainly state that this is true; that there is no difference.

Chemistry has been arbitrarily divided into two branches: 1. Inorganic chemistry, and 2., the chemistry of the carbon compounds called, organic chemistry. The idea doubtlessly originated from the fact that carbon is invariably

found in living organism. But how is it possible that they can overlook the undeniable and self-evident fact that carbon compounds are also found in the inorganic kingdom? Let us take just two out of the hundreds of purely, and certainly inorganic carbon compounds. Namely--carbon dioxide (C-O₂) and marsh gas (C-H₄). Did anyone ever know of either of these developing into cells or organs, and manifesting life and growth? As a matter of fact, they are both deadly destroyers of all organic life. They do not support any known form of life or combustion; and all forms of life are combustion. Ladies and Gentlemen, this is a most serious and vital matter to humanity and to our intellectual sanity. Either we are sane reasoning beings or we are idiots. You will all admit that when it comes to a question of sanity, we had better pause and reflect; and if we do, we shall refuse to take even with a "pinch of salt" the definite statements made by writers of chemical text-books, who occupy eminent positions in the universities of modern science. Quoting from one of the most eminent authorities on the science of chemistry today, we find the following piffle.

"The notion that organic substances could be formed only by some mysterious agency, manifested only in organized beings was finally exploded by the labors of Wohler and Kolbe. The former obtained urea from ammonium cyanate, while the latter, at a subsequent period, formed acetic acid using in its preparation only such unmistakably mineral substances as coal, sulphur, aqua regia (nitro hydrochloric acid) and water. During the half century following Wohler's synthesis, chemists have formed from mineral materials many of the substances previously formed only in the laboratory of nature and have also produced a vast number of carbon compounds which, so far as we know, have no existence in nature, (These experiments must, therefore, have been produced outside of nature. Ed.)

At the present time, therefore, we must consider as an organic substance any compound containing carbon, whatever may be its origin and whatever its properties."

Can you beat it? A "big bug" scientist, blind and dumb as a human can be (Wohler), makes urea, an inorganic end product of metabolism from ammonium cyanate and another equally eccentric and inane pseudo scientist (Kolbe) forms acetic acid from inorganic materials. Did that make them live and grow as individual living entities? Did that convert them into organic living things or beings? Ladies and Gentlemen: Such stuff is piffle, unworthy of human intelligence and if chemical textbook writers are unable to give you the plain, simple truth about the difference between the inorganic and organic, then we will have to do it for them for your own sakes and for the sake of reason and understanding of truth.

PROTEAN BODIES, or substances, are known as albuminoids and gelatinoids. These substances are never absent in living vegetable or animal cells to whose "life" they are indispensable. They are the exclusive products of the organized or organic living kingdom and have never been found in the inorganic kingdom.

Here is the dividing line between the two kingdoms. 1. The inorganic does not live, eat, drink, breathe, excrete, reproduce its kind and die. It is the same identical compound, no matter where you find it. It never, under any circumstances, develops into cells nor advances to a really complex structure. The other has an almost infinite capacity to evolve into the most intricate structure and conscious individuality. Its infinite powers of evolution have produced and still produces, every known form of both vegetable and animal organism that lives on earth including man himself.

Today, as ever, the body of man is formed from the minute proplasmic germ cell, even as the oak is formed from the acorn and the chicken from the egg. Is there any conceivable combination of purely inorganic substances that can accomplish this miracle? The answer is NO!, so let's get this nonsensical and ignorant idea out of our minds that we can build the cell out of inorganic materials without the assistance of the Herb, and we shall have taken a step forward in understanding the truth which will make us free.

Here, then, is the genesis of life and the origin of species. Albumins and gelatins. They are the perpetual beginning of life. The positive and negative, the male and the female and it is universally admitted that their chemistry or chemical constitution is unknown. There is a thick curtain drawn between the inorganic and organic. A veritable wall that obscures or shuts out the deep incomprehensible process that goes on within. The ordinary hen's egg is a very good example of this curtain, or wall that divides the two kingdoms. The outer shell or wall of the egg is inorganic (carbonate of calcium). Next comes the skin, composed of elastin, chondrin, gelatin, ossein and keratin. Next within is pure albumin (the white) imprisoned in a delicate network of membranes. Then comes the yolk, which contains the positive phosphates of calcium, magnesium, potassium, sodium and iron, together with sulphates, chlorates, iodides and flourides.

In fact, within that dividing wall (the shell) there are all the elements of life. All that is necessary to prove it is, to place it in the required amount of heat, and behold, the chicken is born, From then on and on, a perpetual reproduction, which in time, according to outward conditions, produces more than 200 known varieties of fowl. This is as far as we go, but it is sufficient, or should be, to prove to the most critical mind, that there is a very distinct difference between the inorganic (dead) kingdom, and the organic (living) kingdom. So, once and for all, let's not be fooled into the belief that we can create life out of inorganic substance.

Just one or two more demulcents, and then we shall have given you the cream of them all.

DEMULCENTS: (Continued)

FLAX: *Linum Usitatissimum* (Linn).

Common Name: -- Linseed.

Parts Used: The seed.

Although this is about the last demulcent to be described in this course, it is by no means the least. It has a most remarkable and interesting history, besides its almost universal use in several important industries, apart from its being a very valuable Herb for medicinal use.

Its cultivation reaches back to the remotest periods of history. Flaxseed, as well as linen cloth, has been found in ancient Egyptian tombs. Both the Old and New Testaments of the Bible frequently mention this Herb. In Genesis, the fine linen robe in which Joseph was arrayed was spun from flax. It also furnished the garments of the High Priests and we read in Joshua II-6, that the Caananites were spinners of this fine linen into robes. The New Testament tells us that it formed the raiment of the Savior in the tomb where Joseph of Arimathaea laid Him. In Exodus IX-31, it says: "The flax was balled;" which means that it had arrived at a state of maturity. When the bolls are ripe, the flax is placed in water to assist the separation of the fiber from the stalks and when ready, are spread out to dry. This is the custom referred to in Joshua II-6.

For ages, it has been woven into sail cloth rope and cord, (White sails are mentioned by the Greek Poet Homer (1000 B.C.) in the Odyssey.) Pliny (the Elder) 23-79 B.C., naturalist and Herbalist, eulogizes this Herb as the earth's greatest marvel. He says: "What department is there to be found of active life in which flax is not employed? In what production of the earth are there greater marvels to us than this plant. To think that here is a plant which brings Egypt to close proximity to Italy--so much so, in fact, that Galerius and Balbillus, both of them Prefects of Egypt, made the passage to Alexandria from the straits of Sicily, the one in six days, the other in five. What audacity in man! What criminal perverseness! Thus to sow a thing in the ground for the purpose of catching the winds and tempests, it being not enough for him, forsooth, to be borne upon the waves alone." Pliny's remark about "criminal perverseness" is rather laughable in view of the fact that this lowly Herb made into sails and rope and to caulk or stuff into the cracks of ships. Also for the clothing of the ships crews, wicks for their candles, torches and flares for signaling and lighting, painting the ships themselves as well as for healing wounds and curing scurvy, made it possible for Rome to conquer the world and for Lord Nelson to win the battle of Trafalgar. Columbus could not have discovered America without flax. In fact, the whole machinery of international trade and barter and the progress of the whole world would have been held back for hundreds of years but for two Herbs.--The lowly flax and the mighty oak. And now, we ourselves, will, like Pliny, use a few expletives about flax, only slightly different.

Why should mankind, as a whole, be so totally indifferent, callous and ignorant of probably God's greatest Herbal gift to man. As its oil is expressed and made into paint, varnish, furniture polish, water proofing, printers ink, enamels, lacquers, stains, putties, primers, roof cements, linoleum, oil cloth, dryers, patent leathers, enamel leathers, wood preservatives, plastic compositions, artificial

rubber, tempering steel, photography, coating silk thread, carron oil for burns, poultices, and a thousand and one other uses; no one ever thinks of the wonder and marvel of it. No one ever thinks of giving it any honor. The rose is honored as the symbol of Love, and is the national emblem of England. The lily as an emblem of purity (honored at Easter) and is the national emblem of France. The thistle of Scotland, the Leek of Wales, the chrysanthemum of Japan. Mistletoe and holly are made much of in Europe at Xmas time. The poppy is the floral emblem of California; the sunflower of Texas, the golden rod of Ohio, etc. But, nowhere in all the world is any notice taken of the beautiful and graceful little flax plant with its turquoise blue flowers growing tall and stately as any plant. For ages it has been, and still is, of more use to mankind than any other plant to be found in the whole garden of nature. We should bow our heads in shame and remorse for our callous indifference, when we think, that besides all its other myriad uses, it is one of the very best remedial agents in many diseases, both for humans and animals. It is very important in veterinary practice and is also used for fattening cattle and for fertilizer. If you have not already seen what we mean by man's callous indifference to his best friends, you will certainly do so, after we have described its chemistry and many virtues as a therapeutic agent.

HABITAT: Central Asia, Egypt, Southern Europe. Cultivated in Russia, England, India, United States, Southern Europe, Holland.

SYNONYMS: Lint-bells, winter lien, lini semina, etc.

LINUM: From the Celtic, llin, a thread; English, Linen-- its fabric.

USITATISSIMUM: From the Latin adjective, usitatus (most useful).

NOTE: When exposed to heat, light, damp atmosphere or otherwise carelessly preserved, especially the ground seed, it is subject to insect attack, and should not be used after it is 1 year old.

CHEMICAL CONSTITUENTS: Fixed oil, 35 to 40 percent (in nucleus); mucilage (C-12,H-20,O-19), 15 percent (in epithelium; proteids, 25 percent; amygdalin, resin, wax, sugar, no starch (except in young seed), phosphates, sulphates, chlorides of potassium, calcium, magnesium. Ash, 5 percent. The oil consists of liquid glycerides of oleic acid (C-18,H-34,O-2), 85 to 90 percent. A mixture of palmitin (C-3,H-5 (C-16,H-31,O-2)₃). A solid crystalline fat, which exists in palm oil, butter, and in the sheath of the medulla oblongata, medullated nerves and spinal cord. Myristin (C-45,H-88,O-6) found in nutmeg and stearin (C-3,H-5, (C-18,H-35,O-2)₃, 10 to 15 percent lineleic acid (C-18,H-32,O-2) linolenic acid (C-18, H-30, O-2).

This most wonderful oil should be kept in well corked or capped containers (brown actinic bottles), and kept in a cool, dark place. Boiled linseed oil should not be used medicinally either inwardly or in outward application, for the following reasons: Boiled linseed oil has added to it litharge, red lead,

manganese dioxide, lead acetate, or manganous borate, to increase its weight and drying properties for use in paints, etc. Therefore, it must never be used in liniments, poultices, or any other way, as serious symptoms will result. People have been poisoned, and have died from applying boiled linseed oil to burns, etc.

PROPERTIES AND USES OF LINSEED AND OIL:

Demulcent, emollient, laxative, diuretic, anti-scorbutic, anti-rheumatic, anti-catarrrhal, analgesic, anti-arthritis, lubricating, soothing and vulnerary.

FORMULA No. 72. Infusion of Ground Flaxseed.

Put 1 ounce of ground flaxseed into a saucepan. Pour over it 1½ pnts boiling distilled water. Let stand in a hot place for 10 minutes, stirring frequently. Strain, and add 4 ounces of honey. Mix thoroughly by stirring or shaking. Keep in a cool dark place.

DOSE: A wineglassful to a teacupful, according to the case under treatment, 3 or 4 times a day. NOTE: The decoction (formula given later), owing to the excess of oil it contains, is much less acceptable to the stomach than the infusion, but much better for enema.

For inflammation of the mucus membranes of the respiratory, digestive and urinary organs, renal and vesical irritation, catarrh, dysentery, calculi, strangury, give dose most acceptable, and increase as necessity arises.

CHILDREN: (Add more honey), give from a tablespoonful to a wine-glassful, according to age and condition. Honey is a natural synergist of flaxseed, and increases its therapeutic action. Cinnamon, ginger, pepper, mint, cloves, or any stimulating carminative may be added when making, in the proportion of 1 heaped teaspoonful of the carminative Herb to each ounce of flaxseed, and each 1½ pints of water, as given above.

For more laxative effect, use the following:

FORMULA No. 73. Laxative infusion of flaxseed.

1 ounce ground flaxseed

1 quart Distilled water

1 ounce ground Licorice Root

Proceed the same way as in simple infusion. After straining, add 4 ounces glycerine and 4 ounces honey. Mix thoroughly.

DOSE: Same as for simple infusion until bowels act freely. Then, reduce the dose to one wineglassful or less. Children accordingly.

FORMULA No. 74. Decoction of flaxseed.

2 ounces ground flaxseed

1 quart distilled water.

Boil 10 minutes. Strain and squeeze out all mucilage and oil. While hot, add one quarter teaspoonful of eucalyptol, shake well together and also shake well before using. This will be found to be a superb injection or enema for piles and inflammation of the prostate gland. Use a small bulb syringe (baby syringe) and inject from a teacupful to one pint. Retain as long as possible. Repeat 2 or 3 times a day. It is also a very wonderful douche used for inflammation, leucorrhoea, bad odored discharge, vulvitis and vulvo-vaginitis. Also apply on tampon and allow to remain for 1 hour. Take ordinary water douch afterwards, and if inflammation still remains, repeat.

FORMULA No. 75. Flaxseed Meal Poultice.

This is made by adding boiling distilled water to ground flaxseed, or flaxseed meal, to obtain the proper moist consistency for poultices. Then, spray or sprinkle with a small quantity of eucalyptol (not more than half a teaspoonful to a large poultice), which must be stirred in and mixed as uniformly as possible.

This is one of the very best applications for enlarged glands, joints, swellings, boils, carbuncles, pneumonia, pleurisy, sprains, cruises, contusions or inflammation of any part of the body. The part should be covered with glycerine, olive oil or sweet almond oil, before the poultice is applied. Apply as hot as bearable and as close to the affected part as possible. The poultice is put into thin gauze and applied direct. Cover with wax paper or oil silk. Then again cover this with some thick flannel or a piece of old blanket to keep in the heat. Give the infusion internally and keep up the hot poulticing as often as it cools, until all inflammation has disappeared. This is a perfectly safe procedure which can do no possible harm in any case, but will perform some most remarkable cures in desperate cases. It is the lack of knowledge of this magnificent remedy that is one of the great crimes of modern medical men. Its chemical analysis reveals the amazing fact that it contains brain food (palmitin and potassium phosphate), fibrin solvent (potassium chloride), heart tonic and food (calcium chloride), pus destroyer (calcium sulphate), muscle food (magnesium phosphate and sugar) and laxative (magnesium sulphate, Epsom salts) together with drawing, heating, lubricating and healing qualities, second to none in the world. That, and for other reasons that follow, is why we were so forceful in condemning the brutal indifference of mankind in general and the doctors in particular, towards this super Herb. We hope you understand now that we were not wasting your time, but giving you some of the most valuable information you will ever receive.

Flaxseed Oil: Blended with mucilage of acacia (mimosa gum), mucilage of comfrey, lime water, almond meal, etc., makes the most excellent emulsions of different kinds and effects, according to what is desired.

FORMULA No. 76: Improved Carron Oil.

Put 1/4 ounce (2 teaspoonfuls) of eucalyptol into 1 pint of raw linseed oil (pure). Shake together perfectly until the eucalyptol is thoroughly incorporated with the oil. Add 1 pint of fresh lime water and shake until a perfect emulsion is formed.

This is one of the most soothing, stimulating and healing applications for burns. The ozone forming eucalyptol has a great natural affinity for the oil, prevents sepsis and causes healing (proliferation of new cells), to be brought about at a more rapid rate. It is a great improvement on the old form of carron oil. It is quickly made and if kept in a cool, dark place, will keep for a long time. Apply on lint and cover, renewing the application as often as necessary.

It is also a soothing and healing application for sunburn, chapped hands, chafed parts from acid perspiration, and particularly good for babies. Also for lacerations, abraded or torn parts, sprains, bruises, contusions, nettle rash, stings, hives, acid burns and for removing dark spots from the skin.

NOTE: The inorganic calcium in the lime water, when it is shaken with the raw linseed oil, is at once changed. By its combination with the oleic acid in the oil, plus the glycerine contained in it, the calcium becomes a part of an organic glycerio-oleate of calcium, which is one of the fastest healers and cell proliferants known.

Our idea of adding the ozone-producing oil or eucalyptol, hastens the IONIC changes and keeps the tissues directly supplied with oxygen even though they are covered. We deem it necessary to explain this to you in case you think we were departing from our strict rule of using nothing but purely organic substances.

At this point it might be well to set you straight relative to oils, emulsions, and saponification of oils with alkaline salts: An EMULSION is officially described as "an oily or resinous substance suspended in water, the agency of mucilaginous or adhesive substances." However, this is not strictly true in the case of many emulsions. To analyze it: The process for making the above mentioned emulsion, carron oil, it is merely a matter of shaking together the oil and lime water, which is a 15 to 17 percent solution of calcium hydroxide (CA-(OH)₂ in water.

PLEASE NOTE: (1) Lime water is not mucilaginous; (2) nor is it particularly adhesive. And yet, its unity with linseed and other oils makes a perfect emulsion. By re-reading the official description of emulsions it will be plainly seen that there is something radically wrong with their findings.

We cannot permit our students to remain in ignorance of these errors, simply because they emanate from high authorities; and so, while we are at it, let us find out WHY the oil is emulsified.

Soap is usually made by saponifying oils with either sodium-hydroxide (NA-HO) called caustic soda, or by potassium-hydroxyde (K-HO) called caustic potash. Since all oils and fats are composed of glycerine and acids (oleic, palmitic, stearic, etc.), this is what happens when these powerful alkalis are heated with the oil. The acids are drawn out of the oil, and unite with the alkali to form soap, freeing the glycerine. It is a complete chemical change. But when CALCIUM-hydroxide is united with oils in emulsions, only a partial chemical change takes place. The presence of calcium instead of sodium or potassium, prevents the complete saponification of the oil because, while sodium and potassium are softening, calcium tends to harden.

The mere boiling of faucet water causes deposits of calcium inside the kettle. Bones harden through calcium. Calcium carbonate is chalk marble, alabaster, etc. That is the reason why calcium prevents complete saponification and is, itself, changed to a glycerio-oleate in emulsions, leaving some of the oil free, but holding it in suspension.

All oils must be emulsified by digestive ferments before they can be utilized in the organism, although the oils are later given up to the tissues as required.

We believe that we have given you enough material to digest on the subject of EMULSIONS, and now, in our next lesson, we will finish with DEMULCENTS, and go on to the study of nervines, tonics and stimulants

LESSON FIFTEEN

It has often been said that a little knowledge is a dangerous thing. This is particularly true when it refers to the treatment of chronic disease. Two weeks ago, (Lesson #14) we opened the subject of our discourse by stating that it was most pleasing and encouraging to note the advancement in Medical Science, but we later qualified that statement by saying, "In other words, Herbalism or Herbology is fast becoming an established science."

Let it not be thought, for one moment, that we were referring to the regular school of medicine. There is evidence in abundance that they have not advanced one inch in the past one hundred years. In fact, we go farther and state that, ignorant and inefficient as they were one hundred years ago, they have even retrogressed, which means that today they are actually more ignorant and inefficient as they were one hundred years ago. Here is the unbiased statement of one of their own members, who through honesty, has come to abhor poisonous drugs and now uses only nature's remedies. He says, "The spirit of progress in the arts, science and industries of the world during the past fifty years has wrought no change in the healing art." (So far as allopaths are concerned.) (Ed.) It is today what it has always been, a colossal system of deception, in obedience to which mines have been emptied of their cankered minerals, the intestines of animals taxed of their filth, the poison bags of reptiles drained of their vermin, the blood of black cats and white puppy dogs extracted by vivi-section and all these and many other abominations, have been thrust down the throats of credulous and long suffering human beings. Less than 100 years ago, the following disgusting objects were in daily use and formed the most prominent remedies of the medical profession of that period: Earthworms, hog's lice, snakes, toads, skins of hen's gizzards, viper's flesh, man's hair, dried human flesh, the heart of a mole, crab's eyes, sheep's excrements. From another standard medical work, "Collecteane Medica", London 1725, page 25, we find the following remedies---For quinsy, powder of burnt owls, one drachm; burnt swallows, one drachm; cat's brains, two drachms; dried and powdered blood of white puppy dogs, two drachms;---For colic, wolf's guts dried and powdered. two drachms; old man's urine, three drachms; sheep's excrements, two drachms. A sovereign remedy.

Less than 55 years ago, millions of human beings, up to that time, had been hurried into untimely graves by the lancet. Old and young alike were subjected to the fallacy of blood letting, for the most trivial ailments, thus whole generations were swept into untimely graves by this bloody delusion which, happily, for the present generation, has been put down.

Later than forty years ago, calomel (subchloride of mercury) was in constant use as a sovereign remedy for every ill that human flesh is heir to. This destructive delusion was not discarded until it had filled the world with hopeless, boneless and toothless wrecks. Thousands of wretched victims of this fallacy still live to curse this destructive delusion of the physicians of that day. To modify and perpetuate their fallacies, to better suit their present purposes, they have substituted the most deadly poisons such as arsenic, strychnine, chloral, morphia and scores of other poisons and destructive drugs that lay the foundation of innumerable ills to the human family. Smallpox no longer monopolizes vaccination, but shares it with the measles, scarlatina, diphtheria, hypo-chondria, erysipelas, cholera, hydrophobia and delirium tremens. Verily, the medical practice of today has no more foundation in science, philosophy or common sense, than it had one hundred and fifty years ago. It is based on conjecture and improved by sad blunders and hidden by death. A drug which forms the favorite remedy for many forms of disease at one period will, in a short time, be discarded as useless and speedily replaced by some other, and that, in turn, will soon fall into oblivion as some new drug comes into fashion."

Such is the fearless and faithful testimony of the celebrated Doctor Alexandria M. Foss.

We make these slight deviations from our subject as a matter of education. It is almost impossible to learn the truth of what goes on behind of locked doors of the medical castle until someone on the inside becomes so horrified and ashamed, that he can stand it no longer, and so comes out and tells the world. It is a sad fact that the great majority of medical textbooks are written and published by the "regulars". Not only are they misleading, but there is scarcely a word of truth to be found in them. They consist mostly of technological extravagance, a series of over-elaborated and extremely complicated theories as to the cause of disease, a total ignorance of the laws of nature, the laws of logic and the laws of just plain common sense.

We urge you not to waste your time in study of them, for there is grave danger of your being caught in the net of their mental aberrations, and first wondering, then wandering from the paths of logical reasoning and common sense. They will show you illustrations of minute living organisms, (so-called pathological germs) which they found in sputum, or pus taken from diseased tissues or secretions. Probably, at first sight, you are astonished, then you begin to wonder—"Can this be true?" "Yes, it must be true.-There they are! right in the pus plain as can be. How awful that such creatures can live and destroy our bodies without our knowledge until too late. Surely these doctors have discovered the truth. They are right. The germs must be killed. But wait a minute before you jump to such a conclusion. We find the fly on garbage, which is composed of decaying organic matter. Is he, the fly, the cause of the garbage, or does the garbage breed the fly? We find the mosquito in the swamp. Does the mosquito cause the swamp? We find the white maggot in decaying flesh. Was he (the maggot) the cause of death? And, what are these creatures doing there? They are

eating, consuming, doing away with the decaying matter. Let's look further. The fly consumes sixteen times its own weight per day, and his average life is two hundred days. Therefore, one ounce of flies consumes one pound of diseased matter per day, and during his normal life of two hundred days, he actually does away with 200 lbs of diseased matter (the weight of a heavy man). This is an understatement, for it is estimated that one ounce of flies will probably become 100 lbs of flies in 200 days, - just over 7 months. Therefore, the amount of decomposing matter done away with by the original ounce of flies, is probably nearer to 1000 lbs. As a matter of fact, the little fly is one of the greatest scavengers in nature, and it has been conservatively estimated that, but for the fly, humanity would be exterminated by pestilence within 10 years, because decaying organic matter would so pollute the air we breathe, and the water we drink, that the waters of life, and the very breath of life itself, would quickly destroy us. So, Ladies and Gentlemen, do we point out the way for you, to avoid the pitfalls of ignorance and error on the part of the magnanimous and grandiose medicos, because they and their infernal findings and doctrines have done, and are still doing more to kill off the human race than all other destructive agencies in nature.

This amazing and horrible fact is not only our own opinion, but the proof comes from those few honest physicians within the ranks of the medicos themselves. With one more short reference, to further convince you, we can leave this disgusting subject, and proceed with our study of Herbs.

The following is taken from the British Medical Journal of a few years ago. The Editor, referring to the "regulars" or the "faculty" says:

"In no profession are ignorance and helplessness so systematically veiled under the assumption of infallibility and omnipotence; in no profession do they so flatly contradict each other on the rudiments of the science of medicine; in no profession is the knowledge of one generation so invariably discredited by the next. I will close (says the editor) with Dr. Skerritt's remarks and leave you to these awful reflections." It is refreshing in this age of medical bombast to find at least one member of the profession honest enough to give public expression to his true opinions. The text which Dr. Markham Skerritt selected for his address to the Medical School of Bristol, upon the occasion of its anniversary was, "The Teachings of Failure", and the fearlessness with which the lecturer showed up the hollow pretenses of the craft, was admirable. He impressed upon his medical brethren the facts that, at the present day, not only are their studies still full of complexity and obscurity, their doctrines transitory and fallacious, and their methods clumsy and dangerous, but furthermore, that the teachers themselves make the danger and confusion worse by their defective observations, and their illogical habits of mind. The claims made week after week for a list of new remedies are simply astounding. There is such a plethora of "specifics" for every ill to which flesh is heir, that the wonder is, how anyone ever contrives to die with a doctor in attendance. Nevertheless, die they do, and at a progressively increasing rate, year by year, and the so-called "Science of Physic" continues to be, in Sir Astley Cooper's words "founded on conjecture, and improved by

murder." And as Dr. Mason Goode said, "a jargon, destroying more than war, famine and pestilence combined."

And now, we return to the further study of -

DEMULCENTS: (Continued) Glycerine.

In Lesson No. 5, Page 10, we pointed out that all animal and vegetable fats and oils are composed of glycerine (C-3, H-5, (OH)3) and fatty acids. We also said that glycerine was one of the greatest curative compounds in nature, if not the greatest.

As a demulcent for external use, its essential liquidity is of the greatest value, and places it, for some purposes, before all other substances of this class. It may not be so directly antiphlogistic as the aqueous solution of gummy matters, because the cooling effect of evaporation, and the direct sedative effect of the water are waning, but for preserving softness of tissue, and protecting against irritant influence from without, it is without an equal, and much more convenient because it does not require the constant watchfulness to prevent drying. It does not evaporate, which is one of its most important and remarkable properties. In dryness of the ear, either from a deficiency or too great a solidity of the cerumen and consequent deafness, glycerine is an excellent remedy, and comes near to being an absolute specific in many such cases of so-called catarrhal deafness. It is equally useful in the annoying dryness of the mucus membrane of the nostrils, which is a very common complaint that is often connected with inflammation. In either of these cases, it may be introduced by means of a camel's hair pencil or small brush, or in the case of external meatus, upon sterilizes cotton.

GLYCERINE. Is probably the most important therapeutic agent ever discovered by man, and enters into (or should) the treatment of at least fifty percent of all known pathological conditions. Before we elaborate further on this wonderful substance (glycerine), and give you specific directions for its many uses, please turn to Lesson 5, page 10, paragraph 3. It requires no great imagination to see how vastly important glycerine is, composing as is seen, a very large proportion of every fat and oil contained in the human body. Furthermore, it is freed in the breaking down of fats and oils and immediately unites ? nascent acids holding them in check by its 3 atoms of OH (Hydroxide), which is the basic radical of glycerine, or we may say, the alkaline principle it contains. We know that sodium and potassium hydroxides (NA-OH) and (K-OH) are sometimes freed in certain inflammatory processes and that they act caustically upon the tissues they come in contact with, and here is the great difference between the caustic alkalis and glycerine.

While the hydroxides of sodium and potassium unite violently with fatty and other acids to form soaps in the case of fatty acids and neutral salts in the case of non-fatty acids. In the first, they are powerfully escharotic and in the second, they give off enormous quantities of carbon dioxide gas, which causes swelling

and bloating, great pressure, and depression of functional activity. Glycerine on the other hand unites with nascent fatty acids to form fats and oils, which are bland, nourishing and healing to the tissues. Glycerine combined with equal parts of ripe pineapple juice, is a most powerful solvent of the pseudo-membranous exudation in diphtheria. Properly applied and given internally in tablespoonful doses, it will be found to be almost specific in many cases and will save life when all other remedies have failed.

FORMULA No. 77. Glycerinated Pineapple Juice.

Mix equal parts of glycerine and pineapple juice (ripe and fresh). Apply frequently by painting with a camel's hair brush.

Internally: Dose: One tablespoonful to be held in the mouth and slowly swallowed. Also used as a gargle several times a day.

For skin diseases, glycerine alone is very virtuous, particularly in lichen, prurigo, herpes, eczema, psoriasis, lepra, etc. The following formula will prove a great boon and blessing in above affections.

FORMULA No. 78. Glycerite of Burdock and Walnut (For Skin Diseases)

Fluid Extr. of Burdock Rt:

1 lb. Burdock Rt.(cut)

1 gal. Distilled water

½ oz. Potassium Sulphate

1 pt. Glycerine

Dissolve Potassium Sulph. in water, add Burdock Rt. and boil till liquid is reduced to ½ gallon. Strain, and again add enough water to just cover the root, and simmer for 10 minutes. Strain, combine the two liquors, add glycerin blending it in thoroughly.

Fluid Extract of Walnut Lvs:

1 lb. Walnut Lvs. (cut)

1 gal. Distilled water

½ oz. Potassium Sulphate

1 pt. Glycerine

↑

(Procedure same as for Burdock Root Extract)

Cool and bottle.

Keep these two extracts separately bottled and labeled and stored in a cold place for future use.

To make the above Burdock and Walnut Formula, mix equal parts of each, in quantities needed for immediate use.

FOR OUTWARD APPLICATIONS in above skin diseases, apply on cotton or lint, cover with waxed paper and bandage on securely. Leave on all night. If continuous treatment is convenient, change dressing several times a day.

INTERNAL USE: DOSE: One dessert-spoonful to a tablespoonful in water 3 or 4 times a day between meals.

This remedy is unsurpassed for relaxed and atonic conditions of the alimentary tract. Also for ulcerations, tumors, cancers, kills worms (ascaris), parasites, germs, is remarkable in syphilis and all cachetic conditions, scrofula, tuberculosis, hardening of arteries, fibroid growths, morbid mucoid deposits on tongue, esophagus, stomach intestines, bronchial catarrh, dryness of mucus membranes, croup (painted on glottis, while tongue is pressed down and forward). It is remarkable as a quick relief of dysentery, diarrhea, prolapsis uteri and ani, hemorrhoids, enlarged prostate, hernia, etc. In fact, it would be difficult to name 20 pathologies which could/not benefit by it.

When used for injections or douches, the strength must be determined by the special condition of the patient, and the amount of astringency or stimulation desired. The full strength of this remedy is 1 in 2. Fluid extracts are usually made in the strength of 1 equals 1. This remedy is fluid extract strength diluted with an equal part of glycerine. Undiluted glycerine is irritant and stimulant, arousing to activity. Well diluted, it is demulcent, emollient, soothing, and healing. Therefore, we must judge its strength for use according to condition and effects desired. For the separate use of each or either of these glycerites (burdock or walnut) see Lessons treating of them individually. Glycerine is far to be preferred in making fluid extracts to alcohol, wherever it is compatible. It is a perfect solvent of all alkaloids, starches, inulin, (elecampane) lupulin, (hops) quinine (cinchona) cascarin (cascara) gentianin (gentian) tannin, tannic and gallic acids, (oak bark, etc.), iodine, bromine and many other principles. The following is a list of Herbs, roots, barks leaves and berries with which glycerine combines to make glyco-extracts or glycerides. Fifty percent of glycerine will preserve them perfectly. They will not evaporate unless boiled or heated to 100 degrees. They will not ferment or become rancid, form moulds or sour. They will keep indefinitely without loss of strength or virtue if kept in actinic (brown colored) bottles and well corked. Therefore, glycerine is of inestimable value for making extracts. Adders tongue (erythronium americanum), anise (pimpinella anisum), Althea (marsh mallow), arnica (arnica Montana), archangel (angelica atropurpurea), barberry (berberis vulgaris), bear berry (arctostaphylos uva-ursi), balm (melissa officinalis), bilberry (vaccinium myrtillus), bitter root (apocynum androsaemifolium), bitter sweet (amara dulcis, solanum dulcamara), birch (sweet betula lenta), blue vervain (verbena hastata), black adder (prunos verticillatus), blue cohosh (caulophyllum thalictroides), blue flag (?)iris versicolor, black cohosh (cimicifuga Racemosa), bryonia (pryonia alba), bugle-weed (lycopus virginicus), boneset (eupatorium perfoliatum), blackberry (rubus vilosus), burdock (arctium lappa), broom (cytissus scoparius), bethroot (trillium pendulum), buchu (barosma crenata), crawley (corallorhiza odonterhiza), candy tuft iberis

amara), cedron seed (cedron simaba), celandine (chelidonium magus), comfrey (symphytum officinalis), chicory (chicorum intebus) colt's feet (tussilago farfara), cotton root (gossipium), corsican moss (fucus helminthocorton), columbo (cocculus palmatus), cramp bark (viburnum opulus), culebs (piper cubeba), dandelion (leontodum taraxacum), dogwood (cornus florida), dwarf elder (sambucus ebulus), elder (sambucus canadensis), elecampane (inula helenium), feverfew (pyrethrum, parthenium) feverweed (gerardia pedicularia), fenugreek (trygonella foenum), fireweed (erecthites), five finger grass (potentilla canadensis), fit plant (monotropa uniflora), flaxseed (linum), female fern (polypodium vulgare), fragrant valerian (valriana officinalis), galangal (alpinia galangal), gentian (gentiana lutea), german chamomile (anthemis nobilis), golden seal (hydrastis canadensis), gold thread (coptes trifolia) hops (humula lupulus), hyssop (hyssopus officinalis), Irish moss (chondrus crispus), kcusso (brayera anthelmintica), lily root (water lily), Jungwort (pulmonaria), damiana (Mexican) turnera microphylla), mistletoe (viscum album), myrtle berry (bayberry), oak bark (quercus), plantair (plantago lanceolate) rhubarb (rheum palmatum) motherwort (leonurus cardiaca), strawberry leaves (fragaria virginia), walnut leaves (juglans), -Oregon grace root (berberis aquifolium), yam (wild) (dioscorea), yellow dock (rumex crispus), xanthoxylum (prickly ash bark), yellow parilla (menispermium).

Any or all of these can be made into fluid extract as directed in burdock and walnut leaves above, We believe these glyce-extracts in the strength of 1 in 2 are Superior to alcoholic, etheric or sly other extracts ever made, for any and all purposes. Glycerine, however, is not suitable to be used for resinous or oily Herb extracts. For that purpose, alcohol is the most satisfactory, menstruum for the simple reason that glycerine will not dissolve or mix with resins or oils, but alcohol will. One more special and very valuable item of information about glycerine is that it unites with many insoluble poisons, which have been administered by doctors and have become lodged or deposited in the tissues of the body such as different forms of mercury, iodine, mineral sulphates, arsenic, strychnine, etc.,

It is sometimes exceedingly difficult to dissolve and dislodge these poisons from the tissues. Glycerine will often do this (dissolve them) and carry them out of the organism. Just as soon as these dreadful poisons are cast out, the sufferer regains health. So, many mysterious diseases, which often defy diagnosis, are caused by deposited poisons. Therefore, this information is priceless to the practicing Herbalist.

Next week we will classify demulcents and make it more clear which of them to use in particular conditions.

LESSON SIXTEEN

Nature produces thousands of demulcents, emollients and vulnerary Herbs, depending on their different and varied chemical constituents for their therapeutic application in widely diverse conditions.

We have given you a detailed description of thirteen of them, selected carefully, and believed by us to be the world's best. We have only one more demulcent to describe, and then we shall classify them according to their chemistry and particular uses.

DEMULCENTS: Continued.

THE GREAT MULLEIN. Latin name, *Verbascum Thapsus* (Linn.)

Natural Order: Scrophulariaceae.

SYNONYMS: White mullein, gorchos, mullein dock, our ladies flannel, velvet dock, blanket Herb, woolen, rag paper, candlewick plant, clown's lungwort, Bullock's lungwort, Aaron's rod, ice leaf, Jupiter's staff, Jacob's staff, Peter's staff, shepherd's staff, shepherd's clubs, beggar's stalk, beggar's blanket, Adam's flannel, Cuddie's lungs, feltwort, fluff weed, hare's beard, old man's flannel, duffle, Hag's taper, etc.

PARTS USED: Leaves, flowers and root.

HABITAT: The great mullein is a widely distributed plant, being found all over Europe and in temperate Asia as far as the Himalayas, and in North America. It is exceedingly abundant as a naturalized Herb in the eastern states of America. It grows throughout Britain, except in the extreme north of Scotland. It is found growing on banks, by roadsides, and on waste ground; more especially on gravel, sand or chalky soil. It flowers during July and August.

The natural order, Scrophulariaceae, is a very important family of plants, composing 200 genera, and about 2,500 species, all of which grow in temperate and sub-tropical regions. Many of them produce flowers of great beauty and for this reason, they are cultivated in gardens and green houses on a very extensive scale. Of these, the beautiful calceolaria, mimulus, penstemon, antirrhinum and collinsia are among the most beautiful. Many valuable medicinal plants belong to this family such as the foxglove (*digitalis*), the speedwells and veronicas, the figworts, toadflax, eyebright, bartsia, cow wheat, the red and yellow rattles or coxcombs and many others. All the various species of mullein possess similar

medicinal properties, but the great mullein, the most common of them all is the one most employed.

For therapeutic purposes, it is generally collected from wild growing specimens, though there is a large quantity comes to the market from cultivated plants. The great mullein is a most valuable remedy in all pulmonary complaints. It has a special affinity for the respiratory organs and is considered by some authorities to be more curative in tuberculosis, coughs, bronchitis, etc., than comfrey, lungwort, pleurisy root, or any other Herb used in the treatment of respiratory diseases.

Chemical Constituents. The leaves.

They are nearly odorless, of a mucilaginous and bitter taste. Their chemistry has not been very clearly defined and is scarcely mentioned in the majority of scientific textbooks, but we know that it contains a large percentage of a peculiar gum, with 1 to 2 percent of resin, divisible into two parts.-One soluble in ether, the other not; a readily soluble amaroid (bitter) substance, tannin, saponin, mucilage and an anodine principle which has not been defined.

The flowers. Contain gum, resin, a yellow coloring principle, a green fatty substance strongly resembling chlorophyll, a glucoside fatty matter, free phosphoric acid uncrystallizable sugar, mineral salts composed of potassium phosphate, calcium phosphate, a mucilaginous saponitic substance, volatile oil and an astringent narcotic and sedative principle.

We are fully aware that this vaguely defined chemistry is not very enlightening, but we must remember that some Herbs have so many complicated chemical constituents as to defy the most careful analysis by the greatest living chemists. Nature seems to lock her profound secrets up in the leaves and flowers of some plants. Nevertheless, we can be absolutely sure of one thing. Mullein is not only a great plant but is also an important remedy for tuberculosis, and other dreadful pathological conditions. In Ireland, mullein is considered a specific for all lung troubles, and is extensively cultivated there and kept on hand for that purpose. In England, the great mullein has been used medicinally for hundreds of years, and is mentioned in almost every medical Herbal. We do not intend to go deeply into its history, but we might mention that Culpepper, Gerard, Parkinson, Coles, Prior and many other famous Herbalists all speak very highly of mullein.

We wish to call your attention, especially, to the fact that mullein contains both POTASSIUM and CALCIUM PHOSPHATE. We learned in previous lessons that these two organic salts are absolutely necessary for the nervous system and bone structure. As the ravaging effect of tuberculosis is, to feed on all the tissues of the body until they are literally wasted away, it may be, and probably is, on account of the presence of these two vital salts, that the great mullein is so remarkably effective in checking this disease.

THERAPEUTIC USES AND APPLICATION: Demulcent, emollient, antiseptic, astringent, pectoral, haemostatic, anodyne, narcotic, germicide, vermicide, anti-asthmatic, anti-catarrhal, anti-spasmodic and vulnerary.

FORMULA No. 79 Infusion of Mullein Leaves

1 ounce Mullein Leaves (cut)

1½ pints Distilled water

Boil the water and pour over the leaves. Cover and let steep in a hot place for 15 minutes. Strain through muslin to avoid the hairs. Sweeten with honey to taste, or add 1 ounce of glycerine. Cool, bottle and keep in a cool place.

DOSE: One wineglassful to half a teacupful or more 3 or 4 times a day between meals. Children less according to age.

This is a precious remedy for checking the distressing cough and expectoration in phthisis and all pulmonary diseases. Also for hemorrhage of the lungs, stomach, intestines or any other internal part. When the disease is far advanced, we recommend the strong decoction of the leaves and flowers, singly or in combination with comfrey root and garlic juice.

FORMULA No. 80: Strong Decoction of Mullein.

4 ounces Mullein leaves and flowers, equal parts (cut)

3 pints distilled water

Boil slowly for 15 minutes. Strain, press and reduce to 1 pint. Add 4 ounces glycerine, cool, bottle and keep in a cool place.

DOSE: One tablespoonful 3 or 4 times a day. Children, one teaspoonful. Add 4 ounces of honey for children. This decoction is 4 times the strength of the infusion, and is much more astringent and anodyne. It is non poisonous and may be taken in larger doses. It is a wonderful and merciful remedy, calming and quieting to the nerves, and soothing the inflamed tissues remarkably. Tuberculosis has been cured in its earlier stages by this one remedy alone. In all stages, however, it will give prompt relief and promote rest and sleep. Its narcotic principle is not well known, but it is well known that, it is not poisonous. Enormous quantities of it have been taken, and there is no case on record that injury or harm has come to patients who have consumed as much as a quart a day. It is claimed to have overcome extreme cases of diarrhea and dysentery, but its greatest virtue is manifest in the treatment of tuberculosis and other pulmonary complaints.

As already stated in previous lessons, and particularly in Lesson No. 12, that there is no better remedy in nature for hemorrhage/of the lungs than comfrey root. Neither is there, in our opinion, any remedy in nature equal to allium sativa,

or garlic juice for supplying lost sulphur, and stopping the decay of cells in any part of the organism; particularly in advanced stages of tuberculosis. But we are also aware that, while one specific Herb or remedy will do one thing most thoroughly, it often happens that a combination of two, three, or even more Herbs will be more effective in bringing about a recovery. One single Herb, no matter how good that one might be for a specific condition, is sometimes not adequate to take care of all the complications that might exist. So, for advanced stages of tuberculosis, we highly recommend the following formula. NOTE: This does not imply that our previously recommended formulas for the treatment of pulmonary disease are in any way inferior to this one, but there is an old saying that "What is one man's meat is another man's poison." This is particular true in the treatment of disease. No two people are exactly alike. As true physicians, we must remember this, and note carefully the characteristic type of our patients and their peculiar temperament. After we have used a special treatment which seemed to be indicated, but proved disappointing in its results, we must not give up the ghost but think things over, and try to ascertain where we have made our mistake; and then adopt another formula of a similar character, which will often turn out to be the best we could have used. And now, here, is the formula which we have found to be extremely virtuous, and which has often given results after other remedies have failed.

FORMULA No. 81. For Advanced Stage of Tuberculosis.

1 pint of Strong Decoction of Mullein (See page 4, this lesson)

1 pint Formula No. 54, (Lesson No. 12, page 11 (Comfrey)

1 pint Formula No. 21, (Lesson No. 5, page 17 (Garlic)

DOSE: One tablespoonful or more, according to the severity of the case, 3 or 4 times a day. Children less according to age, with honey added.

This is a special formula, expressly for advanced cases of tuberculosis, but is also of great value in treatment of many other conditions such as ulceration of stomach, duodenum, intestines, renal disease with blood in the urine, dysentery, cholera, internal tumors, cancers, acid or alkali burns, infected wounds, sprains, bruises, second and third degree burns, torn ligaments, broken bones, torn and lacerated flesh, purulent skin diseases, and all diseases that show a marked deficiency of calcium and sulphur. It is powerfully antiseptic, nourishing, emollient, demulcent and healing and is indicated in all wasting diseases, malnutrition and rickets. It is exceedingly valuable in all forms of bone disease, necrosis, osteo-myelitis, etc. It gives prompt relief in coughs, catarrh, bronchitis, asthma, dyspnoea, high blood pressure and many nervous troubles. It is perfectly harmless and may be given in very large doses where indicated. The dried leaves of mullein have been used extensively and with great benefit, smoked in an ordinary tobacco pipe to relieve the irritation of the respiratory mucus membranes in asthma and the hacking cough of tuberculosis. Either smoked in a pipe or made into cigarettes, it very often completely controls the spasms and cough far more

effectively than the poisonous stramonium which is so extensively used for smoking. Mullein leaves are not poisonous in any form and are, therefore, to be preferred. Another very valuable formula of mullein is made as follows:

FORMULA No. 82. Mullein Oil.

Put 2 ounces mullein flowers into a jar or wide mouthed bottle. Add sufficient hot olive oil (Italian) to cover and show one inch of oil above the flowers. Cork and shake well. Place in a hot place or expose to the sun for 14 days, macerating or shaking well every day. Care should be taken not to cork tightly when cold and then heat it. The air in the bottle or jar when heated will expand and may burst the bottle. Therefore, be sure it is quite warm or moderately hot before corking tightly. At the end of the two weeks, filter through filter paper in a funnel. Bottle ready for use. This is a famous German formula and is sold in all the drug stores of Germany. In spite of what we think of Herr Hitler and his political puppets, we are obliged to admit that German scientists are second to none in the world. In almost every branch of industry into which chemistry enters, German chemists have led the world for many years. Before the last world war, German patents registered in England composed more than 80 percent of all the patents registered in that country.

We mention this astounding fact to enhance the virtue and value of mullein oil. We, ourselves, believe it to be one of the greatest discoveries in the realm of medicine ever discovered by mankind. For suppurative inflammation of the inner ear (otitis media and interna), whether it be croupous, desquamative, diphtheritic, hemorrhagic, mycotic, parasitic, scarlatinous, or syphilitic, this wonderful oil is the local remedy par excellence. It is equally food in inflammation of the outer ear which often extends over the greater part of the meatus (otitis externa diffusa), or it may be circumscribed (otitis externa circumscripta) in which case, it is usually furuncular (otitis externa furunculosa). In any and every form of ear disease, either catarrhal, serous or purulent, this oil will give almost immediate relief and will ultimately bring about a complete cure.

Doctor Fernis, an English Herbalist, says that some of the most brilliant results have been obtained in suppurative inflammation of the inner ear, by a single application of mullein oil. He recommends that the oil be warmed and in acute or chronic cases, two or three drops be made to fall into the ear, two or three times a day. The doctor was right

We have known a triple oleate of mullein flowers to give almost miraculous relief in severe cases of earache. The mysterious narcotic principle seems to benumb the parts almost instantly. Suppuration is hastened and a cure is brought about. NOTE: A triple oleate of mullein flowers is made with pure oleo extracted from olive oil. The fresh flowers of mullein are macerated in it for 21 days, exposed to bright sunlight or ultra violet rays. The first oil is expressed and filtered. A fresh supply of the flowers is placed into it and the process is repeated three times. It is very expensive and difficult to obtain as it has to be imported. A single oleate is priced at \$4.50 per pound. A double oleate at \$10.00 per pound

and a triple oleate at \$15.00 per pound. We are of the opinion that these most valuable oleates of mullein and other virtuous flowers could be produced at about one half to one third of the German product and would find a ready sale for many purposes. The ordinary oil of mullein (Formula No. 82) relieves pain and inflammation both internally and externally.

DOSE: One teaspoonful with or without honey 3 or 4 times a day. It is vermicide, germicide and parasiticide.

Externally: For neuralgia, tic doulcreaux, sore throat, pleurisy, pneumonia, sprains, bruises, sores, wounds, lacerations, swollen joints, torn ligaments, purulent ophthalmia, inflamed parts in appendicitis and many skin diseases. Rub in well where possible or apply on a saturated tampon or cotton and cover.

We have given you twelve of nature's best demulcents and now it remains only to classify them so that you may see at a glance which of them to use in particular conditions. In the order given in these lessons, they are:

Marsh Mallow Root. (Lesson No. 10, Pages 13, 14, 15, 16 and 17) This is essentially a lime or calcium plant specially indicated in malnutrition, rickets and weak digestion, but is contra-indicated in diabetes and pancreatic disease, owing to its heavy content of starch. Is not suitable for very young children for the same reason.

(2) MIMOSA GUM (gum acacia, gum arabic) (Lesson No. 10, pgs. 17, 18 & 19). This plant is a calcium and magnesium plant, free from astringency and starch. An ideal nourishment for delicate stomachs, very young children, and for diabetics.

(3) SWEET ALMOND (*Amygdalus Dulcia*) Lesson No. 11, pgs. 8, 10 & 19) The most nourishing of all Herbs for the brain, bone and muscular tissues. For all malnutritional diseases, depleted nervous system, muscular weakness, weak digestion, gall stones, nephritis and diabetes.

(4) QUINCE SEED (*Pyrus Cydonia*) (Lesson No. 11, pgs. 10, 11, 12, 13 and 14). Essentially an oxygen plant and gentle laxative. Specially indicated in atonic and relaxed conditions of stomach, intestines, kidneys, lungs, dyspnoea, weak heart, small and flat chests, etc.

(5) COMFREY ROOT (*Symphytum Officinale*) (Lesson No. 12, pgs. 8 to 15). Exceptionally good for all hemorrhages, both internal and external, (particularly hemorrhage of the lungs). Excellent for torn, bleeding and lacerated parts, broken bones, ruptures, varicose veins and a powerful cell proliferent or builder of new tissue.

(6) IRISH MOSS (*Chondrus Crispus*) (Lesson No. 12, pgs. 16 to 20). Contains every element found in the human body, except three. There is a general nutrient restorative and balancer of body chemistry, applicable to almost every

disease of an acid nature. (For Irish Moss, also see Lesson No. 13, pgs. 2, 3, 4 and 5.)

(7) ICELAND MOSS (*Centraria Islandica*) (Lesson No. 13, pgs. 5 & 6). Another powerful oxidizer and catarrh remedy.

(8) SLIPPERY ELM BARK (*Ulmus Fulva*) (Lesson No. 13, pgs. 11 to 13). This demulcent is specially indicated in gastritis, gastric catarrh, mucus colitis and inflammation of all mucus membranes. Relieves pain and helps to dissolve and remove gall stones. Very easily digested and acceptable to the most delicate and inflamed organs. Absorbs poisonous exudations, soothes lungs and bronchi, but is not suitable for diabetes, owing to its content of starch.

(9) Bladderwrack (*Fucus Vesiculosus*) (Lesson 14, Pages 2 to 12.) This is the wonder Herb for goitre, enlarged glands, over-weight or adipose tissue, thins and vitalizes the blood reducing high blood pressure and restoring chemical balance. An excellent tonic alterative and laxative.

(10) Flax Seed (*Linum Usitatissimum*) (Lesson No. 15, Pages 5 to 12. An ideal Herb for internal and external inflammation. Hemorrhoids, leucorrhoea, prostatitis, renal and vesical irritation, dysentery and as an outward application or poultice for burns, swollen joints, etc. Also an excellent and easy laxative.

(11) Glycerine (Glycerol) (Lesson No. 16, Pages 6 to 11). This is the greatest of them all. Never contra-indicated. Is so versatile it cannot be classified. Needs special study. See Lesson No. 16, pages 6 to 11.

(12) Mullein Herb (*Verbascum Thapsus*) (This Lesson, Pages 1 to 9). This natural wonder Herb is the only Herb known to man that has remarkable narcotic properties without being poisonous. It is the great pain killer and nervous soporific, calming and quieting all inflamed and irritated nerves. Controlling coughs, cramps and spasms. Invaluable in tuberculosis and ear diseases, but needs most careful study and memorizing of its varied and merciful virtues. (See this lesson).

And now we pass to a study of a group of Herbs, which have been used, most of them, from time immemorable, restoring health to countless millions of sufferers from the most common of all human ailments Namely constipation, variously called mucus colitis, indigestion, peristaltic insufficiency, intestinal atrophy, sluggish intestines and a hundred other pseudonyms.

Laxatives: Aperients, purgatives, evacuents.

SACRED BARK: Natural Order. Rhamnaceae.

Synonyms: Christ thorn, bear wook, chittem bark, holy bark,

Latin name: Rhamnus Purshiana from ram, (Celtic) meaning a tuft of branches, and pursh, named after Frederick Pursh, Botanist (1817).

Spanish, Cascara sagrada. Cascara (bark), sagrada (sacred or holy). Worshipped by the North American Indians and many California natives on account of its great medicinal virtues.

HABITAT: North Idaho, west to the Pacific, Northern California, Oregon, Washington and the South-Western States of Canada.

Parts Used: The bark. This is an extremely valuable plant, which like many other Herbs, wraps its marvelous virtues in obscurity, defying correct chemical analysis on account of its very complicated chemistry.

CHEMICAL CONSTITUENTS: (So far as is Known)

Emodin. Laxative principle (resinous) (C-15, H-10, O-5), tannin, 2 percent. A yellowish green volatile oil (chemistry not known), rhamnol arachidate (glycerides of linolic and myristic acids), 2 percent, quebrachol, (C-20, H-34, O). (This is found in quebracho bark, native of Chile, and is highly recommended in cardiac asthma and dyspnoea; purshianin, (1/5 grain is purgative) an intensely bitter active principle which does not pre-exist in the bark, but is produced by slow oxidation by Keeping from 1 to 6 years. The longer it is kept, the milder and more effective it becomes in its laxative and tonic action.

MEDICINAL PROPERTIES AND USES: Laxative or purgative, according to dose; tonic; febrifuge; anti-diabetic; hepatic; stomachic; ???ic

It increases the secretions of the stomach, liver, pancreas and is very remarkable in its action in torpor of the colon and constipation. It is unquestionably one of the very best and safest laxatives ever discovered. An immense amount of clinical evidence has been published about the wonderful virtues of this Herb. We, ourselves have used it over a period of more than thirty years and have known it to completely restore normal and healthy bowel action in many cases of long standing habitual constipation, some of them more that 20 years standing. For activating the Gall bladder (its bitter principle) and the pancreas, in diabetes, we believe it is without equal. Various reports and testimonials have come to us from patients who state that it has given them great relief in cardiac asthma, catarrh, dyspepsia, indigestion, mucus colitis, worms, high blood pressure and many other varied conditions, which are difficult to believe. So universally is it known and used that even the regulars do not deny its virtues. It is an official remedy (fluid extract) in the United States Pharmacopoeia and the British Pharmacopoeia and in the 19th edition of the United States Dispensatory, page 1059 appears the following. Cascara Sagrada is an excellent laxative for use in habitual constipation. It is not to be employed as a purgative when a powerful impression is to be made. Its action closely resembles that of rhamnus frangula, but is more powerful and certain. In many cases of habitual constipation, the continued use of the bark seems to produce a permanent

beneficial effect upon the intestinal tract. This is a great admittal on the part of the Allopaths who usually condemn harmless Herbs as inert or useless. We believe the best preparation of sacred bark is made as follows: It is always reliable and will Keep indefinitely.

FORMULA No. 83. Fluid Extract of Cascara.

1 pound of Cascara Bark (cut)

1 gallon of Distilled water

Boil vigourously until the water just covers the bark. Strain, and set liquor aside. Return bark to saucepan and add 1/2 gallon more water. Boil again until the water just covers the bark. Strain, and combine the two liquors and simmer slowly until the liquor is reduced to half pint. (The last part of the second boiling should be done in a double boiler.) Add one half pint glycerine. Stir well, then when cool enough, bottle.

DOSE: Frown one half to one teaspoonful at night upon retiring. It is advisable not to try to alter this bitter taste, because much of its virtue depends upon its bitterness.

Children: From 5 to 15 drops in honey water. In order to be of permanent benefit, this should be taken from 3 to 6 months. This wonderful Herb enters into several of our formulas.

We have given you a deep study, and trust you will greatly profit by it.

LESSON SEVENTEEN

“Is there no balm in Gilead? Is there no Physician there? Why, then, has the daughter of my people not recovered her health?”

This is what the Jewish Rabbi or High Priest said to a man who came from afar to report the sickness of his daughter. (Quoted from the Bible). This is one of the many quotations from the Bible which could be given to show the great faith and belief in the use of Herbs for healing the sick, by the ancient Jews. There are many Herbs called by the name “balm of Gilead”, but the one evidently referred to in the above quotation is the original and genuine balm of Gilead around which so many mystical and some of them mythical, associations have gathered. It is a small tree growing on both sides of the Red Sea and it has very ancient history. It’s Latin name is *Commiphora opobalsamum*, and it belongs to the natural order *Burseraceae*. It has many names, among which are balsam of Mecca, balsam of Judea, balsam of Gilead, balessan, bechan, balsam tree and many others.

History: Balm, baulm or bawm, contracted from balsam, may be derived from the Hebrew *bot smin*, meaning “chief of oils” or *basam* (balm) and *besem* "a sweet smell". According to Dioscorides, it means “the juice flowing from the balsam tree.” Pliny states that the tree was first brought to Rome by the generals of Vespasian, but Josephus relates that it was taken from Arabia to Judea by the Queen of Sheba as a present to King Solomon. There, being cultivated for its juice, particularly on Mount Gilead where it acquired its popular name. It was greatly valued as a holy tree by the Turks, who grew the trees in the Gardens of Matarie, near Cairo, safely guarded and in secret, for the use of Royal Princes and Rajahs. Very early in history, Prosper Alpin wrote a book about it called the “Dialogue of Balm” and Bruce, Theophrastes, Galen and Discorides all wrote about it’s great virtues. Unfortunately for us, this particular balm of Gilead is seldom found in either Europe or America in its pure state, but, fortunately for us, we have several trees commonly called balm of Gilead and one in particular in which we are interested right now. But, you and I are living in a hard matter-of-fact world, where doubt and incredulity have taken the place of Faith and Belief in the bountiful gifts of God in Nature. So, we took this round-about-way of impressing you with the truly great virtues of a sister plant to the ancient and venerated original balm of Gilead, which sister plant grows in our own native America.

It stands to common reason that the plant we have just described must have had most wonderful medicinal properties, or those great men would not have eulogized it, and it is our belief that the sister plant we are about to describe is not

one whit less virtuous and valuable than the old original. Nothing that is good ever dies on this old earth for they all produce their kind, and the old Biblical saying “The leaves of the tree shall be for the healing of the Nations.” is just as true today as it ever was and now let's look at our own balm of Gilead.

LAXATIVES: Continued

BALM OF GILEAD: (Poplar) Latin Name--Populus Balsamifera

HABITAT: Canada and North America

The buds of this and other balsams are covered with a fragrant resinous matter which may be easily separated in boiling water. The odor is like incense and the taste is bitter and rather unpleasant. The bark is tonic and laxative. The resinous matter from the buds is soluble in alcohol, olive and other oils, but not soluble in water.

It is seldom we meet with a laxative that is at the same time stimulant, tonic, diuretic and anti-scorbutic, but here in this balsam tree we find all of these virtues. The chemistry of either it's balsam or the laxative and tonic principles of its bark are practically unknown. What we do know is that it has been successfully used in a variety of diseases and the North American Indians considered it to be one of Nature's best remedies for bad blood (scurvy), coughs and all chest complaints, stomach troubles, kidney and bladder diseases, rheumatism and all kinds of skin diseases. The following formulas will cover its varied uses. We might here mention that the fragrant gum resin extracted from the buds is exported to Germany, England and France under the name of tacamahaca.

FORMULA No. 84. Extract of Balm of Gilead Bark

1 pound of balsam poplar bark (cut)

1 gallon of distilled water.

Boil slowly in an open pot for 30 minutes. Strain and return the bark to the saucepan. Cover with fresh water to 3 inches above the bark. Boil until the water is level with the top of the bark. Strain and add the two liquors together. Slowly reduce to one pint. Add one pint high grade glycerine. Cool and bottle.

DOSE: One to two teaspoonfuls at night upon retiring. Note the action and regulate the dose accordingly, as before stated, the result to be obtained is a soft molded stool 2 or 3 times a day. Avoid diarrhea.

For Children: Children from 5 to 15 drops in honey water according to age. This extract is 1 in 2 strength. It will keep indefinitely without losing its power. The average dose is one teaspoonful, but some cases react more than others, so it is advisable to start with small doses.

This formula has considerable tonic, digestive, resolvent and dis?utient properties and is without any toxic principle. It rarely produces any griping pains or cramps, but is usually very mild in its action. In cases where pains are produced, a cup of hot ginger tea drunk immediately after taking will prevent the pain.

FORMULA No. 85. Oleo-Resin of Balm of Gilead.

1 ounce Balm of Gilead buds

1 pint Pure Olive Oil

Heat the oil to near boiling point. Steep the buds in the hot oil for one hour, keeping the oil hot but not boiling. Strain through a cloth, and when cool, bottle. This is a wonderful remedy for dry and debilitated intestines, with old standing constipation brought about by long use of drastic purgatives and mineral cathartics. Also for inflammation and ulceration of the stomach, duodenum or intestines, inflammation of the gall bladder with formation of stone. It is a remarkable solvent of cholesterol (the principal ingredient in gall biliary calculi). In cholesteraemia, where a morbid excess of cholesterol remains in the blood owing to non-excretion, and which is frequently deposited in the brain and other nerve tissues, this remedy will be found very valuable. It not only dissolves the cholesterol but by its diuretic action, tends to carry it out of the system. It is greatly laxative, powerfully peristaltic, lubricating, nourishing, diuretic and healing. For old people, and those whose mucus membranes have become dry, we have no remedy that is better or more promptly beneficial than this one.

DOSE: One tablespoonful in lemon juice, or with equal parts of honey added and beaten together, taken 3 or 4 times a day between meals.

Children: From a teaspoonful to a dessertspoonful according to age and condition. For outward application to swollen glands or joints, and in all dry scaly skin diseases, rub in well or apply on cotton and cover. The following salve will be found to be one of the most excellent healing balms for many purposes:

FORMULA No. 86. Balm of Gilead Ointment

Process No. 1

2 ounces of balm of Gilead buds

1 quart boiling water (distilled)

Boil very slowly for 30 minutes, do not stir. Have ready a pan of cold water. As the resinous matter rises to the top of the water, carefully skim it off and drop into the cold water. Avoid skimming the buds. When no more resin rises, the boiling water and buds can be thrown away. Examine the resin on the cold water and remove any buds which may be clinging to the resin. NOTE: It may be necessary

to bring the water to boiling point and keep it just simmering for 5 minutes, to separate perfectly.

Process No. 2

Heat 1 pound of anhydrous lanolin (wool fat) with 4 ounces of pure castor oil (oleo-resinae) until both are thoroughly and uniformly mixed. Place the resin into this hot mixture and stir until all is dissolved. Remove bubbles and pour into hot jars. Allow to cool without disturbing. Do not close caps until quite cold, just place the caps over the jars but do not close them tight. This will avoid dust settling in the ointment. It is advisable to thoroughly chill by placing the jars in an icebox or refrigerator for an hour or two, but this should not be done until the ointment is quite cool. Keep in a cool place. A variation of this can just as easily be made by using only 3½ ounces of castor oil and ½ ounce of eucalyptol. We prefer this latter method because the eucalyptol makes it more anesthetic and antiseptic owing to its releasing ozone when in contact with organic decaying matter. For psoriasis, pityriasis, dry exzoma, itching affections, impetigo, ulcers, burns, infected wounds, sore throat, sunburn, dry and scaling skin, chapped hands, sore or tender feet, athlete's foot, varicose ulcers, sprains, bruises, swollen joints, dandruff, etc.

DIRECTIONS FOR USE: The parts must first be cleansed by washing in warm, soapy water, rinsing well and drying. Wherever possible, the ointment must be rubbed in well for 5 to 10 minutes, the excess should be wiped off so as not to grease the bed or wearing apparel. For skin diseases, burns, wounds, etc., apply on lint and strap on with adhesive tape or bandage. A half teaspoonful beaten up with a teaspoonful of honey and taken internally will give almost instant relief in dry cough and sore throat. It affords great relief in hemorrhoids and is exceptionally valuable for babies' chafed skin. For babies, apply gently over the sore surface and then apply babies powder over this.

LAXATIVE: Continued.

Now we come to the consideration of one of nature's most remarkable and wonderful, tonic, laxatives and hepatics.

MANDRAKE: Latin name *Podophyllum Peltatum* (Linnaeus)

Synonyms: May apple, wild lemon, raccoonberry, duck's foot, heg apple, vegetable mercury, Indian apple, yellow berry.

Parts Used. Root and resin.

HABITAT: American mandrake is a native of many parts of North America; common in the eastern United States and Canada. It grows profusely in wet meadows and damp open woods. It is interesting to note how some of our most valuable Herbs get their common names. In the case of mandrake, the North American Indians had much to do with the naming of six out of the eight common

names given to this plant. It was called May apple because it blooms in May, thus starting the fruit which ripens in summer (August). The name wild lemon was given because its fruit is of a lemon color, though its taste strongly resembles the strawberry. The name raccoonberry was given because it was noted that raccoons ate the ripe fruit. The Indians, always very close to nature, figured that if the raccoons ate it, it must be good; so they also sought out and ate the fruit and it, therefore, became known as Indian apple. The name yellow berry was given because of its color. The name duck's foot because its 5 to 7 parted leaf resembling the webbed foot of aquatic or domestic fowls, as the duck.

CHEMICAL CONSTITUENTS: Resin 4 to 5 percent, starch, gum, fixed oil, gallic acid. The resin is the active principle and is both very complicated chemically, and also very active. It is called resina podophylli, or better known as podophyllin. It consists, as far as is known, of: (1) podophyllotoxin, (C-15, H-14, O-6) 40 to 60 percent; (2) podophyllinic acid; (3) podophylloquercetin, which occurs in yellow needles. The first of these (podophyllin) is the very active cathartic principle. It is whitish, bitter, resinous, soluble in alcohol and ether, but very slightly in water. It is first cherry red, then greenish blue and violet by sulphuric acid. When heated with alkalis, it is converted by hydration into podophyllic acid (C-15, H-16, O-7) which will be seen is only the addition of one atom of water (H₂, O), which very considerably reduces its activity.

THERAPEUTIC PROPERTIES: Hydrogogue, cathartic, chologogue, alterative and tonic. It is the slowest but surest acting purgative or laxative according to dose.

While this wonderful Herb is the most powerful of hepatics and intestinal tonics, increasing intestinal secretion and bile flow in very small doses, it is at the same time extremely dangerous in the hands of careless or thoughtless people. In larger than strictly medicinal doses it produces copious watery stools, griping, nausea; large doses are very poisonous, producing, especially in the young vomiting, purging, collapse, coma and epileptiform convulsions in from 10 to 20 hours after taking. The resin, applied to ulcers produces purgation and is very irritant to the skin. Those employed in powdering the root, particularly the resin, have irritation of the skin, eyes, nose, mouth and respiratory passages.

USES: Constipation, torpid liver, lead poisoning, diarrhea, catarrhal or malarial jaundice, intermittent and remittent fevers, dyspepsia, bilious vomiting, headache, dropsies, rheumatic, scrofulous and syphilitic affections. It should not be combined with quick or brisk cathartics and should never, under any circumstances, be given in overdose.

Five grains of the resin has caused death.

FORMULA No. 87.

1 teaspoonful of mandrake root (cut)

1 teaspoonful of ginger root (cut or powdered)

1½ pints of distilled water.

Boil slowly for 10 minutes, strain and add 4 ounces of glycerine. Bottle in actinic (brown) bottles when cold, and keep in a cool place.

DOSE: One dessert spoonful to one tablespoon according to the case. twice a day, morning and evening. The first dose should be small to ascertain with safety how much is required to activate the bowels without purgation. Gradually increase or decrease the dose to suit the bowels. This is a most remarkable, though simple hepatic, and as a deobstruent, it has no equal. It steadily acts upon all the tissues of the system and it's action continues for a long time. In chronic liver diseases, we do not know of any Herb in the whole range of remedies, that can, in any way, compare with it. It acts upon the duodenum and intestines and causes them to throw out any obstruction and at the same time is a powerful and effective vermicide. It quickly changes the yellow color of the eyes and skin and restores them to their natural color. It is also very beneficial in uterine diseases and its beneficial effect upon the whole system is very great, indeed.

The dose for children is just sufficient to gently activate the bowels, to bring about a loose, but not watery stool twice or three times a day. It combines very well with either of the following tonic laxatives and also with cascara sagrada bark.

LAXATIVES Continued.

OREGON GRAPE ROOT Latin name Berberis Aquifolium

Parts Used: Rhizome and roots

Synonyms: Rocky mountain grape, holly-leaved barberry, California barberry, trailing mahonia.

HABITAT: North America, West Nebraska, Rocky Mountain region, extending to Arizona, Oregon, Washington and British Columbia, Canada. This is a low trailing glabrous shrub, the leaves strongly resembling holly.

CHEMICAL CONSTITUENTS: Berbine 2.35 percent, oxycanthine 2.82 percent, berbamine, gum, resin, tannin, physosteria, fat.

Berberine (Xanthropictrit) (C-20, H-17, NO-4) occurs in yellow, bitter crystals, needles and prisms, soluble in alcohol, 1 in 300 of distilled water, 1 in 12 of dilute phosphoric acid. Not soluble in ether. This is the vital, active principle, but all the other principles are valuable and necessary for the best effect. Oxycanthine (C-18, H-19, NO-3) occurs in bitter white crystals, turning yellow in sunshine and is soluble in 30 parts alcohol and slightly in water.

THERAPEUTIC PROPERTIES: Alterative, antisyphilitic, anti-periodic, tonic, hepatic and laxative.

USES: Scrofulous and syphilitic cachexia, chronic skin diseases, psoriasis, eczema, chronic uterine diseases, atonic dyspepsia with constipation, chronic hepatitis.

FORMULA No. 88: Strong Glycero-phosphate of Oregon Grape Root.

1 pound of Oregon Grape Root (cut)

1 gallon of distilled water

½ ounce of diluted phosphoric acid

Dissolve the phosphoric acid in the water, add the root and let stand for 2 hours with occasional stirring. Boil slowly until the root is barely covered with water. Strain and set liquid aside. Put the bark back into the saucepan and add about 3 pints of fresh distilled water. Boil down again until the root is just covered with the water. Strain and combine the 2 liquors, then again boil down to one pint. Add one pint of glycerine, blend thoroughly, cool, bottle and keep in a cool place

DOSE: One teaspoonful, well diluted with water 3 or 4 times a day.

Children, 10 to 20 drops, according to age.

This is an exceptionally fine tonic, laxative, hepatic and digestive agent. It also acts as a nerve tonic. We consider this formula to be much better than the ordinary fluid extract, which is an alcoholic tincture. It produces most beneficial results in any of the above mentioned conditions, and when used intelligently is fraught with no danger.

LAXATIVES: (Continued)

BARBERRY BARK: Latin name, *Berberis Vulgaris* (Canadensis)

Synonyms: Berbery, Pipperidge-Bush, *Berberis dumetorum*, Gouan.

PARTS USED: Bark and root bark.

This plant is related to Oregon Grape Root. Both belong to the natural order, Berberidaceae. They are very similar in chemical composition and act upon the system in much the same manner. From our own experience we find barberry to be slightly superior to Oregon grape root, as it contains a slightly higher percentage of berberine. Yet, it is a question not easily decided because, while Oregon grape root seems to act more favorably and reliably in scorbutic and syphilitic conditions, barberry's action is more pronounced upon the liver, stomach and digestive organs in general, and with greater speed and effectiveness. We have known it to produce almost miraculous results in cases of chronic

dyspepsia and jaundice, after every other remedy had failed. It is not necessary to give its chemistry here because, as before mentioned, it is practically identical to Oregon grape root. Its berries, however contain citric and malic acids, and have astringent and anti-scorbutic properties. The berries are most useful in fevers; especially typhus. Also in bilious disorders and scrofula. Very refreshing in irritable sore throat.

FORMULA No. 89: Strong Glycero-phosphate of Barberry Bark.

- 1 lb. Barberry Bark (cut)
- 1 gallon distilled water
- ½ ounce of diluted phosphoric acid

Proceed exactly as in Formula No. 88 (for Oregon Grape Root), and use the same dosage.

Our recommendation is, use Oregon grape root for scrofulous and syphilitic cachexias; and barberry for chronic dyspepsia, jaundice and liver disease.

FORMULA No. 90. Jelly of Barberries

- 2 pounds fresh Barberries
- 1 gallon distilled water

Boil until the water is just level with the top of the berries. Mash the berries to a pulp, then strain through a sieve and press. Return liquor to a clean saucepan (Enamel is best. Do not use aluminum or iron), add 1½ lbs of brown sugar and simmer for another 10 minutes, or until the syrup is not in excess of 3 pints. Pour into hot sterile jars cool, and keep in a cool, dark place.

DOSE: For sore throat, a teaspoonful frequently. As a pleasant acid drink in fevers, and in convalescence from fevers, one tablespoonful stirred into a teacupful of real cold water. To promote mild perspiration and break up recent colds, one tablespoonful or more in a cup of hot water upon retiring.

FORMULA No. 91. Mandrake Root and Barberry Bark (Laxative, vermicide)

- 1 heaping teaspoonful Mandrake Root (cut)
- 4 ounces Barberry Bark (cut)
- 1 quart distilled water

Boil 15 minutes, strain and set aside. Cover the Herbs again with water (about 1 inch above the top of Herbs), boil until water is level with the Herbs. Strain,

combine the two liquors, then boil down to 8 ounces. Stir in 4 ounces glycerine, allow to cool, bottle and keep in a cool place.

DOSE: One tablespoonful night and morning until bowels are acting freely. Then, regulate the dose to suit the bowels. Children: ½ to 1 teaspoonful. (Watch for worms)

NOTE: Do not give large doses to children. Remember, mandrake is the slowest working laxative, but its action lasts long and continues for hours, or sometimes for days after last taking. This is an excellent, safe and certain vermicide, especially for pin-worms in children.

We have scarcely enough space in this lesson to do justice to another Herb (Laxative), but we can name it and give a brief description of it. In our next lesson, we will give you a clear outline of its many virtues.

LAXATIVES: (Continued)

CALUMBA: Latin name, Jateorhiza Palmata (Lamarck)

Natural Order: Menispermaceae. Jateorhiza Calumba (Roxburgh)

HABITAT: East Africa, Madagascar (Mozambique and Quilimaui forests along the lower Zambezi River). Cultivated in Africa and East India Islands.

Parts Used: The Root.

SYNONYMS: Columbo, kalumb, foreign columbo, calumba, calumba root.

Palmata, - like the palm of the hand, i.e., the leaves palmately lobe or divided.
Calumba, - from Columbo in Ceylon which is supposed to be its original habitat.

This plant strongly resembles Yellow Parilla, or Canadian Moonseed, as it is frequently called. (We shall discuss Yellow Parilla later). A brief description of this root will help in purchasing the correct kind. It is also frequently worm eaten and should be carefully examined for worms. Using chloroform or other preservatives after the worm is in it, will do no good because, the worm destroys 90 percent of its virtues, and makes it unfit for human consumption. Calumba Root occurs commercially in circular or oval bi-concave sections (disks) 1 to 2 inches wide, 1/12 to ½ inch thick, greenish-brown roughly wrinkled, internally yellowish, parenchyma contains starch, odor slight, taste aromatic, bitter and mucilaginous.

In our next lesson, we will describe its chemistry and therapeutic application fully.

LESSON EIGHTEEN

Continuing our study of Calumba Root, we think it advisable to inform you regarding several common adulterations of this valuable plant before describing its therapeutic action on the tissues and fluids of the body.

Calumba is most commonly adulterated with White Bryony Root (*Bryonia alba*) which is a hydragogue, cathartic, emetic, emmenagogue and vesicant, and consequently dangerous to use in strong decoctions or large doses. It is also adulterated with American Columbo (*Frasera carolinensis*) which is not poisonous, but, at the same time, it changes the therapeutic action of the real African Calumba. Those two adulterations are dyed yellow with turmeric or safflower, and made bitter with infusion of Colombo or Quassia, thus giving a resemblance of African Calumba Root. These adulterations can be detected by noting the following: (1) There is a slight difference in their usually lighter color; (2) They precipitate with iron salts; (3) They are not mucilaginous; (4) They redden litmus paper; (5) They evolve ammonia with fixed alkalis; (6) They contain no starch (the addition of a small amount of iodine turns starch to a violet color). Occasionally there are other adulterations, but the two mentioned are the most common ones.

This is important information because, apart from the possible danger to patient, we know of nothing that will disgust a sincere botanical physician like an unexpected symptom that results from the use of an adulterated herb.

CHEMICAL CONSTITUENTS: Calumbin (C-21, H-24, O-7) 0.8 %; berberine(C-20, H-7, NO-4) 1 %; starch 35 %; pectin (the very base of vegetable jelly) 17 %; gum 4.7 %; resin 5 %; wax, calumbio acid (C-21, H-22, O-6) ash 6 %. Calumbin gives most of the bitterness. It is usually obtained by exhausting the root by alcohol, evaporating and letting stand for several days to crystallize. The crystals are white, bitter, odorless, soluble in alcohol, alkalis and acetic acid, but almost insoluble in water. The berberine is left in the mother liquor from calumbin. It is evaporated and allowed to crystallize upon standing. NOTE: Quite recently this has been resolved into three alkaloids; palmative, calumbamine, jateorhizine, which, with calumbin constitutes this Herb's active principle. DOSE: ½ to 1 grain. Calumba contains no tannin and therefore, it can be used with iron salts (yellow dock, etc.) as an improvement on gentian.

THERAPEUTIC PROPERTIES AND USES: Tonic, stomachic, digestive stimulant, (increases appetite and digestion by stimulating the gustatory nerves, thereby dilating the gastric vessels and augmenting secretion). Antiseptic,

disinfectant, anthelmintic, large doses emeto-cathartic, small doses gently laxative. This Herb is most valuable in dyspepsia, debility, remittent fevers, dysentery, diarrhea, cholera morbus, cholera infantum, hectic fever of phthisis, vomiting of pregnancy, bowel flatus, inactive liver (torpor), constipation and mucus colitis.

NOTE: Our commercial root is collected indiscriminately from both *jateorhiza calumba* and *jateorhiza palmata*, which are almost identical in chemistry and therapeutic action.

FORMULA No. 92: Infusion of Calumba Root.

1 ounce Calumba Root (cut)

1 ¼ pints distilled water

Boil the water and pour on the roots. Let stand in a hot place (not boiling) for 30 minutes. Strain and add 2 ounces of glycerin. Cool bottle and keep in a cool place.

DOSE: 1 Tablespoonful 3 or 4 times a day between meals. Children, 1 to 2 teaspoonfuls in honey water, twice a day according to age. This is one of the purest and most effective bitter tonics to be found in all nature. In indolent, dysorasic and enervated conditions, it is one of the quickest and best tonic strengtheners, promoting digestion, elimination of toxic matter, toning and nourishing the whole system. In chronic diarrhea and dysentery and in convalescence from febrile diseases it is unsurpassed by any other remedy. We have known cases of extreme dyspepsia and debility, without power to digest and assimilate nourishment, to be completely restored to health and strength within a few weeks or months by the simple use of this Herb. That is our main reason for putting you on guard regarding adulterations, and showing you how to detect them. We also believe that the infusion of this Herb is the best and the safest form in which to administer it.

LAXATIVES: Continued.

PEREIRA BRAVA: Latin name, *Chondrodendron Tomentosum*.

NATURAL ORDER: Menispermaceae.

SYNONYMS: Velvet leaf, ice vine, moonseed vine, pareira.

HABITAT: Brazil, near Rio de Janeiro and other parts. Also in Peru.

PARTS USED: The Root

PEREIRA--Portuguese French, means vine; BRAVA--wild tomentosum.

Latin, tomentosus (woolly). The underside of the leaves have gray hairs.

CHEMICAL CONSTITUENTS: Pelosine (cissampeline) (C-18, H-21, NO-3), tannin, starch, gum, a soft resin, yellow bitter principle, calcium malate, salts of sodium, magnesium, and potassium nitrate and ash, 6 to 11 percent.

THERAPEUTIC PROPERTIES AND USES: Tonic, diuretic, emollient, aperient, hepatic and strongly laxative according to dose. This unique and wonderful Herb is similar to uva ursi leaves in therapeutic action (diuretic). It is eliminated largely by the kidneys and bladder. It is soothing and tonic to the urinary tract, especially the bladder. Pereira is effective in relieving cystitis, calculous affections, chronic inflammation and ulceration of the kidneys, gonorrhea, leucorrhoea, dropsy, rheumatism and jaundice. At the same time, is cleansing and healing to the intestinal tract. The natives of Brazil use it extensively in treating the bites of poisonous serpents by the vinous infusion being taken internally, and the bruised leaves applied to the wound. Natives of nearly every country have proven themselves to be most reliable authorities on the use of their native Herbs. In fact, at least 90 percent of all the information we now have on the medicinal use of Herbs has been obtained from natives of the various countries in which they grow.

Now, if pereirs brava root is so powerful as to neutralize such virulent poisons as the venom of serpents, it stands to reason that it should also take care of lesser acid poisons. Its chemistry proves that. The organic salts of sodium, calcium, potassium are all neutralizers of acids, and are tissue builders. Calcium malate is a vitalizing oxidizer, and sodium nitrate is used beneficially in dozens of diseases.

FORMULA No. 93. Infusion of Pereira Brava.

4 ounces of Pereirs Brava Root (cut)

2 quarts distilled water

Boil slowly until the water level reaches top of the root. Strain, add another pint of water to roots and boil 5 minutes. Strain and combine the two liquors. Boil till reduced to 3/4 of a pint. Strain, or allow sediment to settle at bottom of pan, then pour off clear liquid and add 6 ounces of glycerin. Cool, bottle, and keep in a cold place.

DOSE: 1 to 4 teaspoonfuls 3 or 4 times a day, diluted with 4 times as much water. May be sweetened with honey. (Should be for children).

Children: One-half to 2 teaspoonfuls, according to age, well diluted with honey water. This is also an excellent remedy for enuresis in children. Note: Care should be taken in all cases of bed wetting, not to allow the patient, either child or adult, to drink liquid or partake of watermelon or any other watery fruit or vegetable after 6: P.M., and mothers should see to it that urination takes place just before retiring. Again, in case of very old people who cannot control the bladder, and who find it necessary to rise several times during the night, this wonderful Herb

will prove to be a great blessing and comfort. Because of its solvent and soothing action on calcic deposits, will actually prolong life.

In case of purulent leucorrhoea, when used as an antiseptic douche, few remedies equal this one.

DIRECTIONS: Put 2 to 4 ounces of the strong decoction into 1 quart of fairly warm water. The douche should be taken right after urination. Retain as long as reasonably possible (about 10 minutes). Flush with plain warm water, and in very bad cases, repeat 3 or 4 times a day.

LAXATIVES: Continued.

YELLOW PARILLA: Latin name, Menispermum Canadense (Linn.)

NATURAL ORDER: Menispermaceae.

SYNONYMS: Canadian moonseed, moonseed sarsaparilla, Texas sarsaparilla, vine maple.

PARTS USED: The rhizome and roots.

HABITAT: Canada and the United States. Cultivated in Great Britain as a hardy deciduous ornamental shrub.

This is another climbing plant (calumba and pereira brava are also climbers or vines) with a long yellow root and a round striate stem (bright yellow and green when young). Leaves roundish, cordate, peltate, 3 to 7 angled, lobed. Flowers small, yellow, borne in profusion in auxiliary clusters. Drupes, round, black, with a bloom on them, one seeded. Seed crescent shaped, compressed. The name moonseed being derived from their lunar shape. The root has a persistent bitter taste with very slight odor.

We have given you its botanical description because it grows extensively in the United States, and may be collected.

CHEMICAL CONSTITUENTS: Berberine (C-20, H-17, NO-4), menispermmin (a white resinous alkaloid which has been used as a substitute for sarsaparilla), starch and a bitter laxative principle.

THERAPEUTIC PROPERTIES AND USES: Tonic, alterative, diuretic, anti-scorbutic, anti-rheumatic, hepatic, laxative, antiseptic and stomachic.

This Herb has proved most valuable in the treatment of numerous chronic diseases. The North American Indians considered it to be superior to sarsaparilla (Smilax Ornata). Be that as it may, we know beyond doubt, that it is a superb remedy for the treatment of scrofula, rheumatism, syphilis, mercurial poisoning, arthritis, skin diseases, chronic dyspepsia, liver diseases and constipation.

FORMULA No. 94. Infusion of Yellow Parilla.

1 ounce Yellow Parilla Root (cut)

1 pint distilled water

Boil the water and pour over the root. Allow to steep in a hot place for half an hour, with occasional stirring. Strain and add 2 ounces glycerin. Cool, bottle and keep in a cold place.

DOSE: One wineglassful 4 to 6 times a day . Regulate the dose to suit the conditions and the bowels.

CHILDREN: 2 to 4 teaspoonfuls 2 or 3 times a day, according to age and condition.

FORMULA No. 95: Strong Decoction of Yellow Parilla.

4 ounces Yellow Parilla Root (cut)

2 quarts distilled water

Boil until water boils down to where it just covers the root. Strain and set liquid aside. Pour another pint of water over the root and boil 5 minutes. Strain, and combine the two liquids, then boil till reduced to 3/4 of pint. Strain and add 6 ounces of glycerin. Bottle and keep in a cold place.

DOSE: One tablespoonful 3 or 4 times a day. Children, 1/2 to 1 teaspoonful in honey water, 3 times a day.

For outward applications: For swollen joints and gouty affections, heat the decoction and while hot apply on saturated cotton. Cover with waxed paper and flannel to hold in heat and moisture. It should also be taken internally, using the above dosage.

For Skin Diseases: Bathe the parts with the hot decoction, then apply externally as above; also take internally. This treatment should be given daily, from 3 to 6 months, depending on the nature and severity of the case, and whether or not it is acute or chronic. An acute case will respond more quickly than a chronic case. When the condition is not completely curable, this treatment will afford great relief, and retard the advancement of the disease.

Old chronic cases of arthritis are the most stubborn and difficult, but we have known some bad cases to be completely cleared up within one year by the use of FORMULA No. 96, on the next page.

As previously stated, it is difficult to classify some Herbs under one heading such as alliterative, tonic, laxative, etc., for the reason that some herbs could just as well be classified under several different headings because they

possess a number of virtues. Such a one forms the main ingredient in the formula we are about to give you. This one should be classified under a special heading "tonic-blood-purifier". And since we wish to give you this valuable formula now, as it fits in with the type of case we have been discussing, we think it advisable to describe this Herb first, before giving you the formula Later, we can resume our study of laxatives.

TONIC-BLOOD-PURIFIER: Special classification.

SARSAPARILLA: Jamaica. Latin name, Smilax Officinalis.

NATURAL ORDER: Liliaceae.

PARTS USED: The root.

HABITAT: Central America, New Granada and along the banks of Magdaline River, Bajorne. This plant derived its name from being exported through Europe through Jamaica. The word, sarsaparilla, is from the Spanish sarza, meaning bramble; and parilla, meaning a vine in allusion to the thorny stems of the plant. It is a large perennial climber, the roots spreading out 6 to 8 feet, and having a thick bark, grey or brown in color, almost odorless. Taste mucilaginous. The deep orange roots are the best.

CHEMICAL CONSTITUENTS: Parillin 0.2 percent (C-26, H-44, O-10) also called amilacin, parillic acid, pariglin, salseparin, and parillinic acid. Saponin equals 5(C-20 H-32, O-10 plus 2 1/2 H2-O). This is a glucoside, soluble in water. Alcohol (Crystallizable) considered by some authorities to be the most important and toxic of all its constituents. Starch, coloring matter, essential oil, potassium chloride, basserin, albumen, salts of calcium, potassium, magnesium and sulphur. Also oxide of iron. The Honduras sarsaparilla is considered to be the best, of all the many sarsaparillas.

THERAPEUTIC PROPERTIES AND USES: Alterative, diuretic, tonic, diaphoretic, anti-arthritis, anti-syphilitic, depurant, deobstruent, anti-scorbutic, laxative.

FORMULA No. 96. Yellow Parilla & Sarsaparilla Compound.

6 ounces Yellow Parilla Root (cut)

10 " Sarsaparilla Root (cut)

1 gallon distilled water

½ ounce potassium chloride

Heat the water and stir in the potassium chloride until dissolved. Put in the Herbs end boil briskly until the water is one inch above the Herbs (boil very slowly towards the last to allow the roots to settle). Strain and set liquor aside. Add fresh

water to Herbs to a little more than cover them and simmer 10 minutes. Strain, combine the two liquids and reduce (by boiling) to 1½ pints. Strain, add 12 ounces (¾ pints) of glycerin, cool, bottle, and keep in a cold place.

DOSE: One tablespoonful 3 or 4 times a day. Regulate the dose to suit the bowels, avoiding diarrhea.

Children: ½ to 2 teaspoonfuls according to age.

For outward applications to arthritic or gouty joints, dilute with equal parts of boiling water and make the application as in yellow parilla, (pg. 7, this lesson). We have known this remedy to give results when everything else had failed; but it must be used persistently over a long period of time. The parts should be massaged every day as much as can be tolerated by patient. Starches and foods containing calcium must be cut to a minimum. These include cheese, macaroni, spaghetti and potatoes. Citrus fruits are indicated in moderation. Berries, apples, grapes, celery, parsley, carrots, and cabbage are all excellent foods. Frequent vinegar rubs are also recommended. Alcoholic stimulants must be avoided. If the above combined treatment and diet is strictly adhered to, it will ultimately not only restore strength and mobility to the affected joints, but also health to the whole organism.

In the first lesson we pointed out that all the Herbs belonging to the Liliaceae family contain sulphur, but in this particular Herb (sarsaparilla) it will be noted that it not only contains sulphur, but also four metallic salts: - iron, calcium potassium and magnesium. The iron is in the form of oxide (FE-0) (FE-03); calcium is calcium oxalate (CA-C-2, 0-4); potassium as chloride (KOCL); magnesium, (MG-S-04) a chloride which provides the bitter taste, and a small amount of magnesium sulphate (MG-S-04) equals Epsom salts. It will be well worth our while to analyze these valuable salts in the light of what we have already learned about them individually in an earlier lesson. We know that iron is the oxidizer and vitalizer of the blood; that calcium oxalate also carries 4 atoms of oxygen, and that calcium absorbs carbon dioxide (C-02); and that potassium chloride is a fibrin solvent. We now learn that magnesium is a bitter tonic, and we all know that organic magnesium sulphate is an excellent laxative.

Since all the above are contained in one root (sarsaparilla) is there any wonder that it is such a wonderful tonic-blood-purifier? We give this short review just to impress the student as to what he may expect when using sarsaparilla.

LAXATIVES: Continued.

ALOES: Latin name, Aloe Vera (Linn.)

NATURAL ORDER: Liliaceae.

PARTS USED: The leaves.

HABITAT: South and East Africa. Principally in the remote districts of South-West Africa and in Natal. Aloes have been discovered that were 30 to 60 ft. in height, with stems as much as 10 ft. in circumference. They are succulent plants with perennial, strong and fibrous roots, and numerous persistent fleshy leaves proceeding from the upper part of the root which is narrow, tapering, thick and very fleshy, beset at the edges with spiny teeth. The true aloes blooms the greater part of the year. It is not to be confused with the American Aloes (so-called, *Acava Americana*) which is singular for the long interval between its flowering periods, and is sometimes called century plant. It is supposed to bloom once in 100 years. This is not true, however, nor is this agave plant a true aloes. Aloes consists of the juices exuded from the transversely-cut bases of the leaves of various species. Let it be clearly understood that there is no analogy between the Old World aloes and the New World agave, or American aloes, either chemically or otherwise. The true aloes is of great antiquity as a remedial agent. It was employed by the ancients and was known to the Greeks as a product of the Island of Socotra, as early as the Fourth century, B.C. It was used by Dioscorides, Celsus and Pliny as well as by the later Greek and Arabian physicians, though it is not mentioned either by Hippocrates or Theophrastus. From notices of it in the Anglo-Saxon leech-books, and reference to it as being one of the Herbs recommended to Alfred the Great, by the Patriarch of Jerusalem, we may infer that it was used in Great Britain as early as the 10th century. At this period, aloes was imported into Europe by the way of the Red Sea and Alexandria. In the early part of the 17th century there was a direct trade in aloes between England and Socotra. In the records of the East Indian Company, there are notices of aloes being bought from the King of Socotra. The product being a monopoly of the Sultan of the Island.

We have given you this short history of aloes in order to impress you with its importance. It has enjoyed the high esteem of many of world's greatest physicians, both ancient and modern, and it is still considered by scientists in every part of the civilized world, as being one of the most reliable and virtuous of bitter-tonic-laxatives and vermicides. In Europe, it is a commonly used domestic remedy, but less so in America. It enters into thousands of patent medicines, pills and tablets.

There are several varieties of aloes, but the two principal and best are called Curacao and Socrotine. Two parts of Curacao being equal to three parts of Socrotine in purgative action, though the latter is more expensive.

CHEMICAL CONSTITUENTS: Aloin (varying amounts according to source). The official aloin is a neutral principle, chiefly from Curacao and Socrotine aloes (Soc-aloin) (C-15, H-16, O-7). Barbados aloes (barbaloin) (C-17, H-2, O-7), resin 30-50 percent. Emodin (the purgative principle of aloes) 8 percent, volatile oil (very slight), ash 1 to 4 percent. The resin is composed of esters of various acids, (cinnamic) (C-9, H-8, O-2) obtained also from cinnamon. Cumaric acid (C-9, H-8, O-3) found in the tonka bean as the odoriferous principle. The ash consists of potassium and magnesium.

THERAPEUTIC PROPERTIES AND USES: Bitter tonic, laxative or purgative according to dose, emmenagogue, stomachic, hepatic and vermifuge (Ascorides). Aloes is a remedial agent requiring very careful handling which, without a thorough knowledge of its peculiarities, can easily do more harm than good. Large doses are poisonous, producing irritation of the intestinal canal, pain, vomiting, purging, cold sweats, prostration, convulsions and collapse.

NOTE: In cases of poisoning by aloes, give emetics (mustard) demulcents, stimulants, artificial heat to the body and extremities, and hot fomentations to the abdomen.

Aloes, by itself is seldom used, as it usually produces griping pains. The active principle, aloin, is twice as strong. Soluble in 65 percent water, and in small doses, does not usually produce pain. It is slow acting, generally taking from 10 to 12 hours to activate the bowels, and sometimes longer. Its action increases the flow of bile, acts as a tonic stimulant to the stomach, but its greatest effect is produced on the lower half of the colon, arousing atonic and weak peristaltic muscles to activity, without disposing them to subsequent loss of power. We do not recommend the use of either aloes or aloin alone, but advise the addition of a stimulating carminative such as capsicum, ginger, cloves, etc.

FORMULA No. 97: Carminative Infusion of Alcin.

¼ ounce Aloin (powder)

½ " ginger (cut or powder)

¼ " cloves (cut or powder)

1½ pints distilled water

1 heaping teaspoonful of Sodium Phosphate

Dissolve the phosphate in the water and bring to a boil. Pour over the aloin and Herbs and let stand in a hot place, well covered, for 15 minutes. Strain and add 4 ounces of glycerin. Blend thoroughly, cool, bottle and keep in a cold place for 24 hours.

DOSE: From one teaspoonful to a tablespoonful twice a day until bowels are acting freely, but without diarrhea. Then regulate the dose to suit the bowels.

This formula will be found to be very valuable in atonic dyspepsia, torpid liver, and peristaltic insufficiency. It is not suitable for children, but is good for old people, and in constipation of long standing. It will also promote menstrual flow without pain.

LESSON NINETEEN

It has been said that only one out of ten million acorns ever becomes an oak tree, and one out of ten thousand eggs ever becomes a chicken. Nature is very prolific in her provision, and this is particularly true of medicinal Herbs which she provides for the health of the sick and eradication of disease. If there were such a thing as an incurable disease, humanity and every other living creature would have been exterminated ages ago. But no matter how virulent and life-destroying the so-called fatal diseases may be, there comes a time when their poisonous activity ends. Nature's creative forces are more than equal to her destructive forces.

There are several thousand laxative Herbs. We cannot use them all, so we select a few which we believe to be the best. These have been tried and proved by testimonies from all over the world and from our own clinical experience. In addition to those we have already given you, there are two more under this classification which we consider as being worthy of bringing to your attention.

LAXATIVES: Continued.

CULVER'S ROOT: Latin name, *Leptandra Virginica* (Linn)

NATURAL ORDER: Scrophulariaceae.

SYNONYMS: Bownam's root, Culver's physic, black root, oxadoddy, tall speedwell, St. Veronica's Herb, whorlywort, Brinton Root, physic root, Hini, Beaumont Root, Quitel. *Leptantra* (Latin) meaning thin, slender.

VERONICA'S HERB: The flower thought to resemble the face of Christ. (St. Veronica, an old tradition says, "wiped the blood from the face of Jesus while on his way to Calvary, and the image of his face was imprinted on the cloth." It still can be seen at St. Peter's Cathedral at Rome.

PARTS USED: The dried rhizome and roots.

This family of Herbs is named from their wonderful efficacy in the treatment of scrofulous diseases. Doctor Culver, after whom the root is named, used it extensively and successfully in his long practice so that it became one of our early popular American Herbs. It prefers mountain valleys, meadows and rich woodlands. It is often cultivated in gardens for its beautiful flowers which vary from white, flesh to purple color.

There is a very singular and interesting tradition regarding the flowers of this plant when cultivated. It is said that those who cultivated it for a religious purpose, believing its flowers to image the face of Christ, produce flowers with a very strong resemblance to a human face, while those who cultivate it for its beauty only, produce flowers, which, while extremely beautiful, have no resemblance to a human face at all.

We cite this very unusual and intriguing belief because in our long study of Herbs, we have met with many similar ideas. It has been said that there are more things in Heaven and Earth, than is dreamed of in our philosophy. There seems to be a law of nature which indicates that thought correlates with the object thought of. Those children of nature, the American Indians, worshipped the bush called *Rhamnus Purshiana*, or *cascara sagrada* (sacred bark) and it is believed by many that the reverent and sacred thoughts they gave it produced its truly great virtues. We cannot speculate along these lines scientifically, but because, at the best, we are very ignorant, we, at least, can leave it an open question and keep our mental eyes open for similar phenomena in the future.

CHEMICAL CONSTITUENTS: Leptandrin, the active principle, a bitter glucoside, mannite (C-6, H-14, O-6). This is obtained from manna also and found in honey. Saponin, tannin, gum, citric acid, a volatile alkaloid and salts of potash and magnesia.

THERAPEUTIC PROPERTIES AND USES: Cathartic or laxative according to dose. Chologogue, alterative, tonic and emetic. Has been used successfully in duodenal atony, chronic constipation, with insufficiency of biliary and intestinal secretions.

Leptandrin is very similar to podophyllin in its action, but acts more powerfully on the duodenum while podophyllin acts more powerfully on the liver. They are often given mixed or combined in one preparation, both of them acting in about the same time, from 10 to 15 hours.

Culver's root should never be used when fresh as it is a very violent irritant. It is one of those Herbs, which, the longer it is kept, the more gentle and effective is its action. Here let us point out or impart some very valuable information. There are several cathartics in common use which are violently irritant to the intestinal mucosa such as scammony, jalap, gamboge and several other drastic, hydrogogue, cathartics, they all produce nausea, vomiting and terrible griping pains, often profuse nervous perspiration and prostration. In a lesser degree, both mandrake root and Culver's root belong in that class because, though much milder in action in large doses, they both produce considerable irritation. We do not advise the use of any of these drastics except mandrake and Culver's root for the very good reason that they set up an inflamed and varicose condition of the mucus membrane which lays the foundation for ulceration, perforation and cancerous growths later on. Most of them are administered in pill or tablet form, and whichever spot they touch, their action is concentrated and violent. Many people are living today a miserable and painful existence because

of the irreparable injury done to their intestines by the use of drastic purgatives. Any powerfully acting Herb, in pill form, has a concentrated action on one small area and takes a long time to diffuse itself over a large area. Besides this, we must never forget that only when Herb principles are dissolved or in solution, are they ionized and made available to the cells. Therefore, whenever we are going to use a powerful remedy of any kind, let's always remember to use it in infusion, decoction, or fluid extracts well diluted. Then we shall never have to feel remorse for having done more harm than good through our ignorance.

FORMULA #98: Compound Infusion of Culver's Root

NOTE: We do not recommend the use of Culver's root in any form without the addition of a carminative to obtund griping.

1 ounce Culver's root (cut)

1 ounce ginger root (cut or powdered)

1 ½ pints distilled water.

Boil the water and while boiling, pour on the Herbs. Cover and let steep in a hot place for 15 minutes. Strain, cool and keep in a cold place.

DOSE: One tablespoonful at night in a wineglassful of water. May be sweetened if desired. If this dose does not activate the bowels in 12 to 15 hours, take two tablespoonfuls well diluted and gradually work up to the correct dose. Culver's root is not suitable for children, except in rare cases of jaundice. Then, it becomes the remedy par excellence.

DOSE: ½ to 1 teaspoonful morning and evening well diluted with honey water. When the bowels are acting normally, the dose must be reduced, Culver's root acts upon the liver, increasing the flow of bile in small and repeated doses, much better than in large doses. Even when the bowels are apparently not effected, its hepatic action will be made evident by the change in the color of the skin and eyes. Small non-purgative doses of the compound infusion of Culver's root have completely cured many cases of chronic scrofulous and syphilitic diseases. Also many cases of cirrhosis of the liver and other cirrhous diseases. When properly understood and combined with suitable adjuvants or synergists, it is a very important and useful remedy. It combines wonderfully with liquorice root which modifies its action and makes it a much milder laxative. It covers, to some extent, the bitter taste and acts as an emollient and demulcent laxative.

LAXATIVES: Continued.

LIQUORICE ROOT: Latin name, Glycyrrhiza Glabra (Linn.)

SYNONYMS: Liquorice root, sweet wood, Italian juice root, Spanish juice root.

NATURAL ORDER: Leguminosae.

HABITAT: Southern Europe, Western Asia, Persia, Northern Africa. Cultivated in Russia, Spain, Italy, France, England, Germany, United States and China.

PARTS USED: The root (frequently in sticks of the dried juice). This leguminous plant has been used medicinally from ancient times. The use of it was first learned by the Greeks, from the Scythians.

Theophrastus (3rd century B.C.) in commenting on the taste of different roots, for instance, said -"The sweet Scythian root which grows in the neighborhood of the Lake Maeotis (Sea of Azov) is good for asthma, dry cough and all pectoral diseases." Dioscorides named the plant Glycyrrhiza (Greek, glukus, sweet; and riza, a root). Roman writers, Celsus/&/Scribonius Largus, mentioned liquorice as a Radix Dulcis It was prescribed by the early physicians from the time of Hippocrates in cases of dropsy and diabetes, to prevent thirst. Liquorice is probably the only sweet substance that provides that effect. It is thought, however, that this property does not actually exist in the sweet juice, but that if a piece of the root is chewed until all the juice is extracted, there remains a bitter principle which acts on the salivary glands, to remove thirst. This knowledge is very important, as so often in dropsical cases, the patient suffers with an inordinate thirst.

CHEMICAL CONSTITUENTS: Glycyrrhizin 6 to 8 %; a sweet white crystalline powder, consisting of the calcium and potassium salts of glycyrrhizic acid, sugar, starch 29 %, gum, protein, fat 0.8 %, resin, asparagin (C-4, H-8, N-2, O-3) 2 to 4 %, a trace of tannin ? in the outer bark of the root, yellow coloring matter, and 0.03 % of volatile oil.

The amount of glycyrrhizin in the extract varies from 5 to 24 %, and the amount of moisture from 8 th 17 %. Upon ignition, the extract yields from 5 to 9 % of ash. (Calcium and potassium).

THERAPEUTIC PROPERTIES AND USES: Laxative, demulcent, pectoral, nourishing and emollient.

For dry or inflamed mucus tissues, there are few Herbs in nature that can equal it. We informed you in earlier lessons that all leguminous plants are calcium plants, and this particular plant contains a high percentage of calcium, and furthermore, it contains asparagin. We might also mention that, all legumes develop minute bacteria on the roots in some mysterious way; these bacteria enable the plant to utilize nitrogen from the air. The nucleus of cells is protein, and all protein contains nitrogen. Chemical analysis of liquorice root reveals that, it not only contains protein, but also asparagin (Chemistry given above) which contains approximately 12½ percent of nitrogen.

Thus we can see why this plant is so nourishing. It is our opinion that, all children should be given periodic doses of the decoction or extract of this wonderful root.

The world famous Guinness' Stout contains extract of liquorice. For more than 50 years chemists here have tried to find out the secret of its tonic and nourishing properties which produce the amazing effect of restoring people to health and strength. It was only about 20 years ago that the secret was discovered, and now there are a number of breweries in Europe who brew a stout quite equal to the old famous Irish brand.

FORMULA No. 99: Decoction of Liquorice Root

4 ounces Liquorice Root (cut)

3 pints Distilled water

Boil slowly for 20 minutes. Strain, return liquid to saucepan and boil slowly till reduced to 3/4 of a pint. Add 4 ounces glycerine and blend thoroughly. Allow to cool, bottle and keep in a cool place.

DOSE: One tablespoonful to a wineglassful 3 or 4 times a day. NOTE: As this is quite harmless, the dose may be increased if desired. Children, 0 teaspoonful to a tablespoonful, according to age.

FORMULA No. 100: Compound of Liquorice and Culver's Root

4 ounces Liquorice Root (cut)

1 ounce Culver's Root (cut)

3 pints distilled water

Follow directions as in Formula No. 99, for Liquorice Root.

DOSE: One dessertspoonful to a tablespoonful according to the condition of the bowels. Children, ½ to 1 teaspoonful as required.

LAXATIVES: Continued.

RHUBARB, TURKEY: Latin name, Rheum Palmatum (Linn.)

PARTS USED: The dried rhizome deprived of most of the bark.

SYNONYMS: East Indian Rhubarb, China Rhubarb.

HABITAT: West and Central China, Tibet, Russia. Cultivated in England, but is much smaller than Turkey Rhubarb.

NATURAL ORDER: Polygonaceae.

This is a perennial plant, strongly resembling our garden rhubarb, but is very much larger. It grows to a height of 8 to 11 feet, and its leaves are very large, often reaching 5 feet, and the stem or rhizome from 4 to 6 inches.

The name rheum is derived from the Latin *rah*, meaning the river Volga where it grows and was first found. *Palmatum* from the Latin *Palmatus* (the palm of the hand) referring to the much divided leaves.

The chemistry of rhubarb is very complicated and difficult of understanding except to advanced analytical chemists, and even they do not all agree as to its specific. As it is our custom to give the approximate chemistry, where known, of each Herb we describe, we will give you what is known of rhubarb, though it may prove of little use.

CHEMICAL CONSTITUENTS: Chrysophanic acid 5 %; methyl chrysophanic acid, emodin, rhabareron, rhein, glucoside, rheotannic acid and anhydrides, gallic acid, cathartic acid, resins (phaeoretin, erythroretin, aporetin) oxalic acid, calcium oxalate, starch, ash 12 to 14 %.

CHRYSOPHANIC ACID: (1,8-Dihydroxy-3-methylanthraquinone) 3-methyl-chrysazin; chrysophanol. (C-15, H-10, O-4); mol. wt. 254.23; C 70.86%

EMODIN: Rhubarb-emodin; (1,3,8-trihydroxy-6-methylanthraquinone); 4,5,7-trihydroxy-2-methylanthraquinone. (C-15, H-10, O-5) mol. wt. 270.23; C 66.67%, H 3.73%

RHABARERON: (3-Hydroxymethylchrysazin; 1,8-dihydroxy-3-hydroxymethyl-anthraquinone; rhabarberone) (C-15, H-10, O-5) mol.wt.270.23; C66.67%; H 3.73%

CALCIUM OXALATE: (CA,C-2,O-4, H-2 O) mol.wt. 146.12; Anhydr. salt 87.67 %; (H-2,O 12.33 %; Ca 27.43 %, CaO 38.38 %1 anhydr. oxalic acid 61.62 %.

There are various other chemical substances, but are not of an understandable nature. The above are the latest findings, according to Merck's Index.

THERAPEUTIC PROPERTIES AND USES: Laxative, astringent, tonic, stomachic, brisk purgative. Valuable in effecting a quick, safe emptying of the bowels. Does not clog or produce an after-constipation as so many cathartics do. Is especially useful in diarrhea caused by irritating substances in the intestines. It not only removes the irritating substance, but its after-astringent action checks the diarrhea.

The following note from The Chemist and Druggist of March 31,1923, is worth quoting: "Rhubarb in BACILLARY DYSENTERY. An investigation was undertaken to determine the way in which rhubarb acts in this disease, and which

constituent was responsible for its action, One writer having stated, in regard to the treatment of bacillary dysentery, that no remedy in medicine has such a magical effect." Again, Dr. R.W. Burkitt, resident physician of Nairobi, British East Africa, states that "Acute bacillary dysentery has been treated in that colony exclusively with powdered rhubarb, for several years. The dose to be given is 30 grains every 2 or 3 hours until the rhubarb appears in the stools. After a few doses, the stools become less frequent. Hemorrhage ceases and straining and other symptoms of acute general poisoning which characterizes the disease, rapidly disappears. In children, 5 grains is given every 2 hours for 3 doses only because, if continued longer, the rhubarb will cure the dysentery, but will produce an obstinate simple diarrhea. In both adults and children, the thirst is combated by small, frequent doses of bicarbonate of soda and citrate of potash." Dr. Burkitt concludes: "I know of no remedy in medicine which has such a magical effect. No one who has ever used rhubarb would dream of using anything else. I hope others will try it in this dreadful tropical scourge."

We don't know you feel, but we are thrilled at this admittal on the part of one of the "regulars" And here is another positive proof of the great and beneficent action of Herbs in the treatment of disease. Bacillary dysentery is, as the doctor says, a most dreadful scourge that has caused heart-rending suffering and thousands of deaths, yet here is a simple Herb which would have saved them all. As to Dr. Burkitt's recommending bicarbonate of soda. and "citrate of potash" for preventing thirst, it is a pity the doctor did not know about using liquorice for this purpose. He would have found it far more effective, without the danger of destroying the hemoglobin in the patient's blood. (A 10% solution destroys the hemoglobin in about 2 1/2 minutes.) (Also see "liquorice & thirst" pg. 5, this lesson). May we repeat again our previous statement that, the best form in which to administer Herbs is by means of infusions or decoctions, yet this doctor's giving rhubarb in powdered form seems to contradict our teaching.

For further light on the matter, let us explain that, IONS which we discussed earlier, are not only cell foods which rebuild tissue that has degenerated through disease, but disintegration/of tissue /also takes place by means of ionization. In some diseases there is a rapid process of disintegration of tissue, with the loss of one or more elements or compounds composing it. These elements, when thrown out, immediately become useless to the cells, and if not removed will cause irritation. Powdered rhubarb slows ionization and stimulates activity of the peristaltic muscles, thus ridding the system of the irritating substance. On the other hand, powdered Bayberry bark and many other astringents act by slowing the process of ionization and, re-instating normal action. Now that there is no confusion on that point, we can proceed.

FORMULA No.101: Infusion of Rhubarb Root

1 ounce Rhubarb Root (cut or powdered)

1¼ pints distilled water

Boil the water and pour on the roots. Cover and allow to steep in a hot place for 20 minutes. Strain, cool and bottle.

DOSE: One wineglassful 3 times a day after meals. Children, 1 teaspoonful to a tablespoonful, according to age.

FORMULA No. 102: Syrup of Rhubarb

4 ounces Rhubarb Root (cut) 2 quarts distilled water

3 pounds brown sugar 4 ounces glycerine

Simmer rhubarb in the water for 30 minutes. Strain and boil again till reduced to 1 pint. Stir in sugar, then simmer slowly for 5 minutes, removing scum as it rises. When clear, add glycerine, cool and bottle.

DOSE: 1 tablespoonful 3 or 4 times a day. Children, less according to age.

FORMULA No 103: Powdered Compound of Rhubarb

4 ounces powdered Rhubarb Root

1 ounce powdered Ginger Root

Stir or sift till uniformly mixed and thoroughly blended.

DOSE: $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon stirred into a wineglassful of water. Stir and drink, powder and all. Wash down with water. Children: This is not suitable for the very young (that is under 5 years). It is too powerfully stimulant. If, however, there is acute diarrhea, give the syrup of rhubarb according to dosage for that formula.

In administration of laxatives, care should be taken in their selection. The specific information we have given you about each of the laxatives described plainly indicates which of them to select in particular cases, but to further help you in your choice, the following information will prove useful.

Where the tonic effect is most indicated, use the bitters. Where the hepatic effect is indicated, use the hepatics. Where a quick cleansing effect is desired, use rhubarb. For children, generally, there is no better remedy than liquorice. For atonic and partially atrophied colon, either mandrake or Culver's root. For long continued treatment of constipation, use cascara sagrada. A study of each of them will guide you correctly.

Though we believe we have given sufficient information about laxatives to meet any requirement, we, nevertheless, shall be glad to give detailed information about any other special laxative in which you are interested and about which you would like to get some reliable information. We do not mean that we are prepared to treat of an unlimited number, because the number of them runs into hundreds, but if you desire to know of any one or two laxatives not treated in this course,

please put in your written request at question time and the information you desire will be given you the following week at question time or can be obtained in writing for 25¢ per item. Before finally leaving laxatives, we might add that rhubarb in small doses (not sufficient to produce a distinct laxative effect) is a most valuable stomachic and tonic. Employed in atonic dyspepsia, it very materially assists digestion, creating healthy action of the digestive organs when they are in a condition of torpor and debility. Also, when rhubarb is chewed, it increases the flow of saliva and will often cure salivation.

In lesson #5 we treated briefly of the three basic elements which form by far, the greater part of the human organism. Namely, carbon, oxygen and hydrogen. Slightly more than one fourth of the body weight in health is composed of carbon. Oxygen composes nearly three fourths of the weight of the fluids of the body and hydrogen composes one fifth of the same fluids while water composes four fifths. We spoke particularly, however, of the fact that a very large number of foods and Herbs being composed of these three elements and classified as hydrocarbons, proteins and fats, which includes oils. There is a very large number of aromatic or essential oils found in roots, berries, leaves and flowers. They are foremost among nature's great curative principles. The great majority of them are composed of carbon and hydrogen, a lesser number of carbon, hydrogen and oxygen and some few of them contain nitrogen or sulphur, or both in addition to the three first named elements. These very marvelous essential oils, basically, belong to what is called the terebenthic series. Nearly all of the pure hydrocarbons have a common base, the formula of which is (C-10, H-16). When they are liquid, they are called terpenes. When solid, they are called camphenes. They are so important in the treatment of disease that without a knowledge of them, we should not be able to accomplish one half of the cures that can be brought about by their use, either individually or combined with other remedies. It is our purpose to give you a clear understanding of essential oils, oleo-resins, balsams, and other allied odoriferous principles. We have chosen the end of this lesson to introduce them so that next week we can proceed at once to describe them both chemically and therapeutically.

LESSON TWENTY

When we set out to study essential oils, oleo-resins, camphenes and true resins, we undertake the deepest study of this advanced course in the Science of Herbology. At the same time, we shall find that our efforts are more than worthwhile because the essential oils are the concentrated essences of the Herbs in which they are found, or from which they emanate through the action of oxygen, the Breath of Life. They are so varied and so complicated that chemistry has failed to analyze and define the great majority of them. We know the chemistry of some few of their bases, such as the principle ingredient in the terebinthic series, which are really turpentine, but there are many hydrocarbons, which are isomeric with the terebinthic or terebinthina series, but which are not turpentine. Early in these lessons we pointed out the absolute necessity of a clear understanding of the meaning of words. Here is one of many instances of which we had reference. The word ISOMER or ISOMERIC is from the Greek meaning equal plus part namely, composed of the same elements in the same proportions, but chemically and physically different, as for instance, diamond and graphite, both being chemically pure carbon. To make it still more clear, the word isomerism is defined as "The state of compounds that are isomeric;--identity in respect to the quality and quantity of the constituents, but with essential difference of chemical and physical properties." So, it comes about that there are many isomeric hydrocarbons having the formula, carbon 10, hydrogen 16. They exist in Herbs in the different turpentine and volatile oils or essences. However, there are many terpeneless essential oils and they compose the purest and highest grades obtainable.

First, we will give you a brief description of turpentine. The common American turpentine is obtained by making incisions in the bark of *Pinus Palustris*. It is a yellowish-white semi-solid, having a balsamic odor, which, by distillation, is divided into two products. One a liquid, oleoptene (oil or essence of turpentine), the other a solid, stearoptene (resin or colophony). The liquid (turpentine) consists chiefly of the hydro-carbon (C-10, H-16) (American). French turpentine consists of an isomeric body called terebenthene, or terebene.

CHEMICAL CONSTITUENTS: Volatile oil 20 to 30 percent; rosin (resina, resin) 50 to 60 percent; a bitter principle, formic acid, (CH₂-O₂) succinic acid (C-4, H-6, O-4), pinic acid (C-20, H-30, O-2), sylvic acid (C-20, H-30, O-2) (isomer of pinic acid).

THERAPEUTIC PROPERTIES AND USES: The oil. Internally: Stimulant, carminative, cathartic, anthelmintic, haemostatic, expectorant, diuretic,

diaphoretic, febrifuge. Used internally for chronic bronchial catarrh, cystitis, gonorrhoea, leucorrhoea, gleet, chronic urinary trouble, hemorrhages, puerperal fever, inflammation of the bowels, traumatic erysipelas, intestinal worms, pneumonia, phosphorus poisoning and lead-poisoning. Externally: Rheumatism, sciatica, lumbago, neuralgia, bronchitis, pleurisy, peritonitis, tympanitis, renal colic, gangrene, sprains, wounds, scabies, ringworms, enlarged glands, burns, frostbites, colic, and the vapors of the oil in whooping cough, diphtheria and laryngitis.

Although purified oil of turpentine is a very valuable remedy when given in small doses, it is very dangerous and poisonous when administered in large doses, or carelessly administered without due consideration of all the symptoms in the case. When using it, always remember the following important facts: (1) It contracts vessels; (2) it increases peristalsis and gastric secretions; (3) it stimulates heart action; (4) it depresses the nervous system. Large doses produce gastro-enteritis, vomiting, diarrhea, suppressed urin, causes lumbar pains, urethral burning, haematuria, strangury, insensibility and death by paralyzed respiration. Note also that it is excreted by the skin, bronchi and kidneys. Inhaling strong vapors gives nasal, ocular and renal irritation.

The symptoms of turpentine poisoning are easily recognized. Strong odor of turpentine, giddiness, gastro-enteritis, strangury, scanty bloody urin with a distinct violet odor, may have purging, cyanosis, dilated pupils, stertorous breathing, feeble rapid pulse and coma.

Antidotes: Give emetics, if no purging, use enema then give plenty of water and demulcent drinks, hot fomentations to the loins. The usual dosage of turpentine is from 5 to 30 drops in sugar or in syrup, but we believe that the maximum dose should be not more than 5 drops, and have often found that 2 or 3 drops beaten up with a tablespoonful of honey and administered every 3 or 4 hours, for only 3 and not more than 4 doses will produce better results than large doses, and without any danger to the patient. We also recommend mixing 5 drops of turpentine in one teaspoonful of eucalyptol as an inhalant (a few drops of the mixture in half a teacup of hot water.)

We do not depreciate or under-estimate the virtue of pine vapor, but merely point out that it is a most powerful and potent remedy which is more effective and safer in small doses.

There is a safe way of taking large doses of turpentine, and that is by making an emulsion as follows:

FORMULA No. 104: Emulsion of Oil of Turpentine.

Put 1½ ounces of powdered gum acacia into a dry pint bottle. Add

1½ ounces of rectified oil of turpentine and shake well. Add

½ ounce of sweet almond oil and again shake well. Add

3 ounces of distilled water and shake well.

When emulsified, add 2½ ozs. syrup or honey a little at a time, and each time shaking. Finally add 2 ozs. water, again a little at a time and shake till uniformly blended. The amount should equal 11 ounces.

DOSE: One teaspoonful to a tablespoonful according to the severity of the case.

ESSENTIAL OILS: (Continued). As before stated, although most of the medicinal essential oils are hydrocarbons, others contain aldehydes, acetones, phenols and esters. We will take those selected as being most potent and curative in alphabetical order, and as we come to aldehydes, etc., we will briefly describe them.

ANISE: Latin name, *Pimpinella Anisum* (Linn)

Natural Order: Umbelliferae.

Synonyms: Aniseed, ansys, annyle, sweet cumin.

HABITAT: Western Asia, Southeastern Europe, Cultivated in Southern Europe, United States, in gardens.

CHEMICAL CONSTITUENTS: Volatile oil 1 to 3 percent. Fixed oil 3 to 4 percent. Choline, resin, sugar, mucilage, malates, phosphates and ash, 7 percent.

VOLATILE OIL: *Oleum anisi*. Oil of anise (official). It is a pale, yellow, thin, strongly refractive liquid, odor of aniseed, sweetish, aromatic taste, (increasing with age) oxygenation. Contains a liquid body, terpenes (C-10, H-16), methyl chavicol, (C-10, H-12, 0) and a stearopten, called anethol (C-10, H-12, 0), 80 to 90 percent. It is thought that this latter is the vital principle upon which its virtues solely depend. It's malates and phosphates are calcium, potassium, magnesium and sodium.

THERAPEUTIC PROPERTIES AND USES:

Aromatic, stimulant, carminative, stomachic, tonic, galactagogue, anticatarrhal, expectorant, sedative. This is one of our very best corrigents to griping cathartics for relieving pains of colic, particularly for babies and young children. Its warming, soothing effect upon the stomach will often calm crying babies when all else fails, and it is reputed to have overcome convulsions in young children after opiates had failed. The following formula, when correctly made, is an extremely valuable remedy particularly for children.

FORMULA No. 105: Aqua Anisi or Anise Water.

1 teaspoonful (moderately heaped) purified odorless talcum powder

½" ' Oil of Anise (Essential)

Put these into a glass mortar and triturate thoroughly for 5 minutes.
Then add -

3½ ounces Distilled water, a little at a time until 1 oz has been added.
Then add rest of water and stir thoroughly and pour into filter. The
triturate or filtrate is the universally used anise water.

DOSE: One dessertspoonful to a tablespoonful in hot water, equal parts. It may be sweetened with honey, and should be for children. This is an extraordinarily soothing syrup, a carminative and a disperser of gas. It is perfectly harmless and may be taken ad libito.

ESSENTIAL OILS: (Continued)

CARAWAY: Latin name *Carum Carvi* (carni) (Linn).

Synonyms: Caraway seed, carvies, French carni carvi, German Kummel, genciner kummel.

Parts Used: The dried seed.

HABITAT: Central and western Asia, Himalayas, Caucasus, Europe, Siberia, cultivated in England, Norway, Russia, Germany, Scotland, Morocco and United States.

Natural Order: Umbelliferae.

The seed ripens in August of the second year (a biennial plant). Then the plant is cut down, dried and thrashed in a cloth. There are several varieties: English, German, Holland Dutch, Magador and American. This last results from cultivating the plant in gardens. The fruit or seed is aromatic, smaller than the German, but this latter composes by far the greatest part of our supply. The English type is the shortest, Magador the longest and lightest, and Holland the finest.

CHEMICAL CONSTITUENTS: Volatile Oil, 5 to 7%; fixed oil, resin, gum, tannin, ash, 5 to 8%; no starch; oleumcari--oil of caraway (Official). Contains a terpene-carvene (C-10, H-16) 35 to 50%. Chemically identical with citrene, hesperidene, Carvone (C-10, H-14, O) 50 to 65%, and an alcohol (C-10, H-17, OH). Carvone is an oily liquid, creosote odor and taste, closely related to menthol and myristicol. It is identical with thymol (from *thymus vulgaris*) and carvacrol, a thick and disagreeably flavored oily liquid (C-13, H-14, O). Isomeric with thymol, and also obtainable from camphor. It is a powerful antiseptic, and is serviceable in relieving toothache.

THERAPEUTIC PROPERTIES AND USES: Carminative, stimulant, antiseptic, diuretic, stomachic. Caraway oil is very similar to anise, and since they are synergistic to each other (combined, help each other) a blend of the two oils is highly recommended for all purposes for which either is used. These blended oils (50-50) are triturated and prepared in the same manner as anise water (Formula No. 105), and administered in the same dosage. This combination will be found very effective in flatulent colic, especially in children. Also to correct or modify the taste of garlic, and offset the drastic action of purgatives such as podophyllum (mandrake) and Culver's root (*Leptranda Virginica*). The oil of caraway is much used in flavoring cakes, breads, etc. Locally applied to the skin, it acts as an anesthetic. Our two common vegetables, parsley and celery are closely related to caraway, and we shall take these up in a later lesson.

ESSENTIAL OILS. (Continued)

CAJUPUT: Latin name, *Melaleuca Leucadendron* (Linn)

Natural Order: Myrtaceae.

Parts Used: A volatile oil distilled from leaves and twigs.

HABITAT: East India Islands (Celebes, Bouro, Amboyna, Maluccas, Philippines and Cochin China.

Synonyms: Kayo puto, white wood, oleum cajeputi.

CHEMICAL CONSTITUENTS: Volatile oil, mucilage, pectin.

OLEUM CAJEPUTI: Oil of Cajuput. A thin colorless or greenish liquid, peculiarly agreeable, distinctly camphoraceous odor (cineol), aromatic, bitter taste. Contains at least 55 to 67 percent of cineol (cajuputol, eucalyptol) (C-10, H-18, O). Also the alcohol terpineol, (C-10, H-17, O). Several terpenes, pinene, valerianic and benzoic aldehydes. NOTE: Aldehydes are alcohols that are partially dehydrated, and are nearly all aromatic principles. Owing to its cost, cajuputi oil is very subject to adulterations with cheaper oils, such rosemary, turpentine, camphor, etc., but as it is an official oil, purchasers should always insist on U.S.P. oil. Cajuputi oil is one of our very best essential oils, and is wonderfully efficacious for a number of painful and distressing conditions.

THERAPEUTIC PROPERTIES AND USES: Aromatic, stimulant, carminative, diuretic, diaphoretic, astringent, antiseptic, vermifuge, [?????] cide, rubifacient, counter-irritant. Has been successfully used in rheumatism, myalgia (muscle pains), spasmodic affections of the stomach and bowels, catarrh of the bladder, low fevers, gout, colds, cholera morbus, dysmenorrhoea, laryngitis, bronchitis, toothache, chilblains.

FORMULA No. 106: Syrup of Cajuput (oil)

Triturate $\frac{1}{2}$ teaspoonful of oil of cajuput in one tablespoonful of powdered sugar in a mortar. Stir one pound of brown sugar into 8 ounces of distilled water, while the water is boiling. Keep stirring and simmer till the sugar is dissolved. Remove from stove and stir in the triturated oil and sugar. Add 4 ounces glycerine, stir briskly until all is of uniform mixture. When cool, pour into a wide-mouth bottle or jar. Always shake well before taking.

DOSE: One dessertspoonful to a tablespoonful 3 or 4 times a day before or between meals. For low fevers and febrile conditions, one tablespoonful in a teacup of hot water before retiring. Dose for children, from $\frac{1}{2}$ to 1 teaspoonful in warm water as an antispasmodic in colic and for worms. For gout and rheumatism, the following liniment will be found very merciful and effective.

FORMULA No. 107: Compound Liniment of Cajuput.

7 ounces pure Olive Oil

$\frac{1}{4}$ ounce Oil of Cajuput

$\frac{1}{4}$ " rectified Oil of Turpentine

$\frac{1}{4}$ " Oil of Garlic

$\frac{1}{4}$ " Oil of White Pine

Mix all together and shake well (equals 8 ounces). Always shake the bottle before using.

DIRECTIONS FOR USE: Rub into the affected parts before retiring, and in severe cases, apply 2 or 3 times a day. In case it proves too irritating to the skin, pour a small quantity into another bottle and dilute with an equal amount of olive oil. For children, dilute with 3 parts olive oil to 1 part of the liniment. This liniment is worth its weight in gold, for all sprains, bruises, rheumatism, sore muscles, chilblains, etc.

ESSENTIAL OILS: (Continued)

CINNAMON: Latin name, Cinnamomum Zeylanicum.

Natural Order: Lauraceae.

Parts Used: The bark and essential oil.

Synonyms: Cod's cinnamon, annam cassia, Ceylon cinnamon, etc.

HABITAT: Annam (Cochin, China), Ceylon. Cultivated in China, Java, Sumatra, South America, West Indies.

Cinnamon has a very ancient history. King Solomon of Biblical fame is reputed to have used, or recommended it in the treatment of several diseases. It was brought to the Phoenicians, Grecians and Romans by Arabian navigators. The Chinese cassia was used first, the Ceylon not until 1275 A.D. Cinnamon is one of our most versatile and valuable Herbs. It enters into a great many remedies, and an immense amount is sold throughout the civilized world, for flavoring of cakes, bread, puddings, candies, etc. Either the bark or oil is extremely useful in a variety of conditions.

CHEMICAL CONSTITUENTS: Volatile oil 0.5 or 2 percent; tannin 3 to 5 percent; resin, bitter principle, sugar mannite, starch, mucilage, ash 2 to 5 percent.

Volatile oil, oleum cinnamomi, oil of cinnamon, oil of cassia (Official) This volatile oil, when pure, contains not less than 75 percent of cinnamic aldehyde (C-9, H-8, O). It is a colorless liquid having a cinnamon-like odor, a burning aromatic taste, is soluble in alcohol, fixed and volatile oils, sparingly in water, and contains 95 percent of pure cinnamic aldehyde. This is the main principle of oil of cinnamon, as eucalyptol is the principle of eucalyptus oil, or eugenol is to oil of cloves. Cinnamic aldehyde oxidizes into resin and cinnamic acid (C-9, H-8, O-2). This acid occurs also in balsam of tolu, Siam benzoin and storax, all of which will be dealt with later. Upon further oxidation, it becomes benzoic acid (C-7, H-6, O-2). The ash consists of calcium, potassium and silica.

THERAPEUTIC PROPERTIES AND USES: (Of Cinnamon Bark) Carminative, stomachic, stimulant, astringent, haemostatic, aromatic, antispasmodic, antiseptic, germicide, and parturient. The oil has the same medicinal properties, except that it is not astringent, but much more powerful in every other respect.

USES: The bark. Diarrhea, flatulence, nausea, vomiting, menorrhagia, and to counteract griping medicines.

The oil: In syrup, mucilage, emulsion, cod liver oil with garlic, asafoetida, and nauseating medicines, not only to cover taste and odor, but as a synergist to increase their efficacy.

FORMULA No. 108: Infusion of Cinnamon.

1 ounce Cinnamon Bark, (cut or powdered)

1¼ pints distilled water

Boil the water and pour over the bark. Cover and let steep in a hot place for 10 minutes. Strain, and add honey to taste.

DOSE: One wineglassful 3 times a day, given 1 hour before meals.

Children, from a teaspoonful to a tablespoonful, according to age, in honey water.

This is a prompt and efficient remedy for nausea, vomiting, cramps and spasms, dyspepsia, weak digestion, cholera infantum, diarrhea, dysentery, and is particularly helpful in vomiting in pregnancy and as a stimulant and parturient. If it is desired to keep this infusion for some time, add 1 ounce of alcohol (70 percent) and 3 ounces glycerine. Bottle and keep in a cold place.

FORMULA No. 109: Compound Aromatic Powder of Cinnamon.

6 ounces powdered Cinnamon (Saigon)

2 " " Cardamon Seeds (Elettaria Cardomonum)

2 " " Nutmeg (Myristica Fragrous)

Mix all together thoroughly and put into a wide mouthed jar, and seal tightly.

DOSE: One quarter to one half level teaspoonful steeped in a teacup of boiling water, well covered, for 10 minutes. Strain, and when cold, drink one cupful 2 or 3 times a day. Children: $\frac{1}{4}$ to $\frac{1}{2}$ of the above dose.

This is an extremely fine and quick remedy for nausea and for the same purposes for which the infusion of cinnamon is used. For cramps and spasms, it should be taken hot, and sweetened with honey. It stimulates the digestion, warms the whole body in a few minutes, is strengthening to the heart, and tones up the nervous system. As previously stated, oil of cinnamon is much more powerful in its action upon the tissues. Can be used in iron tonics, since it is non-astringe

FORMULA No. 110 Syrup of Cinnamon

Dissolve 2 teaspoonfuls of Oil of Cinnamon in 4 ounces of 70 percent alcohol. Shake well and set aside.

Make Brown Sugar Syrup as follows:

Boil 6 ounces of water, and while boiling stir in slowly 12 ounces brown sugar. Boil very slowly with constant stirring until sugar is dissolved. When syrup has boiled 5 minutes, there should be approximately 1 pint.

Remove from fire and allow to cool until it is lukewarm.

Pour in cinnamon oil and stir until it is thoroughly incorporated. Now pour all into a quart jar, seal and shake well.

NOTE: The alcohol will tend to cool the mixture, but do not close the cap of the jar while hot, as the heat will expand the air inside the jar, and might burst it.

The DOSE of the syrup alone is 1 teaspoonful or more in water. It is excellent for children. This syrup may be mixed with any nauseous medicine,

shaken with cod-liver oil, etc., in any proportion desired. It is a cardiac stimulant, and acts upon the whole organism as a safe, pleasant and effective tonic nervine.

LESSON TWENTY-ONE

Continuing our study of essential oils, we come to the most powerful, and certainly one of the most useful of all the essential oils of nature, namely: -

CLOVES: Latin name, *Eugenia Aromatica* (Linn)

Synonyms: Caryophyllus, mother cloves.

Parts Used: The dried flower buds.

EUGENIA: Latin, French, Greek, meaning well plus born, or of noble birth. In honor of Prince Eugene of Savoy, a great patron of Botany (died in 1736).

AROMATICA: Latin, Aromaticus, meaning fragrant odor.

CARYOPHYLLUS: Meaning a nut. i.e. referring to the appearance of its flower buds.

CLOVE: Latin, Clavus, a nail; i.e. the resemblance of its dried flowers.

HABITAT: Malucca Islands, Indian Ocean Islands, Amboyna Group, Sumatra, Mallaca, Penang, South America in Brazil, Guiana; Cayenne, Africa, Zanzibar, West Indies.

Cloves were unknown to the ancients, being brought to England by the Arabians and the Venetians. For a long time the Portuguese and the Dutch monopolized the trade. At the present time, most of our cloves come directly from Zanzibar, but the finest come from Penang. Some from Pemba and Bombay. Much of our supply also comes from the West Indies. We recommend the Malucca and the Amboyna varieties which are thicker, heavier, darker and most oily and aromatic, and will produce better results. NOTE: The ordinary cloves purchased at our markets are usually not more than half the strength of the genuine Malucca cloves. We give you here a full analysis:-

CHEMICAL CONSTITUENTS: Volatile oil, 18 percent; tannin (gallo-tannic acid) 10 to 13 %; gum, 13 percent; resin (tasteless), 6 percent; caryophyllin, eugenol (C-10, H-12, O-2), vanillin, green wax, cellulose 28 percent, water 18 percent.

OLEUM CARYOPHYLLI: Oil of Cloves (Official). This volatile oil is distilled from cloves, with water or steam, and usually 3 percent of sodium chloride is

added to raise the boiling point to 109.5° C (229°F). It is a thin, colorless or pale yellow liquid, becomes darker and thicker by age, strongly aromatic odor of cloves; pungent, spicy taste; becomes semi-solid yellowish mass when shaken with a solution of potassium hydroxide or ammonia water. Contains (light portion) sesquiterpene, caryophyllene (C-15, H-24), polymeric with terpine C-10, H-16). The heavy portion phenol, eugenol (C-10, H-12, O-2) 80 to 90 percent. Vanillin, purpurool (causes oil to darken) and/methyl alcohol.

EUGENOL: C-10, H-12, O-2) (Official also called Eugenin. Caryophyllic acid, eugenic acid, ethylmethyl, pyrocalechol, para-oxy-methoxyallyl benzol. (These names are descriptive synonyms for chemists only, and do not especially interest us). They are given, however, to illustrate the complexity of nature's processes, and to show how utterly impossible it is for puny man to ever hope to duplicate her infinitely varied chemical phenomena.

This mysterious, complicated and unsaturated aromatic principle is undoubtedly the most valuable curative ingredient or principle found in cloves. It is a colorless, or pale yellow, thin, oily liquid, having the odor of cloves, and a pungent, spicy taste. Becomes darker and thicker with age. When oxidized with permanganate of potash, it yields vanillin (same as obtained from vanilla, balsam of Peru, and several other plants), caryophyllinic acid (C-20, H-32, O-6) is another of its valuable by-products. As a germicide, eugenol is the most powerful agent known to medical science. It is even more powerful than bichloride of mercury.

THERAPEUTIC PROPERTIES AND USES: (Powdered Cloves).

Stimulant, stomachic, carminative, aromatic, astringent, anti-emetic, anti-spasmodic, antiseptic, digestive, germicide, Increases circulation of the blood, raises temperatures, promotes digestion and nutrition. It is excreted by the kidneys, skin, liver, bronchial mucus membrane, stimulating and disinfecting these emunctories.

USES: Nausea, vomiting, flatulence, spasms, epilepsy, twitching, ague, palsy, indigestion, poor circulation, cold extremities, low blood pressure, mucus colitis, diarrhea, dysentery, bronchial catarrh, phthisis, sour stomach, bad breath, zymotic diseases, etc.

USES: (Eugenol). To flavor nauseous medicines. In olive oil, sweet almond oil, emulsion or mucilage as a stimulant-nutrient, antiseptic, peristaltic, stomachic and anti-spasmodic. Not nearly so astringent as powdered cloves, but is the most powerful of all stimulants to the circulatory system, and as a germicide.

FORMULA No. 111: Infusion of Cloves.

½ ounce Cloves (powdered)

2¼ pints distilled water

Boil the water and pour over the cloves. Cover and let steep in a hot place for 10 minutes. Strain and add 4 ounces of honey or black molasses. When cold, bottle, cork well and keep in a cold place.

DOSE: A small wineglassful 3 times a day 1 hour before meals.

Children, $\frac{1}{2}$ to 1 teaspoonful, according to age.

FORMULA No. 112: Strong Decoction of Cloves.

2 ounces Cloves (cut or powdered)

1½ pints distilled water

8 ounces pure Glycerine

Boil the water and while boiling pour over the cloves. Cover and simmer over very low fire for 15 minutes. Remove from heat and allow to cool slightly, keeping it covered. Strain, add glycerine blending it thoroughly, pour into brown actinic bottles and keep in a cold place. It is usually advisable to strain through a linen or fine cloth, and when most of the liquid has run through, squeeze out the rest by twisting the cloth or pressing. This last contains a good deal of the oily glyceride, and must be thoroughly mixed by shaking with the other strained liquid. This is a very powerful medicine, and should not be taken in over-dose, or given to children indiscriminately.

DOSE: One teaspoonful to a dessert-spoonful, 3 or 4 times a day, preferably 1 hour before meals, and 1 dose in hot water upon retiring. It will be found to warm the body and produce a sensation of well-being, restfulness and relaxation. However, patients should be warned not to take advantage of the feeling of vital energy it so often produces, but they should relax and rest, thus allowing this miracle of energy to gradually restore vitality to the batteries of the system. Overdoses will defeat this object. Remember, the aftermath of over-stimulation is depression and lowered vitality. Small and often repeated doses have been known to cure St. Vitus dance and epileptic fits. Also hysteria in high-strung, nervous women and children. While taking a course of caryophyllum, the stools of children should be watched for worms, as we have reports of the passing of worms from children who were taking this particular formula.

FORMULA No. 113. Eugenol in Mucilage.

Make one pint of a mucilage of any one of the mucilaginous and demulcent Herbs given in this course, and while still warm, put into a bottle and add $\frac{1}{2}$ teaspoonful of eugenol. Shake well until thoroughly mixed. Also shake bottle before taking.

DOSE: One wineglassful to be taken approximately 1 hour before meals.

Children: From a teaspoonful to a dessert-spoonful 3 or 4 times a day, in syrup or honey, and thoroughly mixed.

FORMULA No. 114: Emulsion of Eugenol and Sweet Almond Oil.

8 oz. Sweet Almond Oil

2 teaspoonfuls of Eugenol

8 oz. Lime Water

2 oz Black Molasses or Honey

Shake together the Almond Oil and Eugenol until thoroughly mixed. Add the honey or molasses and shake again. Last, add the lime water and shake until the oils are thoroughly emulsified. Keep in a cold place.

DOSE: One dessert spoonful to a tablespoonful 3 or 4 times a day.

Children: One teaspoonful or less, according to age. Add honey. This is equally as nourishing as cod-liver emulsion, if not more so. It is much more pleasant to take, and is more easily digested by delicate stomachs. Eugenol offsets the tendency to nausea suggested by oil, and if there be intestinal worms, they will be expelled. Eugenol is one of the greatest antiseptics and disinfectants, as well as being the most powerful stimulant of all the essential oils.

ESSENTIAL OILS: Continued.

COPAIBA: Natural Order, Caesalpinaceae.

Synonyms: Balsam of Copaiba, Balsam Capivi.

Parts Used: The essential oil and oleoresin.

HABITAT: Brazil, Venezuela, Columbia, Amazon Valley, Banks of the Orinoco River.

The history of these interesting trees and their peculiar product (oleoresin) from which the oil is obtained by distillation, dates back to the 17th Century, at which time much was written about it. Since that time (1625-1638), it has been used extensively for venereal diseases. There are 11 known species of the trees. They were separated and classified by Hayne (1827) and Betham (1870), all growing in Brazil. Copaiba is an oleoresinous exudation, like turpentine; except that copaiba is a pathogenic product, doubtless as an antiseptic protection, and collects in ducts.

It is obtained by making large auger holes or boxes, square or wedge shaped, into the center of the tree's stem near the base, from which it usually

flows at once giving 12 pounds in 3 hours. If none should appear, the wound is closed with clay or wax, and reopened in two weeks, whereupon it usually discharges abundantly. There is an extraordinary phenomenon which sometimes occurs that is worth mentioning. Old trees furnish 2 or 3 flows a year, and when abandoned, these ducts, which are very long, sometimes the whole length of the stem, will fill up and expand with such force as to burst the trunk of the tree with a loud cannon-like report. The first flow is thin, clear, colorless liquid, which shortly becomes thicker and yellowish. One tree may yield from 10 to 12 gallons a year, the value of which depends upon the amount of volatile oil it contains.

CHEMICAL CONSTITUENTS: Volatile oil, resin, bitter principle, copaivic acid (C-20,H-34, O-4). All these are crystalline. It has no benzoic or cinnamic acid, but does contain oxycopaivic acid (C-20,H-28, O-3) and metacopaivic acid (C-22, H-34,O-4), hence the name “balsam” is misapplied.

OLEUM COPAIBA: Oil of Copaiba. (C-15, H-24), This oil is distilled from the oleoresin with water or steam, and upon it depends nearly all of its valuable medicinal properties. It is a pale yellow liquid (oil) oxydizing by exposure, has characteristic odor of copaiba, aromatic, and has a bitter, pungent taste. Consists chiefly of caryophyllene (C-15,H-24), Should be kept in actinic or brown glass bottles in a dark place, because light causes it to change and deteriorate, losing radio-activity. The residue of resin left after distilling the oil is of little practical use, and though it is used by regular physicians in treatment of venereal disease, cystitis, bronchitis, dysentery, etc., evidence goes to show that its use is fraught with danger. It has proved to be an irritant poison which, the soluble in alcohol, deposits in glands and tissues, setting up a very serious poisonous condition which is difficult to eradicate, owing to its insolubility. Even the oil, although bland and unirritating apart from its nauseous odor and taste, to some but not in all cases, cannot be used for very long without causing indigestion, flatulence, renal irritation and sometimes a skin rash that resembles roseola, or urticaria.

THERAPEUTIC PROPERTIES AND USES: Similar to turpentine, diuretic, stimulant, expectorant, laxative, nauseant and disinfectant. Acts mainly on the genito-urinary mucus membranes by which it is eliminated, and by the skin and mucus membranes generally. It increases, not only the quantity of urine secreted, but also the solids contained in it, thus ridding the system of accumulated deposited matter. It imparts its distinctive odor to the urine, sweat, milk, breath and feces, which is its principal objection. Never-the-less, it is an exceedingly valuable, quick remedy for that very prevalent result of uncleanliness, gonorrhoea which is one of the curses of civilization. As such, it must be classed among the most potent and beneficial Herb remedies, besides which it has often cured cystitis, bronchitis, dysentery, diarrhea, hemorrhoids, psoriasis, dropsy and even leprosy, taken as emulsion, electuary or the oil, in 5 to 10 minim capsules.

FORMULA No. 115: Emulsion of Copaiba Oil.

Mix 1 ounce Oil of Copaiba with 4 ounces of olive, or sweet almond oil, and 1 dram of eugenol. Shake all together, then add 5 fluid ounces lime water. Shake until oils are emulsified, bottle and keep in a cold place. Put into brown actinic bottles.

DOSE: One teaspoonful 3 or 4 times a day, between meals. (Dose of oil of Copaiba equals 6 drops). The addition of eugenol, not only covers the nauseous taste and odor, but acts as a synergist, increasing its stimulating and antiseptic powers. Also modifies the peculiar distinctive odor of the oil as it exudes from the emunctories.

FORMULA No. 116: Electuary or Syrup of Copaiba.

Heat 8 ounces of honey or brown sugar syrup in a double boiler.

Do not boil. Stir in $\frac{1}{2}$ ounce of oil of copaiba and $\frac{1}{4}$ teaspoonful of eugenol. While still warm, stir well and pour into a jar. Cap and keep in a dark place.

DOSE: One dessert-spoonful 3 or 4 times a day.

FORMULA No. 117: Copaiba Oil and Eugenol, in Capsules.

Mix 2 ounces Oil of Copaiba and $\frac{1}{4}$ teaspoonful Eugenol, and shake well together. Put into 5 minim capsules, by means of medicine dropper.

DOSE: 1 or 2 capsules before meals. The addition of Eugenol into each of these 3 formulas is our own idea, and will be found to remove the principal objection to the taking of this most virtuous oil.

NOTE: In no case should more than 15 minims (drops) a day be taken, and in no case should the treatment be continued for more than 20 days. In very stubborn cases where, after taking for 2 weeks, the symptoms have not entirely disappeared, which is very seldom, the treatment should be stopped, and Formula No. 1 in Lesson No. 1 be taken for 2 or 3 weeks. This will usually clear up the most difficult cases providing, all alcoholic stimulants and rich stimulating foods are abstained from during treatment.

ESSENTIAL OILS: (Continued)

CORIANDER. Natural Order. Umbelliferae (Linn)

Parts Used: The fruit, so-called seeds.

Latin Name: Coriandrium Sativum. CORIANDRIUM, Latin and Greek meaning a bug (Odor of leaves); SATIVUM, Latin--Sativus, meaning sown or cultivated.

Synonyms: Bed bug plant, owing to the odor of the fresh Herb strongly resembling the odor of bed bugs; curry plant, which forms an ingredient in curry powder.

HABITAT: Central Asia, Southern Europe, China, Italy, and cultivated in the United States and Europe.

Here is a remarkable Herb of peculiar and very objectionable odor when in the fresh state; but when dried and stored, gradually oxidizes, producing a pleasing odoriferous oil, which is not only a valuable medicine, but is also used extensively as a condiment for flavoring foods and is an ingredient of curry powder. It is also used in perfumery.

Coriander has an ancient history, and was a favorite with Hippocrates and other ancient physicians of renown. Pliny tells us that the best coriander came from Egypt. It was there, no doubt, that the Israelites learned of it. It was one of the Herbs brought to England by the Romans, and was used by them as an aromatic spice, and also as a remedy for chills and fevers. It was extolled during the Middle Ages for being a remedy for erysipelas, (also called St. Anthony's fire). Turner (1551) says: 'Coriander layd to wyth breade, or barley mele, is good for Saynt Anohoyne's fyre', supposed to have been cured by the intercession of Saint Anthony.

CHEMICAL CONSTITUENTS: Volatile oil, 1 percent; fat 13 percent; tannin, malic acid, mucilage, ash 5 percent.

OLEUM CORIANDRI: Oil of Coriander. (Official)

This oil is distilled from the fruit, crushed between rollers, with water or steam. It is a yellowish liquid, having the characteristic aromatic odor of coriander, and a warm spicy taste. Is completely soluble in 80 to 90 percent alcohol and partly water. It contains a terpene-pinene (C-10, HO16) 5 percent, and an alcohol-linalool (coriandrol) (C-10, H-18, O), 90 percent, from which one molecule of water can be withdrawn, leaving pinene (C-10, H-16). This should be kept in brown actinic bottles, in a dark place.

THERAPEUTIC PROPERTIES AND USES: Aromatic, carminative, stimulant, diuretic stomachic and antiseptic.

USES: Indigestion, flatulency, colic, neuralgia, rheumatism. To correct griping medicines such as senna, rhubarb, mandrake, Culver's root, etc. It is used also to flavor gin and liquors, and in veterinary practice.

FORMULA No. 118: Infusion of Coriander.

½ ounce coriander seed (cut or powdered)

1½ pints distilled water.

Boil the water and pour over the seed. Cover and let steep in a hot place for 10 minutes. Strain and add 4 ounces glycerine. Bottle and keep well corked.

DOSE: One tablespoonful to a wineglassful 3 or 4 times a day 1 hour before meals.

FORMULA No. 119: Honey of Coriander.

Triturate 2 teaspoonfuls of oil of coriander with 2 ounces of powdered sugar in a mortar for 5 or 10 minutes. Heat one pound of strained honey and while hot, stir into the sugar and oil mixing thoroughly. When warm, put into a jar large enough to allow for shaking. Shake well until uniformly mixed.

DOSE: One teaspoonful to a dessert spoonful in hot water, well stirred, for pains and cramps in the stomach and bowels. Also to stimulate digestion and appetite in dyspepsia and flatus. It dispels gas and flatu magically, quickly relieves colic, sweetens the breath and gives a sensation of warmth and comfort. This formula (honey of coriander) should always be well shaken before being taken. It can be mixed with any griping or nauseating medicine, to make it more pleasant and palatable. The following is a valuable secret formula for making a famous Indian curry powder which, for many years, has been very high priced and could be obtained only by importing it. It makes the most excellent curried meats, seafoods, etc., by simply adding one or two teaspoonfuls of the curry powder to each quart of the stew while cooking.

FORMULA No. 120 Indian Curry Powder

1 ounce Ginger (Jamaica, powdered)

1 " Coriander Seed (Powdered)

1 " Cardamon Seed "

¼ " Capsicum "

3 ounces Tumeric "

Mix all thoroughly by sifting several times, then store in a glass jar, and keep tightly sealed. This makes an appetizing seasoning, and imparts a delightful flavor to hamburger, stews, meat loaves, gravies, sauces, etc. It is, of course, very hot like chili, but is healthful. Curry is a popular seasoning in India and in the tropics. We would just say, before leaving coriander, that it has few equals as a stimulating carminative, and also tends to increase vitality.

ESSENTIAL OILS (Continued)

CUBEBS: Natural order, Pipiraceae (Linn.) Latin name, Piper Cubeba.

Parts Used: The dried, unripe, but fully grown fruit.

SYNONYMS: Tailed cubebs, Java pepper, tailed pepper.

Piper, from the Sanskrit - pipala; Bengalese - pippul; Greek - to digest, or aids digestion.

CUBEBA: Persian - kababa, the native name of the plant.

HABITAT: Java, Sumatra, Borneo, Penang, East Indies and Ceylon. Cubeb grows extensively on coffee plantations, or on ground reserved for the purpose, being supported usually on shade trees. It is a climbing, woody perennial. Fruit is gathered when fully grown, but before it is ripe. It is dried carefully in the sun, and exported from Java to Singapore, whence it enters the market. There is no evidence that it was known to the ancients, but evidently was brought into Europe by the Arabians.

CHEMICAL CONSTITUENTS: Volatile oil 5 to 15 %; resin 2½ to 3½ %; cubebin (C-10, H-10, O-3) up to 3 percent. Cubebic acid (C-14, H-16, O-4) 1 to 3 percent, fatty oil 1 percent, gum 8 percent, starch, ash 5 to 6 percent.

OLEUM CUBEBAE: (Official)

This volatile oil is obtained from cubeb by distilling, with water or steam. It is a yellowish-green liquid, characteristic odor of cubeb, warm, camphoraceous, aromatic taste. Contains a little dipentine (C-10, H-16), but mostly sesquiterpine and cadinine (C-15, H-24). The oil, resin, and particularly the cubebic acid, are considered to constitute the whole virtues of the plant.

THERAPEUTIC PROPERTIES AND USES: Diuretic, stimulant, carminative, expectorant, disinfectant, local irritant (the oil), and in large doses, poisonous, causing headache, giddiness, nausea, purging and paralysis. It is eliminated by the bronchial mucus membrane, skin, kidneys and genito-urinary tract, all being powerfully stimulated, increasing secretions, and at the same time disinfected. It imparts to urin a peculiar distinctive odor.

USES: Gonorrhoea, urethritis, vesical irritability, cystitis, abscess of prostate gland, hemorrhoids, chronic bronchitis and catarrh. Cubebs, when properly understood, and correctly prepared according to the proven formula given here, are one of the best remedies for the above named conditions. But like many another good remedy, are dangerous in the hands of careless people.

FORMULA No. 121: Infusion of Cubebs.

1 quart distilled water

1 ounce Cubebs (cut or powdered)

Boil the water, and while boiling, pour over the Herb. Cover and allow to steep in a hot place for 10 or 15 minutes. Strain, cool, bottle and keep in a cold, dark place.

DOSE: From a tablespoonful to a wineglassful 3 times a day, between meals. Not suitable for children.

FORMULA No. 114: Emulsion of Eugenol and Sweet Almond Oil.

- 6 ounces of sweet almond oil
- 2 teaspoonfuls of eugenol
- 2 ounces lime water
- 2 ounces black molasses or honey

Shake the almond oil and eugenol together until thoroughly mixed. Add the honey or molasses and shake again. Finally add the lime water and once more shake until the oils are emulsified. Keep in a cool place.

DOSE: One dessert spoonful to a tablespoonful 3 or 4 times a day, with honey added. This is quite as nourishing as cold liver oil emulsion, if not more so. It is much more pleasant to take and more easily digested by delicate stomachs. The eugenol offsets the tendency to nausea.

FORMULA No. 122 Cubeb Salve.

- ½ ounce of oil of cubeb
- ¼ ounce of cubeb resin
- 8 ounces of anhydrous lanæ (woolfat)
- 4 ounces of olive oil

Melt the woolfat and add the olive oil. Keep hot, but do not boil. Put in the resin and stir until dissolved. Finally add oil of cubeb. Stir and pour into warm jars and allow to cool. This is a most excellent remedy for abscess of the prostate gland, ururitis, hemorrhoids, itching, and also for application to boils, etc. For abscess, a small portion of the salve is inserted into the rectum and the gland is anointed with it. Apply 2 or 3 times a day, preferably after stool. For application to any affected part, use as any other salve.

We promised last lesson to make up for the shortened Lesson No. 21, and we believe we have done so in giving very valuable information, and no less than twelve most valuable formulas which is as much as can be reasonably digested in one lesson.

LESSON TWENTY-TWO

In the first lesson of this course, we cited the fact that when snakes cast their skin, they go blind, and in that condition they crawl to a mossy bank or fallen tree on which moss is growing, and with that lowly Herb (moss), they restore both their skin and sight.

The critical mind might reasonable say, "Yes, but what if there is no moss in the vicinity, then what does the snake do?" Nature does not work along those lines. She not only provides one or two specific remedies for each disease, but hundreds of Herbs for each disease, and for each of her children, no matter how lowly they may be. It has never been a question in the intelligent observer's mind, whether or not there is a remedy for every disease, but, which is the best of the many Herbs that heal specific diseases. So, the answer to any critic who may doubt that the snake knows his remedy, and always finds it available, is that there are many Herbs that will cure one disease or affliction. Also, there are Herbs which, when used individually, will cure several diseases.

That this is absolutely true, will be seen in the following brief history and description of a most neglected, despised and grossly misunderstood Herb, which in ancient times was honored and eulogized by some of the greatest medical minds of all time.

We have before stated that many of Nature's best remedies have been thrown on the scrap pile by doctors as useless, but which nevertheless, have survived through long centuries, and have ultimately come to the attention of unbiased scientists, and been put to endless use. Because of the great importance of this beautiful plant in future medicine, we have spent a few minutes to revive your faith in Herbs as infallible remedies, and to show that the claims made in these lessons are not our opinion, but are based upon actual historical clinical experience of the world's greatest botanical physicians or Herbal doctors. The Herb we have reference to is the very common and well known plant called ---

FENNEL: Latin name, Foeniculum Vulgare.

Natural Order: Umbelliferae.

Parts Used: Seed, leaves, roots.

SYNONYMS: Fenkel, sweet fennel, wild fennel.

HABITAT: It grows in most parts of temperate Europe, but is generally considered indigenous to the shores of the Mediterranean, whence it spreads eastward to India. It has followed civilization, especially where Italians have colonized, and now grows wild in many parts of the world. It is common in California. Fennel was known to the ancients, and was cultivated by the very ancient Romans.

Pliny had much faith in its medicinal properties, claiming that it would cure 22 different diseases. Pliny also observed that serpents eat it when they cast off their old skins, and restore their sight by rubbing against it. Fennel was one of the Herbs used by Hippocrates, and was also well known to the ancient Egyptians. A lengthy treatise on this plant was known, and is supposed to have been one of the books destroyed when the Alexandrian Library was burnt. All down through the ages, this wonderful Herb has been used in the treatment of many affections, such as, failing sight, blindness, dropsy, adipose tissue, inflammations and fevers, ague, St. Vitus' Dance, fits, nervous troubles and a score of other conditions.

Regarding its power of restoring sight, the poet Longfellow mentions it -- above the lower plants it towers. The fennel with its yellow flowers, and in an earlier age than ours, was gifted with the wondrous powers, lost vision to restore." An old English rhyming Herbal preserved in Stockholm, gives the following description of how the snake restores his sight with fennel.

"Whaune the heddere (adder) is hurt in eye,
 Ye red fenel is hys prey;
 And yif he may it jynde
 Wonerly it doth hym knde
 He shall chewe it wonderly
 And laye it to his eye kindly.
 The jouse shall sang and heyle ye eye
 Yat before was sicke it feye (fever)".

Fennel is frequently mentioned in Anglo-Saxon recipes as a remedy and as a condiment. Prior to the Norman Conquest (1066) fennel shoots seed and fennel water are all mentioned in an ancient record of Spanish agriculture, dated 961 A.D. The diffusion of the plant was stimulated in Central Europe by Charlemagne, who ordered its cultivation on the Imperial farms. It is treated by the two great Herbalists of the Middle Ages--Gerrard (1597) and Parkinson (1640). William Coles in "Nature's Paradise" (1650) says: "Both the seeds, leaves and root of our garden fennel are much used in drinks and broths, or those that are

gown fat, to abate their unwieldiness, and cause them to grow more gaunt and lank."

There are many references to fennel in poetry. Even the great Milton mentions it in "Paradise Lost"; but of all the writings on fennel, it remains for the great master Culpepper to really tell us something substantial about it. It is probably owing to this great Herbalist's reliability, that the virtue and fame of this plant has been kept alive until this present day. He says, "One good old custom is not yet left off, viz: to boil fennel with fish, for it consumes the phlegmatic humor which fish most plentifully affords, and annoys the body with; though few that use it know wherefore they do it. It benefits this way because it is a Herb of Mercury, and under Virgo, and therefore bears antipathy to Pisces (the fish). Fennel expels wind, provokes urin and eases the pains of the stone, and helps to break it. The leaves or seed boiled in barley water and drunk, are for nurses to increase their milk and make it more wholesome for the child. The seeds boiled in water stayeth the hiccup and taketh away nausea or inclination to sickness. The seed and roots much more help to open obstructions of the liver, spleen and gall, and therefore, relieve the painful windy swellings of the spleen and the yellow jaundice, as also the gout and cramp. The seed is good for shortness of breath and wheezing, by stoppings of the lungs. The roots are of most use in physic, drinks and broth that are taken to cleanse the blood, to open the liver, to provoke urine, and amend the ill color of the face after sickness and to cause a good habit through the body; both leaves, seeds, and root, thereof, to make people more lean that are too fat. A decoction of the leaves and root is good for serpent bites, and to neutralize vegetable poisons as mushrooms, etc.'

Three more short references and then we will describe it's definite uses to you. John Evelyn in his "Acetaria" (1680) held that the peeled stalks, soft and white, of the cultivated garden fennel, when dressed like celery exercised a pleasant effect conducive to sleep. The Italians eat these peeled stems which they called "oartucci" as a salad, cutting them when the plant is about to bloom and serving with a dressing of vinegar and pepper. Large quantities of fennel were used in the households of the rich in England as may be seen by the record in the accounts of Edward I's household when 81/2 pounds of fennel were bought for one month's supply.

CHEMICAL CONSTITUENTS: Volatile oil 4 to 6 percent, fixed oil 12 percent, sugar, mucilage, ash 8 to 12 percent.

OLEUM FOENICULI: Oil of fennel. (Official) This volatile oil obtained by distilling fruit (seed) with water or steam, is a pale, yellowish liquid, chemically almost identical with oil of anise, but has a characteristic, aromatic odor of fennel, sweetish milk and spicy taste. Contains pinene, phellandrene (C-10, H-16), isomeric with oil of turpentine, dipentine, limonene, fenchone (a bitter camphor) (C-10, H-16, O), Anethol (C-10, H-12, O) 60 percent. Also another isomer (chavicol) anisic aldehyde and anisic acid. NOTE: Anethol is generally supposed to be the most active and vital principle, but as there are several varieties

according to where it grows, and the source of supply, we cannot depend on its carelessly defined chemistry. No account is given of its content of calcium, phosphorus, magnesium, sodium, potassium or sulphur, yet the ash contains calcium and potassium phosphates. We know how valuable these are for bone and nerves, and because it unquestionably reduces adipose tissue, it is to be assumed that it contains sodium phosphate, which invariably splits up acids, such as fatty acids, into carbon dioxide and water, which are thrown out through the lungs and skin. Again, since it promotes perspiration and urination, it most certainly must contain sodium sulphate, which we know is the salt that carries waste water from the system through the kidneys and skin, and finally, it acts as an aperient which would indicate the presence of magnesium sulphate (Epsom salts).

Some may say this is only guess work, but as a matter of fact, it is much more truly scientific than the clumsily defined chemistry of this wonderful plant. A priori reasoning, from cause to effect, and from effect to cause, is the mental process which gives us 95 percent of all our knowledge; Therefore, in view of our past teaching on chemical and therapeutic effects obtained through these and other specific vital salts, we ask you not to ignore our logical deductions, but to give them your fair and open minded consideration and note the results obtained from the use of fennel in the light of these statements.

THERAPEUTIC PROPERTIES AND USES: Carminative, stimulant, stomachic, galactagogue, hepatic, diuretic, diaphoretic, expectorant, reduces adipose tissue, strengthens weak eyes, digestive, antispasmodic, anti-emetic, antiseptic and vermicide.

USES: Flatulency, indigestion, dyspepsia kidney and bladder affections, dropsy, catarrh, cramps and spasms, obesity, nausea, pinworms, ophthalmia, failing sight.

FORMULA NO. 123: Infusion of Fennel Seed.

1 ounce of Fennel Seed (crushed or powdered)

1¼ pints Distilled water

Boil the water, and while boiling pour over the seeds. Cover and steep in a hot place for 30 minutes. Strain and add 4 ounces honey. Cool, bottle and keep in a cold place.

DOSE: One wineglassful with or after each meal. Children: One tablespoonful 3 or 4 times a day. For colds (children) one wineglassful in hot water before going to bed. Adults: Take one teacupful, hot, every hour, and keep body warm.

This wonderful remedy will also be found excellent for nursing mothers. It will promote the secretion of milk and make it more acceptable to the baby. It disperses wind and flatus in both mother and child, and is a splendid remedy for cramps and colic. It is an amazing fact that the simple drinking of fennel tea, and bathing the eyes with it, quickly reduces inflammation of the eyes, and will often

correct squinting. It should be applied fairly hot to the eye that is affected or turned, more so than the other eye. As it is perfectly harmless, it may be taken ad libitum.

FORMULA NO. 124: Aqua Foeniculi (Fennel Water)

1 teaspoonful Oil of Fennel

1 teaspoonful purified Talc.

Triturate the above in a mortar for 5 or 10 minutes, adding distilled water gradually to make 1 pint. Put into a bottle, shake well, then filter until clear.

DOSE: One wineglassful, sweetened with honey, 3 or 4 times a day.

Children: 1 tablespoonful 3 or 4 times a day. This remedy is also known to be effective in ENURESIS, and is good for all irritated conditions and catarrh of the bladder, especially for old folks.

FORMULA No. 125: Aperient for Children.

2 ounces Liquorice Root (cut)

2 ounces Fennel Seed (crushed)

1 quart Distilled Water

Boil slowly for 20 minutes. Strain and add 1 pound of brown sugar. Simmer 5 minutes, removing any scum that may arise. Cool, bottle and keep in a cold place.

1 to 3 years, one

DOSE: For children, teaspoonful; 4 to 7 years, 2 teaspoonfuls; older children, 1 tablespoonful. Regulate the dose to suit the condition of the bowels. This is an exceedingly mild, yet effective laxative, and also strengthening and nourishing for delicate children.

ESSENTIAL OILS: Continued.

WINTERGREEN: Latin name, Gaultheria Procumbens.

Natural Order: Ericaceae.

Parts Used: Leaves and Essential Oil.

Synonyms: Checker-Berry, Partridge berry, deer berry, grouse berry, spice berry, mountain tea, teaberry, ground berry, red pollum, hillberry and wax cluster.

HABITAT: North America, Canada, Georgia and Minnesota, in cold damp woods, mostly in the shade of evergreens.

GAULTHERIA: Dedicated by Kalm to Dr. Gauthier of Quebec.

PROCUMBENS: Lat. pro - forward, plus; cumbens - lying down. This is a very valuable herb when understood and carefully used, but used carelessly or indiscriminately, is very dangerous. Much suffering has been brought about by it's being administered in large doses, though small doses have produced many wonderful results in rheumatic fever and sciatica, both of which are extremely painful and distressing diseases. The tremendous power of this Herb is what makes it dangerous in the hands of those ignorant of its poisonous nature.

CHEMICAL CONSTITUENTS: Volatile oil 0.5 percent (salicylic acid, methyl salicylate) arbutin, ericolin, urson, resins tannin 6 percent, ash 4 to 5 percent.

OLEUM GUALTHERIAE: Oil of Gualtheria. This is a colorless or yellowish liquid, characteristic aromatic odor, sweet, warm, aromatic taste. Consists of methyl salicylate (CH-3, C-7, H-5, O-3) 99 percent. Also a paraffin (triacontan) (C-30, H-62) an aldehyde or secondary alcohol (C-8, H-16); an ester (a compound ether, containing acid and an alcohol radical) (C-14, H-24, O-2).

NOTE: This oil of Gualtheria (wintergreen) has been made synthetically, but is not to be relied upon. It has proven to be more poisonous than virtuous. So, when buying oil of wintergreen, or salicylic acid, always make special request for the genuine, and do not trust the artificial, or you will only be disappointed, and will also be endangering your patient's health, and even his life.

THERAPEUTIC PROPERTIES AND USES: Antiseptic, anti-pyretic, anti-periodic, stimulant, diuretic, cardiac depressant, astringent, emmenagogue.

Small Doses: Stimulate the stomach, heart and respiration.

Large Doses: Derange the stomach, causing nausea, vomiting, reduce respiration, heart action, temperature, and arterial tension. By the gastro-intestinal secretion, the oil is converted into sodium salicylate and as such, it enters the circulation. It is eliminated by the kidneys and skin, mainly as salicyluric acid.

USES: Rheumatic fever, sciatica, lumbago, migraine, diabetes, cystitis and diphtheria.

Externally: In liniment for rheumatism (the oil), to remove warts, corns, callouses, cysts, tattoo-marks, etc.

Special Note: As there is a pathological condition brought about by excessive doses of iodine, so is there a condition called "salicylism" brought about by excessive doses of oil of wintergreen. It is very similar to cinchonism, caused by over-doses of quinine(cinchona). It manifests as headache, deafness, ringing in

the ears, sweating, weak pulse and respiration, nausea, delirium, vomiting, etc. In this kind of poison action, give emetics, diffusible stimulants, and apply artificial heat.

FORMULA No. 126: Infusion of Wintergreen.

½ ounce Wintergreen Leaves (cut)

1¼ pints Distilled water

Boil the water, and while boiling, pour over the leaves. Cover and let steep in a hot place for 15 minutes. Strain, and add 2 ounces of honey Cool, bottle and keep in a cold place.

DOSE: One wineglassful 2 or 3 times a day.

CHILDREN: One teaspoonful to a dessert spoonful. This is a very wonderful and merciful remedy to ease the pains of rheumatism, sciatica, etc. especially when a wintergreen salve or liniment is used externally. Formula for liniment will be given later.

FORMULA No. 127: Wintergreen Water.

1 teaspoonful Oil of Wintergreen

1 " " purified talc

Triturate, then make the same as Fennel Water.

DOSE: One wineglassful 2 or 3 times a day. Children, less, according to age.

This is the best and safest way to take Oil of Wintergreen, because the drops of oil are split up by trituration, and cannot therefore, so violently attack the mucus membrane of the stomach and intestines, as it sometimes does when given in capsules. There is another way to prepare and take it, and that is by dilution with either olive oil or sweet almond oil, or the emulsion of either of these oils. Please note that all essential oils may be diluted in this way. Also, the most powerful oleoresins can be diluted, until there is no danger of their acting drastically.

FORMULA No. 128: Wintergreen Salve (Baumebengue)

1 dram (teaspoonful) Oil of Wintergreen (genuine)

1 dram Menthol

1 ounce white beeswax

1 pound pure lard

Melt lard and beeswax on low fire, blending them thoroughly. Remove from fire and add the oil and menthol, stirring until dissolved. When thoroughly blended and still hot, pour into small glass jars which have been slightly warmed. Allow to cool then cap. This is a very soothing balm for the relief of pain in rheumatism, sciatica, lumbago, sprains, bruises, stiff neck, chillblains, etc. It should not be applied to parts where the skin is broken, or on children.

FORMULA No. 129: Wintergreen Liniment (Oils)

2 teaspoonfuls of Oil of Wintergreen (genuine)

1 " " " Oil of Juniper

1 " " " Oil of Camphor (genuine)

15½ ounces (liquid measure) Oil of Olives (Olive Oil)

Heat the olive oil, but do not boil; while hot, add the camphor and blend thoroughly. Then add the other ingredients and again stir till thoroughly blended. Allow to cool, then bottle.

This is a very strong penetrating oil liniment that has proved very effective for all sprains, bruises, charley horse, rheumatism, sore muscles and joints, sciatica, stiff back and neck. When used for children, it should be diluted with two parts of olive oil to one part of liniment. It will give quick relief in cases of sunburn, or any burn where the skin is not broken; also in torn ligaments, fractured ribs and sprained ankles, it has no superior.

ESSENTIAL OILS: Continued.

JUNIPER: Latin name, Juniperus Cominunis.

Natural Order: Pinaceae.

Parts Used: The oil and berries.

Synonyms: Juniper bush, Juniper berries.

HABITAT: North America, Canada, Asia, Europe, North Africa. Grows in dry woods and on hillsides.

CHEMICAL CONSTITUENTS: Volatile oil 1 to 2 percent, sugar 15 to 30 percent, resin 10 percent, juniperin (a light, yellow, bitter principle), proteids 4 percent, fat, wax, malates, formic and acetic acids.

OLEUM JUNIPERI: Oil of Juniper is obtained by distillation of the fruit (berries) with salt and water or steam. It is a greenish yellow liquid which becomes thicker and darker by age(oxygenation), has characteristic, aromatic odor of Juniper,

warm, aromatic, turpentine-like bitter taste; contains chiefly pinene (C-10, H-16) with some cadinene (C-15, H-24) juniper camphor and an ester, to which both the odor and the taste are due.

THERAPEUTIC PROPERTIES AND USES: Stimulant, diuretic, anodyne, ammenagogue, carminative, stomachic, antiseptic.

USES: Renal dropsy, vesical catarrh, rheumatic pains, sciatica, swollen joints, etc.

FORMULA No. 130: Infusion of Juniper Berries.

1 ounce Juniper Berries (crushed or powdered)

1 ¼ pints distilled water

Boil the water, and while boiling pour over the berries, cover and allow to stand in a hot place for 15 minutes. Strain and add honey to taste. DOSE: One wineglassful 3 or 4 times a day.

Children: One teaspoonful in honey water.

This is a mild and harmless diuretic and anodyne if not taken to excess; but when taken in large frequent doses, will produce renal irritation, and do more harm than good. In renal dropsy, its effectiveness can be much improved by adding parsley seed, as follows:

FORMULA No. 131: Safe Dropsy Remedy.

4 ounces Juniper Berries

8 " " Parsley Seed

3 pints distilled water

Boil the water, and while boiling pour on the Herbs. Cover and steep for 30 minutes. Strain, and add 25% glycerine.

DOSE: From a dessertspoonful to a wineglassful, according to the urgency of the case. Give warm for best results, and the dose should be repeated every 3 hours until the water flows freely. This most valuable formula has saved many lives in serious dropsical cases. The dose should be reduced to a dessertspoonful immediately after the danger is passed.

LESSON TWENTY-THREE

The great teacher, Jesus, is quoted in the New Testament as reproving the Pharisees for putting a tax on Herbs. He said, "Yetithe, thyme and rue." This not only shows that Herbs were in common use by the Jews nearly two thousand years ago, but that the great wise sage, Jesus, thought that they should not be taxed, because they were God's gift to the people. Since we are dealing with both thyme and rue in this lesson, this biblical quotation is pertinent or, as lawyers say, relevant.

It is probable that the particular thyme the Master had reference to, was not our common garden thyme (*Thymus Vulgaris*) but the Herb we now call Wild Marjoram (*Origanum Vulgare*). Today the oil distilled from garden thyme, or wild thyme is commonly known as oil of origanum, but while our common thyme did not grow in Palastine or the Holy Land, we know that wild marjoram did, and still grows there. We bring this to your notice in order to avoid confusion, and so that you can be sure of what you are using, and know what to expect of it when using it in your practice.

ESSENTIAL OILS. (Continued)

WILD MARJORAM: Latin name, *Origanum Vulgare* (Linn.)

NATURAL ORDER: Labitae.

PARTS USED: The Herb.

HABITAT: Asia, Europe and North Africa.

Naturalized in America, and grows in practically every state. Grows best in soils that contain plenty of calcium.

It is a perennial Herb, having a square stem, purplish downy leaves, and pale purple flowers. It has an aromatic, pungent and bitter taste.

CHEMICAL CONSTITUENTS: Volatile oil, 1 percent bitter principle, resin, tannin, salts of calcium, potassium, magnesium and silica.

HISTORY: Marjoram has a very ancient reputation as a medicinal Herb. The Greeks used it extensively, internally for several diseases, and externally for sciatica, rheumatism, neuralgia, swollen glands and joints, and also as an antidote for narcotic poisons, convulsions and dropsy. Among the Greeks, if marjoram

grew on a grave, it augured the happiness of the departed. Among both Greeks and Romans, it was the custom to crown young couples with marjoram. Here is a strange coincidence, which may or may not be in any way connected with the name, America: There are several theories as to the origin of the name, America, and how it came to be given to our country. Marjoram (*Origanum Majorana*) is supposed to be the plant that was called AMARACUS by the Greek writers, and it is thought by some, that America was originally named after this plant. The whole plant has a peculiar, fragrant, balsamic odor, and a warm, bitter aromatic taste, both of which properties are preserved when it is dry.

CHEMICAL CONSTITUENTS: It yields, by distillation with water, a small quantity of a volatile oil, which may be seen in vesicles, by holding the leaves between the eye and the light. This oil is considered to be its principal medicinal agent.

Volatile oil (*Oleum Origani*) 1 percent consists chiefly of terpene (C-10, H-16), a bitter principle, resin and tannin.

THERAPEUTIC PROPERTIES AND USES:

Carminative, stimulant, emmenagogue, tonic, diaphoretic, antiseptic and anti-emetic, Has been successfully used from ancient times up to the present day for dyspepsia, indigestion, nausea, colic, rheumatism, neuralgia, and as a fomentation for sprains, bruises, swollen joints, abscess, etc. An old custom, and a good one is, to give a warm or hot infusion of marjoram at the commencement of measles. It produces a gentle perspiration and brings out the eruption. In rural districts of England, when a child shows signs of measles, and if there are several children in the family, it is a common custom to put all the children in one bed, or as many as will go into one bed, and give them all a hot infusion of the herb. Each child will have the measles, but none will run a high temperature, and in two or three days they will all be well. This same infusion of marjoram is also very useful and effective in cases of spasm, colic, and acute dyspepsia.

FORMULA No. 132: Infusion of Marjoram

1 oz. marjoram herb (cut)

1¼ pints distilled water

Boil the water, and while boiling pour over the herb; cover and let stand in a hot place for 15 minutes. Strain and add honey to taste.

DOSE: One teacupful given warm while patient is closely covered in bed.

Children, from ¼ to a ½ teacupful or more, according to age and condition.

For the other purposes mentioned, allow to cool, and take one wineglassful 3 or 4 times a day, between meals.

FORMULA No. 133: Poultice of Marjoram

Make a loose or moist poultice of flaxseed meal (sufficient for the purpose) by pouring boiling water over the flaxseed in a bowl. Stir in approximately equal parts of marjoram, either cut or powdered. Do this quickly, and in a warm place. Put into muslin or thin cloth and apply to affected parts as hot as can be tolerated. Then make another poultice, and when one gets cool, replace with the other, keeping them hot by placing them in a double boiler in between applications. This is an exceedingly effective remedy for relieving pain and inflammation of any kind. If placed over the abdomen, in acute colic, it will act like magic. Used also for earache, toothache, neuralgia, etc.

FORMULA No. 134 Liniment of Origanum

1 oz. Oil of Wild Marjoram (*Origanum Vulgare*)

1 dram (teaspoonful) Oil of Thyme (*Thymus Vulgaris*)

14-7/8 oz. Olive Oil (so as to make 1 pint altogether)

Shake all together until thoroughly mixed. Pour into a brown actinic bottle, and keep closely capped. This is a good liniment for arthritis, rheumatism, sciatica, sprains, bruises, swollen glands, stiffness and soreness of muscles, as in Charley horse and backache, and also wonderful remedy for chilblains. It may be taken internally in teaspoonful doses for gall stones and dyspeptic conditions. It is best to take it in sweetened milk, or made into an emulsion with lime water (equal parts well shaken together).

ESSENTIAL OILS, (Continued)

PEPPERMINT: Latin name, *Mentha Piperita* (Linn.)

NATURAL ORDER: Labiatae.

PARTS USED: The dried leaves and flowering tops.

HABITAT: Asia, Europe, North America. Grows wild in wet ground, wet places, cultivated in gardens (mostly as a pot herb, and for its oil).

SYNONYMS: Brandy mint, lamb mint, *menthae piperita*, French, *Menthe powree*, German, *pfefferming blatter*.

This is one of the most popular or well known herbs throughout civilization and has been used medicinally for long ages. It was cultivated by the ancient Egyptians and was one of the principal remedies used by Hippocrates. Pliny tells

us that the Greeks and Romans crowned themselves with peppermint at their feasts, and adorned their tables with its sprays, and that their cooks flavored both their sauces and their wines with its essence. It is mentioned in the Icelandic Pharmacopocias. It was only recognized in England late in the Seventeenth century, when the great botanist, Roy, published it in his Synopsis Stirpium bittani corum (A.D.1696).Its medicinal properties were speedily recognized and it was admitted into the London Pharmacopocia in 1721 by the name, Menthe Piperita Sapore. The oldest English peppermint district is in Micham, in the County of Surrey, where its cultivation from a commercial point of view dates from about 1750. This Micham peppermint is considered to be the finest grown in any part of the world. Peppermint is the most extensively used medicinal herb in the world, being cultivated in almost every temperate climate. By far the largest plantations of ?peppermint in the whole world are in the United States, principally in Michigan and Indiana, where thousands of acres are used for the cultivation of peppermint. Comparatively few farmers grow this herb. They are e quipped with up-to-date stills and appliances and, with the help of the growers in Louisiana, produce one-half the world's supply of peppermint, though American peppermint is generally considered to be inferior to that grown in most other countries where it is cultivated and, ?consequently, brings a lower price than the foreign grown.

CHEMICAL CONSTITUENTS: Volatile oil, 1 percent (principally menthol), resin, tannin, gum.

OLEUM MENTHA PIPERITA - OIL OF PEPPERMINT: This volatile oil, distilled from the leaves and flowering tops of peppermint, either fresh or partly dried, with water or steam and rectified by steam distillation, is a practically colorless liquid which gets darker and thicker by age, has a strong characteristic odor of peppermint, and a very strongly aromatic, pungent taste, followed by a sensation of cold, upon drawing air into the mouth. It contains no less than sixteen constituents: Acetic and isovalerianic acids, acetaldehyde, isovaleric aldehyde, amyl alcohol, pinene, phelandrene, limouine, cineol, menthone, menthyl-isovalerate, menthyl ester, cadinene, a lactone dimethyl sulphide, and two others, considered of great importance, viz., methyl acetate, and at least 50 percent of total menthol. Japanese oil yields 50 to 80 percent menthone (C-10, H-18). The hydrocarbons holding menthol dissolved are mainly several terpenes with carbon odor.

MENTHOL (C-10, H-19,OH) is official. It is a secondary alcohol (stearopten) obtained from oil of peppermint by refrigeration at 22.2° c. by means of ice and salt. When solidified, the temperature is allowed to rise gradually, the resulting liquid is poured off, and the crystals are deprived of oil by expression. These are usually purified by re-crystallization. They are colorless, acicular or prismatic crystals, with a strong and pure odor of peppermint, first a warm aromatic taste, then a cool taste. When triturated with equal parts of thymol or camphor, the mixture becomes liquid. When this substance is fractionally analyzed, it is found to contain (as will be seen above) some of the principles or virtues of several other plants, viz., terpenes (pine), carvene (caraway), iso-va-lerianic acid

(valerian), limonene (lemons), cineol (cinnamon), cadinene (cade). No wonder that peppermint is the most universally used plant, and is also considered to be the greatest of all therapeutic remedies.

THERAPEUTIC PROPERTIES AND USES: Carminative, stimulant, nervine, antiseptic, antispasmodic, diaphoretic, anti-bacterial.

USES: Spasmodic stomach and bowel pains, nausea, flatulency, cholera morbus, diarrhea, dysentery, colic, dysmenorrhoea, nervous headache, hiccough, palpitation of the heart, vomiting, and as a flavoring agent.

EXTERNALLY: The oil and menthol for headache, rheumatism, neuralgia, toothache and earache.

FORMULA No. 135 Infusion of Peppermint

1 oz. Peppermint leaves and tops (cut)

1¼ pints distilled water

Boil the water, and while boiling pour over the mint. Cover and allow to stand in a hot place for 10 minutes. Strain, sweeten and drink while hot. This is a quick remedy for sour stomach, to expel flatus and gas, and to relieve the griping pains of colic and cramps. Also, very beneficial for reducing fever in children and promoting free perspiration in recent colds, congestion in the head or chest. The dose for children is, from 1/4 to 1/2 of the adult dose, and may be repeated every hour or two until the desired effect is brought about. The child, of course, must be kept warmly covered in bed. This peppermint tea is also a wonderfully soothing sedative for restless and nervous people of all ages. It quiets the brain and nerves, and brings about complete relaxation and sleep.

For fevers, peppermint tea alone is very wonderful taken in doses of one pint, as hot as can be taken, but as before stated, we believe that a mixture of Elder flowers and peppermint is an ideal fever remedy.

FORMULA No. 136 Strong Decoction of Peppermint.

3 oz. Peppermint leaves (cut)

1 quart Distilled water

Warm the water, stir in the mint. Cover and let stand for two hours. Bring to a boil, then simmer slowly for 15 minutes. Add 4 ozs. glycerine and again simmer for 5 minutes. Strain, cool and bottle.

DOSE: One wineglassful 3 or 4 times a day, between meals.

Children, a teaspoonful to a dessertspoonful, diluted with equal parts of boiling water. For many pains and feelings of discomfort in the stomach and abdominal region, with which so many people suffer, without knowing the cause. These persistent pains tend to create all kinds of fears of ulcers, cancer, and other dreaded diseases, and a double dose of the above formula, made hot by the addition of boiling water, will be found to be of almost magical relief, both physically and mentally because, when the pain disappears, the fear of cancer/etc. also disappears.

FORMULA No. 137 Ready Peppermint Water.

Triturate: - $\frac{1}{2}$ teaspoonful Oil of Peppermint in

$\frac{1}{2}$ teaspoonful purified talc, and

$\frac{1}{2}$ teaspoonful powdered sugar. Triturate all for 5 min.

Add 1 tablespoonful glycerine, and triturate again for 5 minutes.

Add 2 ounces Distilled water, triturate.

Pour into a filter paper in a glass funnel. Rinse out mortar with enough distilled water to gather the remainder of the ingredients.

Pour into filter, stir and allow to filter. If the first filtrate is not clear, add 2 ounces distilled water, shake in a bottle, then filter again. This is somewhat of a tedious process, but when once made, will keep indefinitely, and will always be ready for use. Furthermore, it has many uses. The strength of this peppermint water is much superior to that made by the usual process. It is approximately 1 in 64; whereas the regular peppermint water is only 1 in 500. This makes it eight times as strong. If properly made, it will mix perfectly with either alcohol, glycerine or water, in any proportion, and is therefore a useful remedy to have on hand for many purposes, namely: (1) to flavor nauseous medicines; (2) to relieve pain almost instantly; (3) to prevent or cure nausea and vomiting; (4) to calm the nerves and reduce inflammation in stomach and intestines; (5) to act as a soporific and produce sleep.

DOSE: One tablespoonful in a glass of hot honey-water.

Children, 1 teaspoonful in honey-water.

FORMULA No. 138 Liniment of Peppermint.

1 dram (teaspoonful) of oil of peppermint

1 dram (teaspoonful) of menthol crystals

1 dram of flowers of camphor

1 pint pure olive oil.

Heat the olive oil (but do not boil); then add to it the oil of mint, menthol and camphor. This should all be mixed in a warm jar or bottle, and shaken until all is dissolved. Let stand until cool, then keep in a cool place.

This is a most remarkable liniment for reducing pains of rheumatism, sciatica, lumbago, stiff and swollen joints, congestions of the chest, sore throat, and to be rubbed into any painful part. Is excellent for bruises burns, sprains, torn ligaments, chilblains, athlete's foot, chapped hands, gangrene, purulent sores, etc. It may be applied on broken surfaces and open wounds with remarkable benefit. It has cured varicose ulcers, reduced varicose veins, cleared up skin diseases, such as acne, boils (furunculosis), abscesses, eczema, and is also beneficial for catarrhal affections, taken internally in doses of ½ to a teaspoonful with a tablespoonful of honey well stirred together, and taken 3 or 4 times a day.

ESSENTIAL OILS, Continued:

SAGE: Latin name, *Salvia Officinalis* (LINN.)

PARTS USED: The dried leaves.

HABITAT: Southern Europe, warm stony places, cultivated in England, France, Spain, Germany, Italy, Greece and United States in gardens.

SYNONYMS: Meadow Sage, Garden Sage.

SALVIA: Latin name, *Salvo*, to save, i.e., its healing properties.

OFFICINALIS - OFFICIAL

This was one of the ancient's staple remedies, and was thought to save and prolong life. There is an old Latin proverb which says: "Curmoriatur Homo Cui Salvia Crescit in Horto?" ("Why should a man die whilst sage grows in his garden?") There is also a corresponding English proverb: "He that would live for aye must eat SAGE in May." This herb is sometimes spoken of as SALVIA SALVATRIX (Sage, the Savior). It was believed that sage would thrive or wither just as the owner's business prospered or failed. Another tradition prevailed, that the wife rules when sage grows vigorously in the garden. In the Jura District of France, in Franche-comte, the Herb is supposed to subdue grief, mental and bodily. The following is a translation of an old French saying, "Sage helps the nerves, and by its powerful might palsy is cured, and fever put to flight."

The great Herbalist of the Middle Ages says, "SAGE is singularly good for the head and brain; it quickeneth the senses and memory, strengtheneth the sinews, restoreth health to those that have the palsy, and taketh away shaky trembling of the members." He also shared the popular belief that sage was efficacious against the bitings of serpents. Italian peasants, and many other

country people eat, as a preservative of health, the leaves with bread and butter, of which it has been said, there is no better way of taking it.

A species of sage - *Salvia Pomifera* (the apple-bearing sage of a very peculiar growth) is common on some of the Greek Islands. It has firm, fleshy protuberances of about 3/4 of an inch thickness, swelling out from the branches of the plant, and is supposed to be produced in the same manner as oak apples, by the puncture of an insect of the *Cynipu* genus. These excrescences are semi-transparent, like jelly. They are called sage-apples, and under that name, are met with in the markets. They are candied with sugar and made into a kind of a sweet-meat by the Greeks, and regarded by them as a great delicacy, which is said to possess great healing and salutary qualities. It has an agreeable and astringent flavor. This plant is considerably larger than the common sage of our gardens, and its flavor and odor are much more powerful, being more like a mixture of lavender and sage. It grows very abundantly in Candia, Syros and Crete, where it attains the size of a small shrub. The leaves are collected annually, dried and used medicinally as an infusion. The Greeks are very particular as to the time and date in which they are collected, the date being May 1st, before sunrise. The infusion produces profuse perspiration, languor, and even prostration when used to excess.

CHEMICAL CONSTITUENTS: Volatile oil, 1 to 2 percent, resin, tannin, bitter principle. The oil obtained by distillation with water is greenish or yellowish. Composed of terpene (C-10, H-16), Cincol (C-10, H-18-O), Salviol (thujone) C-10, H-16-O). The salviol developing camphor by oxidation.

THERAPEUTIC PROPERTIES: Stimulant, tonic, vulnerary, astringent, antiseptic, digestive, nervine, to check colliquation sweats, and also as a brain stimulant.

EXTERNALLY: Infusion for ulcers of the mouth and throat.

Dries up mammary secretions, excessive mucus discharges, salivation, indurated sores, and nasal catarrh.

FORMULA No. 139 Infusion of Sage

1 oz Sage leaves (cut)

1¼ pints distilled water

Boil the water, and while boiling pour over the herb. Cover and allow to steep in a hot place for 20 minutes. Strain, add 4 ounces of glycerine or honey Bottle and keep in a cool place.

DOSE: One tablespoonful to a wineglassful 3 or 4 times a day, as a general nervine tonic. Children less, according to age.

There is no advantage in making a decoction, as all its virtues are extracted by means of the infusion.

FOR OUTWARD APPLICATION: Saturate cotton with above infusion and apply to affected parts, cover with waxed paper and bandage on securely.

LESSON TWENTY-FOUR

In this lesson we come to the end of our study of essential oils. We have selected, from a very large number produced by nature, what we consider to be the most useful and applicable in our practice, and all-sufficient for our use. In fact, it is quite doubtful if we shall ever be called upon to use more than half of those treated here. It will be noted, during this study of essential oils, and the herbs from which they are extracted, that not only are their great virtues and marvelous curative effects given, but also their limitations and contra-indications are fully explained. Thus we avoid mistakes and injury to patients which would occur if we allowed our new-born enthusiasm about them to lead us blindly ahead in their use, without first considering the possible danger of over-dosing. This information is as important as the knowledge of their therapeutic action. It is true that sometimes a little knowledge is very dangerous; but it is also true, that every substance in nature is in some cases poisonous or injurious, while in others it is perfectly safe, and in fact beneficial. If this statement seems somewhat vague, let us take time to clear up the point: Sunlight is absolutely necessary to life on earth; but if sunlight is concentrated by converging the rays to a central point, as with a magnifying glass, then sunlight becomes destructive to life. Again, excess of heat or cold destroys life; and so it comes about that, any and every food or medicine is either beneficial or detrimental, depending on when, where and how it is used.

ESSENTIAL OILS, Continued:

SASSAFRAS: Latin names, *Sassafras Varifolium* (Salisbury), *Sassafras Officinale* (Lees and Eberm), *Sassafras* (Linne. and Karsten).

PARTS USED: Root bark and root pith.

SYNONYMS: *Sassafrax*, *laurus sassafras*, saloop, ague tree, cinnamon wood.

HABITAT: Eastern United States, from Canada to Florida and Mexico. Maryland is considered to be the center of cultivation, though it is also cultivated in Louisiana and Virginia.

SASSAFRAS: Latin, *varius*, varying plus *folium*, leaf, namely, leaves of several forms on the same tree. The name, *sassafras*, was given by the Spanish botanist, Monardes (16th Century). It is said to be a corruption of the Spanish word, *Sax afrage*. In the north, it is a bush, but gets much larger as we go south where it becomes a tree from 20 to 40 feet high, with many slender branches and smooth orange brown bark. The tree has berries like those of cinnamon, and this is

doubtless why one of its names is cinnamon wood. In the Middle Ages, it was highly recommended, principally by Spanish physicians, as a cure for syphilis and rheumatism, though it has fallen into the category of a spring and fall blood purifier, and other things have taken its place as remedies for syphilis. Whatever the "regulars" may think of it does not affect any of us one way or another, because we have found from experience in studying their textbooks, that they are so much prejudiced in favor of mercury, arsenic, and minerals generally, that they have come to think that Herbs are merely the stock-in-trade of what they call "Quacks" Our business is to learn the truth about nature and her wonderful remedies in the organic or life kingdom. Our fair-minded analysis of their theories plainly show us that nine times out of ten, they are wrong, and therefore, we are not further interested either in their theories or practice. As real, earnest searchers after truth, let us not allow ourselves to be influenced by the sheer might (legally) of the powers that be, and please do not allow your opinion of sassafras to be prejudiced until you have given it a fair trial, with an open mind. Now, let us study its properties and virtues:

CHEMICAL CONSTITUENTS: (1) BARK: Volatile oil 6 to 9 per cent; sassafrid, 9 per cent; tannin, 6 per cent; starch, gum, resin, wax.

(2) PITH: Principally mucilage.

OLIUM SASSAFRAS: Oil of sassafras (official). This volatile oil is obtained by distillation by water or steam. It is a yellowish liquid when from root bark or recently fallen trees; and reddish from roots of old stumps. (Please note this, and avoid the reddish oil.) It has the characteristic odor of true sassafras, and a warm aromatic taste. It gets darker and thicker with age, and should be kept in actinic or brown bottles, in a cool, dark place. It contains chiefly safrol (C-10, H-10, O-2) 80 per cent, eugenol (C-10, H-12, O₂) 0.5 per cent, cadinene, residue 3 per cent, pinene and phellandrene (C-10, H-16) 10 per cent, camphor 6 to 8 per cent.

SAFROLUM - SAFROL (O-10, H-10, O₂) equals C-6, H-3, C-3, H-8, (OOCH₂). This, chemically, is the methylene ether of allyl-pyrocatechol, which occurs in the oils of camphor, star-anise, cinnamon and several other aromatic oils, and it constitutes 80 per cent of the oil of sassafras. It is a colorless, faintly yellow liquid, having the odor of sassafras. It is one of the heaviest essential oils or oily principles, having a specific gravity of 1.105, optically inactive, and when cooled to -20° C. (-4° F.) it solidifies to a mass of crystals, melting at 11° C. (52° F.)

THERAPEUTIC PROPERTIES: (1) Bark of the root: Alterative, stimulant diaphoretic, emmenagogue, arterial depressant (when taken in large doses or over too long a period). See later.

(2) Pith: Demulcent, emollient.

USES: (1) BARK: To purify the blood, syphilis, skin diseases. A valuable antidote for poison oak, given internally (infusion) and applied outwardly.

(2) OIL: Anodyne, stimulant in neuralgia, to dispel insects and to rid the system of the emetic and narcotic effects of excessive smoking and chewing of tobacco. Also, to neutralize or counteract the poison of henbane (*Hyoscyamus Niger*) commonly known as hog's bean or black henbane, and as a quick antidote to poisoning by *Lobelia Inflata*. NOTE: All three of these herbs belong to the tobacco family. It is interesting to note that old saying: "It takes a poison to kill a poison" is sometimes true, as in this case. Sassafras Oil, which in overdose, or taken over an extended period, is one of nature's most devastating poisons, and yet, is a most reliable antidote to any form of tobacco poisoning, when used judiciously and with understanding.

FORMULA No. 140 Infusion of Sassafras Bark.

1 oz. Sassafras Bark

1¼ pints distilled water

Boil the water, and while boiling, pour over the Herb. Cover and allow to steep in a hot place for 15 minutes. Strain, and add 2 ounces of glycerine. Cool, bottle, and keep in a cool place.

DOSE: 1 tablespoonful to a wineglassful 3 or 4 times a day, for all ordinary purposes. In case of poison oak, the same infusion should be applied to the affected parts on saturated cotton, then covered with waxed paper and held in place by either adhesive tape or bandage depending on the area treated.

As a diaphoretic, a wineglassful in a teacupful of very hot water sweetened with honey, and taken upon retiring. This will generally succeed in breaking up a cold, if given at onset. As an emmenagogue, it is advisable to drink the infusion without further dilution as follows:

Put a teacupful of the infusion into a small covered saucepan. Slowly heat to blood temperature, then drink the whole teacupful, sipping very slowly, a mouthful at a time, taking a half an hour. Keep the lower part of the body warmly wrapped in clothing or blankets. Delayed menstruation can thus be started, especially if the feet be placed in a hot water and mustard bath for the half hour while sipping the infusion. Keep the water hot by adding more as it cools, from time to time.

SPECIAL NOTE: If conception is suspected, this process should not be tried, as there is danger of abortion.

The infusion of sassafras bark is the safest, and we believe the best form in which to administer this Herb, but even then, it can be overdone, and certainly

should not be taken for more than three or four weeks at the very most, nor in unlimited doses.

FORMULA No. 141. Mucilage of Sassafras Pith.

1 teaspoonful Sassafras Pith (powdered)

1½ pints distilled water.

Put all into a quart jar, cover and shake well. Let stand for four hours, shaking several times until of uniform mixture. Do not heat the water. Strain through unbleached muslin. This mucilage is a most effective wash or lotion for inflamed eyes or conjunctivitis; has been used with wonderful success in inflammation of stomach and bowels, diarrhea, dysentery, inflamed throat, and also in poisoning by corrosives (acids or alkalis). The oil must be used with great care and never undiluted, except as an application to warts, corns and hard bony growths. Even then, we recommend that it be mixed with a thick sugar syrup before application. Taken internally, it reduces arterial pressure by depressing vasomotor center; taken for a long period, produces fatty degeneration of the heart, liver and kidneys. It is eliminated as piperonic acid.

FORMULA No. 142 Emulsion of sassafras oil.

2 teaspoons sassafras oil

8 ozs. olive oil

2 ozs. honey

8 ozs. lime water

First warm the olive oil (not hot). Put the sassafras oil into the olive oil in a quart jar. Close and shake until dissolved or thoroughly mixed. Next, add the honey to the mixed oils and again shake well. Finally, add the lime water and shake until the oils are emulsified. Keep well capped and in a cool place.

DOSE: 1 teaspoon to a dessertspoonful 3 times a day. Not suitable for children under ten years of age, but may be given to older children for diarrheas, colic and as a blood purifier, in half teaspoonful doses three times a day for not more than two weeks. We recommend the infusion for children's blood troubles. Taken in from 1 to 2 teaspoons sweetened with honey, twice a day (morning and evening).

ESSENTIAL OILS, Continued:

THYME: Latin name *Thymus Vulgaris* (Linne).

NATURAL ORDER: Labiatae.

PARTS USED: The leaves and flowering tops; also the distilled oil and phenol, called thymol.

HABITAT: Southern Europe, Portugal to Greece. Naturalized in the United States, cultivated in gardens. Grows wild in the mountains.

SYNONYMS: Mother of thyme, common garden thyme, whooping cough herb.

Thyme is a very old remedy, being mentioned by Pliny and Virgil; but it seems that the ancients were not aware of its exceedingly fine antiseptic and healing powers, and used it mostly as a fumigator. Strange, in the days of chivalry, it was an emblem of activity, braver and energy, and it was a custom for ladies to embroider a bee hovering over a sprig of thyme on the scarves they presented to their knights. The affection of bees for thyme is well known, and the honey gathered from the beehives on Mount Hymettus, near Athens, Greece, in former times, became world famous for its fine flavor and sweetness; so much so that, in the minds and writings of the ancients, sweetness and thyme were synonymous. An old English writer says, "Thyme for the time it lasteth, yieldeth most and best honie, and therefore in old time was accounted chief." Its essential oil, which contains all of its virtue is distilled extensively in Southern France, in the region of Nîmes. The entire plant is used. Distillation is carried on during two period of the year, in May and June, and again in autumn. In England, however only a comparatively small amount of the oil is distilled; the Herb being used mostly with parsley as a dressing (stuffing) for poultry, particularly ducks and turkeys at Christmas. French oil of thyme is the finest quality known. A considerable quantity comes from Spain, but it is much inferior to the French oil.

CHEMICAL CONSTITUENTS: Volatile oil, 2.5 per cent (principally thymol), tannin, gum.

OLIUM THYMI: Oil of thyme. A colorless liquid, having a strong odor of thyme, aromatic, pungent, afterwards cooling to the taste. Becomes darker and thicker with age. Contains at least 20 per cent of phenol by volume. (The phenol content in the French and German oils amounts to 25 to 42 per cent.) It is mostly thymol; sometimes, however, carvacrol or a mixture of both. In the Spanish oil, 50 to 70 per cent is carvacrol oil of thyme; also contains cymene (C-10, H-14), pinene, borneol and linalool.

THYMOL: (C-10, H-14, O) also called thymic acid, methyl-propyl phenol. It is in large, colorless, transparent, rhombic prisms, aromatic thyme-like odor and taste, with slight caustic effect upon the lips. It liquefies when triturated with an equal quantity of menthol or camphor. It is soluble in alcohol, ether, 1100 parts water, fixed and volatile oils.

THERAPEUTIC PROPERTIES:

- (1) OIL: Stimulant, tonic, emmenagogue, antispasmodic.

WARNING! If excessive doses are given, it will produce vomiting, depression, coldness, increased urine which acquires a green color and a violet odor, death by exhaustion.

(2) THYMOL: Stimulant, antiseptic, deodorant, disinfectant, parasiticide, antipyretic, and local anesthetic. Its action stands between phenol (carbolic acid) and oil of turpentine, being ten times less poisonous than carbolic acid, yet a far more powerful and permanent antiseptic. It is anesthetic to the skin and mucus membranes, paralyzing the ends of sensory nerves. Is eliminated by the breath and urin.

USES: (1) OIL. Chlorosis, rheumatism, neuralgia, bronchitis, diarrhea, gleet, gonorrhoea, leucorrhoea, vesical catarrh.

EXTERNALLY in baths, lotions for scabies (itch), muscular rheumatism, to correct fetid odor from sores, ulcers, gangrene, applied on cotton for toothache, earache, and is also used in veterinary practice.

USES: THYMOL. Precisely like the oil, not much used internally, but is excellent in fetid bronchitis, stomatitis, diphtheria, coryza, rhinitis, ozaena, conjunctivitis, otorrhoea, gonorrhoea, uterine lochia, cancer, leucorrhoea, warts, skin diseases (psoriasis, eczema, etc.) diarrhea, dysentery, typhoid fever and diabetes.

FORMULA No. 143 Infusion of Thyme Herb.

1 oz. thyme Herb (cut)

1¼ pints distilled water.

Boil the water and pour on the Herb while boiling. Cover and let steep in a hot place for 15 minutes. Strain and sweeten with honey.

DOSE: 1 wineglassful 3 or 4 times a day.

For children, with whooping cough, 1 dessertspoonful mixed with a dessertspoonful of honey when the cough is troublesome. Very young children, 1 teaspoonful with equal parts honey. This is as near to a specific for that distressing complaint (whooping cough) as can be found in all nature. Although the oil and thymol are wonderful, the infusion is much to be preferred for children for internal administration. It is non-poisonous and may be relied upon to kill all germs and worms, take away all bad odors, and restore the health of children who are debilitated and exhausted by that most distressing cough. It might be in order here, to read what that great Herbalist, Culpepper, says about it: "Thyme is a noble strengthener of the lungs; as notable a one as grows, nor is there a better remedy growing for whooping cough It purgeth the body of phlegm, and is an excellent remedy for shortness of breath. It is so harmless, you need not fear the use of it An ointment made of it takes away hot swellings and warts, helps the sciatica and dullness of sight, and takes away any pains and hardness of the

spleen; it is excellent for those that are troubled with the gout, and the herb taken inwardly is of great comfort to the stomach."

EDITOR'S NOTE: No doubt Dr. Culpepper was referring to outward fomentations for the gout.

The world famous LISTERINE ANTISEPTIC which has made a very large fortune for its compounders, has been analyzed, and the following formula is as near as can be determined, according to reliable authorities.

FORMULA No. 144 Antiseptic Compound.

20 grams of Boric Acid, dissolved in 700 cubic centimeters
Distilled water

1 gram Benzoic Acid, dissolved in 150 c.c. of alcohol; add this to
the above solution.

1 gram Thymol, dissolved in -	c.c.
0.25 c.c. Oil of Eucalyptus	0.25 Oil of Gaultheria
0.5 c.c. " " Peppermint	0.1 c.c. Oil of Thyme

Incorporate 20 grams purified talc, and add above solution with trituration. Let stand, with occasional agitation; filter, and add 100 c.c. alcohol, and water to make 1,000 c.c.

This is recommends as a good substitute for the proprietary Listerine. We merely offer it for what it is worth, because so many believe it to be good.

FORMULA No. 145 Antiseptic Oil Compound.

½ dram Oil of Thyme	½ dram Menthol
1 " Thymol	½ " Eucalyptol
½" Eugenol	15½ ounces Olive Oil

Heat the olive oil slowly, until quite warm, but not hot. Add the other ingredients and stir until all is dissolved and clear. Cover and allow to cool, then bottle and cap.

This most remarkable formula is worth its weight in gold. It may be taken internally or applied outwardly for a hundred affections, and always with the most amazingly beneficial results. It would take a large volume to describe, fully, its virtues which, of course, we have not space to give, but if students will go back over the lessons dealing with each of these ingredients and make some comparative notes on their many applications, you will have acquired a

knowledge, that is not possessed by ninety-nine out of every one hundred physicians. We have personally used this almost miraculous formula in scores of different pathological conditions over a period of years, and we believe it is without an equal for many purposes. If you will carefully study the following directions for its use, and then apply it, you will be amazed at the wonderful results it will produce. Oil of thyme, itself, although wonderful, has one great objection; that is, the attraction it has for flies, but this formula is objectionable to all insects, parasites, germs and worms alike. They all avoid it if possible and, if not, they all die.

DOSE: Internally, for all ulcerations, infections, gonorrhoea, leucorrhoea, vesical catarrh, bronchitis, diarrhea, worms, stomatitis diphtheria, uterine lochia, cancer, skin diseases, dysentery, typhoid fever, diabetes:

1 teaspoonful in a tablespoonful of honey. Stir well together in a cup or glass and take 3 or 4 times a day.

Some years ago, a man and his wife came to our office and stated they had both suffered with syphilis for several years. They had been treated by specialists and doctors, and had spent several thousand dollars in various treatments, without apparent results. We recommended the taking internally of the Formula No. 1, given in Lesson No. 2 of this course; also, the taking of one teaspoonful doses of this compound antiseptic oil in-between times, 3 or 4 times a day. Some four months later, this man and his wife reported they had submitted to two severe tests for syphilis, and both were reported negative. One year later they reported, twelve tests had shown them to be entirely free from syphilis. The gentleman gave us a handsome check in thanks for our treatments. We cite this case to show how truly marvelous is this formula.

FOR OUTWARD APPLICATION, in all forms of skin disease, ulcers, cancers, putrid sores, gangrene, etc., apply on lint or cotton, and cover affected part. Change the application as often as necessary. For sore throat with ulcerations, swab the throat with the compound, and apply outwardly, covering with flannel. For congestion and tightness of the chest, rub in well and keep warm. For rheumatism, sciatica, lumbago, stiff joints or muscles, rub in well, then cover so as to hold in the heat. For fetid and sweating feet, wash the feet, then rub in the oils, taking at least 5 minutes for each foot. For spraying it into the nostrils, take a part of the oil compound and an equal amount of lime water, shake well, thus converting the mixture into an emulsion. This is particularly necessary when used on children, as the oils in full strength are too strong for their sensitive noses; but the emulsion is just right. The emulsion is also better suited to children's delicate stomachs, as well as to certain adults who might be sensitive. When making the emulsion for internal use, add a small amount of honey to make it more palatable.

This closes our study of essential oils which, we believe, is all sufficient for your needs.

Next, we will go into the study of a few special NERVINES (so called) and shall point out how greatly they vary in their respective actions. They require thorough study for proper understanding as to their uses in specific cases.

You will find this a most valuable addition to your general knowledge of Herbs.

LESSON TWENTY-FIVE

In Lesson #24, we merely mentioned the herb Rue (*Ruta Graveolens*), but it is such an important Herb, that we are giving it a full treatment in this lesson.

Both garden and wild Rue have been used from very ancient times, and have been highly recommended by renowned physicians of all ages. It was one of the favorite remedies used by the ancient Father of Medicine, Hippocrates, and in Lesson #24, we gave you a Biblical quotation showing that it was also mentioned by the great Teacher, Jesus. All down through history its virtues have been extolled by unquestionable authorities. So here, we give you some of its history, folklore and proven therapeutic value:

ESSENTIAL OILS, CONTINUED:

RUE: Natural order, Rutaceae. Latin name, *Ruta Graveolens*.

SYNONYMS: Herb of Grace, countryman's treacle, herby grass, garden rue.

HABITAT: Southern Europe. Cultivated in gardens in England, France, Germany and United States.

Rue is a hardy evergreen, somewhat shrubby and of a bluish-green color, sometimes purplish. The stem is woody in the lower part, and the leaves are alternate. either bi- or tripinnate. They emit a powerful, disagreeable odor when pinched or crushed, and have an exceedingly bitter, acrid and nauseous taste. The greenish-yellow flowers are in terminal panicles, blossoming from June to September. In England, rue is one of their oldest garden plants, cultivated for its medicinal virtues, which, together with other plants, was introduced by the Romans.

The word "Ruta" is from the Greek, *Revo* (to set free), from its being found so efficacious in overcoming various diseases. The ancient Greeks regarded it as an anti-magical Herb, because it counteracted nervous indigestion which they suffered when eating before strangers, and which they attributed to witchcraft. They gave it credit for entirely doing away with that nervous fear of witches, and thought it to be all powerful against evil influences. Hippocrates, who was greatly honored among the Greeks of that time, was he thought to be an emissary of the gods, because he so strongly recommended it. Rue constituted the principal ingredient in the famous antidote to poison, which was recommended and used by the so-called Greek magician, Mithridates, who affected many cures with it. Joh

Evelyn quotes Pliny as reporting that rue was so good for the preservation of the sight, that the painters of his time ate a great quantity of it, and the Herb is still being used by Italians in their salads. It was supposed to make the sight both sharp and clear, especially when the vision had become dim through over-exertion of the eyes. In Milton's "Paradise Lost" it was with "Euphrasy (Eyebright) and Rue" that Adam's sight was purged by Milton's angel. At one time, the holy water in the Catholic churches, was sprinkled from brushes made from rue, usually preceding the celebration of High Mass, for which reason it was no doubt named the "Herb of Repentance" and the "Herb of Grace."

Gerard tells us "the garden Rue, which is better than the wild Rue for Physic's use, grows most profitably, as Dioscorides said, under a fig tree." This is probably only a reference to the fact that it prefers a sheltered position. The leaves are world famous as a cure for croup in poultry. It has also been successfully employed in the treatment of some diseases in cattle. Shakespeare refers to this plant, rue, in Richard III: "Here in this place I'll set a bank of Rue, Sour Herb of Grace; even for ruth, shall shortly here be seen, In the remembrance of a weeping queen." "Rue water sprinkled in the house kills all the fleas" says an old book. Rue has been regarded from the earliest times as successful in warding off attacks of contagion, and preventing the attack of fleas and other noxious insects. Gerard says: "If a man be anointed with the juice of Rue, the poison of Wolf's bone (Hyoscyamus Niger or Henbane), Mushrooms or todestooles, the biting of serpents, stinging of scorpions, spiders, bees, hornets, or wasps will not hurt him." In former times, it was the custom in England for judges, sitting at assizes, to have sprigs of Rue placed on the bench of the dock, against the pestilential infection brought into court from the jail by the prisoners, and this custom still prevails in some parts, for the purpose of warding off jail fever.

In Lesson #5, page 16, we told you that garlic was the principal ingredient in the "vinegar of the four thieves" who robbed the dead bodies of those who had died of the pestilence and were not themselves affected with the disease. Rue was another ingredient in this most famous "vinegar".

Culpepper recommends Rue for sciatica and pains in the joints, if the latter be anointed with it, as also for the shaking fits of agues, to take a draft before the fit comes. He also recommends that the juice thereof, warmed and dropped into the ears, helps the pains of them and with fennel and honey helps the dimness of the eyesight. The honor given to this humble Herb all down through the ages, and even up to the present time, marks it as one of nature's outstanding marvels of healing. From the time of the great Hippocrates, who used and recommended it as one of his best remedies, even to the year 1902, when the King of England, who was then the Prince of Wales, was made a member of the Order of the Rautekrone, which means "The Crown of Rue", by the King of Saxony, who anointed him and crowned him with the Crown of Rue. It stands to common reason that no Herb could impress such a large number of famous herbalists, scientists, statesmen, writers and kings, unless it had some superlative virtue, and we have given you this valuable historical record to impress you with the

importance and virtue of this common garden plant. We believe it to possess great healing power, and recommend further study of it, in order that it may become better known, and that greater use be made of it.

PARTS USED: The fresh and the dried herb, the tops of young shoots gathered before the plant flowers, contain the greatest virtues of any part of the whole plant. The essential oil is also extensively used, both internally and externally.

CHEMICAL CONSTITUENTS: Contains volatile oil, which is greenish-yellow, aromatic, rutin (rutic or rutinic acid) C-42, H-50, O-25), bitter, yellow, crystalline, glucoside, identical with barosmin (from buchu leaves). The oil also contains capric acid (which is a volatile acid (C-10, H-20, O₂), a constituent of butter from the milk of the goat or cow. It occurs also in cocoanut oil and fusel oil. It has a goaty odor, and is also called decoic acid and rutic acid. Caprylic acid, a fatty acid (C-8, H-16, O₂), with a faint disagreeable odor, which also occurs in butter and cocoanut oil. Oenauthylic acid, which occurs in wine, and is supposed to give the bouquet to the wine. This essential oil is distilled from the fresh plant with water which extracts the virtues much more effectively than alcohol.

THERAPEUTIC ACTION AND USES:

Rue is a powerful stimulant, anti-spasmodic, emmenagogue, antiseptic, germicide, vermicide, parasiticide, emetic, and in large doses an acronarcotic poison. On account of its emetic properties, rue should never be administered immediately after meals. Rue is one of our most useful remedies in hysterical and spasmodic affections; also in whooping cough and spasmodic croup, colic and flatulence. It is a stomachic and tonic, also a stimulant when taken in small doses one hour before meals. It has proved very valuable and effective in typhoid and malaria fevers, but must be given in small and often repeated doses in order to give the best results. It is a most versatile remedy which, when properly understood and carefully applied, is undoubtedly one of our very best remedies for many affections. One of its most famous and effective applications consists in the fact that, if a leaf or two be chewed, a refreshing aromatic flavor will pervade the mouth, and any nervous headache, dizziness, hysterical spasm or palpitation of the heart will be quickly relieved. Externally, it is an active irritant, being extensively used as a rubifacient. If the fresh leaves and tops can be obtained, bruised and applied, it will give almost instant relief in that most painful complaint called sciatica. If it is not possible to obtain the fresh Herb, then a strong decoction will perform the same miracle of relief.

FORMULA. No. 145 Infusion of Rue.

1 oz. Rue (cut)

1¼ pints distilled water

Boil the water, and while boiling, pour over the Herb. Cover, and let stand in a hot place to brew for 10 minutes Strain, cool, bottle, and keep in a cool place.

DOSE: 1 teacupful a day, divided into 3 doses, and taken between meals. Should be sweetened with honey, and if very nauseous to the individual, can be made acceptable and palatable by mixing above dose with an equal quantity of infusion of marjoram (See Lesson 24, page 3). If this mixture is given in warm infusion, it acts as a very fine and effective emmenagogue, for delayed menstruation.

WARNING: There has never been a good thing that was not abused. Large doses of Rue act as a powerful ecboic, or abortifacient, with grave danger to the person who takes them. Many lives have been lost through either ignorant or intentional administration of large doses of Rue. As before stated, Rue in overdose, is a powerful narcotic poison. The senseless and wicked abuse of this wonderful remedy for many distressing conditions, was doubtlessly brought about innocently in the first place. Some women, from weakness or a relaxed condition of the creative organs, have a propensity to abortion. Some foolish person recommends rue-tea, which in ordinary dose of a wineglassful will sometimes bring about abortion in those particular cases. Such cases are usually much talked about among friends, and soon some ignorant, unscrupulous doctor tries the experiment upon a patient who does not want children. The process has resulted in many deaths, because of the following facts:

- (1) Even large doses of Rue do not always act as an emetic;
- (2) Being a powerful emmenagogue, rue should never be taken by pregnant women;
- (3) It is quite impossible to tell in any case, whether a woman has an idiosyncrasy to rue, which many women have; therefore, it is most necessary for a physician to know beforehand whether it is a case of delayed menstruation or conception. If there is a doubt, avoid rue, and recommend any other safe emmenagogue.

However that may be, rue is an excellent remedy when taken in small doses, by infusion, for all hysterical affections, agues, fits, colic, flatulence and rheumatism; but we strongly recommend that it be blended with other synergistic herbs, such as: wintergreen, cinnamon, fennel, caraway, anise, marjoram, etc. The following formula may be made with either one or more of these added to the rue, when making the infusion.

FORMULA No. 146: Infusion of Rue, in combination with other Herbs.

- 1 oz. of Rue, and 1 oz. of any one of the above, or any other chosen Herb.
(Any one of the above Herbs will tend to augment the action of Rue as a stimulant and anti-spasmodic, but will modify its ecboic tendency)

1¼ pint boiling water. Procedure is same as Formula 145, and so is the dosage.

OUTWARDLY: The oil may be blended with pure olive oil, in the proportion of 1 of rue, to 10 of olive oil. Will act as a wonderful pain killer in sciatica, rheumatism, and painful joints; also excellent for earache, when warmed and dropped into the ear; for eyes, in ophthalmia and inflammation, apply to the eyes on cotton.

This brings us to the end of essential oils, and takes us to the study of NERVINES.

SCULLCAP: Latin name, *Scutellaria Lateriflora*.

NATURAL ORDER: Labiatae.

PARTS USED: The dried plant.

HABITAT: North America, west to Alabama, New Mexico, Oregon, in damp thickets, and sides of ditches.

SYNONYMS: Blue skull cap, pimpernel, hooded willow herb, mad dog weed, side flowering scullcap, helmet flower, madweed, hoodwort.

SKULLCAP: Namely, the inverted cup calyx, appears like a helmet, with the visor raised, and after flowering, closes upon the seed as a cap; hence, like a cap fitting the skull. It is a perennial herb, having a square stalk, erect, branching leaves opposite in rasemes with pale blue corolla, upper lip helmet shaped, odor slight, taste bitter.

CHEMICAL CONSTITUENTS: Scutellarin, volatile oil, tannin, sugar, ash 14 percent.

SCUTELLARIN (C-10, H-8, O₃): This is a crystalline, bitter principle or glucoside, in flat yellow needles, soluble in alcohol and ether. The very high percentage of ash is principally composed of phosphates of calcium, potassium and magnesium, together with sulphates of the same metals. It is an exceedingly wonderful nervine, and is considered by many authorities to be the best which nature provides. It quiets the nerves in neurasthenic cases, and is most remarkable for its effect in spasmodic affections, such as St. Vitus' Dance, epilepsy, shaking and quaking of the limbs; but is still more famous for the treatment of hydrophobia, supposedly produced by the bite of mad dogs. It has cured thousands of such cases, and is a most reliable nerve sedative for highly excitable children and adults with natural tendencies to hysterics. It has been used extensively for all kinds of nervous affections, and has been eulogized by some of the greatest physicians, especially of modern times.

USES: Epilepsy, hysteria, nervous exhaustion, chorea, delirium tremens, tremors, spasms, twitching of muscles, hyperesthesia, neuralgia, convulsions, intermittents, incontinence of urin, and hydrophobia.

FORMULA No. 147 Infusion of Scullcap.

1 oz. Scullcap Herb (cut)

1¼ pints distilled water

Boil the water and pour over herb. Cover and allow to steep in a hot place for 20 minutes. Strain, and add honey or brown sugar, to taste. Cool, bottle and keep in a cold place.

DOSE: 1 wineglassful 3 or 4 times a day, and a dose before retiring.

Children: From a dessertspoonful to a tablespoonful, well sweetened with honey, 3 or 4 times a day between meals.

FORMULA No. 148 Strong decoction of Scullcap.

4 ounces Scullcap Herb (cut)

1 quart distilled water

Put the Herbs into the cold water and allow to stand 4 hours. Bring to a boil, cover and simmer for 30 minutes. Watch carefully that it does not boil over. Strain, add 4 ounces glycerine. Cool, bottle and keep in a cold place.

DOSE: 1 tablespoonful in water 3 or 4 times a day. NOTE: For hydrophobia, the dose may be increased to a half teacupful. Add half a teacupful of hot water to each dose, and give until all symptoms have disappeared. For St. Vitus' Dance, spasms, tremors, etc., the decoction is the quickest and most effective form of taking, for adults. For children, the infusion is much preferable, and also for insomnia. The treatment must be persisted in for some time, in order to be of permanent benefit, in all cases of nervous exhaustion.

NERVINES, Continued:

BLUE VERVAIN: Latin name, *Verbena Hastata*. Also called *Verbena Officinalis*. Natural order: *Verbenaceae*.

PARTS USED: Leaves and flowering tops.

HABITAT: Europe, China, Cochin-China, Japan. It also grows extensively in North America, and is thought by some authorities to have originated in America. It is a very old Indian remedy, used and recommended by them for several diseases, and particularly for nervous affections. It is equally famous among the Chinese, and is one of their most important remedies, for a variety of affections.

SYNONYMS: Wild hyssop, Indian hyssop, simpler's Joy, Herbe Sacre, Herba Veneris, Herb of grace. Vervain is a very beautiful perennial plant, growing to the

height of 3 or 4 feet. It has a square stalk and is erect, with opposite branches. The leaves are petiolate, serrate, acuminate and hastate. The flowers are small, purplish-blue, and arranged in long spikes. It grows along roadsides, and in dry grassy places, flowering from June to September.

The name, vervain, is from the Celtic, FERFAEN, from FER (to drive away), and FAEN (a stone), as the plant was much used to treat bladder affections and calculus. The ancients attributed to it great aphrodisiac qualities, hence its name, Herbs Veneris. The priests used it for sacrifices; hence the name, Herba Sacra. The name verbena, was the classical name for altar plants in general, and for this species in particular. The Druids included it in their lustral water, and magicians and sorcerers used it largely. It was used in various rites and incantations by ambassadors, in making leagues. It was worn around the neck as a charm against the bites of venomous serpents and evil influences. It was also thought to be good for the sight.

Its virtues, in all these directions, may be due to the legend of its discovery on the Mount of Calvary, where it staunched the wounds of the crucified Savior. Hence, it is crossed and blessed with a commemorative verse, when it is gathered. It must be picked before flowering, and dried promptly. It is recommended in over thirty complaints, and is widely considered to be one of nature's most virtuous plants. The well-known American Herbalist, Joseph E. Myers, thinks there is no more valuable plant to be found. He says, "Vervain is tonic, expectorant, sudorific, and anti-spasmodic. It is serviceable in menses, is an anti-dote for poke-poisoning, expels worms, and is a capital agent for all diseases of the spleen and liver. If given in warm infusion or powder, in intermittent fever, it never fails to affect cure. In all cases of cold, and obstinate menstruation, it is a most complete and advantageous sudorific. When the circulation of the blood is weak and languid, it will increase it, and restore it to its proper operation. The infusion, taken cold forms a good tonic for constitutional debility, and during convalescence from acute diseases. It has been found to be of great benefit in scrofula, visceral obstructions, stone and gravel. It will correct diseases of the stomach, help coughs, wheezing, shortness of breath, etc. But its virtues are even more wonderful in the effect they produce upon epilepsy (falling sickness), or fits.

The great medicinal virtues of this plant was brought to my attention through knowledge of the good it had effected in a long-standing case of epilepsy. Its effects in that particular case, were so remarkable, that I was led to study it more carefully.

I found, after close investigation, and most elaborate experiment, that, prepared in a certain way, and compounded with boneset, water-pepper, chamomile flowers and the best of whiskey, it has no equal for the cure of fits, or falling sickness, or anything of a spastic nature; also for indigestion, dyspepsia, and all kinds of liver complaints. A more remarkable plant is not found within the whole range of the herbal pharmacopeia."

This eulogy added to the testimony of history from very early times to the present, makes it unnecessary for us to comment further on this most remarkable and merciful herb, except to list its virtues as we know them, and give you its therapeutic applications.

THERAPEUTIC PROPERTIES AND USES: Nervine, tonic, anti-spasmodic, diuretic, diaphoretic, stomachic, astringent, emmenagogue, antifebrine, antiseptic.

USES: Dyspepsia, indigestion, liver, kidney and bladder complaints, amenorrhoea, dysmenorrhoea, neurasthenia, hysteria, epilepsy, palsy, ague, St. Vitus' dance, locomotor ataxia, nervous exhaustion, insomnia, intermittent fever, diarrhea, dysentery, dyspnoea, coughs, catarrh, earache, headache, hallucinations, etc., etc.

FORMULA NO. 149 Infusion of Blue Vervain

1 oz. Blue Vervain (cut)

1¼ pints distilled water

Boil the water, and while boiling pour over the Herb. Cover, and allow to steep in a hot place for 20 minutes Strain and add honey to taste. Allow to cool, bottle and keep in a cold place.

DOSE: 1 wineglassful to a half a teacupful 3 or 4 times a day, preferably 1 hour before meals.

Children: From 1 dessertspoonful to a tablespoonful 3 or 4 times a day. For amenorrhoea, ½ teacupful to a teacupful hot, taken every 3 or 4 hours, until the desired effect is obtained. For fevers, a teacupful to be drunk as hot as possible while the patient is closely covered in bed. Continue the dose every hour until the fever is broken and the patient is resting comfortably. For rheumatism, neuralgia, sciatica, etc., make a poultice of flaxseed meal, by using a strong infusion of Blue Vervain instead of plain water. Apply to the parts as hot as possible, without blistering. Change poultices every time they become cool. This is excellent for drawing out boils abscesses, swollen glands, and to relieve the pain of pneumonia or pleurisy. Also for abscess in the ear, earache, neuralgia, etc.

LESSON TWENTY-SIX

There are a great many Herbs which have been variously classified as nervines, tonics, stimulants, sedatives, etc., by the different schools and authorities, and we find it almost impossible to adequately define their virtues or therapeutic action under one heading. For instance, black cohosh is undoubtedly a tonic, but it is also a heart stimulant, a slight narcotic, a sedative, antispasmodic, nervine and emmenagogue. Therefore, it will be plainly seen that although we choose one heading under which to describe an Herb, we want it particularly understood that the description given is not by any means confined to that one classification. We have compromised in some instances in order to give a broader or better description, and will give credit for any other therapeutic virtue which an Herb might be known to possess.

NERVINE TONICS:

BLACK COHOSH: Latin name, Cimicifuga Racemosa.

NATURAL ORDER: Ranunculaceae.

PARTS USED: The root.

SYNONYMS: Black snake root, rattleroot, rattleweed, squaw root, bugbane, macrotys, etc.

HABITAT: Black Cohosh is a native of North America, where it grows extensively in shady woods, in Canada and the United States. It is called black snake root, to distinguish it from common snake root (*Aristolochia Serpentaeria*).

In Lesson #8, we gave a partial description of black cohosh, because it entered into that most valuable Formula No. 31, and we believe it to be necessary to have a good idea of each ingredient which enters into any formula. But because black cohosh has far greater virtues than we have described, and because it is one of our most valuable and versatile remedies, we are giving you a more detailed description of it. However, it will be well for each of you to refer to what has already been said about it in Lesson #8. The name, CIMICIFUGA, is from the Latin, CIMEX, meaning bug, plus FUGARE, to drive away - namely from the fact, of Cimicifuga Faetida being used for that purpose in Siberia and Kamtchatka. The name RACEMOSA, Latin, Racemosus, means full of clusters, (racemes) namely, flowers. Prof. O. Phelps Brown, a famous English Herbalist, and author of textbooks on Herbs and nature's remedies, speaks in glowing terms

of black cohosh. He says, "It is a very active and useful remedy in many diseases. It is highly narcotic, sedative, anti-spasmodic, and exerts a marked influence over the nervous system. It is successfully used in cholera, periodical convulsions, fits, epilepsy, nervous excitability, asthma, delirium tremens, and many spasmodic affections; also in consumption, cough, acute rheumatism, neuralgia and scrofula. It is valuable in amenorrhoea and other menstrual and uterine affections, as dysmenorrhoea, leucorrhoea, etc. A saturation of the tincture of the root is a valuable embrocation in all cases of inflammation of the nerves, Tic Douloureaux, crick in the back or sides, rheumatism, old ulcers, etc. It has a special affinity for the uterus; and as it reduces, materially, the arterial action, it is, hence, very useful in palpitation of the heart and cardiac affections generally. It exerts a tonic influence over mucus and serous tissues, and is a superior remedy for a variety of chronic diseases."

We do not think it necessary to go further, except to say we believe Prof. Brown has fully covered its virtues, and we entirely agree with him. However, please let us point out again that, generally speaking, the most powerful and potent remedies in nature are often very poisonous and injurious in the hands of careless and thoughtless people, who have little knowledge of Herbs which are highly recommended by really great authorities, but who are not well advised as to the danger of injudicious use of such remedies and, while we are wholly in agreement with Prof. Brown, we still feel that he was lax in not pointing out, that overdoses of black cohosh produce vertigo, tremors, vomiting, prostration, and reduced pulse.

We do not want to set ourselves up as extreme authorities on botanical medicine, but we do want to caution you to avoid mistakes, and are, therefore, most careful to point out the possible dangers.

Although we have used black cohosh for many years, with really wonderful success, and amazing results, we have never, in all our clinical experience, found any deleterious effects to result from our use of it, for the reason that we have never administered overdose.

CHEMICAL CONSTITUENTS: CIMICIFUGIN, resins 3.5 percent, amorphous resinous body (probably the active principle), fat, starch, gum, tannin, volatile oil, sugar, phosphates and other organic salts.

CIMIFUGIN is a bitter, acrid crystalline principle, obtained by steeping the powdered root in alcohol, precipitating with water and then drying it. There are also two resins which are extracted in the same way, and it is a question not yet decided, which of these principles is the famous "Macrotin" of the "Eclectics." The phosphates have not been clearly defined, but it is known to contain potash, magnesia and sulphur, so we may reasonably guess that potassium phosphate is responsible for its nervine tonic action, while its tonic effect upon other tissues is due to magnesium phosphate and its antiseptic power is caused by its sulphur.

Remember, this is merely an expression of our opinion, offered as a suggestion or possible explanation of its most remarkable effects on different organs and tissues, based on our long acquaintance and study of chemistry of the body in health and disease, and also the chemistry of botanical remedies.

THERAPEUTIC PROPERTIES: Nervine, tonic, antispasmodic, alterative, diuretic, expectorant and emmenagogue.

SPECIAL EFFECTS: In the paroxysms of tuberculosis, it gives relief, by allaying the cough, reducing the rapidity of the pulse, and inducing free perspiration. In whooping cough, it proves very effective also. It comes near to being a perfect specific in that common children's complaint, called St. Vitus' dance, and has been used with wonderful effect in epilepsy and fits. As an emmenagogue, it is second only to blue cohosh, which we will describe next.

Here, we think it advisable to point out that some of the vital and most potent principles of certain plants cannot be satisfactorily extracted by water alone. A very large number contains resinous and oily matters that can only be extracted efficiently with alcohol, and black cohosh is one of them.

Some years ago, we had a clinical experience, which conclusively proved this important fact. We had been under the impression, for some years previously, that all virtues from Herbs could be extracted with boiling water, and that the residues left behind were of little or no use. At that time, we were enthused over the results we had obtained by the use of infusions and decoctions of black cohosh, combined with other Herbs, such as blue cohosh and blue gentian, for amenorrhoea and dysmenorrhoea, diarrhea, etc., and we began to think there was nothing like it. Our enthusiasm received a severe jolt, when a young girl with a long-standing case of epilepsy was brought to us. During the fourteen years that she had been afflicted with this disease, she had suffered broken arms and terrible cuts and contusions when she fell. Her parents had taken her to various specialists, and had tried everything else that was recommended, without any benefit for the child. In our enthusiasm we made a strong decoction of black cohosh, blue gentian and valerian root, telling the parents they could expect results almost immediately. To our great surprise, there were no results, except that every time the child took a dose, she became nauseated and vomited, but the fits continued unabated. Disappointed, we consulted an old Herbalist, who informed us that only alcohol could extract the antispasmodic virtues from black cohosh. We told the parents what the old Herbal Patriarch had said, and offered to make another attempt with the tincture, or refund their money.

They decided to give us another chance, and to the surprise of everybody, including ourselves; the results obtained were simply amazing. From having as many as from 15 to 30 fits in one day, and this occurring once or twice a month (usually near the time of her periods). At the end of the first month, she had only had 11 fits and some of them were slight by comparison. At the end of the second month, she had only 3 severe fits and 3 slight ones. She was also much brighter

and progressive in school. At the end of 6 months, she only had pains for a day or so, but had been without a single falling for two and a half months, although at times she would feel dizzy. If she sat down at once, the dizziness would pass away. We gave the formula to their family physician and, when the war came, we went to war. We cannot say that this young woman was completely cured, because we do not know, but we do know that the formula is priceless, and here it is:

FORMULA No. 150. Compound Tincture of Cohosh.

1 oz. Black Cohosh (*Cimicifuga Racemose*) (powdered)

1 oz. Blue Cohosh (*Caulophyllum thalictroides*) (powdered)

1 oz. Blue Vervain (*Verbena hastata*) (powdered)

Put all into 1 1/4 pints of 90 proof alcohol or good whiskey. Cap tightly and shake well. Set in a moderately warm place, just so it is not chilled. Before shaking, each day, first open the bottle then close it again and shake well. Do this for 14 days. Filter and bottle.

DOSE: A teaspoonful in 1 ounce of water, sweetened with honey, 3 or 4 times a day.

Children, (for St. Vitus' Dance) from 5 to 7 years, 5 drops in a tablespoonful of honey water; from 8 to 12 years, 10 drops in honey water; from 13 to 16 years, 1/2 to 1 teaspoonful in a wineglassful of honey water. Should not be given to children under 5 years.

As before stated, this is a priceless formula, but must not be given in overdose, nor must it be persisted in if it produces nausea or vomiting. In those cases, the dose should be 1/4 or 1/2, and well diluted with honey water.

FORMULA No. 151. Syrup of Black Cohosh.

2 oz. black cohosh

1 1/4 pints distilled water

4 oz. glycerine

1 lb. brown sugar

Put the Herb and glycerine into the water and let stand in a fairly warm place for four hours, well covered. Shake from time to time. Put into a saucepan and gently boil for 15 minutes. Strain, return liquid to the saucepan, and stir in the sugar. Simmer for a few minutes, skim as the scum arises. Set aside to cool and, when cold, bottle and keep in a cool place.

DOSE: For young children, 1/4 to 1/2 teaspoonful; children from 5 to 7, 1 teaspoonful; from 8 to 15, 1½ to 2 teaspoonfuls 3 times a day.

Adults, from 1 dessertspoonful to a tablespoonful 3 or 4 times a day.

This is the only really safe and desirable form for very young children. It has cured thousands of cases of colic and convulsions and is an exceedingly valuable remedy for young children suffering from spasmodic nerve troubles.

NERVINE TONICS, Continued:

BLUE COHOSH: Latin name, *Caulophyllum Thalictroides*.

SYNONYMS: Papoose root, squaw root, blueberry root, women's best friend, etc.

PARTS USED: The root.

NATURAL ORDER: Berberidaceae.

HABITAT: United States and Canada. This is a handsome, perennial plant, growing in low, rich, moist soil, and in swamps; also near running streams. It flowers in May and June, producing a panicle of small yellowish-green flowers, and one or two seeds, which ripen in August. (These are sometimes roasted and used as a kind of coffee). The root is a hard, thick, irregular, knotty and contorted candex, from one to several inches long, with slender radicles, up to eight inches long. Externally, they are yellowish-brown; internally, whitish to yellow, running longitudinally. Their taste is sweetish bitter, then acrid and pungent, with a somewhat fragrant odor. It yields its properties to alcohol, water or glycerine. We have given you this description, so that, if you desire, you may seek it and gather it yourself and, in this way, you may be sure you have the right Herb in new and first-class condition. This is a very old Indian remedy. They believed it to be the best parturient in nature, and it was the habit of their women to drink the tea several weeks before labor.

CHEMICAL CONSTITUENTS: Caulophylline, Caulophllin (resins) 12 per cent saponin, tannin, gum, starch, greenish-yellow coloring matter, phosphoric acid, salts of potash, magnesium and sodium.

THERAPEUTIC PROPERTIES AND USES:

Emmenagogue, antispasmodic, nervine, tonic, diuretic, diaphoretic, anti-rheumatic, anthelmintic, parturient.

This exceedingly valuable Herb is well called "woman's best friend" for the reason that it is much more reliable and far less dangerous in expediting delivery in those cases where labor is slow, very painful, and does not bring about natural delivery. As you well know, these distressing cases are many, and great exhaustion sometimes results from delay, through debility, fatigue, or lack of

uterine nervous energy. Blue cohosh in infusion or decoction taken warm will accomplish a practically easy parturition, if given for some hours just previous to the time.

In cases of delayed menstruation, through taking cold or being chilled, it will also be found very effective. For fits, ague, spasms, epilepsy, uterine inflammation, etc., it is the remedy par excellence. It is also a reliable vermicide or anthelmitic, taken in warm infusion, after fasting.

FORMULA No. 152. Infusion of blue cohosh.

1 oz. blue cohosh root (cut)

1¼ pints distilled water

Boil the water and pour over the Herb. Put in a hot place, cover, and allow to steep for thirty minutes. Strain, cool, bottle and keep in a cool place.

DOSE: 1 wineglassful 3 or 4 times a day between meals.

Children can be relieved of recent colds by giving them a dessertspoonful to a tablespoonful in half a cup of hot; sweetened water, while closely covered in bed. If the first dose does not produce free perspiration within an hour, repeat the dose every hour until it is produced.

FORMULA No. 153: Strong decoction of blue cohosh.

2 ounces Blue Cohosh (cut)

1 quart distilled water

3 ounces glycerine

Boil herbs in the distilled water for 20 minutes, covered; then strain and allow sediment to settle at bottom. Pour off into saucepan, bring to boil and add glycerine. Cool and bottle. Keep in a cold place.

DOSE: From a dessertspoonful to a tablespoonful or more, according to the case, 3 or 4 times a day. This is a fine diuretic, diaphoretic and anthelmintic; used also for rheumatism, dropsy, and is particularly good for hysteria and nervous exhaustion from shock or accident.

NOTE: Severe shock will sometimes stop normal menstruation; young, nervous women, especially, will become very ill as a consequence. In all such cases, a wineglassful in hot water, administered while the patient is resting or is completely relaxed will perform a miracle of restoration in a few hours. Blue Cohosh may be advantageously combined with Boneset (*Eupatorium Perfoliatum*)

which adds to its effectiveness, and which is desirable in cases of constipation, congested liver, and low fever.

BONESET: Latin name, *Eupatorium Perfoliatum*.

PARTS USED: The Herb.

NATURAL ORDER: Compositae.

SYNONYMS: Thoroughwort, Indian sage, ague weed, crosswort, Joe-pie weed, vegetable antimony, and sweating plant. The leaves of this plant distinguish it at first glance. They are sometimes said to be perforated by the stem, hence the specific name, "perfoliate". They really consist of two opposite leaves, joined at the base, the botanical name of which is "Connate". The odor of the plant is slightly aromatic; the taste is astringent and strongly bitter.

HABITAT: North America, Canada, in damp or swampy places, moist meadows and banks. The name, *EUPATORIUM*, is from the Latin and Greek, meaning well, plus father, namely, born of a noble father (after Milhridates, Eupator, King of Pontus, who discovered the species).

PERFOLLATUM: Latin, per plus folium, namely, the stem perforates or passes through the leaf, as explained above.

CHEMICAL CONSTITUENTS: Eupatorin, volatile oil, resin, tannin, crystalline wax, gum, sugar, yellow coloring matter, sulphur, calcium, magnesium, sodium and potassium, ash 7.5 per cent.

THERAPEUTIC PROPERTIES AND USES: Nervine, stimulant, tonic, diaphoretic, diuretic, and in large doses, emetic, aperient, anti-periodic (very similar to chamomile flowers). It was a very popular remedy among the North American Indians, being used in hot tea or infusion until perspiration or vomiting occurred.

USES: There is no better remedy for breaking a chill in intermittent fever, so-called break-bone fever, muscular rheumatism, bronchitis, influenza, dyspepsia, sore throat, etc.

FORMULA NO. 154. Infusion of Boneset.

1 ounce Boneset Herb (cut)

1¼ pints distilled water

Boil the water and pour over the Herbs. Cover and set in a hot place to steep for 30 minutes. Strain, and add 2 ounces of pure glycerine. Cool, bottle, and keep in a cold place.

DOSE: 1 wineglassful 3 or 4 times a day.

Children, less according to age.

There is no hard and fast rule regarding the dosage of this wonderful remedy. It depends upon what it is used for, and the severity of the case.

In Lesson #4 of this Advanced course, we thoroughly discussed Elder (Sambucus); in fact, practically the entire lesson was devoted to it, describing its many virtues, and particularly recommending it as a safe and sure remedy for fever. Perhaps, as patriotic Americans, we should devote one whole lesson to describing boneset, since it has a great reputation in the United States for the overcoming of that dread disease called "influenza", which took from six to eight million lives during the first World War.

In our long experience with Herbs, we have learned one important fact, and that is, that if the American Indian approves of an Herb, we can be sure that it has some outstanding merit. The Indians knew all about influenza, and some of their people were stricken with it long before the great World War. But it was then not called "influenza", but "bread-bone fever" because the pain attending it produced the sensation of breaking bones, probably because of the unbearable tension and contraction of ligaments which, when temporarily relaxed in clonic (convulsive) spasms, produced the sensation that the bones were breaking.

We explain this because boneset immediately relieves that clonus, and sets or rests the bone. Therefore, it is a superb remedy for not only "break-bone-fever", but also for every other kind of fever man is subject to. In all cases of influenza, severe colds, chills and fever, the patient must be in bed warmly covered, and hot drinks of the infusion of boneset given in one-half teacupful doses every half hour until a copious perspiration sets in. If it produces vomiting at first, so much the better. In that case, wait until vomiting has completely subsided, then proceed until free perspiration is produced.

We have never known this Herb to fail to overcome influenza, and we are of the opinion that there would never be another death from this disease if boneset were at hand and freely used.

In conclusion, let us point out that boneset acts slowly but powerfully as a stimulant, febrifuge and laxative, and its great power is manifested through the stomach, liver, bowels, uterus and skin. In small doses, it is one of our best remedies for muscular rheumatism, and in larger doses, it is our best remedy for colds and fevers.

Some of the earlier works state that boneset is diuretic, and good for dropsy, but in slight degree. This is an error, and probably refers to the virtues possessed by a sister plant, known as gravel root, and whose Latin name is Eupatorium Perpureum, which we will describe later.

LESSON TWENTY-SEVEN

It has often been said that catarrh is the greatest curse of mankind. It may be, but we are not prepared to say that it is THE greatest curse. In fact, in one sense, it may be one of the greatest blessings, for the simple reason that the annoyance it causes tends to call attention to a very distressing condition of the respiratory organs and forces people to think - to wonder why - and when our attention is called to any physical condition that hurts us, that is the time we want to do something about it.

Many and varied are the theories propounded as to the cause of catarrh. The most popular and, at the same time, the most ridiculous of these theories is that germ organisms are responsible for it; another is that amylaceous or starchy fluids in excess cause catarrh; again, the gluten of cereals has been blamed and, with certain qualifications, the last two may be contributing factors, probably are, but to us, the theory put forward in Dr. Schuessler's Biochemical System of Medicine, as expounded by George W. Carey, M.D., appears to be most reasonable. He says, "In inflammatory exudations we find fibrin in the serous cavities - such as the pleura and peritoneum, and on the mucus membrane, as in croup, diphtheria, catarrh, etc." Again, "The white or gray coating on the tongue, mucus lining or tonsils, is the fibrin which has become non-functional, because of a deficiency of potassium chloride and oxygen. We find the fibrous exudations also in discharges or expectoration of a thick white slime or phlegm from any of the mucus membranes, or in flour-like scaling of the skin. The same material causes the enlargement of all soft swellings." We have spoken before about potassium chloride being a solvent of fibrin, but we feel we should elaborate on it a little more because catarrh is a universal ailment, and the most prevalent of all ailments; therefore, we cannot learn too much about it or how to deal with it. The best key to the understanding of it was given by the famous chemist, Liebig, in his chemical letters. He pointed out that "One part of hydrochloric acid diluted with one thousand parts of water, at body temperature, readily dissolves the fibrin of meat and the gluten of cereals; and this solvent power is decreased, not increased, when the acid solution is made stronger".

We all know that sodium chloride (NaCl) exists in all natural waters, particularly in sea water; also in all spring waters, and in almost every vegetable and animal fluid; that it is even held in suspense in the atmosphere. It is well known that it serves to aid the phenomena of osmosis, and to maintain the solution of albuminoids. It is, undoubtedly, the generator of hydrochloric acid and (as quoted above) hydrochloric acid in the strength of 1 in 1,000, is a solvent and digestive of fibrin; but, it has been clearly proved that sodium chloride does not

create fibrin, while potassium chloride does. Potassium chloride not only creates fibrin, but it keeps it in solution in the blood. Therefore, when there is a shortage of potassium chloride, there is an exudation of fibrin, and it is quite clear that a lack of potassium chloride is THE PRINCIPAL CAUSE OF CATARRH.

Let us go a little further. In a world-famous handbook physiology, by W. D. Halliburton, M.D., F.R.S., Professor of Physiology, King's College, London, England (accepted by the civilized medical world as a standard textbook) there appears, on pages 412 and 413, the following:

"The clotting of blood is due to the development in it of a substance called fibrin, which appears as a meshwork of fine fibrils. This meshwork entangles and encloses within itself the blood corpuscles. The first clot formed, therefore, includes the whole of the constituents of the blood, in an apparently solid mass, but soon the fibrinous meshwork begins to contract, and the serum, which does not belong to the clot, is squeezed out. When the whole of the serum has transuded, the clot is found to be smaller but firmer, as it is now made up, chiefly, of fibrin and blood corpuscles. Fibrin is formed from the plasma. Serums are plasma minus fibrin. It may be roughly stated that in 100 parts by weight of blood, 60 to 65 parts consist of plasma, and 35 to 40 parts consist of corpuscles."

By putting two and two together, therefore, we can get a pretty good picture of the origin and nature of catarrh and, for your better understanding of the subject, we offer you the following:

(1) In all inflammatory processes, there is an exudation of fibrin from the blood into the surrounding tissues.

(2) This exuded fibrin becomes non-functional and insoluble.

(3) No new fibrin can be formed without the aid of potassium chloride.

(4) When the exudation of fibrin is from the mucus membrane, it is called catarrh.

(5) Advanced stages of fibrinous exudation in different organs and tissues is variously named cystitis, cysts, adhesions, etc.

(6) When the exudations of fibrin is excessive, the chemical balance of the blood is upset, and nature calls for potassium and chlorine. If potassium chloride is not available, she will take these two elements from any other compound containing them, such as potassium phosphate (thus robbing the nerves) or calcium chloride (thus robbing the heart muscle) and so on and on until a whole series of unbalanced conditions is created, which is given fancy names and made profoundly mysterious; and all because we consume so much sodium chloride and so little potassium chloride. Yet, nature provides an abundance of potash and chlorine in foods and Herbs, which we shall now consider, and we

hope this valuable information will enable you, in the future, to give greater relief and help in chronic cases of catarrh.

Later, we will give you a list of Herbs that contain potassium chloride, but we have only space to deal with a selected few of them. We have already described one or two of them (See lesson No. 1, page 7 - bladderwrack - Irish moss). On page 8, of lesson No. 1, we cited the fact that birds remove opacities and heal wounded eyes with the juice of the great celandine. The great secret here is that this Herb contains potassium chloride in organic and very active form, and dissolves fibrin.

CELANDINE, GREATER: Latin name, *Chelidonium Majus*.

NATURAL ORDER: Papavereceae.

PARTS USED: The Herb and the juice.

HABITAT: It is indigenous to Europe, but has become naturalized in the United States, growing by fences, along less frequented roadsides and in waste places. It is a pale green, fleshy, perennial Herb, and the whole plant is full of a bright orange-colored fluid, having a disagreeable odor, and an acrid, nauseous taste.

This valuable plant has been used since ancient times, and is mentioned by Dioscorides, Pliny and others. Its very name is from the Greek word, "Chelidon," which means a swallow. The English word, "Celandine" is merely a corruption of the word "Chelidon." This Herb was extensively used in Europe, and especially in England all through the Middle Ages, and was one of the famous twenty-four Herbs mentioned in Mercer's Herbal.

Gerard says, "the juice of the herb is good to sharpen the sight, for it cleanseth and consumeth away slimie things that cleave about the ball of the eye and hinder the sight, and especially being boiled with honey in a brasen vessel, as Dioscorides teacheth." The old alchemists held that it was good to "superstifle the jaundice" because of its intense yellow color.

CHEMICAL CONSTITUENTS: Its chemistry is very complicated, and one wonders how one plant can contain so many definite chemical compounds without becoming so mixed, as to destroy their individuality. Chelerythrine (an alkaloid, C-21, H-17, N0-4). This is very similar to sanguinarine (from blood root) differing from it only that it forms yellow salts, instead of red ones; chelidonine (an alkaloid, C-19, H-17, N-3, O-3 plus 2-H₂O); it has a bitter taste and an alkaline reaction; chelidoxauthin (a yellow crystalline, bitter principle), chelidonic acid (a crystalline acid, C-7, H-4, O-6), gum, resin, chlorophyll, protopine (a white crystalline alkaloid, O-20, H-19, NO-5), salts of potash (potassium chloride and sulphate).

THERAPEUTIC PROPERTIES: Alterative, purgative, expectorant, diuretic, diaphoretic, hepatic, discutient, parasiticide, anti-scorbutic, anti-cancerous, and

vulnerary; outwardly for warts, cysts, corns, hard cancers. It is also used to remove fibrinous deposits and opacities from the eye; salt-rheum, tetter and ring-worm.

NOTE: CELANDINE is very poisonous when given in large doses, and is never suitable for children.

USES: For jaundice, scrofulous diseases, catarrh, cutaneous diseases, hemorrhoids, sluggish liver, gall bladder trouble, splenic diseases, cystitis, fungus grows, etc.

FORMULA No. 154-A: Infusion of CELANDINE.

1 oz. of Celandine Herb (cut)

1¼ pints Distilled Water

Follow the usual procedure and, after straining, add 1 ounce of glycerin and 4 ounces of honey.

DOSE: 1 wineglassful 3 times a day between meals. Not suitable for children. If a wineglass dose activates the bowels too much, the dose must be reduced until the correct dosage is determined. If it is desired to produce perspiration, it must be taken hot. A wineglass is the maximum dose for safety and, therefore, it is always advisable to start with smaller doses, and increase until the desired affect is ascertained, and then you may be governed accordingly.

FORMULA No. 155. Strong decoction of celandine.

4 oz. celandine Herb (cut)

3 pints distilled water

1 teaspoonful potassium chloride

Put the salt into the water and heat, stirring until dissolved. Put the Herbs into the water and let stand for two hours. Boil slowly for 20 minutes, strain, and return to the saucepan, and slowly reduce to three-fourths of a pint. Add 8 ozs. glycerin and carefully reduce to 1 pint. Strain while hot. Allow to cool, bottle and keep in a cool place.

DOSE: 1 teaspoonful in 1/2 glass water 3 times a day. Regulate the dose to suit the bowels, which means either increase or reduce the dose to bring about normal stool and not purgation.

This formula is very suitable for outward application. It will dissolve hard lumps, reduce cysts, remove warts or corns slowly, without pain or

inconvenience. It is also very effective in urticaria, itchy and scaly skin diseases, dandruff or dry skin.

NOTE: When taken internally, some people are nauseated by it. In those particular cases, it is advisable when making, to add one ounce of either ginger, cinnamon, anise seed, fennel, caraway, or any good spice to the formula, and boil in with the celandine. This makes it more acceptable to the stomach (as well as the nose) and affects any tendency to griping or unequal contraction of the bowels, but if it is intended for outward application, nothing should be added, unless it be a few leaves of eucalyptus. When used outwardly, for itch, one teaspoonful of sulpholine can be added to the pint of decoction while hot, and it will be found to add greatly to its virtue.

FOR OUTWARD APPLICATION: Apply on lint and cover first with waxed paper, and then with strips of adhesive tape or bandage. For skin troubles, rub in and leave on over night; wash off in the morning.

NOTE: We have had ladies report to us that it has cleared up all Kinds of skin troubles.

The next Herb we recommend for its solvent action on catarrhal exudations, and to replace the lost fibrin in the body, is

ELECAMPANE: Latin name, Inula Helenium.

NATURAL ORDER: Compositae.

SYNONYMS: Scabwort, elf dock, wild sunflower, horse heal, velvet dock, (French) Aunse, (German) Alantwurz, (Welsh) Marchalan.

HABITAT: It is found wild throughout continental Europe from Gothland southward, and extends eastward in temperate Asia, as far as southern Siberia and northwest India. As a plant of cultivation, it has come to North America, where it has become thoroughly naturalized in the eastern United States, being found from Nova Scotia to North Carolina, and westward as far as Missouri, growing abundantly in pastures and along roadsides, preferring wet, rocky ground, at or near the base of eastern and southern slopes.

This is such an important Herb for so many purposes, and particularly in catarrhal and tuberculous affections that we will have to spend as much time upon its study as is consistent with its importance.

This remarkable plant has been recognized by the world's greatest botanical physicians from very ancient times right down to the present, as one of nature's greatest remedies. Its history (to quote a phrase from the famous Lord Macaulay's Essays) "carries the mind back to the time when the smoke of sacrifice rose from the Flavian Amphitheatre, and when Camel, Leopard, and Tiger leaped in the Arena."

Inula, the Latin classical name for the plant, is considered to be a corruption of the Greek word, Helenium. There are many fables about the origin of this name. Gerard tells us, "It took the name, Helenium, from Helena, wife of Menelaus, who had her hands full of it when Paris stole her away into Phrygia." Another legend says, it sprang from her tears and, still another (which is more likely) that it took the name from the Island of Helena, because the best inula plants grow there. Elecampane was very closely studied and used by the early monks. Vegetius Renatus (about the beginning of the fifth century) called it "Inula Campana", and St. Isidore (at the beginning of the seventh century) named it "Enula", adding: "Enula campana reddit praecordia sans," which means, "Elecampane will the spirit sustain." But long before that time, Dioscorides, Pliny and Galen, all described and recommended this plant.

Very few botanicals have had such a consistent history all through the ages, and still fewer have retained the reputation that has been given to Elecampane by the world's greatest authorities.....Gerard says, "It is good for the shortness of breathe and an old cough, and for such as cannot breathe unless they hold their necks upright." And further, "The root of Elecampane is, with good success, mixed with counter poisons; it is a remedy against the biting of serpents, it resisteth poison; It is good for them that are bursten and are troubled with cramps and convulsions." Of course, we might expect that such a great master remedy could not be missed by the great master astrologer-herbalist, Culpepper. He says, "The fresh roots of Elecampane, preserved with sugar, or made into a conserve or syrup, are very effectual to warm a cold windy stomach, and stitches in the side caused by spleen, and to relieve cough, shortness of breath, and wheezing in the lungs. The dried root made into powder, mixed with sugar serveth the same purpose. It cures putrid and pestilential fevers, and even the plague. The roots and herbs, beaten, and put into new ale or beer, and daily drunk, cleareth and strengtheneth and quickeneth the sight of the eyes. The decoction of the roots, in wine, or the juice taken therein, destroys worms in the stomach and, gargled in the mouth, or the root chewed, fasteneth loose teeth and keeps them from putrifaction, and being drunk is good for spitting of blood, and it removes cramps or convulsions, gout, sciatica, pains in the joints, applied outwardly and inwardly, and is also good for those that are ruptured or have any inward bruise..... The root, boiled well in vinegar, beaten afterwards, and made into an ointment with hog's suet or oil of trotters, is a most excellent remedy for scabs or itch in young or old, the places also bathed and washed with the decoction doth the same; It heals putrid sores or cankers. In the roots of this Herb, lieth the chief effects for the remedies aforesaid The distilled water of the leaves and roots together, is very good to cleanse the skin of the face or other parts, from any morpew, spots, or blemishes and make it clear."

This lengthy description of elecampane and its virtues, by such a great master, at once raises it to the very front rank of medicinal remedies. The critics have condemned his eulogy as overdrawn and exaggerated, but later opinions in more modern times, prove them to be true. One famous authority, Korab, found in 1885, that the active, bitter principle, helenin, is such a powerful antiseptic and

bactericide, that a few drops of solution of 1 part in 10,000 parts, immediately kills ordinary bacterial organisms, being peculiarly destructive to the tubercle bacillus. He gave it successfully in tubercular and catarrhal diarrhea, and praised it also as an antiseptic in surgery. In Spain, it has been used as a surgical dressing. Dr. Obiol, in 1886, stated it "to be an efficient local remedy in the treatment of diphtheria, the false membrane being painted with a solution of Helenin in oil of almond."

CHEMICAL CONSTITUENTS: The substance most abundantly contained in elecampane root is insulin, discovered by Valentine Rose, of Berlin, in 1884, who named it "alantin", but the name insulin, proposed by Thompson, has been generally adopted. It has the same chemical composition as starch, but stands, to a certain extent, in opposition to that substance, which it replaces in the root system of Compositae. In living plants, insulin is dissolved in the watery juice, but on drying, is deposited in the cells in amorphous masses.

It resembles starch, but differs from it that it gives a yellow, instead of a blue color with iodine; also, in being soluble in boiling water, without producing a paste; and in being deposited, unchanged from the hot aqueous solution, when cooled. Among other ingredients or principles found in elecampane root are the following:--- Alanin, an organic base (C-3, H-7, No-2), also called amidopropionic acid, lactamin and lactamic acid; alant-camphor, a kind of camphor (C-10, H-18, O), alantol, an oily liquid (C-15, H-20, O₂), helenin, a yellow crystalline substance, insoluble in water, but soluble in alcohol, oils and ether (This is the great germicidal principle), salts of calcium, potassium and sodium (calcium chloride, potassium chloride, and sodium phosphate).

THERAPEUTIC PROPERTIES: Alterative, expectorant, tonic, diaphoretic, antiseptic, anti-scorbutic, astringent, stimulant, vulnerary, anti-asthmatic.

Its name, "scabwort" comes from its reputation for curing sheep of the "scab", and the name "horse heal" was given to it from its reputed virtues in curing horses of the "heaves" (asthma) and skin diseases. As a safe and merciful Herb for the hacking cough of phthisis, to assist expectoration, loosen and dissolve thick phlegm and fibrinous exudation, as in chronic asthma, there is no better remedy.

Read again and again what Culpepper says about elecampane, and you will be convinced of its priceless healing virtues. Whatever form of catarrh you are confronted with to treat, remember, elecampane is your first remedy.

In cases of hemorrhage and internal injury, broken bones, etc., it may be combined with comfrey root. But for catarrh, use elecampane

FORMULA No. 156: Decoction of Elecampane.

2 ounces Elecampane (cut)

1 quart distilled water

Put the Herb into the cold water and let stand in a warm place for 4 hours, covered. Bring to boil, then simmer slowly, covered, for 15 minutes; then uncover and simmer for another 15 minutes. Strain, and if it measures more than a pint, reduce to a pint by further boiling. If less, add sufficient/boiling water to make a pint. While still hot, add 6 ounces honey, and 6 ounces glycerin. Blend thoroughly, cool and bottle.

DOSE: 1 tablespoonful 3 or 4 times a day, and more if necessary.

For Children, 1 teaspoonful to a dessertspoonful, according to age. If it is to be kept for any length of time, add 10% of good brandy or grain alcohol; if that is objectionable, add 8 ounces brown sugar and boil for another 5 minutes.

This is a precious remedy, not only for catarrh and pulmonary affections, but also for weak and delicate stomachs, poor digestion, sluggish liver, kidney or bowel troubles, as well as for scaly skin diseases. Applied to old ulcers, it is marvelously healing. Its SODIUM PHOSPHATE cleanses the liver and digestive organs; its POTASSIUM CHLORIDE dissolves the exudations of fibrinous matter, and its CALCIUM CHLORIDE supports and feeds the heart muscles. An infusion can be made more quickly in case it is necessary, in the proportion of 2 ounces of Herbs to a pint of water. The decoction, however, will be found to be much more effective, and every physician should keep it on hand.

We promised in our last lesson to describe the sister plant to boneset (*Eupatorium Perfoliatum*); it is called "*Eupatorium Purpureum* and is better Known by its common name, "gravel root." There seems to be some confusion among authorities regarding these two plants. Some claim boneset to be a diuretic, which is not true; however, gravel root is quite a powerful and wonderful diuretic

GRAVEL ROOT: Latin name, *Eupatorium Purpureum*.

NATURAL ORDER: Compositae.

PARTS USED: The root.

SYNONYMS: Trumpet weed, Joe pye weed, queen of the meadow root, purple boneset, gravel weed.

HABITAT: It is indigenous to North America, and is common from Canada to Florida, growing in rich lowlands where it blossoms throughout the summer months. It is a tall, graceful plant, growing to the height of from six to twelve feet. Its leaves are oblong, and its flowers are purple.

CHEMICAL CONSTITUENTS: Euparin, a yellow neutral and crystalline principle (C-12, H-11, O3); eupurpurin, an oleo-resin, iron phosphate, potassium chloride, silica and calcium, sodium acid phosphate.

THERAPEUTIC PROPERTIES: Diuretic, tonic, nervine, stimulant, stone solvent.

USES: Kidney and bladder diseases, Bright's disease, rheumatism, gout, dropsy, strangury, haematuria, cystitis.

FORMULA No. 157 Strong decoction of gravel root.

4 ounces gravel root (cut)

3 pints distilled water

Bring to boil, then simmer 30 minutes, covered. Strain, return to saucepan and simmer till reduced to 1 pint. Add 4 ounces of glycerin. Cool, bottle and keep in a cold place.

DOSE: 1 dessertspoonful to a tablespoonful 3 times a day between meals.

Children, 1 teaspoonful or less according to age.

This is an excellent remedy for cystitis and kidney trouble. It is also a solvent of phlegm and mucoid matter (fibrin), etc. and is quite safe to be taken in larger doses.

LESSON TWENTY-EIGHT

In continuation of our study of those Herbs which have proven so valuable for asthma, bronchitis and catarrhal conditions generally, we shall consider a few of the best of these provided by nature. We are rapidly drawing towards the end of our studies, but we still have a number of very important Herbs to bring to your attention. So, without preliminary history or folklore, except an occasional necessary reference to some important point, we will introduce and describe as many as possible.

Bilious colic is a very prevalent form of catarrh, and is very distressing. Nature's best remedy for this condition is a plant which is little used today, having been pushed into the background by other botanicals which have been given preference, and which we shall consider later.

DIOSCOREA: Latin name, Dioscorea Villosa (named after the world-famous medical genius, Dioscorides).

NATURAL ORDER: Dioscoreaceae.

PARTS USED: Dried rhizome.

SYNONYMS: Wild yam, colic root, rheumatism root, wild yamwurzel, liver root.

HABITAT: Southern United States and Canada.

CHEMICAL CONSTITUENTS: Dioscorein, a resinoid saponin, chlorides, malates, ash 8 percent (consisting of phosphates of calcium, magnesium and potassium).

THERAPEUTIC PROPERTIES: Expectorant, hepatic, stomachic, tonic, antispasmodic, anti-emetic, sedative, anti-rheumatic, anti-asthmatic.

USES: Bilious colic, jaundice, stomach catarrh, hardening and blocking of the liver, nausea of pregnant women, cholera morbus, neuralgic affections, spasmodic hiccough whooping cough, spasmodic asthma, rheumatism, bronchitis, etc.

FORMULA No. 158 Decoction of Dioscorea (Wild Yam)

2 oz. Dioscorea (cut)

1 quart Distilled water

1 oz. potassium chloride

Dissolve the potassium chloride in the water, by heating and stirring. Add the Herb and boil slowly for 20 minutes. Strain, and return to saucepan and boil down to 3/4 pint. Add 4 oz. of glycerine. Allow to stand until cold, then bottle and keep in a cold place.

DOSE: 1 dessertspoonful in water 3 or 4 times a day, between meals. The dose may be increased to a tablespoonful, or even to a wine-glassful in very bad cases of liver congestion. Increased dosage is recommended only in extreme cases, however. The dose for children is 1 teaspoonful or more, according to age and condition. In our opinion, based on long clinical experience, there is no remedy in nature that exceeds in virtue, this one, for all chronic liver troubles. It is much safer and far less distressing than mandrake (*podophyllum*), or any other active hepatic.

Next, we will briefly consider those Herbs which have (without due reason) taken the place of *Dioscorea* (Wild Yam).

CRAMP BARK: Latin name - *Viburnum Opulus*.

NATURAL ORDER: Caprifoliaceae, honeysuckle family.

PARTS USED: The dried bark of the stem.

SYNONYMS: High cranberry, cranberry tree, white dogwood, marsh or water elder, squaw bush.

HABITAT: United States, in thickets, New Brunswick, far west and south to Pennsylvania.

CHEMICAL CONSTITUENTS: *Viburnum*, valeric, (valerianic) acid, resin (brown, bitter) tannin, sugar, oxalates, citrates, malates, earthy carbonates, and phosphates of calcium, magnesium and potassium (not much potassium chloride). *VIBURNIN* is a bitter principle, whitish greenish yellow. It is resinous and very sparingly soluble in water, but freely soluble in alcohol. The principal virtues of this plant depend upon valerianic acid and its citrates, malates and phosphates. It is a very valuable Herb.

THERAPEUTIC PROPERTIES: Antispasmodic, diuretic, tonic, nervine, expectorant, astringent, sedative.

USES: Highly recommended to prevent abortion in nervous diseases of pregnancy, dysmenorrhoea, after menses, ovarian irritation, menorrhagia, asthma, hysteria, fits, cramps, colic, dysentery, etc.

FORMULA No. 159 Decoction of *Viburnum* (Cramp Bark)

2 ounces Cramp Bark (cut)

1 quart distilled water

Boil slowly for 20 minutes, covered. Strain, reduce to 3/4 pint; add 4 ounces glycerine, or 3 ounces brown sugar. When sugar is added in place of the glycerine, boil another 5 minutes. Cool and bottle.

DOSE: 1 tablespoonful 3 or 4 times a day.

Children: a teaspoonful or more, according to age.

Cramp Bark is considered one of the best female regulators in nature, and forms the basic ingredient in several well-known patent medicines for that purpose. It is also the chief ingredient in the world-famous "Hayden's Viburnum Compound, which also contains Dioscorea Villosa (wild-yam), scutellaria lateriflora (skullcap) and aromatics. An exceedingly fine formula, which is even superior to Hayden's Compound, is made as follows:

FORMULA No. 160 Compound Nervine, Hepatic and Female Regulator.

1 oz. viburnum opulus (cramp bark) (cut)

1 oz. dioscorea villosa (wild yam) "

1 oz. blue vervain (verbena hastata) "

1 oz. blue skullcap (scutellaria lateriflora) (cut)

1 oz cloves (whole)

Put all the Herbs into 2 quarts of cold water (distilled), and let stand for 12 hours. Bring to boil and simmer slowly for 30 minutes. Strain, and reduce the liquid to 1 pint. Add 4 ounces glycerine. Cool, bottle and keep in a cold place.

DOSE: 1 teaspoonful to a dessertspoonful in warm water.

USES: For cramps, vomiting in pregnancy, nervous indigestion, delayed menstruation, hysteria, congestion and hardening of the liver, enuresis, cystitis, and to prevent abortion. We know of many valuable formulas, but few equal this one for the above-named conditions. We might add in conclusion, that it's action is highly beneficial in all cases of epilepsy and St.Vitus dance. The dose for children is, proportionate to age and condition.

NOTE: We would like to call to your attention that, there is another Viburnum belonging to the same family, and contains similar properties. Its Latin name is Viburnum Prunifolium. Its common names are black haw stag bush, or sweet viburnum, also Sloe. We do not depreciate its value, but in our opinion, viburnum

opulus/or cramp bark , as it is commonly called, is much superior, and, over the long years, we have used both. However, cramp bark (*Viburnum Opulus*) contains more potassium chloride; also, it does not have the sickly odor of black haw (*Viburnum Prunifolium*), and finally, it blends more perfectly with dioscorea (Wild Yam) and other ingredients.

We have covered catarrh of the respiratory organs, stomach, liver and digestive tract. Now we come to a short study of catarrhal conditions of the renal organs, and the Herbs which relieve these conditions.

The well known Proverb, "Every animal knows it's remedy" fits in here.

We have already told you about the snakes, birds, mongoose, horses, sheep, etc., and how they cure themselves when they become sick, and have given you the names of the Herbs which perform these miracles. Our friend, the dog, is peculiarly liable to disease, principally because he is domesticated, and because in our ignorance, we feed him disease-producing foods. It is a well-known fact that when a dog becomes sick, he almost invariably seeks some particular kind of grass. If he cannot find it growing in his neighborhood, he will take the next best grass to it. And because dogs have been observed to chew on this grass when they are sick, it has come to be known as -

DOG GRASS: Latin name, Triticum Repens.

SYNONYMS: Dog grass, couch grass, witch grass, dog's tooth grass, dog weed, mange grass, (French) Petit Chiendent, (German) Grass-wurzel, Queckenwurzel.

PARTS USED: The dried rhizome, gathered in the spring.

CHEMICAL CONSTITUENTS: TRITICIN, 8 per cent, fruit sugar, 2 to 4 per cent, Inosite, glucose, mucilage, malates, lactic acid, mannite and ash, 7 per cent (composed of calcium, magnesium and potassium salts).

TRICITIN is a gum-like substance, resembling INULIN (see *Inula Helenium*, Lesson #28). It is convertible into levulose.

INOSITE (C-6, H-12, O-6) found chiefly in muscle, and is called muscle sugar. (Also called INOSIN and Phaseomannite).

SPECIAL NOTE: Cattle horses, sheep, etc., that habitually feed upon grasses (The Gramineae) build their powerful muscular bodies from this material, which consists largely of magnesium phosphate (muscle food) and potassium chloride (fibrin former). This is one of the many mysteries of nature explained, and we can scarcely help noting (in passing) the total ignorance and lack of understanding of the modern medical scientist (so-called) of this remarkable fact.

THERAPEUTIC PROPERTIES: Diuretic, aperient, antiscorbutic, anti-catarrhal, fibrin solvent, tonic, demulcent, vulnerary.

USES: Cystitis, Bright's disease (albuminuria), dysuria, irritable bladder, gravel, jaundice, bronchitis, skin disease, gout, relieves thirst in diabetes, allays fever, promotes urination, and in large and frequent doses, is one of our best blood purifiers.

FORMULA No. 161 Strong Decoction of Dog Grass.

8 ounces Dog Grass (cut)

2 quarts distilled water

Put the Herbs into the water and let stand for 4 hours; boil slowly for one hour (closely covered), strain, sweeten with honey if desired, cool and bottle.

DOSE: 1 wineglassful to 1 teacupful 3 or 4 times a day, or ad libitum. This is a known cure for the terrible Bright's disease, and every form of kidney and bladder affection. It is a valuable remedy for people who have to rise every hour or so during the night to void urin, and whose life, consequently, is a perpetual misery. For both adults and children suffering with weak bladder, and cannot control urination (enuresis), this is a remedy par excellence. However, it must be taken in large quantities, and for a long time in order to be of permanent benefit. If enuresis is due to weakness of the sphincter nerve (the nerve controlling the bladder), an ounce of Lady Slipper Root added to the above formula will greatly aid in strengthening that nerve.

DIPHTHERIA is s deadly form of inflammatory catarrh which is characterized, principally, by the extraordinary amount of fibrinous exudation from the mucus membrane of the throat. We gave you several marvelous remedies for this dread disease, elder flowers and peppermint, burdock, elecampane and others, but there are two other remedies which are outstanding and important; in fact, either one of them is specific for diphtheria. To save time and space, perhaps we should include pleurisy, which is another form of acute inflammatory catarrh, and probably kills as many people as diphtheria Pleurisy, as is well known, is characterized by a rapid inflammatory exudation of serum and fibrin into the pleura, or casing of the lungs There is a remarkable Herb which is as near to a specific in either case as a remedy can be, and the main reason for this is, that it contains sufficient potassium chloride to dissolve the useless exuded fibrin, which is the main cause of all the trouble. Its name is

STINGING NETTLE: Latin name, Urtica dioica.

NATURAL ORDER: Urticaceae.

PARTS USED: The Herb and seeds.

HABITAT: Throughout temperate Europe, Asia, Africa, America and Australia.

SYNONYMS: Common nettle.

There is a wealth of history and folklore attached to this Herb, but we have not space for it.

CHEMICAL CONSTITUENTS: Formic acid (in the fresh plant), mucilage, phosphate of iron, phosphate of potassium, phosphate of magnesium and potassium chloride. Some chemists find ammonia and carbonic acid, but they are not existent in the living plant, but are produced by the action of the oxygen and nitrogen of the air, while in process of drying. It will plainly be seen that the chemistry of this plant makes it at once extremely valuable as a therapeutic agent in inflammatory and catarrhal conditions. It is fairly well known that iron phosphate (organic) is nature's quickest and best remedy for all inflammation; that potassium phosphate is the basic food for brain and nerves, and that potassium chloride is nature's masterpiece solvent of fibrin. We trust you have learned these outstanding facts thoroughly and well, and respectfully suggest that if you do not clearly understand them, that you will go back over your lessons, looking for information on the subject, until you most thoroughly understand.

THERAPEUTIC PROPERTIES: Astringent, fibrin solvent, anti-febrile, stimulant, anti-catarrhal, antiseptic, anti-asthmatic, tonic, diuretic.

USES: Pleurisy (a specific), phthisis, pulmonary and bronchial catarrh, renal catarrh, cystitis, stomach and liver affections, mucus colitis, skin diseases (urticaria, eczema, psoriasis, pityriasis).

FORMULA No. 162. Strong decoction of nettles.

4 oz. nettle Herb and seed (cut or granulated)

1 quart distilled water, in which is dissolved

1 dram potash chloride.

Put the Herbs into the water and let stand 3 hours. Boil slowly for 20 minutes, closely covered. Strain and return liquid to the saucepan. Reduce to 1 pint. Cool and bottle. Keep in a cool place.

DOSE: For acute inflammation (pleurisy, etc.) $\frac{1}{2}$ to 1 teacupful, hot, every hour until inflammation and fever subsides.

SPECIAL NOTE: The strained Herb should be made into a poultice and applied to the affected parts. Make sufficient, according to above formula, to provide plenty for internal taking, and also to provide two or more poultices, which must be changed as they cool. The strained Herbs can be kept hot and moist in a double boiler. For all other purposes, except acute inflammation and fever, the dose is 1 wineglassful 3 or 4 times a day.

Children, less, according to age.

ANTI-CATARRHAL HERBS, Continued:

PLEURISY ROOT: Latin name, *Asclepias Tuberosa*.

NATURAL ORDER: *Asclepiadaceae*.

HABITAT: This wonderful Herb is indigenous to North America. Some of the species, of which there are about eighty, are indigenous to South America.

SYNONYMS: Butterfly weed, swallow-wort, tuber root, wind root, colic root, orange milk weed.

PARTS USED: The root.

The name, "pleurasy root" was given to it by the North American Indians, by whom it was considered to be one of the "Great White Father's best gifts to the children of Nature", because it invariably cured their respiratory or chest complaints. Pleurasy root is distinguished from the other species of milk-weed by the singular fact that its stem is almost entirely devoid of the acrid milky juice which contains caoutchouc, and which exudes from the broken stem of the other varieties. It is a handsome, fleshy rooted perennial plant and grows from 1½ to 2½ feet high, bearing carymles of deep yellow and orange flowers, blooming in August, September and October. The root stock is spindle-shaped and has a knotty, wrinkled brown bark, becoming grayish when kept too long, and should be refused if it is grayish. It is almost inodorous, but has a bitterish and disagreeable acrid taste. The North American Indians boil the tubers for food, prepare a crude sugar from the flowers, and eat the young seed-pods after boiling them with buffalo meat. Some of the Canadian tribes use the young shoots as a pot herb, after the manner of asparagus.

CHEMICAL CONSTITUENTS: *Asclepiadin* (a glucosidal principle found in the fresh Herb, and which is poisonous when taken in over-doses, affecting the heart action. It is also present in the well-dried Herb, but in much smaller quantity, volatile oil, two resins, mucilage, starch, tannin and 9 per cent of mineral salts, which have not yet been defined, by chemists.

THERAPEUTIC PROPERTIES: Diaphoretic, expectorant, carminative, sudorific, anodyne, large doses emetic, and cathartic.

USES: Fevers, pleurisy, pneumonia, inflammatory rheumatism, dyspepsia, tuberculosis, asthma, bronchitis, etc. There is no reason to fear the use of it. In correct doses, it is quite harmless and exceedingly merciful in painful fevers, such as pleurisy pneumonia, etc., but we do not recommend it for children.

FORMULA No. 163 Infusion of pleurisy root.

1 oz. pleurisy root (cut)

1¼ pints distilled water

Make, as we have instructed, by pouring the boiling water on the Herb and allowing to stand in a warm place (covered) for 20 minutes, then straining.

DOSE: 1 wineglassful to ½ teacupful in ½ teacupful hot water, while patient is closely covered in bed. Repeat dose until free perspiration is produced and apply hot cloths, wrung out of same strength infusion.

It possesses specific action on the lungs, assisting expectoration wonderfully, subdues inflammation rapidly, brings about reabsorption of exudates and exerts a general tonic effect on the whole organism. It has been used with good results in diarrhea, dysentery, acute and chronic rheumatism, and in low typhoid states, and it is certainly one of our very best remedies in pulmonary catarrh and difficult or suppressed expectoration. In spasmodic asthma, it is wonderful.

We have mentioned another remarkable Herb, that by some authorities, is considered to be America's greatest asthma cure. However that may be, we are convinced that it is a very virtuous Herb for the treatment of many catarrhal conditions. We have already given it in one of our formulas. It happens to grow plentifully in our state of California.

GUM PLANT: Latin name, commonly called *Grindelia Robusta*, but as a matter of fact, that particular species is rarely used. There are three, however, Latin names of which are *Grindelia Camporum*, *Grindelia Cuneifolia*, and *Grindelia Squarrosa*. They all have the same properties and produce the same results, so, when you buy *Grindelia*, it does not matter which of the three you buy /or if they are mixed.

PARTS USED: The dried leaves and flowering tops.

HABITAT: The western United States.

SYNONYMS: Hardy *Grindelia*, gum plant, California gum plant, Scaly *Grindelia*, resin weed, *Grindelia Robusta*.

Some varieties are found growing in the southern part of the United States.

It is rather unusual to give more than one Latin name, and perhaps it conveys that we do not know what we are using, but of course, there are many instances of there being several varieties of a plant, each possessing the same identical therapeutic virtues, To be a little more definite, we will try to explain..... The commonest of the *Grindelias*, and the one most used, is *Grindelia Squarrosa*, from the Latin name, *SQUARROSUS*, meaning scurfy, scaly, full of loose leaves, namely the involucre (the sheath). The word, *Robusta* (Latin *Robustus*), means strong, hardy (the strongest and hardiest variety).

CHEMICAL CONSTITUENTS: Resin, up to 21 per cent; bitter principle, grindeline (soluble in water) 1 to 2 per cent; fixed oil, wax, sugar, caoutchouc, tannin 1½ per cent; saponin mixed with a glucoside, ash, 7 to 8 per cent; volatile oil with turpentine odor.

RESIN: Considered to be the active principle. It is acrid, and so abundant as to coat over the leaves, and involucre, thus making them glutinous; hence, the name, GUM PLANT.

THERAPEUTIC PROPERTIES: Cardiac, sedative, tonic, antispasmodics diuretic, expectorant, relaxes the muscular coat of the bronchial tubes.

NOTE: Large doses are dangerous, producing narcosis, dilated pupils, increased urination, impaired power of locomotion, having an action resembling conium or atropine.

USES: Asthma, bronchitis, whooping cough, catarrh of the bladder and uterus. It relieves dyspnoea, due to heart disease, relaxing tension and quieting the nerves. One of its many virtues is its remarkable effect as a local application in rhus poisoning (poison oak). In many cases it gives almost instant relief, subduing the inflammation almost as soon as applied. In the case of burns, it gives prompt relief. It is eliminated by the bronchial mucus membrane and the kidneys, stimulating them when not taken in excess; when in overdose, it produces renal irritation and inflammation. The principle thing to remember is, small doses, well diluted.

FORMULA No. 164, Infusion of grindelia.

1 oz. grindelia Herb (cut)

1½ pints distilled water

Boil the water and pour over the Herb. Cover and keep in a hot place for 30 minutes. Strain and add brown sugar or honey to suit taste.

DOSE: 1 tablespoonful every 3 hours in acute cases of asthma, bronchitis, or acute renal catarrh. When relief has been obtained, reduce the number of doses to 3 or 4 a day.

Children: 1 teaspoonful in honey water 2 or 3 times a day, according to age and condition.

FORMULA No. 165 GRINDELIA, for outward application in burns, etc.

6 oz. grindelia Herb (cut)

3 pints distilled water

4 oz. glycerine

4 oz. 90% grain alcohol

Heat the water to almost boiling point; add glycerine, alcohol and Herbs. Stir well and cover. Let stand in a warm place for 12 hours. Bring to the boil and simmer for 20 minutes. Strain through a cloth or muslin. Set aside to cool. Bottle and keep in a cool place.

DIRECTIONS for use as a local application to rhus poisoning (poison ivy), burns, rheumatism, etc. Saturate a soft cloth or cotton, squeeze out until it does not drip, and apply to the affected parts. As it dries, the application should be renewed, a new and clean, fresh pad being used each time. Continue until all pain and irritation are gone; meanwhile, taking the infusion internally. In congested areas, apply it hot over the affected parts. This is a very merciful and wonderful remedy.

Another wonder Herb, of similar virtues, is

WILD CHERRY: Latin name, Prunus Virginiana.

NATURAL ORDER: Drupaceae (the plum family).

PARTS USED: The bark collected in autumn and dried.

SYNONYMS: Choke cherry, wild black cherry, etc.

HABITAT: North America (Canada to Florida and Texas).

CHEMICAL CONSTITUENTS: Amygdalin, emulsin, bitter principle, tannin 2 to 4 per cent, gallic acid, resin, starch, volatile oil (hydrocyanic acid).

EMULSIN is a ferment extracted by water. It is a white powder, when pure, and, by its action on amygdalin in the presence of water, it produces hydrocyanic acid (H-C-N) and the volatile oil of bitter almond (neither of which, as such, existed previously in the bark. The poisonous property of the oil depends upon the amount of acid present, and when freed from this acid, it becomes a bland and harmless liquid, but retains its virtues without danger of poisoning by hydrocyanic acid. It should be noted here how very important it is to know the chemical changes that take place in the preparation of Herb remedies. Many otherwise harmless Herbs have been condemned and labeled poison, because of the gross ignorance of people calling themselves Herbalists, and thus the excuse offered by the doctors, who have succeeded in passing laws, restricting the medicinal use of any Herb, by any one else but themselves and they, of all people, know the least about botanical medicine or plain common sense herbalism.

Therefore, once more let us impress upon you the necessity of thorough study in order to avoid such foolish mistakes as are frequently made by the ignorant who

say, "Oh well, its only herbs, and can do no harm anyway." These people are our greatest enemies and bring disgrace upon the noble art of healing.

THERAPEUTIC PROPERTIES: Sedative, pectoral, aromatic, bitter, astringent, increases appetite and digestion, stimulant to every part of the digestive tract.

USES: Tuberculosis, coughs, bronchitis, hectic fever, dyspepsia, stomach and intestinal atony, scrofula, palpitation of the heart, spasms, etc.

FORMULA No. 169 Infusion of Wild Cherry Bark.

1 oz. Wild Cherry Bark (cut)

1¼ pints distilled water

2 teaspoonfuls Sodium Phosphate

2 ozs. glycerine

Boil the water and stir in sodium phosphate. When thoroughly dissolved pour over herbs, cover and steep in a hot place 20 minutes. Strain, add glycerine, bottle and keep in a cool place.

DOSE: 1 wineglassful (2 ozs.) 3 or 4 times a day, preferably between meals, or 1 hour before meals.

Children: 1 teaspoonful or more, according to age and condition.

This lesson is somewhat crowded, but we want to give you as much, and as many formulas as possible before concluding this course.

LESSON TWENTY-NINE

It is a renowned fact that the most valuable things in life are taken for granted; and when some such thing fails us, or does not come to us in adequate supply, the shortage immediately makes us realize its great value.

It has been proven that the older one becomes, the less water our body contains. But there is more to old age than just loss of water; and there is more to youth and health than an abundance of water.

We have endeavored in this course to teach you the nature and value of Herbs, and we believe we have succeeded in imparting to you some valuable facts relating to them.

We touched briefly upon the subject of "ionization", which is the key to cell nutrition. But IONIZATION is such a big subject, that it would take volumes to do it justice. Therefore, we feel it necessary to give you some further information on this very important subject, so that you may better understand just how and why nutrition is brought about, and also what causes malnutrition. It may be necessary to re-state a few basic facts regarding chemistry, in order to point out how, a whole series of chemical changes are set into motion by means of ionization.

First, water is the most vital compound in nature, without which there can be no life. The reason why water is so vital is, that it is composed of the two most active elements known, namely, oxygen and hydrogen. Eight out of every nine parts of water, by weight, is oxygen but, fortunately, water is a very staple compound; otherwise, everything would take fire and be destroyed by rapid oxidation. Much smaller quantities of oxygen are carried by many other compounds and released to the tissues as required. The atmosphere only holds one-fifth of oxygen, held loosely by nitrogen. The presence of iron and phosphorus in the blood, as it passes through the lungs, takes up the oxygen from the inspired air and carries it in the form of iron phosphate to every cell in the body, releasing the oxygen wherever it is needed to burn up waste material, to stimulate all the vital processes of the body, and to maintain a uniform normal temperature of 98.6, which is just sufficient to preserve tissues from being burned, and just the right temperature to keep glutenous and fibrinous fluids circulating.

We have seen that catarrh is caused by glutenous and fibrinous exudations, and that a long chain of serious interferences with healthy function in many parts of the body is the result. So-called arterial blood is surcharged with oxygen, the

great purifier and vitalizer. Venous blood is loaded with waste products and contains very little active oxygen. Free circulation is, therefore, the basic necessity, in order to discharge these useless waste products and supply new oxygen to renew the life and vitality of all cells and organs. From 300 to 400 gallons (capacity) of air is necessary to maintain normal health per day, of 24 hours. Of every 10 gallons of air inspired, 2 gallons is oxygen; therefore, the normal intake of oxygen through the lungs is from 60 to 80 gallons per day, or 2½ to 3 gallons per hour. And this is not all, by any means. There are between 350 and 450 known acids, of which the vast majority are organic, and by far the greatest number of them are oxygen carriers. More than two-thirds of citric acid is nascent oxygen, and one-third of malic acid is oxygen. It is plainly seen in chemical reactions, in which oxygen and hydrogen take part; that hydrogen is the creator of acids, or is the acid former, while oxygen is the alkali former, with the assistance of the alkali-forming elements, which are mostly metals, such as sodium, potassium, etc. Hydrogen is not only an acid former, but when combined with oxygen as OH or hydroxyl, it is also alkaline in reaction.

We do not have to remind you that all chemical change is brought about by "ionization", and that only ions enter into the anabolic and katabolic processes of metabolism, but we do want you to clearly understand that life itself is only possible through ionization, which alone replaces lost energy and substance in cell life.

We have learned that the phosphates in nature are the great builders of the various tissues of the body. They are five in number, and each of them carries four atoms of oxygen.

- (1) Calcium Phosphate (CA-3, (PO-4)₂) (Builder of bone)
- (2) Iron Phosphate (FE,H,PO-4 plus FE-3 (PO-4)₂) (Oxygen carrier)
- (3) Potassium Phosphate (K-2, HPO-4) (Builder of brain and nerve)
- (4) Magnesium Phosphate (MG, HPO-4) plus 7 H-2-O (Muscle builder)
- (5) Sodium Phosphate (NA-2, HPO-4) (Alkaline solvent and stabilizer).

It will perhaps surprise you to learn that there is one Herb which contains all of these body-builders and more, in a most pleasant and easily assimilable form, and which we shall go into extensively in this lesson. It is probably the most valuable food and medicinal agent in the whole of nature, although this is not generally known.

There are a number of plants commonly called by the name "apple", but the one we are about to describe in full is the most common one, and the best known.

APPLE: Latin name, Pyrus Malus.

NATURAL ORDER: Pomaceae.

PARTS USED: The fruit and the bark.

SYNONYMS: Wild apple, *Malus Communis*.

HABITAT: Temperate regions of the northern hemisphere.

Only twenty-two varieties of apples were mentioned by Pliny, but today there are upwards of 2,000 varieties cultivated. The original apple (wild) was supposed to be the small yellow or red apple, called the crab apple, very sour and too acid to eat in its raw state; yet of great value when made into preserves or cider. There are many wise old sayings relating to the apple such as, "An apple a day keeps the doctor away," or "To eat an apple on going to bed will make the doctor beg his bread." We wonder how these old-time writers and poets knew that the apple was so marvelously curative that their sayings are literally true, because in those days there was no real chemistry, and it is the chemistry of the apple that reveals its valuable therapeutic properties.

We say, after an exhaustive study of its chemistry, that in our opinion, there is no other remedial agent or Herb in the whole range of known therapeutic agents that can compare with the apple tree, and although it would be difficult to say which of its many virtues is the greatest, we suggest that its abundance of nascent oxygen compound is probably the main reason why it is such a precious food, blood purifier, and unflinching remedy for so many forms of disease. A close study of its chemistry will show more clearly what we mean.

CHEMICAL CONSTITUENTS:

Various analyses show that the apple contains from 80 to 85 per cent water, about 5 per cent proteid or nitrogenous material, from 10 to 15 per cent hydro-carbons, including starch and sugar, from 1 to 2 per cent acids, and a variety of salts. The sugar content of a fresh apple varies from 6 to 10 per cent, depending on the variety of apple. The apple is rich in real vitamins, and is considered to be one of the best, or most valuable anti-scorbutic fruits for overcoming scurvy. All apples contain varying amounts of organic acids, malic acid (C-4, H-6, O5), gallic acid (C-7, H-6, O5), potassium phosphate (K-2, HPO-4), calcium phosphate (CA-3, (PO-4)₂), iron phosphate (Fe-H, PO-4 plus FE-3, (PO-4)₂), magnesium phosphate (MG, H,PO-4) plus 7H-2,O) sodium phosphate (Na-2, H, PO-4). It has been calculated that in 100 grams of dried apples, of the sweet varieties, there is up to 1-3/4 milligrams of iron; in the sour varieties, up to 2-1/2 milligrams of iron. (This is relatively a large amount when we consider all the other oxygen carriers); and it is known that the apple carries a much larger percentage of phosphates than any other known fruit.

NOTE: The valuable acids and salts of the apple exist to a special degree in, and just below the skin and, in order to get the full nutritional value of an apple, it should never be peeled.

The variety of apple called winesap contains more malic acid than any other variety and, remember, that sour apples (not unripe ones) contain the most organic iron. The bark of this noble tree and, particularly, the root bark, contains a bitter principle called phloridzin (C-21, H-24, O-10), a most marvelous tonic, which has shown better results in intermittent fever than quinine and, by the action of dilute acids upon it, is converted into phlorctin (C-15, H-14, O5), which has febrifuge properties. The root bark and the bark to a lesser degree also contain quercin (C-6, H-6, OH-6), a most remarkable bitter astringent, also found in oak bark and acorns; quercite, a sweet crystalline substance (C-6, H-7, OH-5), also found in acorns and called acorn sugar and oak sugar, and we might go on elaborating still other principles, which have been found in this marvelous tree. For instance, the seeds, amygdaline, and an oil called amyl valerate or amyl-valeric-ester, which is the aromatic odor of the apple and called apple essence.

We can scarcely pass without mentioning that the beautiful flowers of this tree and their delicate fragrance attract great numbers of bees, and apple blossom honey is considered to be the most valuable of all honey as a therapeutic agent, and is also considered to possess the most delightfully flavored honey. Apple blossom perfume ozonizes the oxygen of the air, is hungrily drawn into the lungs of those affected with respiratory diseases, and gives prompt relief in dyspnoea, asthma, etc. It is thought that the chief dietetic value of apples lies in its acids, malic, gallic, etc., and there is no doubt that those oxygen-carrying acids do a great deal to benefit people of sedentary habits, who are most liable to liver derangement. They neutralize the acid products of indigestion, dyspepsia, gout, etc. It is these acids plus the sugar that not only digest the apple, but help to digest other foods. Apple sauce, for such rich foods as pork and goose, shows good common sense. The sugar of a sweet apple, like most fruit sugars, is practically a pre-digested food, ready to pass into the blood to provide energy and warmth for the body. A ripe, raw apple is one of the easiest of vegetable foods for the stomach to deal with. If it is well masticated, the whole process of its digestion takes only one hour. The juice of apples reduces acidity of the stomach, because it is changed to alkaline carbonates, and corrects sour fermentation. It has been shown that in countries where unsweetened cider is used as a common beverage, stone or calculus is unknown. A series of inquiries made by doctors in Normandy, where cider is the principal drink, brought to light the fact that not a single case of stone had been met with in more than forty years. A French physician has shown that the bacillus of typhoid fever cannot live long in apple juice, and he, therefore, recommends that cider be mixed with water that is doubtful as regards purity. Cider, in which horse-radish has been steeped, has been found to be helpful in dropsy. Cider, in which garlic has been steeped, is one of the simplest, and yet the most wonderful, remedies for any pus-forming disease in any part of the human organism. Cooked apples make a good local application for sore throat, in fevers, inflammation of the eyes, erysipelas, etc. Stewed apples are laxative and wonderfully cleansing to the whole intestinal tract. An infusion or decoction of the bark has proved invaluable for intermittent and bilious fevers. We could go on and on elaborating the almost endless virtues of the apple, but we have not space, and you will be expecting some formulas containing the virtues or therapeutic

properties of this great (probably greatest) natural remedy for the treatment of disease.

Before we give you the formulas, we wish again to remind you that if Dr. Scheussler's Bio-chemic System is basically true which, with certain provisos, we believe it is, then it should be clear that the apple goes nearly half way through the twelve cell salts by providing all of the phosphates mentioned and recommended in that system, and it furthermore provides a number of other oxygen carriers, none of which is poisonous or injurious in the least degree. As oxygen is unquestionably the greatest purifier, vitalizer, cleanser, neutralizer of acidity, antiseptic, disinfectant, discutient, germicide, respiratory stimulant, cardiac stimulant, brain and nerve stimulant, and life giver in all nature, the simple and often despised apple is second to no other Herb in food and medicinal properties.

FORMULA No. 167 Fresh apple juice

Wash and cut up 10 lbs. winesap apples. Put through a mincer or juicer, pressing out every drop of juice. Bottle and keep in a cold place.

DOSE: 1 teacupful, slowly sipped, 3 or 4 times a day.

For acidity of the stomach, indigestion, dyspepsia, and sluggish liver, this is not only one of the most pleasant, but also the most effective and quick remedies that can be desired by man. The abundant nascent oxygen will neutralize all decomposing or fermenting waste matter. The phosphates will restore vital energy to the nerves and the acids will dissolve and remove bile concretion and fibrinous exudations.

FORMULA No. 168 Stone and gout remedy

1 quart apple cider

2 ozs. hydrangea root (cut)

Let stand for 12 hours. Bring to the boil and slowly simmer for 30 minutes. Strain, cool, bottle and keep in a cool place.

DOSE: 1 wineglassful 3 or 4 times a day.

NOTE: People suffering with either gout or stone should avoid eating excess of nitrogenous or proteid foods, also completely abstain from all spiritous liquors - whiskey, brandy, gin, beer, etc. Stone is usually deposited in alkaline urine. The acids of cider convert the sodium phosphate normally contained in apple juice into sodium acid phosphate which we know also exists in hydrangea root, together with a radio-active calcium sulphide. (See lesson #6, page 13). The combination is ideal for dissolving stone and calcarious deposits in any part of the system, but particularly in the renal organs.

This is a priceless formula, is perfectly harmless, and will cure every curable case, if other directions as to diet, etc. are followed. Quite apart from the stone solvent properties of this remarkable though simple remedy, it is a digestive agent of the first order. It increases appetite and tends to restore a chemical balance in the whole organism. In cases of chronic gout, this is a wonderful outward application. Saturate cloths in the hot solution and apply, changing the application as it cools. One hour's treatment 2 or 3 times a day, will soon dissolve the calcic deposits, and a gentle rubbing of olive oil in between applications will greatly assist the cure.

FORMULA No. 169 Magic remedy for pus diseases.

SPECIAL NOTE: Pus diseases are all caused by the decay of cells, which is notably accompanied by the loss of sulphur, hydrogen and calcium from the affected parts, and the consequent death of the cell.

In order to give you a better understanding of this miraculous remedy, we feel it necessary, before giving you the formula, to show the vast extent of dreadful and disastrous effects produced by the decay of cells. Cancer has increased very rapidly in recent years, until today there are at least three times the number of cancer cases being blindly and ignorantly treated, and unfortunately, without any more substantial, beneficial results than there were less than thirty years ago; and cancer is only one of the manifestations of pus diseases. There are ulcerations, acne, boils, abscesses, carbunkles, tumors, eczema, psoriasis, lupus, and many other forms of skin disease, internal ulcerations, athlete's foot, purulent ophthalmia, mastoiditis, necrosis of the bone, syphilitic sores, chancres, varicose ulcers, and a thousand and one other puss diseases. The following quotation from the Bio-chemic System of Medicine is very significant at this point: "Sulphate of Lime is used to clean out an accumulation of heteroplasm, in the interstices of tissue; to cause the infiltrated parts to discharge their contents readily, and to throw off decaying organic matter, so it may not lie dormant, or slowly decay and thus injure the surrounding tissue. A lack of this salt allows suppuration to continue too long. It controls suppuration. A decay of epithelial cells, after the infiltrated parts have discharged their contents, indicates a lack of this salt. The third stage of all catarrhs, lung troubles, boils, carbuncles, ulcers or abscesses need this cell salt. While silica hastens the process of suppuration in a normal manner, calcium sulphate closes up the process at the proper time" and now, the formula:

FORMULA No. 169 Magic remedy for pus diseases

2 quarts apple cider

8 ozs. garlic juice (fresh)

1 oz. horse-radish root (freshly grated)

Put the Herbs into the cider and let stand in a fairly hot place for 12 hours, with occasional stirring. Remove to a cool place and allow to stand for another 12 hours. Shake well several times during the period. Strain and press through a linen cloth. Bottle and keep in a cool place.

DOSE: 1 tablespoonful or more 3 or 4 times a day between meals.

FOR OUTWARD APPLICATION: In all pus formation, either on or near the surface, swollen and inflamed glands, or any enclosed foci of infection, for cancers, tumors, bone growths or protuberances, necrosis (where accessible), ulcers, skin diseases, purulent sore throat, wens (sebaceous cysts), infected wounds, carbuncles, boils, acne, eczema, lupus, etc., etc.

Apply on a piece of saturated cotton. The duration of the application must be adjudged according to the special condition of the case. Should pus be discharged from the part in large quantity, it will be necessary to change the application frequently. In case the application proves too painful when applied to large sores, the effect can be modified by first applying castor oil, and then the Magic Formula. It is one of the safest and most marvelous counterirritants for stubborn cases of severe sciatica, muscular and arthritic rheumatism, and has restored the use of locally paralyzed parts. Mixed with equal parts of glycerine and applied over dropsical areas, it will quickly draw out the water and give prompt relief.

It has been our custom to give you a thorough knowledge and understanding of the Herbs we use in our formulas, and so we will continue now, and give you the detailed facts regarding this truly wonderful ingredient, Horse Radish, which goes into our Magic Formula.

HORSE RADISH: Latin name, Cochlearia Arboracia.

NATURAL ORDER: Cruciferae.

PARTS USED: The Root.

SYNONYMS: Mountain radish, great raifort, red cole.

HABITAT: This plant has been in cultivation from earliest times, but its exact place of origin seems to be obscure. Some authorities consider it indigenous to eastern parts of Europe, from the Caspian and through Russia, and from Poland to Finland. In Britain and other parts of Europe, from Sicily northward, it occurs cultivated or semiwild as a garden escape. It is probably the plant mentioned by Pliny under the name of Amoracia, and recommended by him for its medicinal qualities, being then apparently employed exclusively in physic, not as a food or condiment. Or, it is possible that the wild radish, or Raphanos Agrios, was this plant. It is said to be one of the five bitter Herbs, with coriander, horehound, lettuce and nettle, which the Jews were made to eat during the Feast of the Passover.

Both the root and leaves of horseradish were universally used as a medicine in the middle ages and, as a condiment, in Denmark and Germany. It was known in England as Red Cole in the time of Turner (1548), is not mentioned by him as a condiment but only as a medicine. Today, it is rarely used medicinally.

CHEMICAL CONSTITUENTS: Sinigrin (the pungent principle, also found in black mustard). It is a crystalline glucoside, which is decomposed in the presence of water (ionization) by Myrosin (an enzyme, found also in the root, but is developed by scraping the root when in fresh state; sinigrin and myrosin existing in separate cells, and it is the bruising that brings them together. On exposure to the air, the root quickly changes color and loses its strength. It becomes quite inert by boiling. It contains also a bitter resin, sugar, starch, gum albumen, and acetates of calcium, sulphate of calcium, allyl and potash. The great virtue of the root consists principally (in our opinion) in its content of organic calcium sulphate, allyl sulphide, and its volatile oil.

THERAPEUTIC PROPERTIES: Stimulant, aperient, rubefacient, diuretic, anti-scorbutic, anti-rheumatic, antiseptic, disinfectant, germicide, vermicide, stone solvent, anti-hydropic, diaphoretic, powerfully digestant, expectorant and carminative.

USES: Scrofula, dropsy, paralysis, rheumatism, indigestion dyspepsia, sciatica, poor circulation, malnutrition, atonic constipation, pulmonary complaints, bronchitis, coughs (particularly whooping cough), weak chest, wheezing and low blood pressure.

You will now have a much better idea as to which part this wonderful Herb plays in the Magic Formulas given in the preceding pages. We will now give you two more formulas, using this valuable Herb.

FORMULA No. 170 Horse-Radish Dropsy Remedy.

1 quart Apple Cider

4 ounces Horse-Radish Root (freshly scraped)

Put the root into the cider, and allow to stand in a fairly hot place for 12 hours, using a screw-top jar. Loosen the cap occasionally, then tighten and shake well. After 12 hours of steeping, remove to a cool place and allow to stand for another 12 hours, with occasional shaking. Strain, and add 4 ounces of pure glycerine. Bottle and keep in a cool place.

DOSE: 1 tablespoonful to a wineglassful 3 or 4 times a day, before meals, and a dose at bedtime.

FOR OUTWARD APPLICATION: Saturate cloths in the fluid, which has been heated (not boiled) and apply to affected parts. Avoid, as much as possible, all

acid producing foods and drinks. Hot baths taken daily, will facilitate the recovery. The treatment should be continued for some time after all symptoms have disappeared.

FORMULA No. 171 Horse-radish Lotion, for the removal of spots and blemishes from the skin.

4 ounces Horse Radish, freshly scraped

1 quart Buttermilk

4 ounces Glycerine

Put all into a half-gallon jar and shake well. Let stand over night (for 12 hours) in a cool place. Shake well again and run through a fine sieve or muslin. Bottle and keep in a very cold place.

DIRECTIONS FOR USE: Wash the parts to be treated, in warm water. Dry thoroughly and rub the horse-radish lotion into every part that has spots, discolorations, freckles, blackheads, scurf or any skin blemish whatever. This should be done at night and, after thoroughly saturating the skin until it tingles with warmth, wipe off the surplus before going to bed. This is a remarkable skin stimulant and bleach that beats nine out of ten expensive skin lotions. The organic sulphur and calcium in this lotion cures pimples and produces a clear, healthy complexion. There are many more valuable formulas made with horse-radish, but we have neither time nor space in which to give them. The use of horse-radish should not be over done. It is a very powerful stimulant, and over stimulation is much more injurious than beneficial.

LESSON THIRTY

The element, sulphur, enters into nearly every cell and tissue of the entire body. It is the greatest antiseptic known.

As we pointed out in an earlier lesson, - when the cell breaks down, sulphur is the first element lost, and is usually accompanied with hydrogen when it exudes from the dying cell. We have now reached the stage where we must go a little deeper into this vital chemical problem, because after all, it is the "life and death of the cell" which we are studying.

We know that hydrogen is the generator of acids; that oxygen is the universal element entering into both acid and alkaline reactions; that sodium and potassium are the principal alkaline metals. But what about sulphur? Hydrogen sulphide (H-2, S) is produced in the intestine, by the decomposition of albuminous substances; it also occurs in sores containing pus, abscesses, purulent tumors and cancers. It is found in urine of tuberculous cases, and sometimes it reaches the bladder by diffusion from the rectum. An animal dies almost immediately in an atmosphere of pure hydrogen sulphide, and even the diluted gas is rapidly fatal. An atmosphere containing only one percent of hydrogen sulphide may be fatal to man, although individuals habituated to its presence, can exist in an atmosphere containing 3 percent. Even when highly diluted, it produces a condition of low fever. Its toxic powers are due primarily, if not entirely, to its power of reducing and combining with the hemoglobin, or coloring matter of the blood, with which it produces a dark-colored substance known as "sulphaemoglobin". The form in which hydrogen sulphide generally produces deleterious effects is, as a constituent of the gases emanating from sewers, privies, burial vaults, decomposing albuminous matter in garbage, in certain swamps, from dead animals undergoing the process of decomposition, in leper colonies, from decomposing human bodies in war, and from all dead animals, from the greatest to the microscopical animalculae of stagnant water.

Therefore, it can be plainly seen that, although sulphur is the greatest antiseptic in nature, under some circumstances, it is also one of the greatest destructive and deadly elements known to man. For that reason we should learn all we can about it, so as to be able to recognize its destructive forms, and turn them into constructive healing.

Sulphur has a most powerful affinity for oxygen and unites with it to form two oxides:-- SULPHUR DIOXIDE (S-O₂) and SULPHUROUS ACID, which is brought about by solution in water. Water not only dissolves the gas, but

combines with it to form true sulphurous acid as follows:-- S-O₂ (sulphur dioxide) plus H₂, O (water) equal H₂, SO₃, which is sulphurous acid, but it does not stop there. Both sulphur dioxide and sulphurous acid are powerful reducing agents, stealing oxygen from other compounds, and so oxidizing themselves into sulphuric acid. Since it is so necessary that we thoroughly understand these chemical changes that are so often disastrous to the human body, we will try to make it more graphic:-- SULPHUR DIOXIDE (S-O₂) occurs in volcanic gases and in solution in some mineral waters. Also during the combustion of coal or coal gas containing sulphur or its compounds (This is the principal source of atmospheric S-O₂).

PHYSICAL PROPERTIES: It is a colorless suffocating gas, having a disagreeable and persistent taste, very soluble in water which, at 15° centigrade, dissolves about 40 times its volume of the gas. It is neither combustible nor is it a supporter of combustion. The reason for this is the same as in the case of C-O₂ or carbon dioxide. It, like C-O₂, is an end product of combustion. Its oxygen is held tightly and is not easily freed by combustion, but is easily freed when in contact with the alkali metals, sodium, potassium and lithium, also by the powerful affinity of iron for oxygen. It is fortunate for us that sodium and potassium are always present in the blood because they combine with sulphur dioxide, sulphurous and sulphuric acids, to form sulphites and sulphates of sodium and potassium, and so the sulphur acids and dioxide are carried out of the system, because both sodium and potassium sulphates are laxative or purgative according to dose, and the quantity of water they eliminate or throw out, both through the intestinal tract and renal organs (urine) is loaded up with inorganic sulphurous matter, which is not only useless, but exceedingly dangerous and poisonous to the organism. Sodium and potassium phosphate are also fortunately present in the blood, and we have learned how they serve as the great builders of new cells and tissues and to maintain an alkaline condition. The important lesson to be learned here is that the ever active oxygen will unite just as freely with sulphur as with iron or carbon and, when sulphur gets there first and steals the oxygen, trouble begins, as we have seen. The element, iron, is the natural, normal carrier of oxygen; when freed to the cells and tissues, it is the great life giver, but when locked up in carbon dioxide and sulphur dioxide, it is inorganic, non-respirable, and death dealing. Unless the positive organic metals--iron, sodium and potassium--come to the aid of the rapidly suffocating cells by splitting those deadly compounds, the cells will surely die by asphyxiation. After death they will decompose, producing pus, and rapidly contaminate the surrounding tissues. Next week, we will endeavor to show how sulphur and carbon can be controlled and utilized as life givers instead of destroyers, but this is enough chemistry for this week and, now, we will learn something wonderful about one of nature's greatest remedies for those conditions we have been talking about.

GENTIAN ROOT: Latin name Gentiana lutea.

NATURAL ORDER: Gentianaceae.

PARTS USED: The root.

SYNONYM: Yellow gentian.

HABITAT: The yellow gentian is a native of the alpine and subalpine pastures of central and southern Europe, frequent in the mountains of Spain and Portugal, the Pyrenees, Sardinia and Corsica, the Apennines, the mountains of Auvergne, the Jura, the lower slopes of the Vosges, the Black Forest, and throughout the chain of the Alps, as far as Bosnia and the Balkan States. It does not reach the northern countries or the British Isles. At an elevation of from 3000 to 4500 feet, it is a characteristic species of many parts of France and Switzerland. It has been pointed out that oxygen intensifies the bitterness of cascara sagrada and other Herbs and improves their tonic properties considerably, but this is only after the bark has been removed from the tree (in the case of cascara). Here is an Herb, however, that does not wait to be dried before absorbing oxygen. Up in the mountains where it grows, there is such an abundance of oxygen, uncontaminated by civilization with its oxygen-consuming automobiles, factories, and myriad fires, that the very life of this beautiful and wonderful plant is dependent upon pure oxygen, and it has acquired the habit of storing vast quantities of condensed oxygen in its roots; although this is an apparent reversal of the usual method of Herbs, in absorbing carbon dioxide and releasing oxygen to the air through their leaves or lungs, it is not actually a reversal, because of the fact, that any gas is absorbed by plants; and as oxygen is so abundant, that it predominates while carbon dioxide is at a low ebb. There is nothing for the plant to do but absorb the oxygen and store it. That is why it is so bitter, and is such an exhilarating tonic that performs miracles of healing when the body is loaded with toxic waste matter and life is at a very low ebb. Its tonic action is also dependent upon its content of potassium, sodium and iron. The chemistry of gentian root, as given by the text-books is so unreliable, varied and inadequate in explaining its great therapeutic virtues, that we hesitate to give it to you. But as it is our custom to give the chemistry of the Herbs covered in this course, we will give it for what it is worth. But warn you that it is of very little worth as a guide to its use.

CHEMICAL CONSTITUENTS: The dried root contains gentiin and gentianarin, both bitter glucosides, together with gentianio acid (also called, gentisin), supposed to be physiologically inactive; gentio-picrin (another bitter glucoside); saccharine constituents are dextrose, levulose, sucrose and gentianose, a crystallizable, fermentable sugar. It is free from starch and yields from 3 to 4 per cent ash.

THERAPEUTIC PROPERTIES: Gentian root is one of the most useful and virtuous bitter tonics in the whole range of botanical medicine. It is especially useful in states of exhaustion from chronic disease, and in all cases of general debility, weakness of the digestive organs and want of appetite. It is one of the best strengtheners of the human system. Many of the worst dyspeptic complaints are more effectively relieved by gentian bitters than by any other remedy. It is of special value in jaundice and liver affections, besides being unrivalled as a

stomachache tonic. It also possesses febrifuge, emmenagogue, anthelmintic and antiseptic properties. Besides all this, gentian is an effective anti-spasmodic in hysteria and neurasthenia. Its outstanding value lies in the fact that it combines favorably with many other Herbs, either to modify their action or fortify them. When combined with a laxative that is ordinarily debilitating, it will often completely counteract that weakening and distressing effect, and make it possible for that laxative to be used without any aftermath of weakness. Combined with yellow dock or any good herbal iron tonic, it forms a most efficacious blood maker, increasing the hemoglobin in anemics in a most remarkable way. It deepens respiration, and enables more iron and oxygen to be carried and released to the cells and tissues. It combines perfectly with aromatics and carminatives, is often given combined with orange peel and, in this form, it quickly restores lost appetite and greatly aids the digestion. Combined with tormentil root (discussed in a previous lesson) it has been used with great success in cases of intermittent fever.

This wonderful Herb (gentian) has been used since very early times and, during the Middle Ages it was employed for more uses than the majority of other Herbs. Culpepper says, "Gentian comforts the heart and preserves it against faintings and swooning; The powder of the dried root helps the bitings of mad dogs and venomous beasts. The Herb, steeped in wine, and the wine being dark, refreshes such as be over weary with traveling and grown lame in the joints, either by cold or evil lodgings; It helps stitches and griping pains in the sides, and is an excellent remedy for such as are bruised by falls when knee are bitten on the udder by any venomous beast, do but stroke the place with the decoction, and it will instantly heal them."

As a matter of fact, this is true in a much broader sense. A strong decoction of gentian not only kills worms and low organisms in the intestines, but applied outwardly, it kills all parasites, vermin, etc., and is an excellent application to infected wounds, bruises, bad sprains, etc.

The following formula will, we believe, cover most, if not all, of its therapeutic applications.

FORMULA No. 171-A Simple Infusion of Gentian.

1 oz. Gentian Root (cut)

1¼ pints distilled water

Boil the water and pour over the root. Cover and put in a hot place to steep for 30 minutes. Strain, cool, bottle, and keep in a cool place.

DOSE: 1 wineglassful 3 or 4 times a day. The best time to take is about 1 hour before meals. For children with weak stomachs, it should be sweetened with honey and given in doses of 1 to 3 teaspoonfuls 3 or 4 times a day.

NOTE: In case of worms, give a double dose without the honey and continue at above intervals until the worms are expelled in the stool. Follow up with lesser doses, and avoid feeding the child meat and rich foods.

For all ordinary purposes, this simple infusion is an all-around, bitter tonic which is generally more acceptable to the delicate stomachs of invalids, and those who are slowly recovering from some exhausting disease, than the strong decoction. BUT if it fails to produce the desired effect, quickly resort to the strong decoction, which is the following formula:

FORMULA No. 172 Strong Decoction of Gentian Root.

4 ounces Gentian Root (cut)

3 pints distilled water

Let the root stand in the cold water for 12 hours. Bring to a boil and simmer, while closely covered, for 15 minutes. Strain, return liquid to sauce pan and simmer slowly until reduced to 3/4 pint. Remove from fire and add 4 ounces of pure glycerine, cool, bottle, and keep in a cool place.

DOSE: 1 teaspoonful to a dessert spoonful in a wineglassful of water, 1 hour before meals.

For children: From 5 to 15 drops in honey water, according to age.

FOR OUTWARD APPLICATION: In parasitic affections, infected wounds, etc.

Apply on lint dipped in the decoction and squeezed until it does not drip; cover with waxed paper and bandage on. This may be applied either hot or cold. It relieves the pain of sprains, bruises, burns, inflamed joints, etc. There is a remarkable Herb names "calamus" or "sweet flag" which combines so well with gentian root that each of them enhances the virtue of the other. We will first give you the following formula in which both of these herbs are included, and later describe calamus in detail.

FORMULA No. 173 Gentian-Calamus compound

4 ozs. gentian root (cut)

4 ozs. sweet flag root (cut)

1 oz. dried orange peel (cut)

½ oz. cardamom seed (crushed)

Put all into 1 gallon of distilled water and let stand for 12 hours. Bring to a boil and simmer while closely covered, for 30 minutes. Strain and return to saucepan.

Slowly reduce to 1 quart. Add 8 ozs. black molasses and 8 ozs glycerine. Cool, bottle and keep in a cold place.

DOSE: 1 tablespoonful or less, 1 hour before meals.

Children: 1 teaspoonful, or according to age.

This is a pleasant, aromatic, bitter stomachache and tonic, which we believe is second to none. It is positively the most remarkable restorative after a long illness that we have ever known and, as such, is worth its weight in diamonds. It is as harmless as new milk, and so remarkably effective as to be almost unbelievable. In two weeks, we have seen cases that were almost hopeless because of being unable to retain any nourishment, improve so much that not only could they sit up in bed, but could take short walks, retain nourishing food, and sleep as soundly as babies. We highly recommend that you make up some of this formula and have it on hand for just such emergencies. This is an improvement on the famous old English remedy known as the "Stockton Bitters". Its two main ingredients were gentian root and sweet flag.

CALAMUS: Latin name, Acorus Calamus.

Natural Order: Acoraceae.

HABITAT: This is an indigenous plant, growing throughout the United States, in low, wet, swampy places, and along the sides of ditches and streams, and flowering in May and June. It is also a native of Europe and Western Asia; a variety is also found in India. The European plant differs slightly from the American.

Parts used: The root.

SYNONYMS: Sweet flag, grass myrtle, sweet grass, sweet root, sweet cane, sweet rush, sweet sedge, sea sedge, myrtle flag, sweet myrtle.

The odor of calamus is strong and fragrant; its taste warm, bitterish, pungent and aromatic. Its active principles are taken up by boiling water. Trommsdorff obtained from 100 parts of the fresh root of the European plant 0.1 of volatile oil, 2.3 of soft resin, 3.3 of extractive with a little chloride of Potassium, 5.5 of gum with some phosphate of potassa, 1.6 of starch analogous to insulin, 21.5 of lignin, and 65.7 of water. Sixteen ounces of the dried root afforded to Neumann about two scruples of volatile oil. The oil is at first yellow, but ultimately becomes red, and has the smell and taste of calamus. The extractive matter has an acrid and sweetish taste. The root is sometimes attacked by worms, and deteriorates by keeping.

MEDICINAL PROPERTIES AND USES: Calamus is a stimulant tonic, possessing the ordinary virtues of aromatics. It may be taken with advantage in pain or uneasiness of the stomach or bowels arising from flatulence, and is a

useful adjuvant to tonic or purgative medicines in cases of torpor or debility of the alimentary canal. Excellent for use in intermittent fevers and scrofula; helps increase appetite, prevents formation of gas. Will destroy the taste for tobacco. Tea made of calamus is excellent for external application to wounds, sores, burns and ulcers.

FORMULA No. 173-A Infusion of Calamus (Sweet Flag)

2 heaping teaspoonfuls of Calamus root (cut)

1 pint of distilled water.

Boil the water, and while boiling pour over the Herbs. Cover and steam for 15 minutes. Strain.

DOSE: One or two cupfuls a day, taken either hot or cold, 1 hour before meals.

And now we come to the consideration of another of Nature's great masterpieces, which fits in here because it also is a bitter stomachache, carrying not only a wealth of oxygen, but a veritable chemical laboratory within itself. It is

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QUASSIA: Latin name, *Picraena excelsa*; Quassia Amara, (Linn.)

This Herb has no very ancient history so far as is known, but the history of its discovery, as a remarkably virtuous plant, is none the less vitally interesting. Its therapeutic properties were discovered by a Negro slave, a native of Surinam, in the West Indies. His name was Quassi and, as often happens, the Herb was named after its discoverer.

There are two varieties -- (1) A large tree, growing in Jamaica, St. Kitt's, Antigua, St. Vincent, and (2) a small tree growing in Surinam, West Indies, Brazil, Guiana, Columbia and Panama. They are identical as far as medicinal properties are concerned.

It was upon the small tree, growing in Surinam, that the negro slave built his reputation as a master healer. He treated the most deadly fevers with it, secretly for a long time, and was so successful that ultimately he was prevailed upon to sell his secret to the doctors for a large sum of money, which was paid in gold. This was in 1756, a large supply was taken to England and, at once, became famous in Europe, but owing to the smallness of the plant which was little more than a shrub, the remedy became scarce until the larger and more abundant tree was found growing plenteously in Jamaica.

For many years, it was the most famous fever remedy in the world but, like a large majority of nature's best remedies, it has fallen into disquietude, probably because the doctors found it so curative that they could not make enough money to satisfy their world-famed rapacious appetite for riches and ease. Be that

as it may, Quassia is still Quassia, still one of nature's star remedies and. we believe, that in the very near future, this marvelous discovery of a lowly negro slave, is destined to become once again the wonder remedy that it proved itself to be in the Eighteenth Century. This is an old and proven saying that "The mills of God grind slowly, but they grind exceedingly small." God is not mocked, and we may be sure that, sooner or later, the hidden virtues of Herbs, which the great Father of love planted in the earth will come to light and save our people from premature and untimely graves. "And behold I have given you every herb bearing seed which is upon the face of all the earth and every tree in which is the fruit of a tree, and to every beast of the earth, and to every fowl of the air, and to everything that creepeth upon the earth, wherein there is life. I have given every green herb for. meat, and it was so, and God saw everything that He had made, and behold, it was very good."

To the lowly Surinam negro slave, there came the divine revelation that one of the trees; which the Creator had made and planted in the earth for the use of man, was a very great remedy for the deadly fevers that killed off so many of his own race and the white race indiscriminately, so he gave the tea, made of the wood of the tree, to all who needed it, and there were no more deaths from the terrible fever. They were all healed and restored to health. The white man looked on in amazement, and finally, the poor negro slave was induced to part with his secret. For a long time it was thought that this Herb was the greatest medical discovery ever made, but gradually and surely its popularity died out, until today, the only thing it is used for is, to kill the eggs or nits of vermin in the hair of children. Here, it is reborn.

SYNONYMS: Bitter ash, lofty quassia, bitter wood tree; French, Bois, de Quassie; German, Quassienholtz. Latin name: Simarouba Excelsa.

CHEMICAL CONSTITUENTS: Picrasmin (Quasiin) (An alkaloid giving a yellowish-blue fluorescence with acidified alcohol), resin, mucilage, pectin, tannin, tartrate and sulphate of calcium, calcium Chloride, sodium chloride, potassium chloride, -sodium sulphate, potassium sulphate, and potassium nitrate. Is there any wonder that this wonder Herb cures fevers and restores health to the sick? Here, in this one Herb, we have (1) resin, to protect the tissues from the attack of destructive substance; (2) mucilage, to soothe and heal them; (3) pectin, to digest; (4) tannin, to astringe; (5) tartaric acid, to provide living oxygen (6/15ths of it is oxygen), (6) calcium sulphate, to clean out heteroplasm and remove waste; (7) calcium chloride, to support and feed the heart; (8) sodium chloride in organic form, to distribute water and act as an ionizer to provide food for the cells; (9) potassium chloride, to keep fibrin in solution in the blood, and to dissolve the exudates of it; (10) sodium sulphate, to rid the system of waste and toxic water; (11) potassium sulphate, to supply oxygen to the skin and epithelium, and so maintain their healthy function. We repeat, is there any wonder that this Herb is such a great healer of the sick? Or that the Negro slave received such honor?

THERAPEUTIC PROPERTIES: Tonic, stomachache, antiseptic, febrifuge, parasiticide, vermicide, germicide, antispasmodic, hepatic, digestant, slightly narcotic, having only a small amount of tannic acid, may be mixed with iron preparations to increase the hemoglobin and generate new blood, etc., etc.

SPECIAL NOTE: Quassia is a very powerful remedy, and if taken to excess, is emetic, irritant and depressant, producing nausea, which in small doses, it speedily cures.

FORMULA No. 174 Decoction of Quassia Wood

2 heaping teaspoonfuls cut quassia

1(1/2) pints distilled water

Put the Herb in the water and let stand for 24 hours. Bring to a boil and simmer for 20 minutes. Strain and add

2 ozs. pure glycerine. Cool, bottle, and keep in a cool place.

DOSE: 1 tablespoonful to a wineglassful 2 or 3 times a day. For fevers, a wineglassful in hot water, while patient is closely covered, in bed.

DOSE FOR WORMS IN CHILDREN: 1 teaspoonful in honey water 2 or 3 times a day. A brisk laxative at night will effectually eliminate the worms.

This is a very precious and valuable remedy, and we wish you great success with it.

LESSON THIRTY-ONE

In our studies of those vital elements and compounds that enter into all the complicated processes of life on this earth, there is one great master element to which we should give a little more quiet consideration, in order to make it more clear as to just why and how certain important chemical changes take place, balancing the mistakes we make, and restoring chemical equilibrium. We have not overlooked it, but the time has arrived for us to know more about it.

Its Latin name is Chlorum, meaning green, and its common name is chlorine. It is in every drop of water in the vast oceans, and in every green leaf and blade of grass that covers the earth. It enters into every living cell, and digestion would be impossible without it. Yet, in spite of its universal activity throughout nature, not one single atom is found existing free, in either the mineral, vegetable or animal kingdom, naturally. When it is freed from combination with other elements, it becomes a destroyer of all life, unless it be in organic form. Then it is released for solvent or building purposes in just sufficient quantity and dilution to act safely without evil effects. We have used the Biochemic theory of medicine merely as an illustration of some of the known chemical changes that take place in the different organs and tissues of the body. Although it has imparted knowledge to us, we have not adopted it, for the following reasons: --- (1) It is very incomplete; (2) It does not recognize the evident difference between the living and the dead (organic and inorganic); (3) It evidently is totally ignorant of Iontophoresis; (4) We know of several other salts (so called) that have no part in its theories, but which are as vitally important to the life processes of the body as any of the twelve cell salts; (5) There is, in nature, an uncountable number of organic compounds which enter into the metabolic processes of the body, but which are totally ignored by the biochemists, and this is where the great master element - chlorine - comes in. There are only two chlorides mentioned in the biochemic system, namely, sodium chloride (called Natrium Muriaticum) and potassium chloride (called Kali Muriaticum). Both of them hold but one atom of chlorine (NaCl) and (KCl), but calcium is capable of holding two atoms of chlorine, the. Formula of calcium chloride being (CaCl-2) and 2 atoms of water (2 H-2,O). Here is something very wonderful to think about. Without sufficient calcium chloride, the blood becomes impoverished, thin, anemic, and will not coagulate in cases of extreme hemorrhage, and when phosphoric acid or the soluble phosphates are lacking, it will not coagulate at all, or in such an insignificant manner as to be positively dangerous, even in epistaxis. In passing through the lungs, in this impoverished condition, the oxygen will further decalcify it, and thin it, and that means death, simply through lack of calcium chloride and phosphates. Likewise, the heart

cannot be supported or sustained without calcium chloride and stops in systole. Enlarged glands, scrofulous swellings, skin diseases, lupus, uterine and ovarian tumors, fibroids, etc., all We have also shown you that an insufficiency of SODIUM CHLORIDE will check the process of osmosis, slow up chemical changes (by ionization) and upset the entire chemical balance of the blood and fluids, precipitating exudations of calcic and other matters, and creating a variety of so-called diseases. We trust that we have made it clear to you, dear student, that a little knowledge is a dangerous thing.

And now, we wish to bring to your attention a significant phenomenon which will prove how great is the virtue and effect of that master element, CHLORINE.

There is a powerful and remarkable Herb, commonly called Lily of the Valley. CHLOROPHYLL is the green coloring matter found in all green plants. From its very name, chloro (green), and phyll (to regenerate) we might guess that it contains the green element, CHLORINE, and we should not be wrong. CHLORINE and IRON are the principal ingredients of CHLOROPHYLL, although chemists may disagree as to its exact formula. IRON, the magnetic element, has the power to hold three atoms of chlorine in the compound called per-chloride of iron. There are three loosely held atoms of chlorine in chloroform (CH-Cl₃), and it is this well known anaesthetic we are going to use as an illustration of the immense vital power of CHLORINE to animate the speed of growth of plants.

The winter buds of the Lily of the Valley, placed in the vapor of chloroform, for a few hours, and then planted, reveal a most amazing phenomenon. They break into leaf and flower considerably before others planted at the same time, but which have not been thus treated. The resulting plants are exceptionally fine, the leaves being of a pure intense green, and the flowers a beautiful creamy white.

In Advanced Lesson #3, pg.4, I related my personal experience, when a boy, of the almost miraculous power of the Lily of the Valley leaves, which cured, my poisoned thumb in a few hours; and had it not been for them, I should be a one-armed, man today.

Returning to the "chloroformed lilies":--- This remarkable experiment is only one instance of many, showing where plants are being cultivated chemically with astonishing results, and revealing some of nature's most profound chemical secrets. Now, let us look into the life and nature of the

LILY OF THE VALLEY: Latin name, Convallaria Majalis.

NATURAL ORDER: Liliaceae.

PARTS USED: Flowers, leaves, rhizome.

SYNONYMS: May lily, Our Lady's Tears, Lily Constancy. Ladder to Heaven, Jacob's Ladder, Male Lily, Convall Lily.

HABITAT: It is probably a native of Europe, but is extensively distributed over North America and Northern Asia.

HISTORY: It is of very ancient use, and many interesting legends and traditions have been written about it; we will briefly give you one or two of them: It is thought by some that these humble lillies were the lillies referred, to by the great Teacher, Jesus, when speaking to his disciples, He said, "Consider the lillies of the field, etc.", but it is more probable that He was referring to the real field lillies (*Lilium Candidum*), also known as the Easter Lily, which we will discuss later. The Lily of the Valley grows in woods under trees, and is, strictly speaking, not a field lily. The name, Majales or Maialis, signifies that which belongs to the month of May. The old astrolological books place the plant under the dominion of Mercury, since Maia, the daughter of Atlas, was the mother of Mercury, or Hermes. Apulicus, in his Herbal, written in the fourth century, declares it was found by Apollo, and given by him to Aesculapius, the leech. A legend says. that the fragrance of the Lily of the Valley draws the nightingale from hedge to bush, and leads him to choose his mate in the recesses of the glade. There are other legends, but this is all we have room for

CHEMICAL CONSTITUENTS: Two glucosides are given: - Convallamarin, (called the active principle); it acts upon the heart like digitalin, and is also powerfully diuretic; Convallararin, which is only slightly soluble in water, and purgative; volatile oil, tannin, salts of iron, calcium, sodium, potassium and sulphur.

SPECIAL NOTE: It frequently happens that the chemical analysis of plants, as given in the text-books of science is vague, and often misleading. Nor are they always the same. One analysis will show one thing, and another will be quite different. Therefore, they are often confusing to those without clinical experience; particularly is this true of the Lily of the Valley. All that they see are the two glucosides. But we have taught you that POTASSIUM CHLORIDE and CALCIUM CHLORIDE are great remedies. Now, you shall learn that IRON CHLORIDE is equally important to life within the organism. Although all these are contained in this lowly lily, no one has yet even recognized their presence. However, it is evident that they are there.

The biochemists ignore Herbs, the homeopaths ignore their chemistry even though using some of it, and the allopaths are so busy with bugs and germs that everything else is without interest to them; so we must, perforce, find out for ourselves, and here we go:

THERAPEUTIC PROPERTIES: A most valuable cardiac tonic, acting like digitalis (but without its cumulative effect), slows action of the heart, and increases the tone of its contraction; powerfully diuretic, and one of our best

remedies for dropsy with faulty heart. It is antiscorbutic, antiseptic, anti-syphilitic, resolvent, discutient, laxative solvent of corns, hard growths, etc.

USES: For valvular heart disease, mitral stenosis, lack of cardiac muscular tone, and general debility of heart action; apoplexy (dissolves the blood clot); dropsy (drives out the water); poisoned wounds, ulcers, cancers (softens hard cancers); purulent ophthalmia, inflammatory skin disease and loss of memory. Loss of memory is like loss of motion or loss of sensitivity They are caused either by pressure of thick, clotted matter in the brain, or lack of brain food. The great master herbalist, Culpepper, says of Lily of the Valley, "It without doubt strengthens the brain, AND RENOVATES A WEAK MEMORY. The distilled water, dropped into the eyes, helps inflammation thereof. The spirit of the flowers, distilled in wine, RESTORETH LOST SPEECH, helps the palsy and is EXCEEDINGLY GOOD in Apoplexy. Comforteth the heart and vital spirits." Why shouldn't it? When we consider that it contains POTASSIUM CHLORIDE, the great solvent of fibrinous and catarrhal matter; CALCIUM CHLORIDE, the great heart remedy; IRON CHLORIDE, which has cleared up all kinds of growths, varicose ulcers and veins, tumors, lupoid ulcers, cancers, ulcerated gums, gangrene, and has effectually stopped alarming hemorrhage, etc; POTASSIUM SULPHATE, the carrier of oxygen and sulphur to the skin and epithelial cells, renewing their vitality; SODIUM SULPHATE, which carries excess water out of the blood and tissues; and CHLOROPHYLL, the great stabilizer and healer.

FORMULA No. 175. Decoction of Lily of the Valley Root.

2 ozs. Lily of the Valley Root (cut)

1 quart distilled water

Put the root into the water and let stand for 6 hours.

Boil slowly for 1 hour, while closely covered. Strain, and add 2 ounces pure glycerine. Cool, bottle and keep in a cool place.

DOSE: 1 dessertspoonful to a tablespoonful 3 times a day. If it is desired to keep this preparation for any length of time, add 6 ozs. 90 proof alcohol or good brandy to each pint.

For outward application to varicose ulcers, skin affections, burns, sprains, etc., the following formula will be found much more effective:

FORMULA No. 176 Elixir of Lily of the Valley Leaves

8 ozs. dried Lily leaves

3 pints distilled water

¼ oz. Potassium chloride

Heat the water and dissolve the potassium chloride in it; add the leaves, let stand, covered, for 12 hours. Bring to a boil and simmer slowly while closely covered/for 20 minutes. Strain and return liquor to saucepan. Reduce to 1 pint, then add 4 ozs. of glycerine. Heat to boiling point and again strain. Cool, bottle and keep in a cool place.

DOSE: INTERNALLY - 1 teaspoonful in water 2 or 3 times a day.

FOR OUTWARD APPLICATION - Saturate cotton or lint, and apply to the affected parts, changing as it becomes dry. The better way to keep it moist is, to place waxed paper over the application and then something warm over that. In conditions where there is a quantity of pus, this will draw it out quickly, and in such cases, it will be necessary to thoroughly cleanse the part between applications.

There is another lily which is closely related to the above, and which has amazing virtues. It is universally known as –

THE GREAT WHITE FIELD LILY: Latin name, *Lilium Candidum*.

NATURAL ORDER: Liliaceae.

PARTS USED: The bulb.

SYNONYMS: Madonna Lily, White Lily, Easter Lily.

HABITAT: Mediterranean countries, Palestine, around the lake of Gennesaret on the plains of Galilee; also cultivated in gardens in Europe, Asia and America.

This is a vastly different plant from the lowly Lily of the Valley. It produces stiff erect stems from 3 to 5 or 6 feet high, clothed with lance-shaped leaves. The flowers appear in June, flowering on into July. They have a very sweet penetrating fragrance, so strong as to be annoying to some people. The honey is secreted in long grooves at the base of the long floral leaves. There are several varieties, some having black stems. It is a strong and vigorous plant, being so hardy that even frost does not affect it. This lily is a great lover of lime or calcium, and if it is planted in soil which is low in lime content, it will not thrive, but will wilt and die. It is also very susceptible to disease when grown in a badly drained soil.

This beautiful white lily was a popular favorite with the ancient Greeks and Romans. In the early days of Christianity, it was dedicated by the church to the Madonna (hence its popular name), probably because its delicate whiteness symbolizes purity. It is employed on July 2nd, in connection with the celebration of the Visitation of the Blessed Virgin. No chemical analysis has yet been published in any text-books, for the reason that it is never used by physicians of

the regular schools. The bulb contains a large amount of remarkable mucilage. The fresh bulb has an acrid principle, which upon drying, entirely disappears.

CHEMICAL CONSTITUENTS: Mucilage (abundance), calcium sulphate, iron chloride, potassium chloride, potassium sulphate, sodium and magnesium salts.

THERAPEUTIC PROPERTIES: Demulcent, astringent, resolvent, vulnerary. The bulbs made into an ointment remove corns and hard growths, takes away the pain and inflammation resulting from burns and scalds, frequently healing them without leaving a scar. It is also effective in the treatment of contracted tendons.

The great Gerald tells us, "The root of the Garden Lily stamped with honey, gleweth together sinews that be cut asunder, it bringeth the hairs again upon the places that have been burned or scalded, if it be mingled with oil or grease. The root of the white lily, stamped and strained with wine and given drink for two or three days together, expelleth the poison of the pestilence."

FORMULA No. 177. Infusion of Garden Lily Bulb (Easter Lily)

2 ounces lily bulb (cut fine)

1 ½ pints distilled water

Boil the water and pour over the bulb. Cover and allow to steep in a hot place for 30 minutes. Strain and sweeten with honey to taste.

DOSE: From 1 tablespoonful to a small wineglassful 3 or 4 times a day between meals. Children, less according to age.

This is an excellent remedy for inflammation of the stomach, intestines, kidneys and bladder; also for local application to swollen glands, tumors, hard lumps, etc.

The way to make the ointment is as follows:

FORMULA No. 178. Ointment of Lily Root (Bulb)

2 ozs. finely cut lily root (bulb)

1 pint pure sweet almond oil

Combine and set in a hot place to steep for 24 hours. Strain while hot. Heat together 4 ozs. beeswax, stirring until thoroughly mixed. Pour into hot, dry jars and allow to cool. This is one of the quickest healing salves ever made; especially for burns and scalds.

There is one other lily of [?] importance to which we must give some consideration. This one, however, does not belong to the same family. Unlike the

Madonna Lily, it likes moisture; in fact, it is an aquatic plant whose natural habitat is water.

WHITE POND LILY: Latin name, *Nymphaea Odorata*.

NATURAL ORDER: Nymphaeacea.

PARTS USED: The fresh root.

SYNONYMS: Sweet water lily, water nymph, large white water lily, sweet-scented lily.

HABITAT: Sluggish streams, ponds and marshes in most parts of the United States. Every one has seen this beautiful plant growing on the surface of the water, so no description should be necessary.

CHEMICAL CONSTITUENTS: The roots contain tannin, gallic acid, mucilage, gum, starch, resin, sugar, ammonia, tartaric acid and sulphates.

THERAPEUTIC PROPERTIES: Astringent, demulcent, anodyne, anti-scrofulous, vulnerary.

USES: Dysentery, gonorrhea, diarrhea, leucorrhoea. The leaves and roots are very effective for boils, tumors, scrofulous ulcers, ulcers in the mouth and throat, inflamed skin and mucus membrane. Cancer of the uterus has been completely cleared up by drinking the decoction and using a vaginal injection. A poultice of the leaves and roots applied to boils and ulcers gives prompt relief from pain and inflammation. It draws out pus, cleaning up sloughing ulcers in a marvelous way. We highly recommend It in all cases of ulceration, inside and outside, be it called abscess, tumor, infection or cancer. It will give prompt relief, drive out or draw out the poisonous scrofulous or syphilitic matter, and bring about a healing that will amaze all who use it.

FORMULA No. 178

2 ozs. finely cut lily root (bulb)

1 pint pure sweet almond oil

Put them together, in a hot place, and let steep for 24 hours. Strain while hot. Add 4 ozs. beeswax. Heat together and stir until thoroughly mixed. Pour into hot, dry jars and allow to cool slowly. This is one of the quickest healing salves or ointments ever made. It is especially recommended for burns and scalds.

There is one other lily we must give some consideration to before leaving the lillies. This one, however, does not belong to the same family. Unlike the

Madonna lily, it likes moisture; in fact, it is an aquatic plant whose natural habitat is water.

WHITE POND LILY: Latin name, *Nymphaea Odorata*.

NATURAL ORDER: Nymphaeacea.

PARTS USED: The fresh root.

SYNONYMS: Sweet water lily, water nymph, large white water lily, sweet-scented lily.

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THERAPEUTIC PROPERTIES: Astringent demulcent, anodyne, antiscrofulous, vulnerary.

USES: Dysentery, gonorrhea, diarrhea, leucorrhoea. The leaves and roots are very effective for boils, tumors, scrofulous ulcers, ulcers in the mouth and throat, inflamed skin and mucus membrane. Cancer of the uterus has been completely cured by drinking the decoction and using a vaginal injection. A poultice of leaves and roots gives prompt relief from pain and inflammation in the case of boils, abscesses, etc., drawing out pus and cleaning up sloughing ulcers in a marvelous manner. We highly recommend it in all cases of ulceration, inside or outside, be it called abscess, tumor, infection or cancer. It will give prompt relief, drive out or draw out the poisonous scrofulous or syphilitic matter, and bring about a healing that will be the wonder of all who use it.

The DOSE of the powdered root is 1/2 teaspoonful in milk or honey water, but the best form in which to take it is the following:

FORMULA No. 179 Infusion of water lily root

1 oz. water lily root (cut)

1¼ pints distilled water

Boil the water and pour over the root; cover and keep in a hot place for 30 minutes. Stir occasionally. Strain and add honey or brown sugar to taste.

DOSE: 2 to 4 tablespoonfuls 3 or 4 times between meals. Children, less according to age.

To make the poultices, the fresh roots and leaves are thoroughly washed and cleaned. Then they are put through a mincer, heated in the oven, on a plate or dish, placed on some gauze and applied, changing them as often as necessary. Injections are made with the infusion without the honey. They are given as frequently as the case requires. It is often advisable to sprinkle a few drops of eucalyptol or eucalyptus oil on poultices for drawing purposes.

There is not space enough left in this lesson to treat effectively of another Herb; so let us recapitulate and, briefly, compare the three lillies, in order to get a clearer comparative picture of them. Each is unquestionably a master Herb. On the surface, all three seem to be of quite similar therapeutic value, but further analysis will show that they are not of equal value in many respects. The great white field lily is not a heart tonic, nor is the water lily. The little lily of the valley is not only a heart tonic, but one of the greatest heart tonics in all nature for mitral disease. Again, while all three of them are diuretics, there is a vast difference. Water lily is comparatively weak as a diuretic. The white field lily has only moderate diuretic action, while lily of the valley is the most powerful of all diuretics (dose for dose) in all nature. On the other hand, for cancerous growths, the water lily is by far the most effective (depending of course upon the specific nature of the cancer). Again, there is a laxative or purgative principle in lily of the valley, which is not in either of the others. For lowering high blood pressure, thinning out thick blood, and clearing the brain of obstructions (cacoplastic matter), once more the little lily of the valley is far ahead of any other remedy known to man. There is no doubt that many cases of amnesia, mental aberration, slow response to sensations, or reactions to stimulus, possibly some forms of so-called simple-mindedness, and even some forms of insanity, are caused by obstructive and useless matter in the brain, and in these, there is no remedy that can compare with Lily of the Valley for the purpose of removing them. So, without dragging out the subject, shall we say that the little Lily of the Valley is the greatest lily for universal use?

The field lily is perhaps best for dry, hard conditions, and the water lily for removing moist and putrid growths.

A further study will tell you more.

LESSON THIRTY-TWO

You will, doubtless, remember that in our last lesson, three great remedies were treated of in full and, if you studied that lesson, you learned something of more value to the true physician in this day of rampant cancer, heart disease, high blood pressure, Bright's disease, dropsy, syphilis, and broken down constitutions, than all the information that can be obtained from all the pharmacopoeias in the world today. It is a matter of common knowledge that practically all of our great botanical remedies have been discovered by natives of the different countries in which they grow. We cited an instance of such discoveries in the case of the Surinam native slave, Quassi, who discovered the wonderful virtues of Quassia, the great fever remedy, heart tonic and vermicide. Many of the greatest medical discoveries have passed into the hands of doctors and have been ultimately discarded for some other much lauded discovery, such as mercury, arsenic, etc., and so have been lost to the world (in some cases, hundreds of years). This is the crime of crimes. To take away from the suffering sick, and let them die or be killed with poisonous drugs, is unquestionably a most dastardly crime. So, a great responsibility is placed on your shoulders, when you are given these more recent discoveries or re-discoveries. You, who are tied down and handicapped by unconstitutional laws, from rendering aid to the sick millions of your own people, including your kith and kin, are now being made the custodians of nature's greatest remedies and are, thereby, being given an opportunity of using them intelligently, to pile up proof that you, yourselves, are the true and only physicians worthy of the name. As the pioneers of a new age in the real healing art divine, we urge you to keep your council. Do not talk. "Let not your right hand know what your left hand doeth." Go ahead, like the brave, fighting, old pioneers that won this wonderful free country. Use these master formulas without revealing them. The day is coming very soon when you will be called upon to enter the ranks against your enemies. Prepare yourselves with the testimony of cured and thankful patients. Do not fall to get those testimonies, to know when and where to put your hand forth and bring them in, as witnesses of your ability and true medical knowledge. If this is faithfully carried out, and you combine as one unit, awaiting the hour of attack, then we give our assurance that we will come to your aid and fight for you in the courts of justice and, in spite of thimble rigging, we shall be able to confuse our enemies, bring an army of American citizens to our aid, and win the case before any judge or jury in America.

Do not forget the "Great Medical Goliath" in England has been slain by the "little David of United Herbalists" in that land. The arbitrary laws have been rescinded. The herbalists are free to practice herbalism. They are today

recognized by the common people (the real power) and they are now rapidly reducing disease in England to a minimum, and daily and hourly becoming more popular as nationally recognized physicians.

Are you Americans less than Englishmen in intelligence and initiative? Are you going to spend the next five years of your lives squabbling and fighting among yourselves? We, the pioneers of this movement, are trusting you to learn how, and make good for, if you fail, you will be crushed under an avalanche of American men and women who will make good and trample you under foot. The public will lose all faith in you as cowards and incompetents. These are harsh words of warning, intended to arouse you to active accomplishment. Those who can take it and benefit by it will be great leaders in this new era of healing; those who cannot, will be left in the rut, trampled under foot by the march of scientific progress. We are trusting you, with the secrets of nature's great healing remedies and their mode of application. We are offering you power, success, and a place in the sun. See to it that you fail not in your stewardship.

Before we finish teaching the Advanced Course, and leave you to your own initiative - to paddle your own canoe - we feel intensely that we should do our uttermost to arouse you from your apathy and make you strong men, fearless and dauntless, to go forward with the weapons we are giving you to fight for your rights, as free born Americans. Therefore, we cite you the living facts:---That while white men are cringing, the naturalized Chinamen are actually practicing herbalism, openly advertising their treatments in big letters and neon signs, and are becoming rich and famous by their cures. Why? Because they have studied the constitutional laws of this country and are united as one man to fight for those constitutional rights. The doctors know this, and know it would be disastrous to them to expose the fact to the American public. If they, the doctors, should lose their case (which they most certainly would), it would ruin their reputation, bring to light their illegal malpractices, and create an upheaval of public opinion that would revolutionize the whole subject of the practice of medicine. The Englishman has beaten you. The Chinaman is beating you and, if you are not, you should be, ashamed to stand cringing and trembling with fear of arrest and imagined dire disaster while you, if you are equipped with knowledge and proof of your ability, will have the very same constitutional rights as the Chinaman, and the myriad other intelligent makers and sellers of patent medicines, who make millions, while you stand quivering and shaking in your shoes.

We are offering you an education that will fit you to fight for the sick and dying millions and, incidentally, make fighters and law makers for America. If you fall, we, who are stronger and more earnest in our endeavors, shall go forward. We are trusting you, only until you fail. God speed !

Now, we come to a more intense study of master Herb remedies, to meet and defeat the great scourge of cancer and syphilis. Do not overlook or neglect the deep study and use of the lillies in Lesson #32.

A most important and very much neglected Herb is named by South American natives of Equador. Condurangu (commonly called Condurango). In the language of the Incas, there is no final "o", so it is commonly misspelled. This marvelous Herb is another instance of a great discovery made by natives, passed on to doctors, who made a great fuss about it for a few years, and then discovered its virtues were killing their business, so, at first, condemned it as useless, then discarded it entirely. There is a very extraordinary and fascinating history connected with this Herb, which actually reveals more of its real virtues than anything else said or written about it. This wonderful plant was known and used by the ancient Incas, but its virtues were kept rigidly secret by them. It is presumed by modern scientific investigation of archeology and prehistoric races, to have been used by the Incas to prolong life, but was designated by them to be very poisonous, in order to keep other nations from learning their secret lore. This plant is a native of the Andes Mountains in South America, especially in the southern portion of Equador, and found most plentifully in the mountains surrounding the city of Loja. It is principally found on the western exposure of the Andes, at an elevation of 4,000 to 5,000 feet. The Indians of the locality believed it to be very poisonous. Its discovery was apparently accidental. An Indian woman, whose husband was suffering from a very painful cancer, persuaded him to drink bowlfuls of the decoction, in the hope and belief it would prove fatal and put him out of his misery. To her amazement, her husband began to improve. His cancer gradually grew smaller and, at last, disappeared entirely. It was considered a miracle by the natives and soon came to the ears of Dr. Equiqueu, brother of the governor of the Province of Loja, both of whom are said to have cured many cases of syphilis and cancerous ulcers by the use of it.

The subject was brought to the notice of this government by our Minister at Quito. The Department of State, at once realizing the value of the discovery and the intense interest with which our people would seek information concerning it, published a circular setting forth the great value of the discovery, as a remedy for cancer and syphilis. This action of the government at once inspired the confidence to which the plant was entitled. It was, for a long time, used with success by progressive physicians but, like nearly every other good thing that passed through their hands, it was ultimately declared useless and discarded. Its discoverers and early users claim that a short time after commencing its use, in cases of cancer, the typical symptoms subside, the pain is diminished, the discharge thickens and becomes less offensive, the tumor becomes softer and deposits lessen, the expression improves, and a cure is speedily effected. They also report it has diuretic and tonic powers, and cures many nervous affections.

CONDURANGO: Latin name, Gonolobus Condurango.

NATURAL ORDER: Asclepiadaceae.

PARTS USED: Bark.

SYNONYMS: Condor vine, Marsdenia Condurango.

HABITAT: Equador.

CHEMICAL CONSTITUENTS: Tannin, a glucoside, an alkaloid (resembling strychnine in its action), resins, starch, gum and 12 per cent ash, composed of calcium chloride, calcium sulphate, potassium sulphate, potassium phosphate, magnesium and sodium salts.

NOTE: What seems to be overlooked in this most virtuous Herb is the fact that Herbs that grow at an altitude of 4,000 to 5,000 feet above sea level are fed with unadulterated pure sunshine, the purest of water, and the purest of oxygen uncontaminated with refuse gases and putrefying matters of so-called civilization. There being little or no carbon monoxide or dioxide, they are abundantly supplied with pure oxygen, nitrogen, sulphur, or whatever is their nature to take from the soil. To us, it is quite clear why this Herb or vine is a true cancer remedy. Were it not for the fact that before it is put to use, the sufferer has usually been pumped full of drugs, such as potassium iodide, bromide chlorate, and many other drugs; so, while Condurango would, doubtless, cure the cancer, it is not reasonable that it can also deal with the deadly drugs. That is the reason the governor of Loja and his brother were able to cure so many cases of syphilis and cancer. Those deadly drugs were not known in that part of the world. Therefore, it behooves you to learn all you can about cancer remedies, and combine them to suit the case. There are a thousand different forms of cancer, and each one is marked by some drug treatment. Find out for yourself what drug or drugs have been used. Concentrate on counteracting and eliminating them first; then apply yourself to curing the cancer. Don't say it is hopeless. It is being done every day. Learn your cancer remedies, select them carefully, blend them intelligently, and the victory will be yours. Remember, it may be your wife, father, mother or friend who needs your help. Fear nothing. The whole earth is covered with cancer remedies, but the selected few we give you are all sufficient for the purpose.

THERAPEUTIC PROPERTIES AND USES: Alterative, diuretic, tonic, antiseptic, heart stimulant, anti-syphilitic, anti-cancerous, and nervine.

Condurango contains an abundance of nascent oxygen, which we know is the greatest antiseptic in the world, and is therefore, indicated in shortness of breath, dyspnoea, dyspepsia, dyscratic conditions, pus-forming diseases, and in failure of the heart, lungs and kidneys to perform their proper functions.

FORMULA No. 180 Decoction of Condurango

1 oz. Condurango Bark (cut)

1½ pints distilled water

Boil slowly for 20 minutes, while closely covered. Strain, bottle and keep in a cool place.

DOSE: 1 to 4 tablespoonfuls 3 times a day Not suitable for children. Overdoses are poisonous, producing vertigo, convulsions, paralysis.

In a previous lesson, we dealt with the Great Celandine Herb, as one of our cancer remedies, but a dangerous one to use without a perfect knowledge of it. Now, we study the Lesser Celandine, as it is called, though, as a matter of fact, it has neither relationship nor any similarity to the Great Celandine, except in the color of its flowers. It must be classed with the cancer remedies, for the good reason that it cures certain forms of cancer, and is much safer to use than the greater plant of that name.

CELANDINE (Lesser): Latin name, Ranunculous Ficaria

NATURAL ORDER: Ranunculaceae

PART USED: Herb

SYNONYMS: Small celandine, figwort, smallwort, pilewort, cancerwort, etc.

HABITAT: The Lesser Celandine is one of the very earliest of spring flowers, its cheery, star-like blossoms showing their golden heads even before winter is spent. It is distributed throughout Europe, Western Asia, and North Africa. It grows in moist corners of fields and places near watersides, but is to be found also on drier ground, if shady. Beneath the shade of trees in some parts, its glossy foliage frequently forms a dense carpet. The blossoms burst into bloom about the middle of February, a few days after the bright shining leaves. The blossoms close up before rain and, even in fine weather, do not open before nine o'clock and, by five p. m., have already closed for the night.

CHEMICAL CONSTITUENTS: Nothing is known very definitely about the constituents of this plant. Its astringent action does not depend upon tannin, but it has the power to reduce large hemorrhoidal and tumorous growths and, for that reason, has recently been reintroduced into the British Pharmacopoeia, and is considered almost a specific for piles. Not so in America, which is but another instance of how American medical science is far behind other progressive scientists (medical), in other parts of the world. In fact, the A.M.A. is commonly referred to as the School of Old Women.

FORMULA No. 181 Infusion of Pilewort

1 oz. Pilewort Herb (Lesser Celandine) (cut)

1¼ pints distilled water

Boil the water and pour over Herb. Cover and let steep in a hot place for 20 minutes. Strain and add 1 oz. glycerine. Cool and bottle.

DOSE: 1 wineglassful 3 or 4 times a day. Not suitable for children.

Outwardly, for hemorrhoids and tumorous growths: Saturate cotton and apply, renewing application as it dries.

For internal hemorrhoids: Use in enema after stool, retaining as long as possible. Repeat as often as the case requires. A mild, non-irritating laxative should be given at night. The diet should consist of easily digested and non-constipating foods, such as vegetables and fruits.

This marvelous little Herb is also most effective as an outward application to hard growths, wens, etc.

Early in these lessons, we told you the story (well known in most parts of the civilized world) about the exhibition fights staged in India between the small animal known as the mongoose and the large venomous snakes, such as the cobra, the Ophidia, and several other of the world's largest and most venomous reptiles known. We cited the amazing fact that sometimes the mongoose is stung by the snake, but no case of a mongoose dying of the venom has ever yet been recorded, although people, and other animals all die within ten minutes of being stung by the same kind of snakes. Observers of these fights have always noted that the instant the mongoose is stung, he leaves the fight, dashes into the jungle and, shortly after, returns to kill the snake. We promised to give you the name of the marvelous Herb that neutralized the poison so quickly and saved the life of the mongoose. Well, here it is. It is called Plantain, Ispaghul; Latin name, *Plantago Ovata*. This plant belongs to the Natural Order, Plantaginaceae, which contains more than two hundred species, of which twenty-five or thirty have been reported as in domestic use. Fortunately for us, we have one of these plantains growing right here in America, and we know it to be just as virtuous as the Indian Herb.

PLANTAIN (Common): Latin name, *Plantago Major*

NATURAL ORDER: Plantaginaceae.

PARTS USED: Root, leaves, flower spikes.

SYNONYMS: Broad-leaved plantain, ripple grass, waybread, snakeweed, white man's foot, Englishman's foot, cuckoo's bread.

Traditions are many concerning this Herb. Pliny states it will cure the madness of dogs. Erasmus, in his *Colloquia*, tells a story of a toad that was bitten by a spider, but was straightway freed from any poisonous effects he may have dreaded, by the prompt eating of a plantain leaf. Another old Herbal says, "If a woodhound (mad dog) rend a man, take this wort, rub it fine, and lay it on; then will the spot soon be whole." In the United States, this plant is called "snake weed" from the belief in its efficacy in cases of bites of venomous creatures. It is related that a dog was one day stung by a rattlesnake. A preparation of the Lesson juice of plantain and salt was applied as promptly as possible to the wound. The dog was in great agony, but quickly recovered and shook off all trace of its misadventure. Dr. Robinson (*New Family Herbal*) tells us that an Indian received

a great reward from the Assembly of South Carolina, for his discovery that this plantain was the chief remedy for the cure of the bite of a rattlesnake.

The broad-leaved plantain seems to have followed the migrations of our colonies to every part of the world. In both America and New Zealand, it has been called by the Aborigines, the "Englishman's Foot" (or white man's foot) for wherever the English have taken possession of the soil, the plantain springs up. Our Saxon ancestors esteemed it highly and, in the Old Lacnunga, it is mentioned as one of the nine sacred Herbs. This is notable as being one of the oldest and most ancient source of Anglo-Saxon medicine. Longfellow refers to this wonderful Herb in his famous, "Hiawatha." In one of the earliest of these lessons, we referred to its curing a woman whose hand and arm were badly swollen from the sting of a bee. With such varied and numerous testimony coming from ancient to modern times, it is hardly possible to doubt its virtues. The following will cover its application:

FORMULA No. 182 Infusion of Plantain

1 oz. Plantain leaves (cut)

1¼ pints distilled water

Boil the water, pour over Herbs. Cover and let steep in a hot place for 20 minutes. Strain; add 2 ozs. glycerine. Cool and bottle.

Dose 1 wineglassful 3 or 4 times a day. Children less, according to age.

Locally, for malignant ulcers, especially of the bleeding type, apply on well saturated cotton or thick lint, and cover, changing as often as necessary.

This formula is refrigerant, diuretic, deobstruent, antiseptic, astringent, vulnerary.

We feel we have given you some keys to the treatment of malignant ulcers and cancers. Study deeply, and use them fearlessly.

GLOSSARY

- Albuminuria (albumen in urine) - Pinguica, tepopote.
- Aphrodisiac (exciting sexual appetite) - Aguacate, damiana.
- Anaesthetic - Hoja santa, lloira sangre, palillo, tabaquillo.
- Anodyne (relieving pain) - Cicutilla, codo de fraile, hoja santa, tatalencho, tepozan.
- Antihelminthic (cure for tape or intestinal worms and other intestinal parasites) - Aguacate, ajo, altamisa, amate, axocopaque, calabaza, cempazuchil, coco, epazote, epazote del zorillo, estafiate, guayaba, lloira sangre, macallo, marrubio, ojo de venado, papaya, pina, yerbabuena.
- Asthma - Chilpanxochitl, hoja santa, jazmin amarillo, marrubio, tepopote, toloache, tomate de culebra.
- Astringents - Crameria, encino, guamuchil, guayaba, nanche, nuez, sangre de drago, suelda consuelda, tepeacuilotl.
- Biliousness - Castilleja, marrubio, manzanilla, diente de leon, doradilla, manzanilla, simonillo, cuasia.
- Blenorrhoea - Acocote, balsamo, cana de jabali, elemuy, melon, nogal, piru, tlalayote, xcanchac-che, yerba del sapo, cabellitos de elote, pinguica.
- Blood purifier (depurative; removes noxious substances) - Guayacan, Raiz de cocolmea, nanche, rasca la vieja, tepopote, zarzaparrilla.
- Bronchitis - Anacahuite, borraja, eucalipto, sinicuiche, yerba dulce.
- Bruises, contusions - Arnica, lanten, yerba del cancer, zabila.
- Burns or scalds - Achiote, lanten, siempreviva.
- Carminative (to expel gas from stomach and intestines) - Anis, costomate, culantro, hinojo, te limon, yerhabuena.
- Catarrh (head cold) - Anacahuite, bojon, marrubio, salvia de bolita, yerba del carbonero, poleo, chapuz, ponchilhuitz.

- Caustic, burning - Ajo, panete, ponchilhuits, chechen.
- Chest - Anacahuite, bojon, calaguala, cuautecomate, culantrillo, gordolobo, monacillo, sinicuicho, yerba dulce.
- Colds - Cebolla, eucalipto.
- Colic (spasm in abdomen due to colonic obstruction) - Cempasuchil, hinojo, manzanilla, mil en rama, pericon, yerbabuena, guaco.
- Cough - Anacahuite, marrubio, sauco, tabachin, tejocote, tilia.
- Cuts and wounds - Calancapatle, guayaba, lanten, llorasangre, mangle, matarique, mispatle, pata de leon, raiz del manso, rosa de Castilla, sinicuicho, tatalencho, tepozan, yerba del cancer, yerba mora; see also sores.
- Diabetes - Cuajilote, damiana, eucalipto, matarique, tronadora.
- Diaphoretics (increase perspiration) - See sweat, inducing of.
- Diarrhea - Albahacar, canagria, costumate, crameria, cuauchichic, cuautecomate, chaparro amargoso, grangel, guayaba, monacillo, tabaquillo, tatalencho, tlalchichinole, zacatechichi, suelda con suelda.
- Digestion (difficult) - Prodigiosa, romero, tabaquillo grande, te del indio, te ranchero, castilleja, yolochichi.
- Diuretics (Increase or facilitate urination) - Ajo, axocopaque, cabellitos de elote, carricillo, cebolla, chicozapote, doradilla, grama, marrubio, pareira brava, pinguica, raiz de cocolmeca, sauco, tejocote, tepozan, tlatlancuava, yerba del sapo.
- Dropsy - Cebolla, cuajilote, limon, llorasangre, palo del muerto, raiz de cocolmeca, tepozan.
- Dysentery - Algodon, capulin, chaparro amargoso, ipecacuana, lanten, mezquite, monacillo, muicle, nanche, xkantumbub.
- Dysmenorrhea (Difficult or painful menstruation) - Balsamo.
- Dyspepsia-Castilleja, cuasia, diente de leon, doradilla, manzanilla, papaya, pexto, prodigiosa, tabaquillo, vara de.zorra.
- Ear - Albahacar, cuajilote, palillo.
- Emetics (induce vomiting) - Chilpanxochitl, espinosilla, melon, ponchilhuits, sinicuiche, violeta.
- Epilepsy - Anil, tumbavaqueros, yerba de la puebla, yoloxochitl.

Expectorants (Induce excretion of mucus from throat and bronchus) - Chilpanxochitl, marrubio, sauco.

Eye - Chicalote, jazmin amarillo, mezquite, yerba de la golondrina.

Febrifuge (for relief of fever) - Ajo, altamisa, borraja, contrayerba blanca, copalchi, chaparro amargoso, escobilla, icaban, macallo, marrubio, prodigiosa, sinicuiche, tlacoxiloxochil, tlatlancuaya, verbana, zacatechichi.

Fever, intermittent - See malaria.

Fevers - See febrifuge.

Flu, influenza, colds, grippe - Cebolla, eucalipto.

Galactopoietic (increase flow of milk in mammary glands) - Algodon, anis, capomo, flor de nochebuena.

Gall Stones (or kidney stones) - Cabellitos de elote cana de jabali, elemuy, tianquispetla.

Goiter - Platano.

Gonorrhea - See Blenorrea.

Grippe, colds, influenza - Cebolla, eucalipto.

Hair - Cantueso, caobo, cintul, cuautecomate, espinosilla, mamey, mulce, romero, sangre de drago.

Heart - Mamey, peyote, yoloxochitl.

Hemorrhage - Algodon, sinicuiche, tepozan, yerba del pollo, zoapatle.

Hemostatic (arresting hemorrhage) - See hemorrhage.

Hypnotics (producing sleep) - See opiates.

Inappetence (lack of appetite or desire) - Azafran del campo, cuasia, culantrillo, diente de leon, nanche, simonillo, sinicuiche, tronadora, yerba del angel.

Indigestion (impaction of food or feces in intestines) - Anil. See also stomach.

Influenza, grippe, colds - Cebolla, eucalipto.

Intestines - Anil, cedron, pericon, raiz de guaco, simonillo, te limon, xkantumbub, yerbabuena.

Jaundice (illness caused by bilious discharge into blood stream) - Arbol de la cera, castilleja, pareira brava, simonillo, tecomasuchil.

Kidney stones (or gall stones) - Cabellitos de elote cana de jabali, elemuy, tianquispepetla.

Laryngitis - Eucalipto, hoja santa, yerba dulce.

Laxatives (purgatives) - Canafistula, diente de leon, rosa de Castilla, tamarindo.

Leprosy - Achioté?, copaljocote, guazuma?, haba de San Antonio, mangle.

Leucorrhea - Nuez, pinguica, tlalchichinole.

Liver - Cuautecomate, diente de leon, doradilla, elemuy, grama, limon, llorasangre, marrubio, pareira brava, simonillo, tepozan, yerba del angel, yeba del zorrillo, garanona.

Malaria, paludism, marsh fever (see fever, intermittent) - Ajo?, guazuma?, haba de San Antonio, jazmin amarillo, maiz de Texas, heliotropo, copalchi, quina.

Mange or ringworm - Jicama, yerba de la golondrina. See also skin.

Menopause (amenorrhea) - Balsamo.

Menstruation, difficult or painful (dysmenorrhea) - Balsamo.

Menstruation, provoking of (emmanagogues) - Ahuehuete, algodón, cedron, cempoalxochitl, culantrillo, epazote, oregano, raiz de sauco, ruda, Santa Maria, tabachin, yerba dulce.

Milk - See Galactopoietic.

Nerves - Damiana, habin, jazmin, amarillo, marihuana, mil en rama, naranjo agrio, peyote, tilia, tlacopaque, toloache, tumbavaqueros, valeriana, zapote blanco, zumaque.

Neuralgia (acute pain following course of nerve branch) - Aguacate, castilleja, chilcuan, jazmin amarillo, matarique, palillo.

Obesity (see reducing and overweight) - Marrubio, encina de mar, raiz de cocolmea.

Opiates (tending to cause sleep) - Amapola amarilia, chicalote, madrono borracho, marihuana, zapote blanco.

Overweight (see obesity and reducing) - Marrubio, encina de mar, raiz de cocolmea.

Pain, mitigating of - Amapola amarilla, capulin, chicalote, toloache, yerba de la golondrina, yerba mora, zapote blanco, tilia, valeriana.

Paralysis - Palo del muerto?, panete, yoloxochitl.

Pharyngitis (inflammation of Pharynx (throat)) - Alfilerillo, algodon, mercadela, palo amarillo.

Purgatives (laxatives) - Anil, begonia balmisiana, chichicamole, chupire, espinosilla, llorasangre, pipitzahuac, piru, ponchilhuits, raiz de jalapa, tabachin, tumbavaqueros, yerba del zorrillo.

Reduce (the body weight), slenderize (see obesity and overweight) - Marrubio, encina de mar, raiz de cocolmea.

Rheumatism - Axocopaque, cicutilla, chilillo, gobernadora, limon, matarique, pareira brava, pexto, raiz de guaco, tatalencho, telcox, tepozan, tripa de vaca, zapote blanco.

Ringworm or mange - Jicama, yerba de la golondrina. See also skin.

Scrofula (lymph gland tumors) - Nogal.

Scurvy - Lentejilla, nanche, palo picante, siempreviva.

Sexual appetite, exciting of (aphrodisiac) - Aguacate, damiana.

Sexual impotence - Damiana.

Skin diseases - Ahuehuete, barbas de chivo, belzinic-che, bolontibi, chilillo, elemuy, guazuma, jicama, llorasangre, pata de leon, tabachin, tlalchichinole, yerba de la golondrina, zabila, zarzaparrilla, zumaque.

Slenderize or reduce the body weight - Marrubio, encina de mar, raiz de cocolmea.

Snakes, poisonous - Guaco, maguey de culebra, semilla de culebra.

Sneezing, inducing of (sternutatory) - Chapuz, chilcuan, ponchilhuits.

Sores, scabs, ulcers - Balsamo, bolontibi, calzadilla, cuachalalate, guaco, jiotillo, mangle, nogal, ponchilhuits, tlalchichinole, yerba de la golondrina. See also wounds.

Spasms or fits (muscular contraction together with nervous involvement), (antispasmodic) - Anil, dapulin, cedron, jazmin amarillo, manzanilla, marihuana, naranjo, payche, raiz de guaco, Santamaria, te limon, tilia, tlacopatle, toloache, tcoronjil, tumbavaqueros, valeriana, yerbabuena, yoloxochitl.

Spermatorrhea (involuntary excretion of semen without copulation) - Damiana.

Sterility - Damiana.

Stimulants - Ajo, altamisa, contrayerba blanca, culantro, chilcuan, hinojo, hoja santa, oregano, palo mulato, poleo, raiz de guaco, romero, sauco, te limon, tlacopatle, zumaque.

Stomach - Amapola amarilla, castilleja, cuasia, chaparro amargoso, lentejilla, manzanilla, mercadela, palillo, pexto, prodigiosa, raiz de guaco, tabaquillo, tabaquillo grande, te limon, tlalchichinole, toronjil, tronadora, yerba del angel, yerba de la golondrina, zabila, hoja santa, occoxochitl, romero, xkantumbub, yerbabuena.

St. Vitus's Dance - Cola de Zorra, epazote, tumbavaqueros, valeriana.

Sweat, provoking or inducing of (sudorific) - Ajo, borraja, calaguala, Contrayerba blanca, epazote, guayacan, marrubio, raiz de guaco, sauco, te limon, tianquispepetla, tlatlancuaya.

Syphilis - Calancapatle, cascara amarga, cuamecatl, guayacan, guazuma, ixinxiu, maguey, palo mulato, pegarropa, sinicuiche, tepopote, torote, yorba del zorrillo, zarzaparrilla.

Taeniafuge (see worms) Aguacate, calabaza, granado, helecho macho.

Teeth - Chaparro amargoso, chicalote, chilcuan, nanche, palo del brasil, panete, sangre de drago, tabachin.

Throat - Mezquite, monacillo, sauco.

Thrush (small white ulcers in mucous membrane of mouth) - Alfilerillo, capitaneja, monacillo, tlalchichinole, nogal.

Tonsils (tonsilitis, quincy) - Alfilerillo, algodon, mercadela, palo amarillo.

Tonics - Botoncillo, haba de San Antonio, immortal, manzanilla, palo mulato, pareira brava, raiz de guaco, Santamaria, tepeacuilotl, xkantumbub, yerba del angel, prodigiosa, cuasia, diente de leon, mil en rama, poligala, tronadora.

Tuberculosis, tubercular patients - Ajo, balsamo, piru, mastuerzo, platano.

Tumors - Cascara amarga, llorasangre, panete, raiz de guaco.

Ulcers, sores - Amate, anil, capitaneja, lanten, llorasangre, mangle, matarique, mispatle, palo picante, pansil, raiz del manso sinicuiche, tabachin,

balsamo, bolontibi, calzadilla, cuachalalate, guaco, jiotillo, nogal.,
ponchilhuits, tlalchicinole, yerba de la golondrina. See wounds.

Urinals - Cabellitos de elote, damiana, gobernadora, jojoba, ojo de venado, pareira
brava, pinguica, piru, tlalayote, tomate de culebra, zumaque.

Urine - See diuretics.

Vermifuge (for worms) - See antihelminthic.

Womb - Algodon, muicle, nanche, sinicuiche, yerba del poll . yerba del sapo,
zoapatle.

Worms, intestinal and tape (see also vermifuge) - Aguacate, calabaza, granado,
helecho macho.

Wounds and cuts (8941mrl) - Calancapatle, guayaba, lanten, llorasangre, mangle,
matarique, mispatle, pata de leon, raiz del manso, rosa de Castilla,
sinicuiche, tatalencho, tepozan, yerba del cancer, yerba mora? see also
sores.

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