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ORIGINAL ARTICLES.

MATERIA MEDICA, PHARMACY AND THERAPEUTICS OF THE CREE INDIANS OF THE HUDSON BAY TERRITORY.*

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FERGUS FALLS, MINN.

Before proceeding to the subject proper I think it may not be out of place to outline briefly how the knowledge of these peculiar remedies came into my possession.

In the summer of 1892 reports of a smallpox epidemic had been received by the Dominion Government from the Indian Agencies located in the Lake Winnipeg region and especially in the District of Keewatin which is north of the Province of Manitoba and extends as far north as man has ever reached. The governor of this district, Sir John Schultz, was instructed to at once take the necessary steps to have all the Indians north of Winnipeg vaccinated and the progress of the epidemic checked as soon as possible. A mutual friend mentioned my name to the Governor and I was commissioned to proceed without delay as far north as there were people and vaccinate all, white or red, that I came in contact with. This was in August, 1892. I immediately set out, traveling by steamer up Lake Winnipeg to Berens river, the first reservation demanding my services, where I put in three days and then proceeded by sail boat to Norway House, once famous as the central seat of the Hudson Bay Company's power in the northwest. This point was made the base of operations in more senses than one and I was kept busy till late in the fall visiting a country with a radius of some 300 miles.

By the last steamer of that year I received instructions from the Indian department of the Canadian Government that I was

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to remain for the balance of the year in charge of the reservations so as to be on the spot in case colder weather might bring a renewed outbreak. I was the first resident physician among these people and doubtless you can all appreciate the prejudice and incredulity with which my efforts were at first received.

On receiving this appointment I immediately set myself to the task of acquiring the language and to that fact I may lay all credit of having obtained the information which I believe no other white man has ever received; for through the language, I found a way to their hearts, won their confidence, and finally was admitted as a member of the "Mitawin" or secret society which is the body that teaches their medicine, religion and secret methods of communication.

My stay of one year lengthened into five, and each year found me acquiring more knowledge of the language which is one of the most perfect from a philological standpoint that I have ever studied and also winning my way into their confidences for after all the Indian is very human and readily responds to kindness when he sees it is sincere; I came to like the work very much though it was oftentimes of a nature that to our confreres in city clinics would seem repulsive.

Through the kindness of one of the oldest medicine men of the Crees I was given the *entrée* to their "Mitawin" and thus have obtained a little insight into their methods of diagnosis and therapeutics; I say a little, because I did not stay long enough among them to graduate in their school and there are many things yet of which I can only surmise the cause though I have seen the effects often enough. But to my subject.

In dealing with the materia medica I have classified the drugs alphabetically according to our pharmacopeia and will take up of each—

1. The part used or the official preparation, so to speak.
2. Its physiological action.
3. Its therapeutic value from their standpoint.

I. Aspidium Marginalis (common marginal shield fern) Maanchowutupe.

Part used, the rhizome, thoroughly dried and powdered or infused whole: plant must be gathered in the month of June to be efficacious and is more so if at least twelve months old.

Physiological action, teniacidal and vermifugal by increasing peristaltic action of the bowels.

Therapeutics: The drug is usually administered in the form of an infusion, the roots in bulk are placed in a kettle, about a handful being used to two quarts of water, boiling water is poured over them and allowed to boil 15 or 20 minutes, when the infusion is cold enough to drink, it is administered *ad. lib.* until the desired effect is obtained. From missionaries they have obtained senna and usually add some of it to the infusion, so that it is rare that there is any failure in its action. Their diagnosis of worms is very correct; they place great importance on the variable appetite and this in an Indian is usually a sign that something is wrong. I have not had the opportunity of ever seeing tape worm passed under this agency, but I have been told of several and do not question the facts at all, as the average infusion is quite strong enough and would, I think, give a dose in our reckoning of from 80 to 150 grains. They also sometimes combine a powdered root which greatly resembles baptisia, this I am told has to be imported from other tribes in exchange for some of the indigenous medicinal plants with which this district is prolific.

Baptisia (wild indigo), imported, Chepatakwawutupe.

Part used, rhizome powdered or in bulk.

Physiological action: emetic, cathartic, also used locally in ulcerated surfaces and syphilitic sores, but not as an antiseptic as far as I can ascertain.

Therapeutics: administered in doses of from 5 to 20 grains, causing violent catharsis and emesis. They claim it has also an ecbolic effect but I have never observed this. They administer the drug in many cases of febriie nature, especially in typhoid, which they term summer fever, working on the theory that the bowels contain irritating matter which if removed will effect a cure of the febrile conditions. The explanation of the use of the powdered root in ulcerated cases is that it dries up and cakes the sores and makes them flake away; a correct enough theory.

Betula Alba (Birch) Wuskwi.

Lenta.

Part used, buds and bark freshly pulled and peeled. The buds must be pulled about three weeks after first appearance.

Physiological action: birch is corrective, stimulant and antiseptic. The bark is used for nearly everything.

Therapeutics: the buds are used in gonorrhea with marked effect as will be mentioned later on. The bark is infused and

mixed with hemlock and other pine barks in the treatment of consumption and other lung troubles.

Calamus (Sweet Flag) Weekàs.

Part used: rhizome, thoroughly dried and chewed in bulk, also pulverized. Large bundles of this plant can be seen hanging in every tepee or wigwam, tent or house wherever Indians are found, and seems to be the family medicine of the people, its virtues being known to all.

Physiological action: stimulant, tonic and carminative. Claimed to be specific in several diseases, especially in pharyngitis and dyspepsia.

Therapeutics: in pharyngitis the patient is directed to slowly chew a portion of the root, and allow the saliva and juicy pulp to be swallowed; a poultice composed of the root slightly pulverized is applied externally all around the throat and neck and usually cures or enables the patient to cure himself by his faith in its efficacy.

A piece of the root is carried by every tripper on his hunts and trips for the Hudson Bay Company and when feeling exhausted by hunger or fatigue, a small piece slowly chewed will restore the flagging energies in a most wonderful manner. An infusion or tea is also used by the women when required in dysmenorrhea (though they have special drugs for this when severe) in a very similar manner as tansy is used by white women. This drug is a standby of the Indian practitioner and is prescribed as a placebo in many instances, our Indian brethren fully understanding this procedure.

Carum (Caraway) Iskotawutupe.

Part used: rhizome and the seeds.

Physiological action: corrective and adjuvant, also singly to relieve colic, etc. Infusion form is the vehicle of administration and is very weak when thus employed; they seem to be ignorant of the volatile oil of these plants.

Caulophyllum (Blue Cohosh) Iskwawutupe.

Part used: rhizome, roots proper and also flowers.

Physiological action: diaphoretic, antispasmodic, emmenagogic and abortive.

Therapeutics: cohosh grows in great profusion on the lake shores and is widely used by the Indian gynecologist. The Indian name means "woman's root" or "squaw root." It is to the Indian obstetrician what ergot and cimicifuga are to us. The

rhizome powdered is indicated in all uterine troubles, especially dysmenorrhea, metrorrhagia and post partum hemorrhage, in infusion and also dry on the tongue, about 30 grains administered in the latter way as a dose. The root proper is used in amenorrhea chiefly in infusion *ad. lib.* The flowers infused are given as specific for rheumatism and sciatica. The cohosh has another use in combination with other drugs that has surprised me very much, namely, its abortive power, but of this I will speak later on. The intermittent contraction of the uterus caused by the infusion of the rhizome is most pronounced.

Cypripedium (Ladyslipper) Muskisineowow, is known but not much used except in epilepsy and insomnia.

Part used: rhizome of C. parviflorum scraped thoroughly and infused whole.

Physiological action: sedative, antispasmodic and depressant.

Therapeutics: indicated in epilepsy and insomnia, but with indifferent success, owing to method of preparation.

Hedeoma (Pennyroyal) Mikwawutupe, known and used as in domestic medicine among ourselves.

Juniperus (Juniper) Nepewewutupe.

Part used, the berries or fruit, also the rhizome and root proper according to the effect desired and also the dried leaves.

Physiological action: the berries are diuretic, leaves used as antiseptic, roots are sudorific and diaphoretic.

Therapeutics: the berries stewed and strained and the liquid administered in half pint doses for simple colds in bladder as a diuretic, the leaves dried and powdered are used with marked effect in psoriasis and eczema, being dusted over the affected surfaces. The rhizome is the chief part employed however, and a very strong fluid extract is made by infusing the scraped root in two quarts and boiling it down to one pint and a dose of about one tablespoonful given twice daily in calculus, cystitis, and Bright's disease. Usually they combine with this mixture another root that I am undecided about, of this I will speak further under the heading of therapeutics.

Mentha Viridis (Spearmint) Wekemakowemina.

Part used: the leaves infused. Physiological action: *nil.* Therapeutics: flavoring and adjuvant in colic.

Abies Canadensis (Spruce or Hemlock tree) Ininatik.

Part used: inner bark and gum or balsam.

Therapeutics: phthisis incipiens is greatly benefited by the

inner bark freshly peeled combined with equal parts of birch and poplar inner bark. These ingredients are soaked from sunset to sunrise in cold water and then brought slowly to a boil and boiled down to half the original quantity, and if possible sugar is added and the infusion prescribed *ad. lib.* I have seen excellent results obtained in the treatment of pulmonary consumption and consider the treatment is in reality along similar lines to our own method in prescribing the different balsams and creosote combinations. The inner bark is also used as a dressing for ulcerated surfaces, wounds, and in some cases of eczema. There is usually an oily, resinous scum that rises to the surface during the process of making this infusion. This is always carefully skimmed off and preserved; its use will be referred to later under the heading of therapeutics.

Plantain (Meadow Grass) Muskosia.

Part used: the leaves dried, powdered and dusted over affected parts. Physiological action: antiseptic.

Therapeutics: in burns and scalds the plantain leaf is chewed up and the paste applied over the injured surface with soothing effect and in internal hemorrhage or injury the juice is swallowed. They also claim that it is very beneficial in tooth ache and ear ache.

Podophyllum Peltatum (Mandrake), Sapoosikun.

Part used: the rhizome and roots.

Physiological action: cathartic, cholagogue.

Therapeutics: the powdered root is administered in large doses of from 10 to 20 grains for all liver troubles; I believe, however, they depend more upon its laxative properties rather than its cholagogue in this connection. What jalap was to the practitioner of 50 years ago so mandrake is to the Indian of today.

Rubus Strigosis (Wild Raspberry) Uskemina.

Part used: the leaves infused in boiling water. Physiological action: astringent, tonic.

Therapeutics: in cholera infantum and dysentery, this infusion is given *ad. lib.* combined with a strong decoction of willow bark with very good effect. In connection with this plant I would like to mention a species of rubi which I believe was unknown until very recent years, that is the rubus arcticus, which has all the medicinal virtues of the rubi class and also more than the usual flavor as a fruit.

Rumex (Dock Weed) Tatupewewutupe.

Part used: the rhizome. Physiological action: laxative.

Therapeutics: in scrofulous enlargement of the glands a poultice applied over the seat of the trouble and an infusion administered at the same time.

Salix Nigra (Willow) Sepastikoos.

Part used: freshly peeled bark of the stem just above the ground. Physiological action: astringent, hemostatic, tonic, diuretic.

Therapeutics: in severe wounds the freshly peeled bark is applied as a surface dressing to arrest bleeding and is applied immediately; the Indian theory being that all flow of blood should at once be arrested. For internal use the bark is dried and powdered and administered in milk in renal and calculus complaints. They are not aware as far as I can learn of the great use of salicylic acid in rheumatism nor do they use any preparation of willow for this complaint. Briefly its uses are local, astringent and hemostatic.

Sarsaparilla (Smilax) Mikwawutupe.

Part used: rhizome and rootlets. Physiological action: diuretic and alterative.

Therapeutics: the Indians do not place much confidence in this drug. It is used by them however in syphilis and genito-urinary troubles. It is always prescribed in combination with baptisia.

Taraxacum (Dandelion) Mewewewineow.

Part used: leaves, stalks and roots.

Physiological action: hepatic, tonic, diuretic and slightly cholagogue.

Therapeutics: dandelion is indicated in torpid liver, acid dyspepsia, and heartburn. After the plant has flowered the stalks are pulled and the milk is carefully pressed into an infusion of the root and administered at intervals of about an hour in copious draughts. The native practitioners claim that it is very efficacious but I cannot say I ever saw results to justify this belief.

Veratrum Viride (Green Hellebore) Mikosowutupe.

Part used: rhizome. Physiological action: febrifugal, depressant and sternutatory.

Therapeutics: in typhoid fever, variola, scarlatina and pertussis, an infusion is administered at very frequent intervals until the heart's action is considerably slowed; at the same time pressure is

exerted on the vaso motor centers and the combination invariably produces a marked decrease in temperature. The strength of the infusion is such, however, that it frequently causes nausea which is considered by the practitioners to be a *"sine qua non"* in the treatment of these diseases. Its use as a sternutatory may surprise some of our white practitioners, but certainly it is efficacious in this mode of employment. I will refer to this later.

The above constitute the principal drugs in the Pharmacopeia; they have, however, some secret preparations which are not made known to the practitioner until he has taken his last year's work, and as I only put in three years I regret to say that I am ignorant of some of the most important combinations that they use.

Pharmacy: the pharmacy of the Indian is not by any means complicated, though they possess a knowledge of chemical incompatibility and rarely use more than two drugs in combination unless some extraordinary result is required. They pin their faith to one specific for each disease, hence the compounding of drugs is not as important a matter as the diagnosis and correct administration of the specific drug for the trouble. They thoroughly understand the making of fluid extracts, infusions and powders. I have known some who evidently in imitation of the white man's pill have used paste made of flour and water and administered powders in the form of a bolus, but in the majority of cases powders are prescribed dry on the tongue or administered in milk.

The official preparations have not changed as far as I can learn from the earliest times. Their pharmacopeia is a strange looking document and consists of anatomical chart, dispensatory and pharmacopeia combined. It is made of white birch bark upon which is drawn a life sized human figure in red ochre; the various organs of the body are indicated in their proper positions and from each organ an arrow is drawn to the margin of the birch bark roll and here is attached a piece of the root or some of the powder done up in the finer birch bark, the exact dose and particular drug that is specific for that particular organ when affected by any trouble is thus clearly set forth.

These rolls are very carefully guarded, but one is presented to each graduate and constitutes his diploma. I am not aware of any white man ever having received one of these, and I was agreeably surprised when I was presented with one of them on

leaving the reservation, though I had not completed my studies in Mitawin.

Instruction in medicine is necessarily didactic, but yet their practice fully carries out their training.

Therapeutics: the Indian practitioner might well lay claim to the title of Eclectic as he uses any and every medicine which he considers conducive to the recovery of his patient; their knowledge of anatomy is not very extensive and major operations in surgery are not known. They have, however, hygienic principles which very closely correspond to those in use among the earliest Israelites; in fact, there is much about this people that points to an eastern origin. They understand what I would term the minor principles of Osteopathic practice and in their treatment of fevers, inhibition at the nerve centre is practiced; for instance, in their treatment of typhoid great stress is placed on vaso motor pressure and I must say that it has very beneficial results.

Thermotherapy is also known and used as no doubt many have seen, the Indian sweating tent being a very common adjunct wherever the people congregate. It is chiefly used for pleurisy, pneumonia and kindred bronchial affections, also in dropsical conditions. The *modus operandi* consists of making a birch bark tent in circular form about six feet in diameter having one central pole; large stones are heated till almost red hot; these are placed in the center of the tent, cold water is then poured over them and the result is an ideal vapor bath. Incidentally the patient gets an occasional scald from the splashing water, but that does not count. Dry heat is also used but not so frequently.

The most common diseases among the Crees in former days seem to have been of a hereditary rather than an acquired nature. Since the advent of the white man and his so-called civilization, many of the white man's diseases have sprung up among them. Under old conditions, the free life of the woods, the pure air and nomadic conditions of life, tubercular diseases were unknown, but since the white man has taught them to build houses and sold them cheap box stoves with the smallest sized stove pipe supplanting the old wigwam with its fire in the center carrying all impure air away through a hole in the roof, they have been enabled to successfully close up every chink, nook, or cranny through which fresh air might enter, and in consequence tuberculosis is now rapidly decimating the Indian race; another powerful factor is the substitution of a diet not suited to their environ-

ment especially in the extreme cold of the winter months; formerly they depended for their food supply on the animals of the country and the fatty, oily food thus obtained was that exactly suited for their needs, but the substitution of flour and other starchy foods has left its mark upon their constitutions. Tuberculosis is known by them as "Mastineaweakoosewin," or wasting sickness and being of comparative recent origin they cannot treat it by any means as well as other troubles.

Fevers are classified under one heading and treatment is practically the same in all cases, veratrum viride combined with baptisia also using inhibition of nerve centers. Goitre is treated by a poultice of mandrake and manipulation with varying results. Hemorrhages are controlled as promptly as possible by the application of willow and in severe cases the principle of the tourniquet is applied. Ax cuts are very frequent and in many instances are very severe; bleeding is arrested by the application of willow bark and the edges of the cut drawn together with sutures made of willow root scalded in boiling water, this latter, however, only in extensive cuts. Gun shot wounds are also very common; the latter they cannot handle with anything like the same skill as wounds caused by sharp instruments, thus proving that their knowledge has not kept pace with their civilization. They can extract arrow heads much better than they can bullets.

Scrofula is very apparent and is on the increase, an indication that tubercular trouble will eventually wipe this people out; at present, however, the birth rate is slightly in excess of the death rate.

In gynecological work the Indian practitioner does not have anything like the calls that the white man has; parturition being a very simple matter in the majority of cases and is conducted in the following manner: The patient kneels down in front of another woman who is comfortably seated and during the labor pains places her head in the nurse's lap, strains with all her might with her arms around the nurse's waist; the infant is allowed to drop on a pillow placed between the patient's knees.

Presentations are in most instances correct (Cephalic) and it is very rare indeed that any complication arises though I have seen a few post partum hemorrhages and delayed placentas; they have, however, for the treatment of these a very reliable combination of drugs causing prompt and strong contractions of

the uterus. The complete formula for this mixture I have never been able to obtain, it is certainly the most powerful ecbolic I have ever seen. It contains eight ingredients, two of which are cohosh and the scum taken off the hemlock bark infusion. It is also used for abortive purposes and in this connection I would say, strange as it may sound, that I have seen the fetus more than once expelled at twelve weeks without any apparent injury to the mother, but it also apparently has the power of causing partial paralysis of the generative organs. Three cases came under my observation and in none of them did conception occur during my residence at Norway House; and in fact menstruation came only at very irregular intervals.

Genito-urinary troubles are handled with much more skill than one would suppose. Gonorrhea is treated very successfully by this people and they have need to be expert in it for there is a great deal of it among them; treatment consists of the fresh buds of the hemlock and birch steeped in cold water and then brought to a boil and given in strong infusion form. Stricture is rare with this treatment, but when it does occur it is handled by giving large doses of baptisia and other purging drugs. Syphilis is treated as a constitutional disease; accordingly they give blood purifiers and strong purgative mixtures. Chancres are treated by dusting over them the powdered rhizome of baptisia and using a wash composed of willow bark infusion, warm and as a healing salve, some of the spruce gum of the country is applied. On the whole their treatment is a failure.

Hernia is simply yet scientifically treated, though to the onlooker it might seem a trifle harsh. It is as follows: as soon as possible after the rupture takes place the patient is placed on his back with a support under the last dorsal and the first lumbar vertebra thus stiffening the abdominal muscles; a small portion of powdered hellebore root is then blown up the patient's nose and during the action of sneezing the "doctor" forces the hernia into its place. This may seem crude, but in simple and recent cases it certainly is effectual. I am not aware as to what their treatment would be in a strangulated case.

In actual practice the Indian medicine man can give us a few pointers; for instance, he positively refuses to attend a patient until the fees are paid. hence there are no bad debts on the books and a collection agency making a specialty of doctors' accounts up there would starve to death; fees are not confined to specie,

but generally take the form of something metalic, this depends largely, however, on the nature of the disease to be treated. As a rule steel traps, guns, rifles, axes, fishing nets, and ploughs are the most eagerly sought for and I have known cases where the practitioner has required a good sized boat to take his fees home with him. On being called to attend a patient he takes his emergency case with him and after the preliminary negotiations have been arranged proceeds to his diagnosis. Immediately after the diagnosis has been made the next thing to do is to find out if the patient is going to live or die, and this is decided in a very strange manner. Taking from his medicine bag a small powder, which resembles lycopodium more than anything else I know of. and asking for a vessel containing cold water, the doctor places about a thimbleful of the powder in the very center of the water; it remains inert for a few seconds, and is entirely insoluble, then suddenly radiates like the spokes of a wheel. then slowly begins to turn around either in the same direction as the sun or against it; if in the former direction the patient will recover; if in the latter, he certainly stands no show. I do not know what this powder consists of, nor can I explain its action. but I have seen it and know that it does this and conclude that it is due to molecular and centrifugal force. You can readily see what an effect this knowledge would have on the patient and I might say here that suggestive therapeutics is not by any means an unknown quantity among these medicine men.

The medicine man must not be confounded with the conjurer; they belong to two separate and distinct schools. The conjurer does not use medicine but charms away the evil spirits that are supposed to haunt the patient and is the fakir of the Indian profession, while the medicine man honestly endeavors to bring his professional ability to cope with the disease, the latter learn their business thoroughly, beginning at the age of about 16 and while his brethren are learning woodcraft and hunting he is being instructed in the secret science of the healing art.

Fearing to trespass too long on your valuable time, I cannot go into this subject fully and will say in conclusion that many of the simple herbs and roots used by the Indian practitioners are well worthy of fuller investigation.