

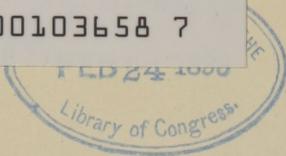
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MATERIA MEDICA
NOTES

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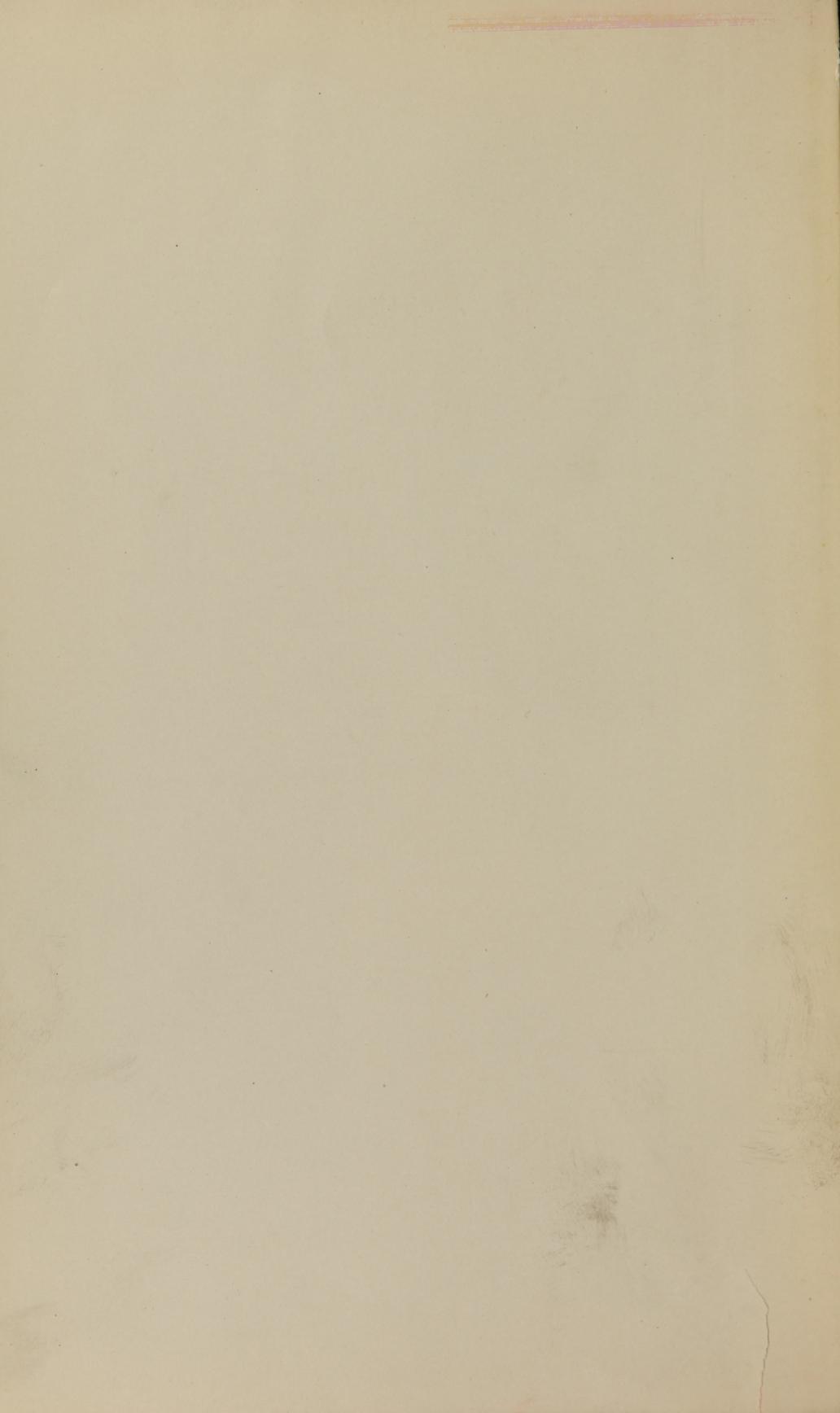
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Winans, W. W.
SOPHOMORE AND JUNIOR

NOTES

FROM LECTURES ON

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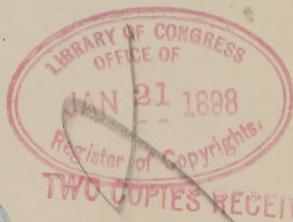
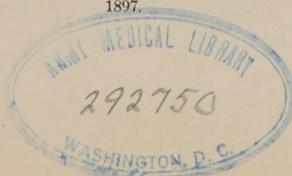
HAHNEMANN MEDICAL COLLEGE,

PHILADELPHIA, PA.

SESSION OF 1896-7.

Rewritten and Compiled by W. W. WINANS, '99.

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MATERIA MEDICA.

Materia Medica Includes :

- PHARMACY—Treating of drugs and their preparation.
PHARMACOGNACY—Treating of source, composition and natural history.
TOXICOLOGY—Treating of their poisonous effects.
PHARMACOLOGY—Treating of their physiological effects.
THERAPEUTICS—Treating of their use in treatment of disease.

Symptoms.

Studied according to the size of the dose, which may be poisonous, medicinal or therapeutic.

Drug Administration is by Six Methods :

1. By mouth and stomach.
2. Hypodermically ; Into subcutaneous cellular tissue, extensor surface of arm, calf of leg, buttocks, deltoid, flat of back, inner side of thigh, abdominal wall. *Objections* : Pain and septic conditions.
3. By inhalation.
4. By rectum. Here sometimes more readily absorbed than in stomach.
5. By endermic method : Rubbing into denuded surfaces.
6. By inunction : Rubbing through, or simple application on skin.

Absorption of Drugs in Point of Time :

1. Through serous membranes.
2. Through cellular tissues.
3. Through mucous tissues.

Effect of Drug Depends :

1. Upon amount absorbed, not that placed in the stomach.
2. Proportionate weight of drug to that of individual.
3. Rapidity of absorption by blood i. e. solubility of drug.
4. Condition of circulation at time of introduction.
5. Amount of symptoms depends on rate of absorption by tissue itself.
6. Rapidity of excretion : very important.

Cumulative Action of Some Drugs is Due :

1. To arrest of excretion.
2. To sudden solution of accumulated drug.

Drug Action :

Drugs act locally or remotely, directly or indirectly.

Local effect may be physiological, mechanical or chemical.

All drugs have primary and secondary action : Primary symptoms are direct effects of drug ; Secondary symptoms are caused by weakened heart, nerve power, etc., i. e. the effect of the primary action.

Hale's Law of Dosage :

For primary symptoms, doses above the sixth decimal.

For secondary symptoms, doses below the sixth decimal.

Drug Names.

SYSTEMIC :

NERVINES—

1. Antispasmodics.
2. Anæsthetics.
3. Somnifacients—Narcotics } Soporifics or hypnotics e. g. Chloral.
 } Anodynes or analgesics e. g. Morphine.
4. Antipyretics.
5. Delirifacients.
6. Excitor motors.
7. Depressor motors.

NUTRIENTS—

1. Astringents.
2. Tonics.
3. Alternatives.
4. Anti-periodics.

LOCAL REMEDIES :

1. Emetics.
2. Cathartics or purgatives } Simple: Easy movement of the bowels.
 } Drastic: Violent movement, pain, etc.
 } Saline: $MgSO_4$.
3. Purgatives } Laxative: Analogous to simple.
 } Hydragogue: Producing large amount of water.
 } Chologogue: Producing large amount of bile.
4. Diuretic—Acting on kidneys, producing large amount of urine.
5. Diaphoretic—Increasing perspiration.
6. Expectorant—Increasing secretions of mucous membranes.
7. Sialogogue—Increasing salivary secretions. e. g. Hg.
8. Errhine—Increasing mucous secretions of nose.
9. Sternutatory—Producing sneezing.
10. Oxytotic or ecbolic—Producing uterine contractions.
11. Emmenagogue—Promoting menstruation. e. g. Ergot.
12. Mydriatic—Causing dilatation of the pupil. e. g. Atropine.
13. Myotic—Causing contraction of the pupil. e. g. Eserine.
14. Vesicant or epispastic—Producing blisters on the skin. e. g. Canth.
15. Rubefacient—Producing redness without irritation. e. g. Mustard.
16. Escharotic or caustic—Destroying or burning tissues. e. g. $AgNO_3$.
17. Demulcent or lubricant—Capable of allaying irritation.
18. Emolient or poultice—Producing warmth and moisture.
19. Protective—An antiseptic dressing for wounds. e. g. Collodion.
20. Anthelmintic or vermicide—Capable of destroying worms.
21. Corminitive—Causing belching of gas.
22. Digestant—Ferment aiding solution of food.
23. Disinfectant—Agent destroying germs.
24. Anzymotic—Capable of destroying germs of fermentation.

Short Cut to Dosage.

O. S. doses of poisonous tinctures vary from five to twenty minims with three exceptions, viz., Aconite, Digitalis and Nux Vomica which are one to five minims.

Medicinal dose of O. S. solid extracts is $\frac{1}{2}$ gr. with three exceptions, viz., Belladonna $\frac{1}{4}$ gr., Cannabis Indica $\frac{1}{16}$ to $\frac{1}{12}$ gr., and Phytostigma $\frac{1}{16}$ to $\frac{1}{4}$ gr.

LECTURES.

SOPHOMORE LECTURE.

Aconitum Napellus.

Ranunculaceæ.

Common name, Monk's Hood—Parts all numerous and hypogynous; leaves cleft, wedge-shaped segments; roots spindle-shaped, tapering in pairs, exceedingly poisonous; from two to three feet high. Flowers dark violet and helmet-shaped. Monk's Hood appearance due to turning in of petals.

Habitat—Mountains of Europe and Asia, in altitude of from 10000 to 16000 ft. Cultivated universally.

Alkaloids—Aconitine, Napelline, Pseudo-aconitine.

Parts Used—Homœopathic Tincture, from parts above ground when flowering. O. S. use only the root, strongest tincture.

Special Pharmacy—O. S. preparation, 35 gr. to 100 c. c. of alcohol. French, 20 to 100. British, 12½ to 100. German, 1 to 10. St. Jacob's Oil is an Aconite liniment.

Dangerous or Fatal Doses—O. S. 80 minims. Solid extract 5 gr. Aconitine doses of $\frac{1}{16}$ gr. proves fatal.

Medicinal Doses—Tincture of Aconitine $\frac{1}{200}$ to $\frac{1}{50}$ gr. O. S. 1 to 3 minims.

Overdose Symptoms—1. Tingling, creeping or numb sensation of lips. 2. Severe burning sensation. 3. Restlessness, mental and physical, difficulty in breathing. 4. Great weakness, progressive muscular weakness, weak pulse, vomiting and diarrhœa. Face anxious, pupils dilated, frequently delirium, eyelids swollen, bladder paralyzed, cold sweats, weaker pulse, heart paralyzed and death.

Toxic Effects—Treatment of. Patient should be absolutely recumbent with legs slightly raised; wash out stomach with pump, and give stimulants for heart and lungs, *i.e.* hypodermic injections of ether, alcohol, digitalis and strychnine successively. Post mortem appearance of mucous membranes, bright red, congested. Active congestion of all internal organs, especially brain.

Physiological Effects—External chilliness with internal heat, cheeks red, swollen and hot. Headache and soreness of eyeballs. On animals its first effect is to increase frequency of heart beat and secondly to reduce it.

Homœopathic Symptoms—Restlessness of mind and body, fear of death and crowded places. Occurs in sthenic people; more useful in young people. Assists menses delayed from fright. Neuralgia of face and arms, tingling sensations in extremities, all symptoms aggravated at night. Increases pulse rate and respiration. Hot skin and increased temperature.

JUNIOR LECTURE.

Symptoms are given under heads as follows :

1—Generalities. 2—Nervous, covering special senses. 3—Circulatory. 4—Respiratory. 5—Digestive. 6—Urinary. 7—Sexual.

Objective are those observed by examiner and are of secondary importance.

Subjective are those appreciated by the patient and are more numerous and important.

Clinical Symptoms—Those observed while patient has been under drug action. Narratively, schematically, or reportorially set down.

Ranunculaceæ.

ACONITUM NAPELLUS—Aconitine.

HELLEBORUS NIGER—Helleborein, Aconitic acid.

STAPHASAGRIA—Delphinine, Staphasagrine.

PULSATILLA—Anemonine.

CLEMATIS ERRECTA—Acrid etherial oil, anominine.

RANUNCULUS BULBOSUS—Anemonol.

RANUNCULUS SCELERATUS—Anemonol.

ACTEA RACEMOSA—Macrotine.

ACTEA SPICATA.

HYDRASTIS CANADENSIS—Hydrastine yellow, Berberine yellow.

ADONIS VERMALIS.

Alkaloids end in "ine." Aconite and Pulsatilla are poly-chrests.

A poly-chrest is an agent which has symptoms, conditions and diseases which human flesh endures.

Aconite.

Ranunculaceæ.

Monk's Hood—Tincture prepared from the whole plant at the beginning of flowering by expressing juice and adding alcohol. Humanity more or less susceptible to drugs in general. Some stand more than others. Smallest dose for experimentation, one minim; largest, five minims.

Alkaloid—Aconitine, of which there is no official preparation and as it varies in strength it is not reliable. One-sixteenth grain has proved fatal. Alkaloids cannot be substituted for tinctures in any case.

Toxic Effects—Tingling and burning of skin and mucous membranes; most marked in tips of fingers, tongue and lips. Soon, relaxation of whole system; great circulatory action. Pulse first slowed and weakened; later, rapid but weak; syncope, sweat, vomiting occasionally. Respiratory apparatus is consequently much affected. Slow shallow breathing, face pallid, features anxious, pupils dilated or vice versa, sclerotic pale, eyes bulge or may be sunken or dull. Anæsthesia follows; tendency to epileptiform convulsions. In short time temperature falls in accordance with circulatory and respiratory symptoms. Death may be sudden or slow (sudden if patient moves or exerts himself) from weakness of heart. Heart stops in diastole. Generally die in 12 to 48 hours.

Treatment—Keep patient quiet in prone position, head being a little lower than body to allow blood to go to head. Do not resort to emesis, exertion will kill patient. If stomach be washed, do so with syphon. Give hypodermic injections of ether, alcohol or digitalis in doses of 1, 2, 3 or 4 gtt. Digitalis is said to counteract effect of aconitine. May have to resort to artificial respiration.

Pathogenesis—Restlessness, anxiety, agony, fear of impending evil; face pale or red, one cheek may be red and hot and other pale and cold; swelling of face; tingling, creeping, numbness, especially ends of fingers, lips and tongue; twitching of muscles; skin readily impressed, goose flesh, eruptions looking like flea bites, with formication,

skin hot and dry; chilliness easily induced, may be sweating, usually hot, may be cold; joints painful; gait unsteady on account of weakness and pain in joints. Drawing, stitching pains in joints, relieved in open air. All symptoms modified by cool atmosphere.

Nervous symptoms—Apprehension and fear of death; apoplexy; tetanic convulsions; muscle twitching, single or groups; drawing pains in nerves, particularly trifacial. Whining mood in young people; delirium rarely present; if it is, death follows. Mind generally clear till last. Great heat of brain; great fullness, dizziness, acuteness of all senses; slight noises painful. Bright light hurt the eyes; smelling perverted; sleep disturbed because of too much blood in brain; anxious dreams if sleep is at all restless.

Circulatory Symptoms—Pallor with heat of skin, skin dry or moist. Pulse contracted, full and tense. Rapid palpitation and stitching pains in heart.

Respiratory Symptoms—An anxious dyspnoea, labored inspiration, stitching pains in chest and lungs, epistaxis frequent; irritation of larynx and cough, worse in a warm room, better in cool; may raise blood.

Digestive Organs—Sensitive taste and teeth; gums swollen and hot, tongue hot and swollen, tingling, numbness and burning; taste bitter; stitching pains on swallowing, throat feels as though sprinkled with pepper, thirst for cold water; frequently vomiting; cutting pains in bowels; sense of burning; abdomen sensitive to touch and pressure. Burning in the anus, causing tenesmus; hemorrhoids; bleeding diarrhoea; green, watery and choleric in appearance: no color, no smell.

Urinary Symptoms—Desire to micturate; anxiousness with micturition; tenesmus of bladder; urine scanty, red, dark, hot, and may be bloody.

Sexual Symptoms—Testicles swollen, hard, feel bruised. Suppression of menses or metorrhagia.

Action of aconite is of short duration, not longer than 48 hours. Generally not over 24 hours. Acts best in acute diseases.

SOPHOMORE LECTURE.

Helleborus Niger.

Ranunculaceæ.

Black hellebore or Christmas rose. Flowers expand in mid-winter and are rose colored and of greenish tinge. Plant grows from six to eight feet in height.

Habitat—Indigenous to southern Europe, but grown universally in gardens.

Alkaloids—No alkaloids but some glucosites, Helleborein and Helleborin.

Parts Used—Root. It is black, but white within, gathered after the flower expands. Homœopathic medicine from dry roots.

Special Pharmacy—Extract of *Helleborus Niger* 1 to 10 grs. Tincture 1 to 8. Homœopathic 1 to 10. Fluid extract 2 to 15 m.

Toxic Effects—Produces violent vomiting, severe pains in the stomach, a hydragogue catharsis, with croup, vertigo and convulsions.

Treatment—Same as in *Aconite*. Chief danger is action on the heart.

Physiological Effects—Scanty urine, followed by profuse urination and dropsical effusions from serous membranes. Blunting of sensi-

bilities of special senses. Great stupidity and drowsiness. Great muscular weakness. Characteristic Symptoms—Stupor (accompanying serous effusions) from which it is almost impossible to rouse patient. Automatic action of leg or arm, constant chewing. Pupil sluggish, but slightly movable; great thirst, greedy drinking of water. Coffee-ground sediment in urine. Effect on brain: Congestion and hyperæmia of meninges, followed frequently by local hemorrhages, swimming of head, dizziness, ringing in ears. Stools jelly-like. Dropsical and brain symptoms most prominent.

JUNIOR LECTURE.

Common name, Christmas rose or death food.

Glucosites—Helleborein, Helleborin and Aconitic acid.

Helleborin—A profound narcotic. At first restlessness, then anxiety followed by paresis. Death.

Helleborein—A cardiac poison and drastic purge. Hurried heart; blood pressure increased; first hurried, then slow and labored breathing; salivation; diuresis, kidneys hyperæmic. Mucous membranes congested.

Helleborus Niger—Generalities: Irritant to skin, redness and vesication, benumbing tongue. Painful pricking in mouth and fauces. Viscid secretion of the mouth; suffocating sensation in throat, burning in œsophagus, great thirst, vomiting, colic, purging, cold sweat, feeble pulse and death. P. M. Inflammation of stomach and intestines. Same as Colchicum.

Provings—From the juice of the fresh root expressed and one-half by weight of alcohol added. Dried root can be used as it has no volatile principle. Anxiousness, restlessness, soon giving way to spasms; pale and distorted face; sunken eyes; cold sweat on face, sweat is so viscid that it hangs in drops on separate hairs; face and body cold; redness and vesication; dropsical swellings in various parts of body with sense of coldness, chilliness most marked with febrile conditions; chills between five and six P. M.; fever ensues. Chill most prominent, without thirst; water tastes bitter (Puls); shaking chill in morning with goose flesh; drawing, sticking pains in joints.

Nervous Symptoms—Sensorial depression; slow comprehension; melancholy; fear of death; tendency to paresis, convulsions unlike Aconite; does not have diminution of senses; pupils dilated, hearing, taste and touch abolished; circulation rapid or slow, tremulous; pulse almost obliterated; constriction of chest, gasping with open mouth; constant hacking cough, due to dropsical condition of air passages.

Digestive Symptoms—Occasionally great thirst that has nothing to do with febrile conditions; pricking in mouth and fauces; numb tongue, trembling, dry and white. Scraping in throat; secretion of mouth viscid; distended, rumbling abdomen; severe colic; liquid or colorless stools, possibly mucoid, (Colch.); stool like frog's spawn, pain and tenesmus.

Urinary Symptoms—Urine, scanty and frequent.

Sexual Symptoms—Complete abolition of sexual desire. Tenderness of right ovary. Action of long duration, one dose acting for three or four weeks; therefore, used in chronic diseases. Camphor antidotes. Combated in secondary effects by Cinchona.

SOPHOMORE LECTURE.

Staphasagria.

Ranunculaceæ.

Common name, Staves Acre Seeds, Larkspur. Pale-blue or purplish flowers. Plants two to three feet high, unpleasant odor, seed one-quarter inch long.

Habitat—Southern Europe.

Alkaloids and Active Principles—Four, Delphinine, only important one, dose one-half to one-quarter grain. Used mainly as local application in neuralgia and rheumatism.

Parts Used—Seeds.

Overdose Symptoms—Vomiting and purging.

Physiological Effects—Most prominent on vascular system, secondly on nervous system. Acts on genito-urinary organs, especially on prostate gland, causing amorous dreams and loss of semen. Conditions accompanying onanism; itching, crawling sensation of external female genitals. Eruptions on skin only local. Mental hypersensitiveness. Characteristic nerve effects. Toothache, teeth turning black and decaying. Effects eyes, producing nodosities and inflammation of lids. Peculiar cough, worse in day time and after dinner; empty sensation in stomach, morsel giving pain. Patients sad and peevish, shy with opposite sex, irritable and cross; memory weak; nervous system worn out. Prefer seclusion.

JUNIOR LECTURE.

Staphasagria.

Larkspur, a parasiticide. Has two alkaloids and volatile oils, Staphasagrine, Delphinine. Volatile acid.

Staphasagrine—Paralyzes motor and respiratory functions.

Delphinine, like Aconitine causes general paresis, labored breathing, slow weak heart, anxiousness, hyperæmia of venous system especially, and produces local inflammation of small intestine.

Staphasagria powder causes nausea, purging, vomiting, irritation and inflammation of urethra, especially of prostatic portion; irritation of ejaculatory and seminal ducts; irritates skin and mucous membranes.

Tincture is prepared by adding one part of powdered seeds to five of alcohol by weight. Drug power one-tenth.

Provings—Appearance of peevishness, anger, indignation. Readily produces irritation, itching and burning after scratching. Hyperæsthesia of skin. Hair of scalp falls out; great weakness in morning; pain in limbs, cannot walk, worse on motion or while ascending. Drawing stitching pains in joints, worse on motion and touch; sweat of foul odor. Headache, tearing, drawing, stupefying; spasmodic pains in temple and forehead and peculiar lead ball feeling in forehead; pressure inward or outward in occiput; roaring in the ears; eyes sunken; pupils dilated; itching of margins of lids; biting, smarting pains in inner canthus.

Circulatory Symptoms—Palpitation, weak heart, slow pulse.

Respiratory Symptoms—Catarrhal inflammation of upper air passages, labored breathing, constriction of the chest relieved by forcible expiration and by sitting, worse on walking; dyspnoea.

Digestive Symptoms—Chalky decay and crumbling of teeth, discoloration in streaks, sensitive to cold; gums swollen, worse on touch, better on hard pressure; mucous secretion increased; throat rough on

swallowing; hiccough; ravenous hunger; thirstlessness; pricking, stitching, burning pains; drawing in abdomen. Stools thin, smelling like rotten eggs; colic; frequent watery diarrhœa; colic aggravated by application of heat; itching of anus while sitting; may have constipation.

Urinary Symptoms—Pressure on bladder, marked urging; urine dark, scanty, dribbling; sensation of fullness in bladder after micturition; burning of urethra.

Sexual Symptoms—Pain in testicles, drawing particularly while in motion and if rubbed by clothing, spermatic cord sensitive; emissions easily excited, amorous dreams; prostatic urethra sensitive. Women: Sore vulva, cannot sit; pains burning; great itching; uterus easily prolapsed, sinks low in pelvis; aching legs, weak when walking; used mostly in chronic conditions.

SOPHOMORE LECTURE.

Pulsatilla Nigricans.

Ranunculaceæ.

Pasque or Easter flower. Small herb, three to six inches high; flowers about Easter. Color of flowers, violet, purple, almost black; large in proportion to plant. Contains an acrid yellow oil, which on exposure to air, decomposes and forms Anemonic acid and Anemonin.

Habitat—Central and northern Europe. *Pulsatilla Nuttallina* in northwestern United States.

Active Principles—Anemonin, a glucoside resembling Aconitine; volatile producing tingling, stupor and dilated pupils. O. S. one-sixth to one-half grain. Anemonic acid.

Parts Used—Whole plant.

Special Pharmacy—O. S. Tincture from root. Homœopathic Tincture from whole plant.

Overdose Symptoms—Vomiting, slimy mucous diarrhœa, profuse offensive sweat; vesicular and pustular eruptions on skin; increased flow of urine; pain in eyes with inflammation, etc.

Toxic Effects—Stupor, coma and convulsions.

Physiological Effects—Most prominent action on mucous membranes; catarrhal symptoms, nasal discharge yellow or green but bland; throat raw; breath fetid; cough loose by day, dry and tickling at night; styes on lids, inflammation of conjunctiva; pain in ears with purulent discharge.

Digestive Tract—Sour belching; loose, slimy, mucous stools; jelly-like sediment in urine; synovial membranes inflamed, especially small joints, producing articular rheumatism. Produces varicose veins in scrotum and rectum.

Generative Organs—Swelling of testicles and spermatic cord. Female organs: Catarrh, leucorrhœa bland and yellow; scanty, delayed and painful menses; breasts swollen and painful, milk scant. Patient tearful, mild and discouraged, anxious and changeable; likes to be sympathized with; symptoms relieved in open air; aggravated in evening and after meals.

JUNIOR LECTURE.

Pulsatilla Nigricans.

Wind-flower, Anemone, Pasque-flower.

Habitat—Europe. Some people of United States more susceptible to American species, especially western girls. The remedies indigenous to a country often act best on inhabitants.

Prepared by expressing juice from fresh plant and adding equal parts of alcohol, drug power one-sixth.

Anemonin applied locally causes inflammation and gangrene, subcutaneously rapid gangrene. By mouth, vomiting; colic and purging. Depreciates circulation and respiration and acts markedly on spinal-cord. Slow feeble pulse; slow respiration; coldness of extremities; dyspnoea and death without convulsions, and paralysis of motor centers in brain. Extracts are useless.

General Action—On mucous membranes, catarrhal inflammation, increased secretion after a very short dry stage. Rheumatic and gouty pains in synovial membranes and joints, especially of feet. On generative organs of both sexes, especially female. Acts prominently on venous system. P. M. App. congestion and edema of lungs, relaxation of heart walls. Clots within heart, fluid elsewhere. Venous stasis; marked hyperæmia of meninges, cord and especially medulla. Action is of long duration, 12 to 14 days. The more one becomes acquainted with this remedy, the higher the dilutions will be used.

Symptomatology—Mental; melancholia, sadness and irresolution, face pale; skin covered with red blotches, itching worse in evening; eruption on back, loins, fore-arm and between mammae; itching, biting, burning over whole body, worse before mid-night from scratching and warmth, not noticed during the daytime unless body becomes heated; chilliness marked with thirst; seldom from 2 to 4 P. M. Chill followed by heat, afterward chill with thirst; skin hot and sweat stands out on face. Cold feet. Fever heat follows chill; hot at night but wanted a cover; licking lips but do not want water; moaning, anxiety, muscular and joint pains like sprains; tearing, drawing, tensive pain, seeming as though a muscle was being stretched; restfulness and sleeplessness; weak in the morning and wants to lie abed.

Nervous Symptoms—Sadness, moroseness, irresolution, weeping, cries at everything, but easily consoled; brain is very sensitive, aching hollow sensation, feels like alcoholic intoxication; vertigo in morning on raising head, compelling patient to lie down or sit, when it disappears. Pain originating in brain substance, extending to eyes, giving marked, burning, itching and lachrymation; dimness of vision on rising in morning, about time of menstruation; things look black, worse in warm room. Pressing pains in ears; tympanum forced out; hearing difficult; roaring.

Circulatory Symptoms—Sticking pains in region of heart, relieved by pressure and slow walking; pulse rapid; palpitation, rapidity of pulse increased when lying on left side; dyspnoea; circulation sluggish; patient chilly; veins distended and sore; rapid exercise causes prostration.

Respiratory Symptoms—Dyspnoea when lying on left side; stopping up of nose; tendency to sneeze; discharge offensive, yellowish or greenish, rarely colorless. Pain at root of nose, sensation as though bones of nose were forced out. Tickling, dryness and scraping of larynx; dry cough, worse at night, worse on lying down; relieved by sitting up; always dry. Tenacious sticky expectoration in morning, yellowish or greenish; great sense of oppression; soreness of chest walls; expectoration may be blood-streaked.

Digestive Symptoms—Toothache, worse from warm food; jerking pains markedly worse in A. M., better from cold water in mouth; sticking, gnawing pains in gums, worse in evening, better in open air if cool; tongue covered with tenacious mucous; tongue and mouth blistered.

Throat dry especially in A. M. Breath offensive; salivation. Taste generally sweetish, may be bitter; water tastes bitter; may have thirst, nausea and vomiting; eructation, bitter and rancid; tallow-like taste after eating pastry; waterbrash; vomiting of food taken hours before. (Ferrum). Puls. good when too much iron has been taken. Pains after eating; gnawing ravenous hunger; stomach disturbed, rumbling of gas, urging in bed and at night; colic, drawing pains in lower part of abdomen; labor-like pains. Cutting in hypogastrium, penetrating into pelvis urging to stool, relieved by forcibly contracting abdominal muscles; flatus in large quantities; hemorrhoids, protrusion of piles and soreness; itching; colic with hemorrhoids and stools of mucous; may be constipated, generally are; stools frequent, but passed with difficulty. If diarrhoea, stools whitish or yellow with mucous and frequently traces of blood.

Urinary Symptoms—Sharp cutting pains in bladder, worse from touch; frequent desire to urinate which is ineffectual; urine scanty and acid; cutting and burning in passage. Various sediments; hæmaturia or blood with urine. Urine may be very profuse, is then lighter in color and has no sediment. Frequently have constriction as if bladder rested on some hard body.

Sexual Symptoms—Drawing pains in right spermatic cord with right or both sides of the scrotum swollen; both sore to touch and pains of a tearing character; must sit down; aggravated greatly by pressure of trousers; always pulling down; peculiar gait. Emissions at night without dreams, with sexual desire the next morning. Women: Drawing in vagina, pain extending to uterus; many contractive pains, causing to bend double; often getting into obstetrical position to get relief. During menstruation, leucorrhœa, often painless; thick milky color, worse lying down and occasionally the discharge may be acid and burning; have swollen vulva; discharge scanty; delay of menses from cold, emotion, fright, etc. May stop after has started and not show for months. Painful menses; trembling feet; cold body; flow only during day while walking, none during night; dark, clotted and paroxysmally discharged. Susceptible before menstrual period; chilliness, yawning and great weight in hypogastrium, behind or above pubic bones, before flow begins; may continue during menstrual period; weight then extends back to rectum, lodging there and causing constant desire to evacuate; drags feet.

SOPHOMORE LECTURE.

Anemone Anemorsa.

Ranunculaceæ.

Wind flower: Four inches high, flowers light blue.

Habitat—Europe, in high places. That in the U. S. short in stature, common in far West; is called *Anemone Patens*.

Physiological effects—*Anemone Patens*, a great cure-all among Minnesota Indians for female complaints. Has almost same action as our medicine from Europe and contains *Anemonine*.

Clematis Erecta.

Ranunculaceæ.

Virgin's Bower, Beggars Weed. Three to four feet high. A bushy growth having white flowers.

Habitat—Central and Southern Europe.

Parts Used—Fresh leaves and stems.

Special Pharmacy—Tincture according to Class I.

Toxic Effects—Blisters skin; is very irritating to eyes, burning and inflaming conjunctiva and iris (Iritis).

Physiological Effects—Chief action on male sexual organs, causing pain and swelling of testicles, scrotum and inguinal glands. Testicles become indurated; pains in spermatic cord. Patients cross and irritable. Pains worse at night and from warmth. Action on female sexual organs: Inflammation of entire genital tract; painful urination; pains extend to breast. Produces induration of mammary glands; dessication of skin. Cures eczema of skin in occipital region.

JUNIOR LECTURE.

Clematis Erecta.

Virgin's Bower, Beggar's Weed. Tincture from leaves and stems while green; $\frac{1}{2}$ by weight of alcohol is added and tincture is equal to $\frac{1}{2}$ drug substance. Two minims to eight of alcohol, 1 x. Has acrid ethereal oil, Anemonine. Applied to skin gives vesication, ulceration and great itching, markedly aggravated by washing and warmth of bed. Acts from two to six weeks internally. Face yellow, sickly, looks emaciated. Febrile condition, chilliness, heat, fever, sweat during sleep; sweat sour, almost always relieving subjective symptoms. When taken internally, face and scalp, and especially the occiput are affected with eruptions, redness and vesication. Eruption influenced by waxing and waning of moon; moist and worse when moon is full and better when it wanes. Lymphatic glands of neck and jaw swollen and painful, worse at night. Inguinal glands affected, and then have difficulty in walking; wandering pains; joints painful as if bruised; crackling of joints, better in open air.

Nervous Symptoms—Nervous, restless, discontented, dreads misfortunes; loss of moral strength; avoids people and occupation, but when away from home, longs to return; fretful with own people. Headache, tearing and drawing; eyes red, glittering; much lachrymation; heat great, feel as though fire streamed from eyes; eye discharge excoriating to skin; contracted pupils, dimness of vision; burning pains in internal and external ear.

Circulatory Symptoms—Vessels palpitate in various parts of body.

Respiratory Symptoms—Marked watery coryza of upper air passages; stitching in pleura with irritating, dry, catarrhal cough.

Digestive Symptoms—Pain in teeth, worse in bed, too long; aching stopped by cold water or drawing cold air into the mouth. Tongue white, dry and cracked. Salivation, often bloody. Vesicles in mouth. Ravenous hunger, but discomfort after eating and marked distension of abdomen. Burning in rectum with urging to stool.

Urinary Symptoms—Inability to evacuate bladder, several efforts necessary; flow slow, stream thin and small; burning in urethra and afterwards, itching, stitching pains at meatus. Urine turbid, markedly red; excess of urates; pus-like appearance; odor like Russia leather.

Sexual Symptoms—Men: scrotum mostly swollen; right testicle more apt to be inflamed but both sensitive; drawing pain in spermatic cord as though being drawn up; rubbing of clothes against inflamed parts very irritating, parts very sensitive. Hard awkward walking; pinching pains. Sexual desire in presence of other sex but inability to get erection; sometimes has erection, but lewd thoughts distasteful at that time. Menses profuse, early; scarcely any pain except in mammae, where nodules prone to develop below nipple.

SOPHOMORE LECTURE.

Ranunculus Bulbosus.

Ranunculaceæ.

Butter-cup, St. Anthony's turnip. Plant about one foot in height. Flowers yellow.

Habitat—United States.

Parts Used—Whole plant.

Physiological Effects—Externally applied, produces burning, itching, dessication of the skin; no skin irritation from internal use. Produces sharp stitching pains and soreness of chest walls, particularly in intercostal spaces. Symptoms always worse from weather changes. Great soreness a characteristic symptom. Cures Herpes Zoster, (Shingles). Epilepsy credited to eating of bulb of *Ranunculus*, so possibly has action on brain and spinal cord. Used by old school for Delirium Tremens.

JUNIOR LECTURE.

Ranunculus Bulbosus.

Contains an oil, Anemonol, a narcotic, producing stupor, slow respiration, paralysis and convulsions before death. P. M. Appearances: Marked gastro-intestinal irritation; marked hyperæmia of kidneys. Juice or tincture produces acute pain in stomach; marked heat in throat; salivation; tongue excoriated and cracked; hiccough; much colic; much vomiting and anxiety, even to fainting; cold sweat. Poisonous dose, death. Skin irritant; redness; vesication; blisters, very large; if pricked, have localized gangrene and burning excessive; irritates conjunctiva and lids; eyes smarting, burning and sore. Headache and vertigo. Mucous membranes of respiratory tract: Stuffiness of nose; tingling, crawling in nose; voice rough and hoarse; muscles of chest sore with constrictive pains, worse on pressure and described as feeling as though they would ulcerate on pressure. Stitching on deep breathing, so patient breathes superficially, worse on change in weather.

SOPHOMORE LECTURE.

Cimicifuga Racemosa.

Ranunculaceæ.

Black Cohosh, Black Snake-root, Rattle-weed. Plant four to eight feet high. Long, slender, wand-like stalk; seeds ripen in cases and rattle in wind, lasting nearly all winter.

Habitat—Common in United States.

Active Principle—Macrotin, a resinous substance of complex character. Dose $\frac{1}{2}$ to 2 grains. Not an alkaloid.

Special Pharmacy—Homœo. Tincture, according to Class III. Tinctura Cimicifuga, O. S., 20 to 100 or 1 to 5, O. S., dose 10 minims to 1 dr. Homœo. 1 to 6 minims. Fluid extract 5 to 20 minims.

Overdose Symptoms—Nausea and vomiting.

Toxic Effects—Intense headache, drowsiness and sopor.

Physiological Effects—Chief action on unstriped muscular tissue of uterus and particularly muscles of eye-ball; belly of muscle affected; produces general muscular rheumatic diathesis. An abortifacient, producing pains similar to those of labor.

Nervous Symptoms—Causes shooting neuralgic pains from one hip to other in uterine region; pains in left ovarian region; hysterical con-

ditions, nervous restlessness of whole body. † Neuralgia of face, diaphragm and left mammary region. Symptoms of spinal irritation, trembling, chorea and finally paralytic symptoms.

Mental Symptoms—Depression, mania, restlessness, as in Aconite; fear of growing crazy. Headache produced universally with dizziness and vertigo; pain at base of skull extending to top.

JUNIOR LECTURE.

Cimicifuga or *Actea Racemosa*.

Ought always to have fresh root tinctures. Tincture represents $\frac{1}{6}$ drug powers so 6 minims to 4 of alcohol makes 1 x. O. S. class it as an antispasmodic, a diaphoretic, a sedative, a diuretic and an expectorant. Acts like digitalis on heart, but not so forcibly, and like ergot on unstriated muscles, but not quite so markedly. Dose, fluid extract, 5 minims to 1 dr. Dose in homœopathy gauged according to susceptibility of patient. Nausea, vomiting and gastric troubles in most women provers, but not in men.

Generalities—Bitter taste, acrid and nauseating. Some irritation of nerve centers, especially vaso-motor system, causing cerebro-spinal and pelvic congestion followed by inflammation which becomes localized in the nerves. Chorea-like spasms, also pains like rheumatism; these very apt to locate themselves in bellies of muscles of neck, chest, back and sometimes joints. Acts prominently on uterus. Also changes in emotional nature; becomes restless and hysterical; twitching of groups of muscles. Menses painful or absent. Headache; pain in infra-mammary and splenic regions. If given early will produce abortion. At labor it stimulates muscles and makes labor easy. Urea and uric acid increased.

Locomotor System—Tremors, especially when walking; feel like shuddering from feeling in spine; restlessness while in bed; muscles sore and stiff in bed; stiff, painful and drawn, feeling contracted. These drawing pains very acute along spinous processes; most marked in morning and when attempting to bend head forward; tenderness of lumbar region. Pain in tendo achilles, sense of shortening, worse in open air. Nervous system greatly depressed with cerebral and spinal irritation; individual easily grieved and troubled; sighs frequently. Women: Macroton has same effect on mental system. Men feel as if they had been off on a spree. In both men and women, pain and soreness in occipital region, extending up to vertex. Great fullness of head, worse indoors, better in open air; increase in severity of headache in afternoon and evening, but better after 9 P. M. Usually irritation or impairment of vision; soreness of eyes with black spots appearing before eyes. Pressure upward and outward in cerebrum, and with this usually palpitation of heart which forces blood up into head and makes it feel as though bolt were driven into brain. Drowsy, but cannot sleep because of pain in head. Sometimes chilliness followed by fever and some sweating.

Circulatory Symptoms—Palpitation of heart and feeling as though bolt were driven into head at each throb. Irregularity; apt to become slow but irritable from motion, or nausea, or vomiting efforts, at which time the heart is in danger.

Respiratory Symptoms—Short, dry cough from tickling of larynx, worse in evening and from talking.

Digestive Symptoms—Bitter, nauseous taste. Stomach symptoms:

nausea, retching; loss or impairment of appetite; faintness in stomach as if food was wanted. Rumbling in intestinal canal: constipation alternating diarrhœa.

Urinary Symptoms—Increased urea and uric acid, and increased amount of urine.

Sexual Symptoms—Pain in testicles and along spermatics. Women: Great bearing down pains during menstruation.

SOPHOMORE LECTURE.

Actea Spicata.

Ranunculaceæ.

White and Red Cohosh, Baneberry. Plant, two to three feet high. Several varieties, alba and rubra.

Habitat—Central and northern Europe.

Parts Used—Roots.

Special Pharmacy—Tincture according to class III.

Physiological Effects—Rheumatic symptoms in smaller joints, particularly of wrists, fingers and toes. Symptoms diagnosed as gout. These troubles associated with sour stomach.

Hydrastis Canadensis.

Ranunculaceæ.

Golden Seal, Yellow Root, Orange Root, Ground Raspberry, Indian Paint. When in flower, stem is about six inches long, when in fruit, about twelve inches. Flowers greenish-white. Fruit resembles a raspberry. It is so valuable commercially that it is in danger of dying out. Root contains yellow or orange fluid.

Habitat—Canada and United States; Ohio, Indiana, West Virginia, rarely in western Pennsylvania and western New York.

Alkaloids and Active Principles—Hydrastine, Berberine or Hydrastin, used by Eclectics, is of deep yellow color. Canadine (Xanthropoxine).

Parts Used—Root by all schools.

Special Pharmacy—O. S. tincture, 1 to 12. Homœopathic, according to Class III. Extractum Hydrastis Fluidum, 5 to 30 grains.

Medicinal Doses—O. S., 30 to 120 minims. Pure Hydrastine, $\frac{1}{4}$ to $\frac{1}{2}$ grains.

Overdose Symptoms—Convulsions and sometimes paralysis. Acts on spinal cord. O. S. recommend it for malarial fevers and for gastric catarrh following abuse of alcohol.

Physiological Effects—Most characteristic effect is on mucous membranes. First inflames and then relaxes tissue. Produces watery discharge, then viscid and very tenacious, then greenish, then bloody. Acts on conjunctiva, bladder, urethra and kidneys. Next important action is on digestion; gone, empty feeling in epigastrium; gastro-duodenal catarrh. Produces torpid liver in which bile is not excreted properly. Primarily, looseness of bowels, then constipation; discharge more or less acrid. Increases glandular secretions and irritates structure of glands. Kali Bich. produces similar symptoms. Hydrastis rivals Nux Vomica as a remedy for constipation.

JUNIOR LECTURE.

Hydrastis Canadensis.

Golden Seal, Yellow Root. Largely used in medicine. Contains alkaloids. Hydrastine (white), and Berberine (yellow).

Hydrastine has marked effect on spinal cord and produces tetanic

convulsions and increased reflex activity. Death from action on cord, from cramps of respiratory muscles, asphyxia.

Circulatory Symptoms—Blood pressure lowered for a short time but suddenly there is a marked increase.

Sexual Symptoms—An ecbolic and an abortive, causing uterus to contract even when empty.

Berberine—A poison to lower animals, but large doses rarely effect man. Animals: Convulsions, trembling, thirst, diarrhœa; paralysis of hind legs. Arterial pressure lowered and vaso-motor paralysis. Respiration slowed at first and then increased; centers depressed. Peristalsis of intestines increased; urine albuminous; epithelial casts; kidneys hyperæmic and inflamed. Man but little effected by 20 grains.

Provings—Acts chiefly on mucous membranes; inflammation and ulceration. Mucous discharges are vitiated and changed. Discharge is thick, stringy, ropy, yellow, irritative and corrosive. Skin: Eruption of simple erythema; vesication; ulceration; pustulation. Loss of appetite; inability to digest food. Constipation, stools covered with mucous. Loathing of food.

SOPHOMORE LECTURE.

Berberis Vulgaris.

Berberidaceæ.

Barberry. Berries sour and astringent, small and red. Bushes six to eight feet high. Berberidaceæ are hypogynous, but with single pistil made of single leaf. Pistil rather one-sided containing seeds in a row.

Habitat—Europe and north of Asia. Cultivated in United States.

Alkaloids—Berberine (Oxychantine).

Parts Used—Roots. O. S., entire roots and seeds.

Special Pharmacy—Homœopathic Tincture, according to Class IV. O. S., not official, from *Berberis Aquafolia*. Fluid extract from 5 to 30 minims. Dispensatory Tincture, 1 to 5. Dose, from 2 to 5 grains. Known in Eclectic school as Hydrastine.

Overdose Symptoms—Produces paralysis in hind legs of animals, after a period of great restlessness in which there have been convulsive twitchings. Loose bowels and great thirst. Acts markedly on kidneys of animals, producing albumen in urine, rendering alkaline urine of herbivorous animals acid. Mainly eliminated by kidneys. Spleen enlarged.

Berberis Aquafolia, or Oregon grape, given in large doses, produces catharsis and great pain in bowels. Large domestic use on Pacific coast in scrofulous and syphilitic troubles. Cures many skin troubles.

Physiological Effects—Chief action on kidneys, liver and spleen. Sharp, tearing, shooting pains in renal region and throughout ureters, bladder and urethra. Secretions of kidneys changed; urine first changed to yellow with white flocculent or red sandy sediment. Leads to stone in bladder or pelvis of kidney. Bile increased in quantity, altered in character, then decreased in quantity. Characteristic kidney pains present in hepatic region also, and in common duct. Signs of indigestion: eructations, belchings, salivation, heartburn. Pains may increase to real colic. Leads to biliary calculi and jaundice. Burning and crawling sensations about anus. Bubbling sensations in muscles with sharp, tearing pains in same. Produces neuralgic conditions and pains over entire body, of sharp tearing character.

JUNIOR LECTURE.

Berberis Vulgaris.

Habitat—Europe and northern Asia.

In olden times used in abdominal and liver troubles. Tincture made from bark of root and is $\frac{1}{10}$ of drug power, therefore the tincture is same as 1 x. Alkaloid is Berberine which gives some slight gastro-enteric symptoms and is less powerful than the tincture. Given in experimental doses of from 1 to 4 grs. to animals. Tincture dose is from 10 to 20 minims.

Generalities—Feverishness and inflammation of mucous membranes beginning in throat and traveling through alimentary canal to anus, giving symptoms of dysentery. Also acts as primary irritant on liver. Have irritation of kidneys even to hæmaturia. Venous system effected, being engorged, with tendency to hæmorrhoids ending in piles. Action of drug lasts from two to three weeks. Face pale, dirty gray in color; cheeks sunken, also eyes with dark gray circles beneath and sickly expression. Weakness when walking or standing and faintness. In locomotor system; tearing, sticking, bruised, ulcerated feeling. Pains across back extending into posterior of pelvis, down thighs and into calves. Have stiffness and swelling of the lower muscles. Stooping difficult in morning; tearing pains, worse when lying and sitting and somewhat resembling *Rhus*. Back and posterior portion of thighs hot during feverish condition.

Circulatory Symptoms—Veins engorged; especially adominal and pelvic vessels in women.

Digestive Symptoms—Slimy, furred, sticky tongue; saliva frothy and viscid; apthæ of mouth; thirst, loss of appetite or great hunger alternating with loathing of food; eructations, bitter and offensive; stinging, burning, cutting pains in stomach. Heartburn; rumbling of bowels with bloating; desire to defecate constantly. Stools mush-like and offensive with rumbling of wind; later with passage of gas or constipation, with clay-colored, sticky stool and burning soreness of anus. Liver: Sudden, cutting, shooting pains located in region of gall-bladder which take away breath and cause retraction of abdominal muscles, causing to lean forward for relief; pains so severe they cause redness of face. Elimination of urine causes soreness, burning and stitching, tearing, pulsating pains in bladder, along the ureters and in kidneys; this pain may have origin in kidneys, bladder or urethra. Urine passed after great urging; of bright yellow color and deposits a mealy gray substance which looks like rye flour. Much mucous is discharged. May have hæmaturia; may have pure bloody discharge with severe pain. Pains when located in bladder or urethra may extend to testicles. Marked stiffening and pain in back, associated with feeling as if the bones were being torn asunder.

Sexual Symptoms—Male: Marked pulpy swelling of spermatic cord, left one particularly. Causes pain on walking of a drawing, burning type, or smarting, tearing; pain may descend into testicle; worse from sitting or walking. Sexual desire so great as to cause too early ejaculation of semen when at coitus. Female: Burning soreness in vagina, especially anterior wall, often extending to vulva, with burning and soreness of anus. Menses increased and anticipated; if early and profuse, desire will be great; if late and scanty, desire lessened. Flow is preceded four to six days by grayish mucous which becomes bloody

as the menses approach. Menses last eight days, followed by discharge of mucous.

SOPHOMORE LECTURE.

Caulophyllum Thalictroides.

Berberidaceæ.

Blue Cohosh, Papoose root, Squaw root. Stalks single, bearing single large leaf at top; stalk ends in a panicle of greenish-yellow flowers. Two feet high.

Habitat—America.

Part Used—Root.

Special Pharmacy—Class III. Eclectic preparation a resenoid, Caulophyllin; dose $\frac{1}{4}$ to $\frac{1}{2}$ gr. O. S. uses it as an emmenagogue.

Physiological Effects—Chief action is on unstriped muscular tissue of uterus. Acts similarly to Cimicifuga on muscles of uterus, only more constantly effecting them, producing recurrent spasmodic pains, chronic contraction. Rheumatic symptoms in small joints, hands and feet. Is equal to Cimicifuga and Actea Spicata combined. Used to shorten labor in pains accompanying rigid os and for hemorrhages accompanying labor. Efficient in all cases when labor troubles occur.

JUNIOR LECTURE.

Caulophyllum.

Blue Cohosh. Eclectics make a decoction by adding 1 oz. of plant to 1 pint of H_2O . Dose 1 to 2 oz. Fluid extract prepared by adding 4 oz. of plant to 1 pint of alcohol; dose 1 to 2 drs. The above are Eclectic preparations. Caulophyllin is not an Alkaloid, but a mixture of resins. O. S. use it as a diuretic and emmenagogue. Active principle is Leontin. Homœo. Tincture prepared by taking fresh root $\frac{1}{3}$ and alcohol $\frac{2}{3}$ by wgt. giving 1-6 drug strength.

Generalities—Most active in women who are rotund and hard of fibre, or in thin exceedingly nervous ones. Spasmodic and severe pain in uterus which tend to abortion in early months of pregnancy. Seems also to effect broad ligaments. Bland catarrhal discharge from vagina. This discharge may become very acrid, and irritating, accompanied by sluggish movements and closed eyelids; worse in open air and better in warm room. Headache, particularly in occipital region; soreness and tension in neck and back of head, with throwing back of head to relieve tension. Unable to sleep; prone to chorea, hysteria and rheumatism. Uterine and ovarian symptoms opposite to those of Secale. Caulophyllum has spasmodic while Secale has tonic. Leontin is an antidote to Secale.

SOPHOMORE LECTURE.

Podophyllum Peltatum.

Berberidaceæ.

Mandrake, May-apple. Leaf is umbrella-shaped; flowers white; fruit yellow when ripe; fruit sweet; root several feet long and jointed.

Habitat—America.

Active Principle—Podophyllin. An alcoholic solution, not an alkaloid.

Parts Used—Root.

Special Pharmacy—Powdered root alone used by O. S. as purgative, dose 5 to 20 grs. Dry extract, same dose. Fluid extract, stand-

ard strength, 1 to 30 m. Resina Podophylli, $\frac{1}{8}$ to 1 gr. Homœo. Tincture, Class III. British 1 to 8, dose 15 to 30 m.

Medicinal Doses—Legitimate doses: Purgative dose to remove foreign substance from bowels, slow action. Homœopaths use it for real diseased conditions.

Overdose Symptoms—Large doses act as drastic purges; slow acting, from 6 to 10 hours. Increases all intestinal secretions and bile; result, copious watery stools accompanied by griping. O. S. use it as a laxative and purgative powder. When inhaled it is exceedingly irritating to all respiratory passages, mouth and skin. Blunts sense of taste; coats tongue yellowish-white. Tongue has peculiar appearance, takes impression of teeth, is flabby and swollen. Nausea and vomiting. Produces salivation like Hg. Liver most prominently effected: Swollen and congested with an alteration of secretions; 1st, bile not sufficiently secreted, result, jaundice; 2nd, hardening of secretions, producing gall stones. In intestines, special affinity for small bowels and on rectum, causing prolapsus; no action on colon; tenesmus and hemorrhoids.

Physiological Effects—Small doses act as laxative; diarrhœa, profuse, painless and watery; stools yellow as from hydrant and aggravated in morning hours. Also offensive stools, accompanied by large amount of mucous, preceded by griping and colic, accompanied by rectal troubles, viz. soreness, heat and pain in rectum. All stools aggravated by eating and drinking. Constipation with clay-colored stools; congested liver with jaundice as result of over purgation. Abdominal symptoms: Sensation of emptiness and weakness. Head symptoms: Children grinding teeth, rolling head in sleep, with mucous stools, green, with pain in rectum. Female genitals: Sensation of falling out or prolapsus of uterus; pains in sacrum, uterus and right ovary, accompanied by weakness and emptiness in abdomen.

JUNIOR LECTURE.

Podophyllum Peltatum.

May-apple, Mandrake. Podophyllotoxine is a resin which is very dangerous to use on old or very young people; dose from $\frac{1}{20}$ to $\frac{1}{2}$ gr., but if marked purgative action is wanted, $\frac{1}{8}$ to 1 gr. Dosage of dry extract from whole plant, 2 to 4 grs.; fluid extract from 2 to 5 m. Tincture strength $\frac{1}{6}$.

Generalities—First effects on mucous membranes of alimentary canal and second on liver and other organs invested with mucous membranes. In lower animals, get intense hyperæmia of alimentary canal, especially of duodenum and rest of small intestines; the tissue finally ulcerates and breaks down. Get retching, vomiting and salivation; colic, purging, tenesmus, depressed pulse and exhaustion. In man, action very marked in intestines and rectum; prolapsus recti and hemorrhoids; salivation, great secretion of bile, followed by torpidity of liver and icterus or jaundice; white tongue, nausea and vomiting; severe pains in abdomen and urging to stool, which is copious, becoming more and more so to exhaustion; lowered pulse, cold extremities and drowsiness. In women, it expends more of its effect on uterus and lower bowels; uterus enlarged and prolapsed. Tincture used in experiments. Effects markedly increased in presence of table salt. Analysis: Weakness, faintness, restlessness in first part of night, associated with pain under right scapula. Febrile condition with marked

chilliness and heat alternating, which always gives rise to desire for defecation.

Nervous Symptoms—Headache, sleep disturbed, much moaning during sleep. Sit or lie with half-closed eyes. Exhaustion and drowsiness during the day, more marked in forenoon and associated with rumbling in abdomen.

Digestive Symptoms—Tongue white in A. M. Mouth full of viscid mucous; loss of appetite and desire for acids; thirst. Vomiting consists of hot, frothy mucous, containing some of contents of stomach, followed by thick green bile and blood. Griping and rumbling. Stools begin at 4 A. M. and are very offensive, yellow and contain undigested food mixed with mucous. At 10 A. M. another stool with sense of acrid burning and tenesmus, with bearing down to void stool. Have great emptiness in epigastrium and perhaps fainting. Enormous stools, stools increase as patient stops eating, so that patient wonders where it all came from. Piles, which give more or less pain, and get prolapsus recti from great straining to overcome tenesmus. Stool hot, variable, green in morning, more natural in evening. Worse when eating and drinking, and may get appetite with these colored stools. Sometimes internal hemorrhoids, which give great pain in rectum and are aggravated by sudden motions, as sneezing. Mental excitement gives pain in hemorrhoids.

Sexual Symptoms—Women: Right ovary especially painful, with flatulence, bearing down of uterus, as though genitals would fall out; worse with flatulence and when stool is normal has feeling as though would fall out.

SOPHOMORE LECTURE.

Senna

Leguminosæ.

Habitat—Cassia Acutifolia Arabia and tropical Africa.

Active Principle—Cathartic acid (excitve irritant).

Parts Used—Dried leaves.

Special Pharmacy—Confection of Senna, with tropical fruits, dose 1 to 2 drs. for adults, $\frac{1}{2}$ dr. for children. Syrupus Sennæ, 1 to 4 drs. Pulvis Glycyrrhizæ Compositus 1 to 2 drs.

Physiological Effects—Used as a base for a great many laxative patent medicines. Tendency to gall stones and jaundice. Watery stools in 4 hours; griping, but no bad effect as from Podophyllum. Taste horrible. Intestinal secretions increased, producing peristalsis. O. S. Constipation of pregnancy; hemorrhoids; prolapsus of rectum. Makes milk of nursing mothers purgative.

Jalapa.

Convolvulacæ.

Jalap, Bona nox, Morning Glory.

Active Principle—Jalapin.

Parts Used—Dried root.

Special Pharmacy—Extract of Jalap and Jalapin resin. Dose, same, 2 to 10 grs. Pulvis Purgans is Jalap and bi-tartrate of Potassium, almost tasteless.

Overdose Symptoms—Gastro-enteritis, and an excessive cartharsis may endanger life.

Physiological Effects—Almost identical with Senna. Has the advantage of being tasteless. Given combined with Syrup of Rhubarb. As a purge, acts in from 2 to 4 hours. First effects, soft stool, followed

by profuse watery stool; some nausea and tenesmus. Is abandoned by O. S. Not used in beginning of acute diseases. Is the most commonly used remedy in cases of ascites and anasarca.

SOPHOMORE LECTURE.

Aloe Socotrina.

Liliacæ.

Aloes: Plant resembles century plant more than any other.

Habitat—Southern and eastern Africa, shores of Red Sea and East Indies.

Active Principle—A resin, Aloin. Eclectic dose $\frac{1}{2}$ to 2 grs.

Parts Used—Inspissated juice of leaves.

Special Pharmacy—Tincture of dried juice $\frac{1}{2}$ to 2 drs. Pilulæ Aloes or soap and aloes, 1 to 4 pills. Lady Webster pills. O. S. constantly lessening dose and repeating.

Medicinal Dose—Prescription, Aloin gr. $\frac{1}{10}$, Calomel gr. $\frac{1}{2}$, NaHCo gr. 1. Five powders at a time.

Overdose Symptoms—Profuse watery stools.

Physiological Effects—Aloin alone acts in from 10 to 12 hours. Small dose produces soft, thick stool. Acts on large intestine. Do not use in inflammation of intestines or in cases of pregnant women, as it acts on uterine tissues, chiefly muscles. Given alone produces feeling of weight and fullness in rectum. Slow action of sphincters are helped by aloes. "Misplaced Confidence."

Rhamnus Purshiana.

Rhamnaceæ.

Cascara Sagrada, Chittem bark, Sacred bark. Taste extremely bitter. Contains some resins.

Special Pharmacy—Extractum Rhamni Purshianae, dose $\frac{1}{4}$ to 1 fl. dr.

Overdose Symptoms—Irritation of bowels.

Physiological Effects—Reasonable doses produce laxative effects. Has the most simple laxative effects, is the least disturbing and least dangerous laxative. Taste extremely bitter. Syrup of orange peel used to cover taste. Best preparation with Maltine.

Oleum Ricini.

Euphorbiacæ.

Castor Oil. Several active principles.

Parts Used—Seeds or beans.

Dangerous Dose—Two or three beans have caused death.

Medicinal Dose—1 to 2 oz.

Physiological Effects—As purge acts from 4 to 5 hours; bland and unirritating and most useful to relieve bowels of undigested food, oiling the intestines. One of the worst for after effects, almost always producing hemorrhoids and constipation. Commonly prescribed in sarsaparilla syrup as soda water. Symptoms of Asiatic cholera, drastic purgation.

Epsom Salts.

Magnesium Sulphate.

Contains Magnesi Citras.

Special Pharmacy—Liquor Magnesia Citratis, most agreeable to taste; made of KCO_2 and syrup solution of Magnesia Citras, in pint bottles; dose $\frac{1}{2}$ to 1 whole bottle.

Medicinal Dose— $\frac{1}{2}$ to 1 oz.

Other Salines.

Glauber's Salts— Na SO_4 , much harsher in action than Epsom, and nauseous.

Rochelle Salts—A compound preparation of K. and Na.; the most pleasant to taste, though not as efficient as Epsom.

Seidlitz Powders—*Pulvis Effervescens Compositus*, prepared in two varieties of paper: White paper, 35 grs. of Tartaric acid. Blue paper, 40 grs. of bi-carbonate of soda, 12 grs. of Rochelle Salts. Mild in action. A laxative used more by laity than physicians.

Physiological Effects—Purgation by increasing peristalsis and causing outpouring of fluid into intestinal canal, not from glands but from blood vessels in rectum. Used in inflammation and for draining perineum.

Rheum.

Rhubarb: Not the same as our pie-plant.

Habitat—Europe and Asia.

Active Principles—Rhein and a number of purgative resins, Phæceretin. Also large number of acids, chiefly Chrisophanic acid, containing tannin.

Parts Used—Root.

Special Pharmacy—O. S. *Extractum Rhei Solidum*, 10 to 15 grs. *Extractum Rhei Fluidum*, $\frac{1}{4}$ to 1 dr. Tincture 1 to 4 drs. Homœopathic Tincture according to Class III. *Syrupus Rhei Aromaticus*.

Physiological Effects—Has astringent properties from the tannin; its acid stimulates digestion, increasing appetite. It has purgative properties, due to the resins, but not long in action. Stains milk, perspiration and urine. If urine is alkaline it will become carmine; if acid, yellow. Milk of nursing mother acquires purgative properties and milk tastes bitter. O. S. use it to empty bowels, and recommend it as curative for sour green diarrhœa in children.

Homœopathic Provings—First: stools sour, slimy, accompanied by tenesmus, griping, colic; the whole body of child smells sour. Second: an excoriating, brown, frothy stool. Third; stools green, slimy, like chopped eggs. All the above stools are sour smelling. An appetite for something, the patient knows not what. Root is used for constipation by laity.

SOPHOMORE LECTURE.

Chelidonium Majus.

Papaveraceæ.

Celendine: Name is given from connection with migration of swallow. One to two feet high. Leaves delicate and flowers yellow. Chief characteristic, a bright yellow juice. Used domestically to remove warts. Introduced under the doctrine of signatures for jaundice and bilious diarrhœa.

Habitat—Germany and France, cultivated in the gardens of New England.

Active Principles—Sanguinarine, and others.

Parts Used—Homœopaths, root. O. S. fresh juice of plant.

Special Pharmacy—Sanguinarine prepared in drug stores. Extract of *Chelidonium*, dose 10 grs. Tincture according to Class I.

Toxic Effects—Violent local irritant. Special narcotic action on nervous system.

Physiological Effects—Liver sensitive, painful and congested. Jaundice. Pain under right shoulder blade. Vomit, stools and urine bilious. Tongue coated yellow, showing imprint of teeth. Stools when thin, are yellow and slimy; when hard, in round hard balls, like sheep dung. Eating relieves gastric disturbances. Has pronounced effect on mucous membranes, particularly those of trachea, bronchi and probably lungs. Much irritation, rattling cough. Expectoration not easy, rising as in symptoms of Tartar Emetic. One foot hot, one cold. Circulation irregular. Effects right side of body.

JUNIOR LECTURE.

Cheledonium Majus.

A local irritant, giving vesication and on ingestion is a narcotic, producing drowsiness with irritability and, finally, loss of reflex with paralysis. Tincture is made of equal parts of fresh plant and alcohol by weight, giving strength of $\frac{1}{2}$.

Generalities—Causes indolence with weakness and desire to lie down, always increased by warmth and by going into open air. Face has yellow tinge; sometimes marked jaundice; yellowness about nose while cheeks are very red. Skin has pimples and pustules, giving rise to itching. Stiffness of muscles of neck and back; tearing in lower vertebræ; joints painful, almost to paralysis.

Febrile Symptoms—Short chill, long heat and dryness of skin at 4 P. M.; later, sweating, which is very marked at 4 A. M.

Nervous Symptoms—Weeping mood, anxiety or apathy. Heaviness of head, especially of occiput, with drawing down the nape of neck, increasing as evening advances, and later so bad that cannot lift head from pillow (Bryonia). Vertigo; dimness of vision; floating specks in air. Stopped-up feeling to ears, tinitis aurium, and feels as if heard wind roaring at great distance. Patient irritable with constant yawning when pains are acute.

Circulatory Symptoms—Sticking in pericardium; pulse rapid but distinct; circulation is poor; finger and toe nails blue with cold.

Respiratory Symptoms—Sticking pains under ribs, more on right side; worse from motion and deep breathing, and giving rise to soreness of chest, as the clothes feel too tight. Spasmodic breathing; marked dyspnoea, particularly in region of sternum, rousing from sleep. Sternal symptoms get worse with marked stitching at lower angle of right scapula, at 4 P. M., and on inspiration and motion, especially of right arm. On rising in A. M., the pain extends around and then becomes oppressive; decreasing, and then coming on at 2 P. M.

Digestive Symptoms—Marked action on liver. Tongue yellow, with red margin and showing imprint of teeth (Merc. and Podo.). Tongue apt to be dry and taste bitter, relieved by eating and drinking; loss of appetite; increased thirst; eructations and vomiting; sticking in abdomen with distension. Hepatic region sore with sense of contraction. Cramp-like pains in hypogastrium; burning, cutting pains in anus and rectum, alternating with itching. Stools bright yellow, copious, pasty and not very offensive; or are light gray and mixed with mucous.

SOPHOMORE LECTURE.

Sanguinaria Canadensis.

Papaveraceæ.

Blood Root: Named from color of root, which is blood red. Used

as Indian paint. One of the most common plants in the United States and one of the first to bloom. On picking flowers an orange-colored juice is seen.

Habitat—United States and Canada.

Alkaloids—Many, Sanguinarine being the principle one. All salts produced by its alkaloids are bright red and orange.

Parts Used—Fresh root.

Special Pharmacy—O. S. Tincture 15 to 100; Homœopathic Tincture, according to Class III, 1 oz. of root to 2 oz. of alcohol. Fluid extract not recommended.

Medicinal Doses—O. S. Tincture 20 to 30 minims. Emetic dose 1 to 3 drs. Powdered root, 1 to 5 grs; emetic dose 10 to 20 grs.

Toxic Effects—Fatal cases tormented with racking, burning pains, and tormenting thirst; sometimes dying in convulsions; death usually due to failure of respiratory function.

Physiological Effects—Key-note, "Congestion." Primarily increases circulation. Most prominent symptoms are vomiting, accompanied by burning in stomach; vertigo and coldness in extremities; palpitation of heart; frequent catharsis, often ending in collapse. Circulation effected. Chief action on mucous membranes of respiratory tract, increasing secretion. Hoarseness; swelling of mucous membranes of throat and larynx. Sometimes dryness with suffocating feeling; whistling cough and symptoms of membranous croup. Rust colored sputa from lungs (blood), accompanied by sharp chest pains. Burnings, congestion or swelling, heat and redness. Produces congestion everywhere, particularly in head. Sick headache intense, worse on right side, from occiput to over right eye. A congestive, not a neuralgic headache. Earache; inflammation and congestion of middle ear, nose, liver and particularly uterus. Congestions all right sided, from vaso-motor disturbances. Sudden rushings of heat and blood to head. Veins distended. Burnings of palms and soles. Patient extremely sensitive to odors. These conditions accompanied with sharp stitching pains, with soreness and stiffness of muscles. Rheumatic troubles of right deltoid; left deltoid similarly effected by Ferrum Metallicum. Used for nasal, aural, and uterine polypi and indications of tendency to bleed.

JUNIOR LECTURE.

Sanguinaria Canadensis.

Both this and Chelidonium give external irritation.

Alkaloids—Sanguinarine, Porphyocine and Puccine. Tincture given in dose of from 5 to 20 m. as an expectorant. Sanguinarine is given in doses of from $\frac{1}{12}$ to $\frac{1}{8}$ gr. Our preparation is tincture of fresh root $\frac{1}{3}$, and $\frac{2}{3}$ of alcohol, giving $\frac{1}{6}$ strength.

Generalities—Weakness, indolence, disinclination to work or rise. Red face; circumscribed redness of cheeks; pain in shoulder, especially at night; marked tenderness of right shoulder joint. Tendency to soreness and ulceration of finger nails.

Nervous Symptoms—Tremors; involuntary movement of muscles; tetanic rigidity. Brain markedly effected; much aching, especially in morning; worse from stooping and from moving. Aching associated with paroxysmal pain in head, worse in right temple, relieved by walking in open air; throbbing worse from motion and stooping; whizzing in ears; transitory flushes of heat in head; vertigo; pupils dilated;

pain in right eye-ball, worse on moving eye upward or outward: darting pain; dimness of vision. North American sick headache starts in occiput and gradually goes over head, finally resting above right eye.

Circulatory Symptoms—Palpitation with head symptoms; pulse rapid, irregular and feeble.

Respiratory Symptoms—Tingling in nose; sneezing, discharge of mucous profuse; heavy pain at root of nose, with sense of stinging; sense of smell partially or wholly lost. Swelling of throat; suffocation on swallowing; dryness in evening, with dry, teasing cough; hacking cough, worse from the tickling, which is just beneath the sternum; worse on lying down and better on sitting up. Dyspnoea. Sticking pains in right chest, running from nipple towards sternum.

Digestive Symptoms—Tongue coated yellow; white, dry subjectively, feeling as though burnt; pain on swallowing; longing for highly spiced food. Appetite which is hard to appease; want things which cannot be procured. Nausea; vomiting with burning in stomach; gastric or reflex symptoms from head. Emptiness of stomach, flatulency, flatus going both ways; rumbling and roaring. Diarrhoea; flatus passed with stools.

Sexual Symptoms—Women: profuse and early menstrual discharge, flow dark or black.

SOPHOMORE LECTURE.

Papaver Somniferum.

Papaveraceæ.

Opium: Laudanum. Opium poppy, one to three feet high; flowers white, petals exceedingly delicate; juice, pure milk white. In Egypt and Asia Minor, obtained by girdling capsule; in India, by making vertical incisions. On exposure, juice turns to dark brown and dries.

Habitat—Europe and temperate Asia.

Alkaloids and Active Principles—18 or 19. Three particularly important: Morphine (sleep-producing), Narcotine (sleep-producing), Codeine (a tetanizing agent) and Apomorphine, a derivative.

Parts Used—The inspissated juice from green, unripe capsules.

Special Pharmacy—Crude state, O. S. Opii Pulvis, dose $\frac{1}{4}$ to 1 gr.; Laudanum Tincture (Tinctura Opii) 11 m. equal to 1 gr. Pulvis Opii, and to $\frac{1}{6}$ gr. Sulphate of Morphia. Paregoric, dose 1 to 8 drs. or 1 to 8 teaspoonfuls, strength about 2 grs. of Opium. 2 grs. Paregoric equals 11 m. of Laudanum. Dover's Powder: Powdered Ipecac 1 gr., powdered Opium 1 gr., Sugar of milk 8 gr.

Dangerous or Fatal Doses—Opium, 4 grs. Morphine, 1 gr.

Medicinal Doses—To relieve pain, $\frac{1}{100}$ to $\frac{1}{20}$ gr. of Atropia to each $\frac{1}{4}$ gr. of Morphia. Suppository use: Extractum Opii $\frac{1}{4}$ gr. with Extractum Belladonnæ $\frac{1}{4}$ gr.

Toxic Effects—Effects appear one-half hour after dose by mouth; in a few seconds, hypodermically. Overdose proves fatal in 10 to 12 hours. Twelve hours generally saves patient. First stage; excitement, face flushed, pulse quick, rapid flow of ideas, dizziness, pupils contracted. Second stage; Narcosis, deep sleep or stupor, pulse and respiration get slow, patient aroused by loud noise. If dose excessive, vomiting, which may save patient; rash on skin; loss of power over bladder; bowels remain constipated; face dark red, then pale; lower jaw drops; pulse feeble; temperature low; urine passed involuntarily. Third stage; coma; breathing stertorous; deep sleep, so that patient cannot be roused;

warm skin, warm but sticky perspiration, which is characteristic of opium; sphincters relaxed, patient dies by convulsions or paralysis of lungs.

Chronic Poisoning—Must use in constantly increasing doses. Depression and exhaustion if not obtainable; melancholia; person loses control of nerves; a mental and physical wreck; weak pulse; previously upright, truthful person, lies. Secondary symptoms: Serous diarrhoea a result of Morphia; primary effect to constipate; cramps in muscles from cessation of drug. Children of mothers who use opium die two days after birth.

Treatment of Opium Poisoning—Stomach tube or Apomorphia, finishing with black strong coffee, allowing it to remain in stomach. Make patient walk; throw water in face. Never walk patient to extent of injuring heart.

Antidotes—Black coffee. $\frac{1}{20}$ gr. of Atropia to $\frac{1}{4}$ gr. of morphia, or to 1 gr. of opium, or to 15 m. of Belladonna Tincture. Do not use Atropia to restore consciousness. KmnO_4 destroys $\frac{1}{4}$ gr. morphia. Keep up respiration over 12 hours.

Physiological Effects—Small doses produce an agreeable stage of stimulation, when fatigue vanishes, time and distance are diminished, face is flushed, eyes brilliant, cerebral excitement. Used by eastern people to give pleasant dreams. Second stage; calm drowsiness and sleep. Gives westerners frightful dreams. Headache, nausea, coated tongue, no appetite, constipation. All secretions checked but those of skin and milk; dark red face.

Brain Symptoms—Sometimes delirium and sleep; acuteness of hearing; stupor generally characterized by jerking of flexor muscles, or if no stupor, violent mania with expression of fear, rivalling that of Aconite. Sterterous breathing, dropping of lower jaw, evidencing paralysis of muscles. Constipation, with black hard balls, covered with mucous. Involuntary stools when diarrhoea. Spasmodic dry cough, worse at night, feverish condition, stupor, red face and tympanitis; hot sweat. Used for bad effects from fright. Renders free from pain.

OLD SCHOOL USES OF OPIUM.

1. To relieve pain from all causes except inflammation of brain. Better to use in combination with Belladonna in renal colic and dysmenorrhœa.

2. To produce sleep in low fevers, when insomnia is associated with pain. It cannot produce natural sleep.

3. To check secretions of all glands except those of skin. (Irrational.)

4. As a sudorific, Dover's Powder. A bungling way of treating a cold.

5. To serve as food temporarily in low fevers when there is great drain on the system.

6. To relieve coughs, but never when there is profuse expectoration. Only justifiable in last stages of phthisis. Codeine best drug for cough in such conditions.

7. In hæmorrhages, as it tranquilizes the circulation.

Contra Indications—Old school never give to children as $\frac{1}{60}$ gr. of Morphia kills. Never to patient with kidney disease or in congestion of brain, respiratory diseases or chronic alcoholism.

DIAGNOSTIC POINTS BETWEEN OPIUM AND OTHER DRUGS.

Contracted pupils characteristic. Pupils contracted unequally in apoplexy involving the pons. Pupils occasionally contracted in uræmic poisoning, but will also find albumen present in urine. Pupils oscillate in coma stage of epilepsy. In opium, warm perspiration; in chronic alcoholism, cold. In drunk, strong pressure on supra-orbital nerve brings consciousness. Difference between dead drunk and apoplexy is that in drunk breath smells and pupils are large and expand to light.

Morphine.

Preparation contains $\frac{1}{8}$ to $\frac{1}{2}$ gr. Produces characteristic itching of skin; is not so constipating as opium *en masse*, is less nauseating, less of a diaphoretic and is therefore more used in medicine than opium.

Codeine.

Never used alone but as sulphate. Dose, from $\frac{1}{2}$ to 2 gr. It is also less constipating, does not lessen mucous secretions; is more of a tetanizing agent. Its continued use produces muscular contractions.

Narcotine.

No narcotic power, entirely a tetanizing agent. Not used alone to any degree.

Apomorphine.

A true alkaloid. Does not exist in opium itself but in morphine, extracted by action of HCl. Hydrochlorate of Morphia is the official preparation, dose, $\frac{1}{16}$ to $\frac{1}{8}$ gr. hypodermically. No narcotic power whatever. Purest, promptest and most powerful emetic we have; producing effect, not by local action, but by action on brain centers. May safely be used to promote vomiting in Opium and Morphine poisoning. Morphine on exposure to air decomposes into Apomorphine. Be careful in administering to old persons or children as bad results will follow. Children bear all forms of Opium badly.

Rule—Never give hypodermic injections of Morphine to child under 15 years, and never give Opium in any way to one under 10 years.

JUNIOR LECTURE.

Opium Somniferum.

Symptoms differ in accordance with size of dose; 1 gr. of Opium produces about same effect as $\frac{1}{4}$ gr. of Morphine. Morphine, however, causes more intense pruritis, is more of an anodyne, more of a hypnotic, less stimulating, less convulsive, less constipating and less of a diaphoretic than Opium. Above effects from small doses. Medium doses; 1 to 2 grs. of Opium. Has power of drying up all secretions of body, except those of skin and mammary glands. Sweat is increased.

Brain is stimulated by increased amount of blood, but no interference of conductivity of nerves governing heart action. Pupils contracted; mind soon becomes calmed; sleep ensues for a greater or lesser length of time according to size of dose. Upon awaking, furred tongue, headache, loss of appetite, constipation, mental and physical depression. Sleep dreamy. Large doses, 3 to 5 grs., instantly arrest digestion, causing nausea, vomiting, greatly increased sweating; con-

ductivity of nerves prevented; heart and circulation depressed; oxidation prevented, temperature lowered; pupils contracted; intense pruritis, especially of nose; retention of urine; stupor from which it is impossible to rouse. Coma vigil associated with delirium. More than a 5 gr. dose is toxic, giving cold sweat; slow acting heart; abolition of all reflexes; coma; contracted pupils, to size of pin point, becoming dilated again as death approaches. Death from action on nerve centers causing suspension of respiration. Post Mortem finds brain deluged with water and lungs congested markedly; right side of heart and venous trunks engorged.

Tincture is called Laudanum. Dose, from 25 to 30 drops or from 13 to 15 m. McMunn's Elixir, a deodorized preparation of opium, ether and alcohol. Acetum Opii, black drop, contains nutmeg, sugar, dilute acetic acid; dose 3 to 20 m. Paregoric is a camphorated preparation and quite pleasant to taste; is a mixture of opium, camphor, benzoic acid, alcohol, anise oil and glycerine. This is oftenest given to children. 1 fl. oz. contains 2 grs. of opium, dose from 1 to 4 fl. drs. Dover's Powder contains: Opium gr. 1, Ipecæ gr. 1, and Sugar of Milk grs. 8. The Ipecac inhibits the action of the Opium. Ipepac is the best drug to supplant Opium and to ward off its harmful effects, although it is not an antidote. It is a good drug to help confirmed users to break the habit. An Opium hunger is acquired after a time and is such that unless the victim has Opium, he gets extremely nervous and restless, even to anxiety, loose morality and lying. Forgetfulness; always chilly, yawning and trying to get comfort by stretching. Attacked by neuralgic pains, especially in extremities; nausea, vomiting, excessive sweating which will not stop till Opium is given in large doses. May substitute Ipecac or Atropine in doses of $\frac{1}{120}$ gr. hypodermically until four doses have been given, when you must stop. Aconite is the best thing in Morphine poisoning; tolerance varies greatly, but may be developed in two months. Gradually diminish and supplant with Atropine, etc. Maximum dose of Morphine is 5 grs. in 24 hours, many cannot stand 2 grs. Maximum dose of Opium is 70 grs. (possibly not 60) in 24 hours. Diminishes red blood corpuscles, anæmia ensuing; muscles flabby, so have but slight contractility; marked constipation. Ingesta decomposes readily. Have flatulence, eructation and frequently an irritating diarrhœa, alternating with constipation. Sweat, due to relaxation, alternating with flushes of heat, due to tension. Have purpura, drosy, marked pruritis. Fever intermittent. Temperature rises to 104°. Then have neuralgic pains in extremities, prostration with fall of temperature, with danger of collapse. Women have great tendency to abort and finally become sterile.

SOPHOMORE LECTURE.

Chloral Hydrate.

Obtained by prolonged action of Chlorine on Absolute Alcohol. It is a white crystalline substance and must be kept in tight bottles. Changed by fixed alkalis into Chloroform.

Fatal Doses—Three grains has killed a child; 30 to 40 grains an adult.

Medicinal Doses—Five to 20 grains. Not more than 30 grains total in 24 hours.

Toxic Effects—Sleep uncontrollable, patient looks dead drunk. Temperature lower than in Opium. Cold sweat; pupils dilated; col-

lapsed condition; total muscular relaxation in from one to two hours. Some made delirious instead of sleepy; wakeful and excited and have fearful headache in the morning.

Physiological Effects—Drowsiness, followed by heavy quiet sleep, from which can be easily aroused. Sleep lasts from two to eight hours and is more natural than that produced by any other drug. No anodyne effect. A pure hypnotic. An extremely dangerous drug when there is weak heart or nephritis. O. S. use it to induce sleep when sleeplessness is due to nervous conditions, never when there is pain or when pain is cause of sleeplessness. Power to control puerpal spasms, tetanus and strychnine poisoning.

Sulfonal.

No odor, no taste, soluble in alcohol, sparingly so in water, soluble in hot water in proportion of 1 to 20. More nearly a pure hypnotic than Chloral. Produces sleep if person is sleepy and desires to sleep. Is neither an intoxicant nor a narcotic, and will not stupefy a person not sleepy. Acts in from one-half to two hours and lasts eight hours. No disagreeable feeling on awakening and no unfavorable action on the heart. Is of no use when pain is present. Best taken in the evening, dissolved in a quantity of hot water and sipped as soon as possible. Is not as powerful as Chloral but succeeds where it fails. Most useful in functional insomnia and insanity.

Dose—Fifteen to 20 grains.

Symptoms of Poisoning—Dullness and stupidity of mind, great prostration; paralysis and death, from action on heart or by producing edema of the lungs. These result from cumulative effects, therefore never repeat on second night, only every other day. Prof. Hare says: Heaviness with staggering gait next day. Paralysis of lower extremities from prolonged use of it.

Hyoscine Hydrobromate.

Formed from alkaloid of Hyoscyamus and resembles Atropine. A useful hypnotic in acute mania, causing delirium in but few cases.

Dose— $\frac{1}{200}$ to $\frac{1}{100}$ gr. hypodermically, and by some given with Sulfonal.

Acetanilid.

From coal-tar series. The antipyretics originated from a search for alkaloids as in Cinchona bark. Acetanilid introduced in trade as Antifebrin, but found out and now both drugs are on the market. May be considered as aniline with one H atom replaced by acetic acid radical or C_6H_7N plus C_2H_3O or $C_8H_{10}ON$, Acetanilid. Made by boiling equi-molecular quantities of aniline with glacial acetic acid and purifying by crystallization from water. Acetanilid is made by heating glycerine and aniline in presence of a dehydrant which gives a substance which is the same as Quinidine, an alkaloid of Cinchona bark. An alkaloid which the O. S. pronounce a good anti-malarial drug.

Special Pharmacy—Acetanilid compound is Acetanilid 6 grs. with Citrate of Caffeine 3 grs. which is the same as Antikamnia. Given by O. S. to cure sick headache.

Medicinal Doses—2 to 10 grs. Not very soluble and is given in capsules; is slightly disagreeable to taste and burns throat.

Overdose Symptoms—A colossal cyanosis, accompanied by profuse sweating and vomiting; ringing in ears; dyspnoea; pupils fixed; marked disturbance of sensibilities and decreased temperature (5 to 6 degrees from one dose). Acts on blood, decreasing coloring matter and actual number of red blood corpuscles. Eliminated through kidneys as Paramido, Phenol.

Toxic Effects—Dark colored urine; liver, kidneys and spleen all found congested. Prolonged usage effects blood, corpuscles shrivelled and crenate. Symptoms more alarming than dangerous.

Physiological Effects—Marked action on nervous system. Clinically, known to remove pains of neuralgia or of superficial character in any part of body. Useless to remove pain due to inflammatory conditions in any part of body. No drug known which will cure sick headache of nervous origin so quickly and effectually. Reduces temperature, the kind which comes with collapse.

Potassium Bromide.

A milk-white crystalline salt, acrid, alkaline taste; soluble in water and sparingly soluble in alcohol.

Special Pharmacy—Elixirii Potassii Bromidi, contains 5 grs. to every teaspoonful and so given.

Medicinal Doses—5 to 120 grs. always given in watery solution.

Toxic Effects—Single dose never kills, 1 oz. gives pain in stomach; wgt. in head and sometimes nausea and vomiting and sleepiness of three days duration. Continued use leads to Bromism. The cumulative effects are mental weakness, general sleepiness and depression, sensibility of skin and mucous membranes. Sexual functions entirely abolished early. An acne-form eruption on face and then on entire body. Breath fetid; temperature lowered; patient muscularly weak; loses taste, hearing and finally mind, becoming idiotic. Some deaths from continued use.

O. S. Usage—Nerve sedative; as hypnotic in over excited nervousness, therefore used in hysteria, D. T., epilepsy, strychnine poisoning, masturbation, nocturnal micturition. Study hypnotics in comparison.

SOPHOMORE LECTURE.

Rhus Toxicodendron.

Anacardiaceæ.

Poison-Ivy: 1 to 3 ft. high. When of the climbing variety called Rhus Radicans. Stunted growth more poisonous than Rhus Radicans owing to greater strength.

Active Principle—Toxicodendric acid, volatile. Poisonous effects due to volatile quality. Susceptible people poisoned by getting near it.

Parts Used—Tincture from fresh leaves, gathered after dark or on cloudy days and in shady places, because poison passes off in sunshine.

Special Pharmacy—Homœo. Tinct. acc. to Class III.

Toxic Effects—Non-poisonous to herbivora. Dogs lose power over muscular organism and die in convulsions with dilated pupils. Acts on spinal cord. Rhus Tox not fatal to human beings, some not even effected by the Rhus Venenata. Redness and swelling of effected parts; surface of skin studded with vesicles, spots itching. Peculiarity: Poison readily spreads wherever fingers go; effects hairy parts, folds of skin between fingers. Mucous membranes inflamed. Poison acts

as though acid developed from slight application. Inflammation of skin of distinct erysipelatous character. Unless cause is known, diagnosis cannot be made.

Treatment—Soak entire body thoroughly in hot soapsuds; next antidote poison in affected parts with soda or bi-carbonate of soda, bathing the parts in strong solution; next, heal inflamed skin, treating as in a burn, protecting from air by bi-chloride towels, 1 to 2000, cosmoline or vaseline; all relieve itching. Solution of Bromium valuable, not to destroy poison but to allay inflammation, 20 gts. of solution of Bromium to 1 oz. of water.

Drugs—Grindelia Robusta, 1 to 10 of water when blood is poisoned. Sanguinaria, Belladonna, Bryonia, Graphites, Ledum and Sepia.

Physiological Effects—Skin symptoms more prominent than rheumatic symptoms; pains in joints and evidently inflammation of fibrous tissues (aponeuroses, ligaments and tendons around joints)—not effecting synovial membranes; better from continued motion. Restlessness. Muscular symptoms aggravated by damp weather and cold air; pains like sprains. Used for over-exertion of any kind, tendons, muscles, etc. Rhus effects left side particularly and crackling in jaw cured by it. Rhus has heart pains similar to those of over exertion, accompanied by numbness of left arm. Action on heart dubious, probably muscular tissues effected. Fever; increased temperature as in typhoid; low, nervous fever, accompanied by delirium and great restlessness, worse at night. Feverish conditions accompanied by yellowish-brown, cadaverous stools, sometimes involuntary and sometimes with tenesmus when they are apt to be bloody. Tongue yellowish-brown, cracked and dry; dry red tip. Soreness in abdomen, tympanitis. Urine either retained or profuse and bloody.

Characteristics—Aggravated from restlessness, relief from continued motion; cracked brown tongue with red tip; aggravated restlessness at night from getting wet and from cold weather; effects left side of body. Dry teasing cough, accompanying fevers. Headache peculiarly described, i. e. board strapped on forehead. Stools, cadaverous, involuntary and bloody. Aconite, Arsenicum and Rhus given only in restlessness. Apis inimical to Rhus, another drug should intervene.

Anacardiaceae—The Cashew family; mainly a tropical plant. Rhus family, so named from color prevalent in parts of most of its members. Leaves, stems and berries brilliant red in autumn.

Rhus Family	{	Poisonous	{	Rhus Radicans.	}	Useful in commerce for tannin.
				Rhus Toxicodendron.		
	Rhus Venenata, Dog-wood, most poisonous.					
	Rhus Diversaloba, Pacific coast.					
	Non-Poisonous	{	Rhus Glabra	}		
	Rhus Aromatica					
	Rhus Coriaria					
	Rhus Punilla					

The two varieties are distinguished by manner of flower growth. Poisonous variety, flowers grow in axils of leaves (axillary inflorescence) whereas in the non-poisonous variety, flowers grow at end of stalk. Rhus Radicans, Poison-Ivy, Climbing Ivy, not used in medicine; easily distinguished, as it has three leaves, with middle leaf on separate stalk.

JUNIOR LECTURE.

Rhus Toxicodendron.

Anacardiaceæ.

Anacardium occidentali and orientali. Occidental is Cashew nut. A bean-shaped nut. Oriental is a heart-shaped nut called the marking nut. They both contain an inky juice which is a severe vesicant and very poisonous. Juice known as Cardol. The heart-shaped nut was used by the ancients to increase mental and physical vigor. They both act similarly to Rhus Tox. Rhus Tox. tincture is made from the fresh leaves. Active principle is Toxicodendric Acid, which is volatile and is made from fresh leaves. Skin, mucous membranes, fibrous tissues and particularly the joints are effected. Along with these come febrile symptoms, either intermittent or continuous fever. Effect begins from 12 to 36 hours after ingestion of drug. The action is persistent, and so, useful in inflammatory conditions of long duration. Olfaction of drug may give symptoms.

Generalities—True dermatitis and inflammation of skin, vesication, bullæ or large blebs. Great heat of skin. Erysipelatous looking eruptions of dark-red or purplish color; formation of boils, infiltration of tissues and sepsis. Effects mucous membranes of bowels, giving diarrhœa and dysenteric black stools, tenesmus, etc. Ulceration of mucous membrane of bowels. The septic material being poured into blood is apt to cause nephritis as a consequence of eliminating it, also cystitis. Rheumatic or neuralgic pains which originate from fibrous tissue, such as muscle sheaths and joint tissues. Numbness is associated with aching and inability to use joints and muscles, giving great pain on first motion, but relieved by continuous motion and a warm atmosphere. Rest in bed aggravates and patient gets up and walks about; worse on awaking from sleep and from sitting. Dampness makes worse. Stiffness and aching of neck, back and sacrum, finally growing weak from excessive exercise and feels paralyzed. Tingling of arms and legs, worse in legs and at night. Restlessness, tossing of legs to relieve nervous tension. Resembles typhoid state, attended with sickly countenance; effect expressed in countenance. Creeping chilliness from 5 to 6 P. M. Head hot internally and externally; as heat develops the whole body grows hot, followed by sweating. Itching almost always associated with burning, worse on touch and feels as though being touched with hot needles. Lymphatic glands swollen, particularly submaxillary, and sore.

Nervous Symptoms—Delirium, usually, with sadness and weeping about nothing in particular. Anxiety, fears of impending misfortune and death, worse in house and better walking in open air. This is mental condition. Vexation and impatience; forgetful; melancholia and vertigo on rising with tendency to fall. Aching and tearing in head with sharp pains through the eyes into head as if dust in eyes. Lachrymation and weakness of eyes. Mucous discharge causing agglutination of lids. Vision dimmed. Tinitis Aurium, crackling, and singing of locust in ears.

Circulatory Symptoms—Palpitation, better if quiet, but body moves with each throb. Pulse rapid and, if not violent, is weak and trembling and shows a reflex of anxiety of mind.

Respiratory Symptoms—Swelling of mucous membrane of nose; also swelling of external surface of nose; also red painful nose which bleeds from its congested mucous membrane, worse through night and in morning. On awakening in night get a sudden watery discharge

from mucous membrane; burning and rawness in the larynx. Tickling and irritability in air passages, giving coughing with anxiety and apprehension. Cough is generally dry with no expectoration, often induced at night by putting hands outside of clothes; this is almost always associated with dyspnoea. Sleepy daytimes, wakeful nights. When sleepless there is a sense of anxiety in præcordium, worse at 3 A. M. and often, when asleep, get frightful dreams and after awaking from these, there is great prostration; body and brain hot but no thirst.

Digestive Symptoms—Pain in lower teeth, especially in incisors, so patient will not bite on food; tearing pain in defective molars; too loose and too long; always relieved by heat. Tongue sore and blistered, very red at tip and coated yellowish-white or brown. If brown, is sticky. Mucous on teeth, causing sores. Breath is offensive. Have great dryness in mouth and throat; taste bitter and then great thirst for water or beer. Ravenous appetite with feeling of emptiness in stomach, hunger disappears on sitting erect. Desire for cold milk; deglutition is difficult with soreness of pharynx; choking; paralysis of muscles of deglutition so swallowing impossible. Nausea; distension of stomach and abdomen with griping pains, worse after eating and drinking; constipation, but as a rule diarrhoea; stools liquid, reddish or yellow from blood, gelatinous and followed by lassitude; hæmorrhoids with itching and burning in anus.

Urinary Symptoms—Marked irritation, frequent urging at night; urine dark, scanty and irritating, sometimes bloody and soon gets turbid on standing. Urine hot on being passed and possibly turbid before passage.

Sexual Symptoms—Swelling of prepuce, giving paraphymosis; scrotum swollen, tough, itching and burning; penis red and swollen; when swelling disappears, scrotum hangs flaccid and low. Women: Soreness of vagina, congestion of uterus and tendency to menorrhagia. Menses: Blood is corroding and biting, excoriating vulva after each menstrual period; also causing eruption about genitals. Milk disappears in nursing women.

SOPHOMORE LECTURE.

Anacardium Orientali.

Anacardiaceæ.

Marking tree, Molasses bean: Others of same species called Occidentals found in West Indies and northern South America. O. S. drug indigenous to western hemisphere, the Oriental to India. A tall large, beautiful tree; beans from which drug is obtained grow on top of fleshy pear-shaped fruit. Nuts are hard and brittle, having two layers of shell, between which is an oily, brown, acrid liquid which contains an active principle, Cardol, a yellowish red oil with properties similar to Rhus Toxicodendric Acid. Used by O. S. as a vesicant, dangerous.

Parts Used—Juice of nut.

Toxic Effects—From 3 or 4 gtt. taken internally.

Physiological Effects—Within 12 hours of application of juice to skin, black blisters appear, followed by erysipelatous inflammations; in 6 days scales appear; then violent exfoliation of skin, taking about two weeks to heal.

Provings—Mental effects most marked; loss of memory; great depression of spirits; melancholia; idea as of pursuit by some one; excessive anger; irritability; strong language.

Characteristic Symptoms—In all chest, abdominal and spinal symptoms, a feeling as of a plugging of all parts. Covers much the same field as *Rhus*.

Tannic Acid—A product of the non-poisonous varieties of *Anacardiaceæ*. Used in tanning. Chief medicinal source from nut galls, excrescences on oak trees, stings of insects, etc. It is an anhydride of Gallic acid. It constricts tissues and forms clots in blood, therefore a valuable local hæmostat. Given internally, slowly changes into Gallic Acid, so power exercised in distant parts is due to Gallic Acid.

SOPHOMORE LECTURE.

Baptisia Tinctoria.

Leguminosæ.

Leguminosæ has about 400 genera and 7,000 species, 350 of which are in the U. S. Flowers butterfly-shaped and all leaves compound; clover the simplest form.

Baptisia Tinctoria: Wild Indigo, is from 1 or 1½ to 2 ft. high, with small, bluish-green, compound, wedge-shaped leaflets; plants bushy. Have bright yellow flowers in July and August.

Habitat—In barren lands in U. S.

Alkaloids and Active Principles—An alkaloid without a name and a resinoid, Baptisin.

Parts Used—Bark of fresh root.

Special Pharmacy—Known among O. S. as a cathartic and an emetic and they use it as a cholagogue. Excites severe inflammation of gastro-enteric mucous membrane. They use it also for gangrenous ulcers and sores in low fevers, typhoid, variola, typhus and scarlet fever. Other drugs that act on Peyer's patches are Iodine, Mercury and Turpentine.

Physiological Effects—Distinct febrile movement. Increases temperature; high colored urine; some have pains in stomach, as though pushed forward; vomiting and diarrhœa. Small doses give constipation. On cat produced inflammation and ulceration of Peyer's patches and intestinal glands. Intestinal contents found bloody and mucoid. Fever always of a septic type. Blood disorganized as shown in offensive secretions. Mental effects, very peculiar; idea as if body were scattered in pieces and patient were trying to gather pieces together and replace. Sore bruised feeling all over body cured by it. *Baptisia* patient has a heavy besotted look; eyes stupid and heavy as in *Opium*. Tongue brown with streak down center; sordes on teeth; inflammation of all mucous membranes and ulceration. Offensive secretions as in diphtheria.

Physostigma Venenosum.

Leguminosæ.

Calabar bean. A woody vine somewhat like that of grape. Pods 7 inches long, containing 2 or 3 beans, which are size of chestnuts.

Habitat—Niger and Calabar rivers in Africa.

Alkaloid—Beans contain an alkaloid, Eserine.

Parts Used—Beans.

Special Pharmacy—Homœo. Tincture acc. to Class IV. O. S. Tincture 15 to 1 or stronger than ours, dose 5 to 20 m. Eserine used as sulphate and salicylate; dose $\frac{1}{50}$ to $\frac{1}{100}$ gr.

Medicinal Dose—O. S. solid extract $\frac{1}{16}$ to $\frac{1}{4}$ gr.

Toxic Effects—Dizziness, faintness, loss of all muscular power. Tremor characteristic. Pupils contracted, tetanus of intestines with

vomiting and purging. Cold extremities and skin. Child remained conscious till death.

Physiological Effects—Characteristic symptom, tremor of muscles. Short contraction. On spine, effect opposite to Strychnia. Antidotes: Atropine or Belladonna in eye, also coffee. Artificial stimulation and respiration. Heart stimulant. Used in spasms, tetanus, progressive paralysis of insane and its spasms. Chief use in eye, 1 to 4 gr. in 1 oz. of water. 1 oz. solution only contracts pupils; 4 oz. solution paralyzes accommodation, lowers intra-ocular tension and dries up eye secretions. Iris contracted by jerks; severe pain in head and eyes; twitching of orbicularis in sensitive persons. Oculists use it to prevent adhesions, to relieve intra-ocular tension and photophobia. Tincture for glaucoma or increased intra-ocular tension. Other way of cure, by iridectomy.

Capaiva.

An oleo-resinous substance of bitter, nauseous taste.

Active Principle—A sort of resinous varnish.

Special Pharmacy—Dose of varnish from 5 to 20 m.

Physiological Effects—Irritating to stomach; heat, loss of appetite; eructations; diarrhœa, and all symptoms of gastro-intestinal catarrh. Urticaria of skin. Urine reacts to albumen; First; increases quantity. Second; lessens quantity, with albumen and burning pains in urethra generally, therefore the inflammation of urethra and pain in loins attributed to congestion of kidneys. O. S. use as a cure for gonorrhœa.

Abrus Precatorius.

A plant ten to twelve feet high. The common Indian licorice root; Prayer beads; Crabs.

Habitat—India and in Brazil as Jequirity.

Parts Used—Seeds.

Special Pharmacy—Infusion, 9 grs. to 1 oz. Preserved from decomposition by addition of 4 grs. of Boric acid.

Physiological Effects—Much used in eye diseases, applied to conjunctiva. Solution rapidly produces diphtheritic or croupous membranes and acts on membranes generally. Period of irritation, 3 days; suppuration in 5 days; 15 days before inflammation subsides entirely. This drug is the basis of Orange Blossoms, a patent cure-all for female troubles. Injected, acts like snake poisons, producing a decomposition of the blood and is, therefore, a powerful heart depressant.

Gums.

ACACIA VERA.

Gum Arabic. A large sized tree in Asia, India and Egypt. Drug also found in beet sugar. Used by O. S. as a vehicle. Official preparation, Mucilago Acaciæ; Acacia 340 to water 1,000. Syrupus Acaciæ, Mucilage of Acacia 25 to syrup 75. Good protective for inflamed surfaces, therefore used internally after corrosive poisoning.

TRAGACANTHA.

Tragacanth gum, a low shrub, even a better protective than Gum Arabic and used in all cases that Acacia Vera is.

ASTRAGALUS MOLLISSIMUM.

Exceedingly poisonous to horses and cattle, producing locomotor ataxia. Mind loses power; pleasant intoxicated feeling; numbness of neck and back. Pupils of eyes contracted, and all colors of rainbow seen. Paralysis of eye muscles.

CYTISUS SCOPARIUS.

Broom: Tops of plants used in medicine as decoction. $\frac{1}{2}$ oz. of broom-tops to 1 pint of water, boiled down one-half. Most efficient diuretic known. Used in advanced stages of kidney troubles where dropsy occurs. Drink decoction freely. A mechanical measure only, but will do when nothing else will do.

GLYCYRRHIZA GLABRA.

Licorice root.

Habitat—Southern Europe and Western Asia. 37,000,000 pounds imported to United States in one year. O. S. has two preparations, Syrupus and Extractum; Syrupus 10% sol. Extractum dose, use freely. Mistura Glycyrrhizæ has Antimony and Opium in it.

MELLILOTUS.

Yellow or Sweet Clover. Medicine from flower of red and white varieties. Congested headache and red face relieved as by nose-bleed.

BALSAMUM PERUVIANUM.

Peruvian Balsam: From tall tree in Central America. A thick, pleasant balsamic liquid. Used extensively by O. S. as remedy in external applications. Soluble in absolute alcohol only. Will make a clear solution in equal parts of 91% alcohol and ether; also in 15% sol. of vegetable oils, castor, olive, or lard. May be diluted with glycerine. Germans use it almost exclusively as a remedy for scabies; also by them in United States for sore nipples, where it is almost a specific. Also used as an antiseptic in deep wounds, forming an impervious covering.

TOLU BALSAM.

From a South American tree. Used as a substitute for Peruvian Balsam, being more readily soluble. Is lighter in color and is of a more pleasant taste.

ROBINA PSEUDIACEAE.

Locust Tree: O. S. from bark of root; Homœopathic from bark of young twigs. Most characteristic effects on digestive organs and used for acid dyspepsia, belching of gas and vomiting of sour fluids. Weight and pain in adomen. Distension or flatulence of abdomen.

Hamamelis Virginica.

Hamamelaceæ.

Witch Hazel. Common American shrub, six to eight feet high. Grows around edges of woods in western states and Canada. Flowers do not appear till late in fall and nuts ripen in fall of following year. Forked witch-hazel used as divining rod.

Parts Used—O. S. made from dried leaves. Homœopathic Tincture from bark of fresh twigs and root according to Class III. Medicinal properties being volatile, will evaporate in air.

Special Pharmacy—Important. O. S., U. S. Pharmacopœia, Fluidum Extractum Hamamelidis, a dark molasses-colored liquid. Used as local douches in throat, vagina and rectum, being preferable in these uses, as it has little alcohol. Preparations most frequently used are distillates from alcoholic solution, giving a perfectly clear liquid, possessing the volatile elements of Hamamelis only. Pond's Extract, a very weak distillate, the same as an aqua or common witch-hazel diluted 4 times. Made from bark.

Physiological Effects—Three divisions of action. First: Causes engorgements of all veins, therefore best only in venous hemorrhages. Inner coat congestion equals an inflammation, the ultimate effect being to narrow the lumen, then enlargement above contraction, varicose veins and piles. Second: On sexual organs, neuralgic pains of testicles and ovaries; inflammation of testicles and urethra. Frequent urination; emissions of semen. Smarting, burning pains in ovaries. Painful contraction of vagina, pruritis. Third: On fibrous tissue, equals Rhus. Soreness, fullness and pain about joints. Dread of moving leg, arm or joints. Weary and stiff with rheumatic pains in joints.

SOPHOMORE LECTURE.

Bryonia Alba.

Cucurbitaceae.

Gourd family, Cucumber family. Mostly herbs, but some shrubs. All contain a bitter laxative principle under peel. Bryonia Alba common in Germany and France. A vine known as wild hops. Black berries. Root three feet long and as large as an arm. Bryonia in Georgia and Louisiana called Bryonia Boykinii, red berries.

Active Principle—All varieties have glucosite. Bryonin, dose $\frac{1}{8}$ to $\frac{1}{3}$ gr.

Parts Used—Root or risome.

Special Pharmacy—O. S. Tinct. from both varieties, 1 to 9, dose 5 m. up. Hmœo. Tinct. Class I (equal parts). Powdered root a drastic purge in doses of from 10 to 40 grs.

Fatal Doses—Powdered root has caused death after violent vomiting and purging. Death preceded sometimes by delirium and loss of consciousness instead of stools.

Physiological Effects—Produces a febrile disturbance. Fever of an irritating character, due to local inflammation. Characteristic Symptoms: Profuse sour sweats, resembling Rhus fever accompanied by asthenic condition of circulation similar to fevers of scarlet, typhoid and diphtheria. Particular effects: 1. Specific effects on serous and synovial membranes causing inflammation. 2. Watery exudates. 3. Fibrinous exudates equal to sharp stitching pains of Bry. aggravated by motion. Relief from rest. All organs enclosed in serous membranes irritated and inflamed. All mucous membranes inflamed and characterized by dryness. Mouth dry; dry hard shaking cough; dry nasal catarrh; soreness behind sternum; dry bronchial catarrh. When lungs are effected, characteristic sharp stitching, pleuritic pains; breathing short and quick; cough dry and hard; tenacious mucoid expectoration, always scanty and sometimes rust-colored. Fibrinous exudates from serous and mucous membranes. Flushing of face and neck; considerable headache in susceptible patients. Important action on synovial membranes; joints swollen, sensitive to touch, aggravated by motion; skin of joint shiny and hot. Distinguishing mark,

stationary inflammation. Jumping rheumatic inflammations are those of Pulsatilla, Colchicum, Benzoic Acid and Caulophyllum. Bryonia inflammation, red muscular tissue, not fibrinous parts; Rhus the sheaths, therefore the aggravation by motion of Bryonia pains.

Brain Action—Congestion, frontal headache, dizziness, vertigo; face hot and red, more or less delirium and congestion of nasal mucous membrane and epistaxis. If not delirious, patient irritable and cross; a desire to get home as in typhoid fever. If a patient talks, it is about daily business.

Tongue, yellowish or yellowish-white coat; intense thirst; give pure water. Sensation of lump in stomach after eating, like lead. Liver symptoms: burning pains and tenderness in hepatic region; jaundice; great sensitiveness in epigastrium. Often vomit undigested food. Stomach symptoms effected by drinks. Sensitiveness in abdomen with rumblings and gurglings; profuse pasty stools; rectum dry. Suppressed menses and lochia; vicarious discharges; nose bleed with menses. Irritation and inflammation of mammary glands and ovaries hard and tender; very painful; breasts hot, smooth and shining.

Summation—Key Notes: Aggravation from motion from irritation and inflammation of membranes and red muscular tissue. Pains sharp and stitching. Mouth dry. In children mouth dry with chewing motion and brain symptoms. Delirious, doing daily business and have desire to get home. Must be humored. Pain and soreness in legs with feverish condition. An aggravated hot weather diarrhoea.

JUNIOR LECTURE.

Bryonia Alba.

Death from 3 grs. of Bryonin. Is used to reduce dropsies, as it is a drastic purge. O. S. use powdered root, 5 to 8 grs. for purgative action, or from 5 to 80 m. of Tinct. Bryonin, $\frac{1}{6}$ gr. gives marked purgation; is very irritating and inflaming. Is also a vesicant, changing the secretions and finally the tissues themselves. Marked action on serous membranes; pours out excess of synovial fluid; irritation of synovial structures and inflammations of joints; muscles likewise and same of internal organs, as liver, giving jaundice; kidneys giving tenesmus; heart irritated and depressed in action, also bronchi, small tubes and lungs.

Generalities—Face and body covered with a rash which itches; worse on walking and relieved by scratching; hot, red, puffy face; inflammation of mucous membranes; chilliness after midday, especially after taking a nap; confusion of brain; body covered with goose-flesh; face gets red and hot even while the goose-flesh predominates. Then follows internal heat with a feeling as if hot water coursed through the vessels; then follows heat externally which reaches its acme in the evening. Lying down increases the heat, but still the patient feels as though he must lie down. Fever continues all night, but has no thirst. Restlessness, worse in abdomen; sweating over whole body, experienced even when walking in cold air, and which is greatly increased on slight exertion, being very severe all night. Locomotor system: All parts unsteady, especially on trying to move; relieved by continued walking. Stitching in joints, worse from motion; marked sensitiveness to touch, especially in A. M. Weariness in A. M. on rising and on walking; weakness of knees, especially on ascending stairs. Vertigo on quick movement of rising. Fainting attended by sweating of fore-

head with nervous rumbling in abdomen. Joints stiff and hot, slightly reddened, but may be pale.

Nervous Symptoms—Delirium worse at night and in early A. M. The delirium is all about business and is followed by anxiety and apprehension of the future. Irritable, quarrelsome, weakminded with disappearance of ideas with faintness. Stitching through brain, worse on motion of head or eyes or sneezing. Worse in A. M. shortly after rising with vertigo on rising; whirling of brain with nausea and faintness. Shooting and pressing out of forehead or frontal protuberances and also occipital protuberance, worse from eating or motion and on stooping. Unsteady gait on walking. Motion of eyes often aggravates pain in head. Lachrymation with burning, intermittent pains, worse on moving eyes about. Continued twitching, drawing pains in upper lids. Rain-bow colors; roaring in ears. Sleep: Considerable yawning and sleepiness in daytime with restless sleep at night. When sleeps, dreams of business affairs.

Circulatory Symptoms—Stitching, aching and rapid action of heart and very violent pulse at times. Feels as if too much blood rushed to head, giving rise to vertigo and epistaxis. Vicarious menstruation in women.

Respiratory Symptoms—Stitching in chest with cough; holds chest when coughing; worse on side of body on which he does not lie; crying out with these pains. So tender that patient tries to hold breath. Constriction of chest with great desire to breathe deeply, while breathing in itself is painful. Coryza; sneezing associated with coughing and hoarseness. Cough dry, but may be an expectoration which is very viscid and takes great effort to dislodge. Cough may be referred to as having origin in stomach.

Digestive Symptoms—Tearing, stitching pains in teeth on eating, which are worse on warmth and relieved momentarily by taking cold water into mouth. Pain better while lying on painful side. Pain alternates between upper and lower jaw. Jerking and drawing pains; spongy, sore gums; white coated tongue; dry mouth relieved by swallowing cold water; so dry that it sticks to roof of mouth. Bitter taste; soapy, frothy saliva; bitterness made better by frequently sipping water. Hunger and thirst. If have thirst, it is for a great draught of water at one time. Internal but no external heat when this thirst prevails. Desire for coffee. Eructation and vomiting of food, but not of drinks. Feels as if had a load in stomach. Stools: Griping, cutting, tearing pains in abdomen preceded by rumbling of flatus. Flatus is offensive. Stools cause burning and stitching in anus and rectum. Hæmorrhoids. Have two varieties of stools, one loose, somewhat, and other hard and dry as if burnt. Have alternating hard and soft stools; sometimes an acrid diarrhœa with sensation as if stool was pasty with inability to complete it. Burning with this diarrhœa, worse at night; bilious, green or yellow with odor of old cheese.

Urinary Symptoms—Urine red, brown or yellow; passed more frequently at day than at night. Sediment may be of light color.

Sexual Symptoms—In men, have an increased desire for sexual intercourse. Women have excessive flow.

Is long acting, about four weeks.

SOPHOMORE LECTURE.

Citrullus Colocynthis.

Cucurbitaceæ.

Bitter Apple or Bitter Cucumber. Plant resembles water melon

(Continued from opposite page.)

Habitat—Spain, Turkey, Africa and Asia.

Active Principle—Colocynthin, also a resinous Eclectic preparation, impure.

Parts Used—The pulp of fruit.

Special Pharmacy—Class III or 1 to 10. O. S., Extractum Colocynthis Solidum. Also a compound extract with Aloes. Pilulæ Catharticæ Compositi equal to Colocynth, Hyocymamus, Jalap, Podophyllin, Leptranda, Peppermint, Calomel and Gamboge.

Fatal Doses—1 to 2 drops probably fatal.

Medicinal Doses—O. S. solid extract $\frac{1}{2}$ to 2 grs. to produce catharsis.

Toxic Effects—Gastro-enteritis, vomiting, etc. Watery stools; violent colicky pains. Classed by O. S. as a hydragogue cathartic, but because of colicky pains, never prescribe it alone. Dangerous for pregnant women, causing abortion.

Physiological Effects—Violent colic, causing to bend double, wanting pressure. Violent neuralgic pains in all parts of body similar to colic. Hip-joint neuralgia most prominent. Mental condition like Bry. Crossness. Used for colic from intense anger. Nervous mental restlessness. Pains great, causing groaning and swearing. Pain in all parts of abdomen and congestion of all abdominal viscera. Colicky pains about the ovaries, relieved by pressure, (characteristic). Dysentery and inflamed rectum with great pain.

variety. Fruit, size, appearance and color of small orange. Fruit has rind and is spongy inside. (Balance of lecture on opposite page).

JUNIOR LECTURE.

Bitter Cucumber.

Contains Colocynthin and Colocynthein, both resins. Dose of Colocynthin is from 2 to 8 grs. Also have an extract used to unload tissues in dropsy by purgation. Has a long period of action, 30 to 40 days.

Generalities—It is a drastic purgative. Cramps in all muscles, relieved by pressure. Muscles sore after cramps. Twitchings and spasms of facial muscles, drawing, tearing and aching, and some swelling in thighs and hips, especially in right. Pains appear and disappear very quickly (Bell.), are throbbing and stitching, but are better while sitting; although relieved there is a feeling of weight in lumbo-sacral region. Walking relieves symptoms; gets relief from weight in lumbo-sacral region by lying on left side. Heat and tenderness of parts; tendency to relief by extra warmth; better while in bed and covered up until about 4 A. M., when pains are boring and throbbing. Pains in sacral region involving sciatic nerve and hip down to popliteal space.

Nervous Symptoms—Moroseness; easily provoked; anxious; severe headache; boring in temporal regions with sense of burning and relieved by pressure, and is also associated with pain in eyeballs, worse on motion and stooping. Roaring in ears with throbbing pains, relieved by pressure. Marked neuralgia. Stitching pains relieved by pressure.

Digestive Symptoms—Feeling in mouth as if scalded; bitter taste; hunger; thirst; empty eructation; nausea, vomiting of bitter serous fluids. Gripping in epigastrium after meals, worse in evening. Constriction and crampy pains in abdomen. Distension and rumbling of wind; sounds as of frogs croaking in intestines, which feel as though they had been rubbed between stones. Face distorted; eyes drawn and squinted; pressure on abdomen relieves. Discharge of flatus affords relief; but only partial. Distension is downward and toward the inguinal rings as if hernia would protrude. Stool is pappy, thin, frothy, sour, yellow, bloody, always gushing and with flatus. Great urging and great pain in bowels which are ulcerated; worse in upright position. Sticking and burning in rectum and anus.

Urinary Symptoms—Pressure on bladder, frequent urging; brownish or flesh-colored deposits from urine; sediment is sticky or viscid (Sepia).

SOPHOMORE LECTURE.

Elaterium.

Cucurbitaceæ.

Squirting Cucumber—A vine with cucumbers 1 to 1½ in. long. When ripe, cucumbers separate from stem and squirt seeds through openings made thereby.

Habitat—A common weed in southern Europe.

Active Principle—Elaterinum, prepared from fresh juice of cucumber.

Parts Used—Homœo. Tincture acc. to Class I, also from fresh juice. O. S. Elaterium, a sediment from juice.

Medicinal Doses—Elaterium, O. S., $\frac{1}{6}$ gr. Elaterinum $\frac{1}{30}$ to $\frac{1}{16}$ gr.

Physiological Effects—Sudden profuse watery stool, projected with great force. Most powerful hydragogue cathartic we possess. Will not act unless taken internally. Acts mechanically. Taken subcutaneously, produces insensibility, salivation, delirium and tetanus. Produces a profuse watery secretion from any mucous membrane, lessening size of congested organ or tissue.

JUNIOR LECTURE.

Elaterium.

Cucurbitaceæ.

Elaterium has an active principle, called elaterin which is very powerful and acts on mucous membranes, giving profuse discharge, thin and watery, like serum and has been used to reduce dropsical effusions. Elaterin has no effect on mucous membranes of lower animals but develops nervous symptoms. Never use it hypodermically as will cause tetanus. Tincture is made from green fruit and gives marked purgation and great desire to urinate, with heat at neck of bladder. Has a nervous erithism which drives from home. Periodical intermittent fever with hives. Neuralgic pains in intestines and renal system. Given in doses of from $\frac{1}{32}$ to $\frac{1}{16}$ gr. Is long acting. Dose of Elaterium, $\frac{1}{16}$ to $\frac{1}{2}$ gr. Lasts 20 to 25 days.

SOPHOMORE LECTURE.

Cicuta Virosa.

Umbelliferæ.

Water-Hemlock, Water-Parsnip—1300 species.

Characteristic inflorescence. Umbrella-shaped flowers. A German plant, 1 to $1\frac{1}{2}$ ft high. *Cicuta Maculata*, an American plant, larger.

Habitat—Germany.

Active Principle—Cicutoxine.

Parts Used—Fresh root.

Special Pharmacy—No O. S. preparation. Homœo. Tincture Class I.

Physiological Effects—Resembles Strychnine, effecting mainly medulla and spinal cord. Produces: 1. Local spasms. 2. Local tonic spasms. 3. Sudden rigidity of entire body followed by little jerks and a series of shakes and violent contortions. Eyes become fixed and staring, often tetanus and symptoms of opisthotonos. Patient becomes unconscious. Cerebral hyperæmia; dilated pupils; headaches; many symptoms of concussion of brain and epilepsy. Peculiar pustular eruptions on face and hands, characterized by honey-colored scab.

Conium Maculatum.

Umbelliferæ.

Spotted Hemlock, four feet high.

Alkaloid—Coniine.

Parts Used—Whole plant excepting root.

Special Pharmacy—Homœo. Tincture acc. to Class I. O. S. Extractum Conii Solidum. Fluid extract of which 1 gr. represents 1 m. of drug.

Medicinal Doses—Extractum Conii $\frac{1}{2}$ to 1 gr. Fluid extract 2 to 6 drops. Coniine $\frac{1}{60}$ gr.

Toxic Effects—Most characteristic effect, general muscular weakness, deepening into complete paralysis of motor nerves. Some gid-

diness and disturbances of vision. Patient conscious to last, therefore not much cerebral effect. Death; if at all, in from 3 to 4 hours, from paralysis of respiratory organs.

Physiological Effects—Headache, fullness and dizziness characteristic. Patient so weak, can lie nowhere but on back. Acts on glands of body, producing impaired nutrition; therefore atrophy, especially of mammae and testicles. Secondary effect, congestion, enlargement and stony hardness of glands. Used for scirrhus breast. Mental symptoms: Characteristically those accompanying atrophy of glands; melancholia, hypochondriasis. Dilatation of pupils, haziness of vision, photophobia and ptosis.

Petroleum Sativum.

Parsley.

Active Principle—Apiol, a green oily liquid of pungent taste, used extensively in France as a remedy for intermittent fevers and as an emmenagogue.

Physiological Effects—Chiefly on urinary organs; inflammation of urethra, pain in urination; crawling, itching sensation in fossa navicularis.

Ferula Asafœtida.

Devil's Drug. Leaves 2 or 3 ft. long, broad and growing from one center and accompanying an umbel of flowers on a 10 ft. stalk. Root large.

Parts Used—Gum resin from root.

Special Pharmacy—Homœo. Tincture acc. to Class IV. 95% of alcohol can be used. O. S. Tinctura Asafœtidæ 20 to 100 or 1 to 5. Dose $\frac{1}{2}$ to 2 drs. O. S. pills 3 to 15 grs. Odor extremely disagreeable.

Physiological Effects—Produces hysterical contractions of muscles and sensation of ball rising in throat. Enormous distension of abdomen with gas. Produces hyperæmia of glands of body, especially sexual glands, swelling and induration. Erotic feeling. Menses too fast and profuse. Mucous secretions increased. Watery diarrhœa, headache, dizziness and increased temperature. Bones extremely sensitive with severe throbbing pains, therefore used in syphilis with these symptoms. Used clinically with deep ulcerations and caries, especially of tibia. O. S. use it for nervousness and hysteria.

Valeriana Officinalis.

Valerianacææ.

Great Wild Valerian—grows from 2 to 4 ft high.

Habitat—Europe and Asia.

Parts Used—Root.

Special Pharmacy—O. S. have many preparations.

Medicinal Doses—Powdered root, 20 to 30 grs. Tincture 1 to 3 drs. Fluid extract 1 dr.

Physiological Effects—Hyperæsthesia. Produces spasmodic movements, staggering gait, dizziness, headache, dilated pupils, sparks and flashes before eyes and great prostration. All due to action on ovaries and testicles. O. S. use it for hysterical conditions. Attracts cats, produces watery stools and excites sexual organs.

SOPHOMORE LECTURE.

Cinchona Officinalis.

Rubiaceæ.

China, Peruvian Bark, Calisaya Bark. Tree grows in mountains of South America, in altitude of from 5,000 to 7,000 feet only. They are forty to fifty feet high. Introduced into the Himalaya mountains. An evergreen tree.

Alkaloids and Active Principles—Quinine, Quinidine, Cinchonine (Tannic Acid, etc), Cinchonidin and Cinoidine, a black, bitter, syrupy residue of the alkaloids.

Parts Used—The dried bark.

Special Pharmacy—O. S. Tincture of Cinchona and Homœo. Tincture, China are identical. Prescribed as a sulphate, Quinia Sulphas. Chocolate caramels hide taste best. Not easily soluble in H₂O but solution obtainable by adding 1 drop of dil. H₂SO₄ to 1 gr. of Quinia. Antiseptic properties. Preservative for meat milk, 1 to 300.

Fatal Doses—Quinia Sulphas, 1 to 2 oz.

Medicinal Doses—Quinia Sulphas, 1 gr. up. Official pill, 2 grs. Tannate of Quinia weaker and larger doses possible. Quinia given in sugar or gelatin pills.

Generalities—According to Hare, contra-indicated in all cases of gastritis, cystitis, meningitis, epilepsy, cerebritis and middle ear diseases of any kind. In 1790, Cullen stated that it had a strengthening effect on stomach and thus cured ague. O. S. use to cure any weakness due to draught or drain on the system of vital fluids. Destroys white blood corpuscles. Spleen: 1. Increases. 2. Decreases size and destroys malphigian action.

Toxic Effects—Ringing in ears, fullness in head, disorders of taste and interferes with smell and vision. Cases of total blindness from one dose; flushed face; staggering gait and evidences of cerebral congestion, relieved by nose-bleed. Deafness and ringing in ears characteristic. Deafness from congestion in middle ear. On dogs, produces atrophy of optic nerve and thrombosis of central vein of retina. Hæmorrhages: 1. Middle ear. 2. Nose, lungs and any part of body.

Physiological Effects—Liver congested; jaundice; biliary secretions favor gall-stones; bitter taste; white-coated tongue; canine hunger; violent thirst; nausea; vomiting; diarrhœa, painless undigested stools worse at night and after a meal. Rapid exhaustion after stool which smells awfully. Powerful stimulant to uterine contractions. Five grains is immense in atonic labor when labor is useless. Chill, fever and sweat in regular order and having distinct intermission of comparative health. Quinine chill returns at same hour each day, intermission characteristic. Thirst with every stage. Symptoms begin in dorsal vertebræ with spinal sensitiveness. China; little if any thirst in cold chill or hot fevers but thirst in third stage. Sweats always profuse and debilitating. Periodical infra-orbital neuralgias, aggravated by slightest draught of air, are always the case except in hæmorrhages.

JUNIOR LECTURE.

Cinchona.

China Officinalis. There are two varieties, rubra and flava. Flava contains more quinine than rubra and an equal amount of Quinidine and Cinchonine.

Generalities—It is rapidly diffused, stimulating the whole system, but is slowly secreted. It appears in urine fifteen minutes after administration and one dose will appear for many days. Appetite and digestion improved and assimilation is augmented, but the secondary symptoms are a diminished digestion and a catarrhal condition of the alimentary tract, giving constipation. It arrests the movements of the white blood corpuscles but increases their number. Heart stimulated by small doses but depressed by large. Nerves and brain exhilarated by small doses. Large doses give anæmia. Pallor with great sense of fullness and constriction as though band were around head. Ringing in ears; vertigo; staggering gait; amblyopia and always headache. Delirium; coma; dilated pupils; some get convulsions, which condition is called Cinchonism. Spinal cord reflex functions lessened; spleen reduced in size; temperature of body lessened. One large dose or many repeated doses not eliminated for two or three weeks. Recent cases of Cinchonism have their cerebral symptoms modified by Morphia and their nervous and cardiac symptoms modified by Belladonna or Atropine. Symptoms: weakness; faintness; tendency to dropsical effusions; face pale, sickly, puffy; body sensitive to touch; pains in joints and bones and periosteum as if sprained; drawing and tearing, especially experienced in spinal column, frequently locating in small of back. Great aversion to physical exertion. Tension in sacrum as from heavy load, and after long stooping, bruised, crushed, cramp-like sensation, worse on motion. Trembling, numbness and paralytic weakness of all joints. Girdle-like pains around legs as from tight garters.

Febrile Phenomena—Intermittent chill all day; forehead icy cold and apt to be broken out in cold sweat. Always thirst with chill. Heat follows chilly stage; sticking and pricking of skin which is very sensitive. Thirst with fever. Fever greatest from 5 to 7 P. M. Desire for fresh air but made worse by walking in it. Heat follows sweat in sleep. Sweat awakens at 3 A. M. and very thirsty at that time. Sweating most profuse on cheek on which patient lies. Sensitiveness of all nerves and worse on touch. Excitability; quarrelsomeness; irritability and disinclination to labor. Senses too acute; headache severe, feels as if it would burst or as if it was beating in waves against skull; vertigo worse at night. Patient throws head back to relieve pain. Worse from motion and walking, better while lying. Contractive pulsation with constriction in vertex and occiput; pupils either dilated or contracted; vision dim or hypersensitive; ringing in ears.

Circulatory Symptoms—Palpitation with rush of blood to head and face, giving full feeling. Intermittent pulse marked.

Respiratory Symptoms—Sneezing; fluid discharge with lachrymation; hæmorrhage from nose; whistling wheezing in chest; difficult breathing, feels as though could not breathe; cough easily provoked by laughing; suffocative attacks, as if larynx was full of mucous; worse at night or on waking; chest feels as if beaten and has burrowing pains.

Digestive Symptoms—Loose teeth; pain on chewing; bitter taste in mouth; appetite increased, but when fully developed can't tell what he wants and so eats nothing. When does eat food it tastes natural and not bitter. Thirst in evening after heat or after chill. Aversion to coffee; eructations; distended stomach and abdomen; griping in abdomen with fermentation in intestines; rumbling flatus passed; stool contains undigested food. 17 to 20 stools daily and attended with

burning and biting in anus. If no stool get tenesmus. Increases seminal secretions and metorrhagia.

SOPHOMORE LECTURE.

Ipecacuanha.

Rubiaceæ.

Cephælis Ipecacuanha, Ipecac: Shrubby procumbent stem, 12 to 14 inches long, white flowers growing in a sort of head; fruit in berry form; root four to six inches long, of size of goose quill; marked by transverse annular rugæ.

Habitat—Brazil and South America; cultivated in India and similar climates.

Alkaloid—Root contains Emetine (Emetia).

Parts Used—Root.

Special Pharmacy—Many preparations. Powdered root, O. S. dose, $\frac{1}{2}$ to 2 grs. O. S. Fluid Extract, dose, 1 to 5 minims. Vinum Ipecacuanhæ corresponds to our Tincture, strength 10%, dose, 1 m. to 1 dr. Dover's Powder (Ipecac and Opium), 2 to 15 grs. Emetine sometimes used. O. S. dose, $\frac{1}{120}$ to $\frac{1}{40}$ gr. Emetic dose, $\frac{1}{8}$ gr.

Medicinal Doses—Best emetic preparation, powdered root stirred in a little H₂O, 20 to 30 grs. For weakened patient use Vinum of O. S. Not so prompt as powdered root.

Physiological Effects—Has mechanical effect. Safest emetic known. No after effect and not violent in action; rather slow, very mild vomiting. No action on medulla or nerves controlling stomach, only on nerve terminations. Continued use produces catharsis; peculiar grass-green stools, slimy and appear as if fermented. Long continued use produces inflammation of bowels, tenesmus and bloody stools. Cures and produces dysentery. Increases all mucous secretions and produces catarrhal inflammation everywhere; sneezing in nose and ordinary catarrh; spasmodic cough; dyspnoea. In animals: Hyperæmic and hepaticized lung tissues. Character of Ipecac hæmorrhage is that it is bright red. Has all disturbances of Cinchona Bark: Chill short, fever very long both accompanied by great nausea (characteristic of Ipecac). Sweat accompanied by cough.

Summation—Nausea (constant), characteristically accompanied by perfectly clean tongue (unusual). Bronchial symptoms: Coarse rales in lungs (fine rales in Tartar Emetic), feeling as if stomach hung relaxed. Bowels: Grass-green stools with tenesmus and nausea always. Dysenteric condition. Bloody mucoid stools aggravated by motion. Bright red hæmorrhage with nausea always. Convulsive cough with asthmatic breathing.

JUNIOR LECTURE.

Ipecacuanha.

Rubiaceæ.

Brazilian drug used in dysentery. Contains an alkaloid Emetine, also Ipecacuanhic Acid. Emetine is a powerful local irritant; get ulcerations of tissues if rubbed into skin, or else pustules as in Tartar Emetic. Irritates mucous membranes of nose as by snuffing it we get spasmodic asthma and, later, emesis; constriction in upper portion of chest and in throat; face pale and dyspnoea accompanies nausea. Root is used but does not act so powerfully though similarly. Doses of Tincture 1 to 10 drops, give increased secretions of mucous membranes, especially of the bronchi, irritating them and getting marked expecto-

ration. Medium doses of Tincture 10 to 30 drops, produce nausea, marked salivation and secretions of buccal mucous membranes. Full dose, 25 grs. to 1 dr., produces vomiting and purging; great relaxation. Sleep induced very quickly after emesis and purging. A very effective emetic and is not a heart depressant, Some sweating if poisoned. P. M. appearances: Gastro-enteric inflammation, hyperæmia of lungs; patches of consolidation.

Provings—Pale, sunken face; blue rings around eyes; eruptions of papular and vesicular character on face; coldness of body followed by heat and sweat; bruised pains in joints and bones; limbs feel as if asleep.

Nervous Symptoms—Stiffness and spasmodic contractions, especially of arms. Mind: Impatience; ill-humor; constant screaming and crying, due to gastro-enteric irritation, and children stuff fists into mouths. Adults are scornful and place no value on things; bruised sensation of brain, but more extensive than in coffee, as these extend clear through head to base of tongue and give nausea. Pupils dilated; pain in eyeballs; scalding lachrymation; diminished pulse.

Respiratory Symptoms—Violent sneezing and a thin, watery discharge from the nasal mucous membranes. If sneezing very intense, get epistaxis. Constriction of throat with difficult spasmodic breathing in larynx and finally get asthmatic breathing. Spasmodic contraction of larynx. Sense of weight in præcordium with anxiety; gasps for breath and throws open window. Rattling of thick, whitish mucous in larynx, which is difficult to expectorate and gives rise to a spasmodic cough, which may be so violent as to cause hæmatisis. Stiffness of body and chest walls with cough. Face blue and appearance of suffocation. Cough from tickling in throat or low in larynx.

Digestive Symptoms—Saliva increased; constant swallowing; *great nausea* and may get vomiting; stomach feels as if hung low in abdomen, relaxed; lost appetite; pains in stomach and bowels; griping, clawing and cutting in bowels relieved by *rest* and worse on *motion*. Cutting in umbilical region, causing shivering and diarrhoea. Stools frequent, liquid and offensive, with green mucous. The greater the effort to remove fæces the more apt we are to have hæmorrhage.

Urinary Symptoms—A red, scanty urine, hæmaturia.

Sexual Symptoms—Few in men. In women, dragging toward vulva and anus and usually referred to uterus and feels as if dragged down and through rectum and as though ought to defecate; tendency to onset of menstrual function before time. Hæmorrhage is excessive and menstruate every fourteen days. Too profuse and lasts too long.

Emetics.

SALT.

Two tablespoonfuls in a half glass of warm water.

MUSTARD.

One tablespoonful in one glass of tepid water is perfectly safe and also a good stimulant.

SULPHATE OF ZINC.

The most common emetic in case of poisoning. Dose, 20 to 30 grs. in tepid water. May be repeated every ten or fifteen minutes. Toxic dose, 1 oz.

CUPRI SULPHAS.

Emetic dose 5 to 8 grs. (large) or 15 grs. in 4 oz. of H_2O , give teaspoonful every few minutes till vomiting ensues. 120 grs. kills. Is recommended in Phosphorous poisoning, as it antidotes poison and acts emetically as well. Never use in narcotic poisoning.

APOMORPHIA.

Quickest and most certain. Hypodermically, $\frac{1}{20}$ to $\frac{1}{10}$ gr. An extreme depressant of heart. Used in narcotic poisons, except when vagus is paralyzed.

TARTAR EMETIC.

Antimonii et Potassii Tartras. Dose, 1 to 3 gr. Slow and severe, causing great depression and prostration. Never used but by O. S. in Compound Syrup of Squills.

HYDRARGYRI SUBSULPHAS FLAVUM.

Turpeth mineral: Has no taste and is quick and prompt. Rubbed up in sugar of milk. Do not allow to remain in stomach. Dose, 3 to 5 gr.

SOPHOMORE LECTURE.

Coffea Arabica.

Rubiaceæ.

Coffee. An evergreen tree with leaves like laurel. Is 20 to 30 feet in height. Flowers white and fruit like a cherry, a deep purple or red berry. Each berry has two seeds. Cultivated trees are 6 to 8 feet high. Mocha is nearest to original and is the best.

Habitat—Introduced into Arabia in 5th century, into Java in 16th century. Abyssinia, Brazil.

Alkaloids and Active Principles—Caffeine (same as Thein in tea) and Gnovana and Gnovine.

Parts Used—Berries.

Special Pharmacy—Roasting berries renders them pulverizable and destroys some organic constituents. The volatile oil produced is Caffeine, which is the aroma. Also decomposes Caffeic Acid into Methylomene. All sugar in it is changed into caramel. The Tincture equals the berries, pulverized, macerated in alcohol and filtered, boiled in H_2O and Q. S. taken to make strength of 1 to 10, which, when added to extract, equals 1 gr. of berries to 10 of extract. Dose, 1 to 5 grs. Citrated Caffeine, dose, 2 to 10 grs.

Overdose Symptoms—Indigestion; heart burn and eructations. Nervous debility with depression of spirits; irritability; ugliness; crossness; wakefulness; headache and dizziness. Palpitation of heart characteristic. Puts system in shape to take on disease.

Physiological Effects—Medicinal side: Mental effect; wakefulness; sleeplessness; wakeful mental faculties; characteristic sick headache. Antidotes to coffee, Nux and Lycopus Virginicus.

Coffee as a beverage aids digestion, promotes peristalsis, allays sense of fatigue and hunger by lessening tissue waste. Lessens excretions of urea, enables a man to do more work on less food and increases capacity for mental labor.

JUNIOR LECTURE.

Coffea Cruda.

Rubiaceæ.

Coffea Tosta contains Caffeone. As a beverage it acts as a stimulant to the heart and brain and checks waste of tissue and urea. If taken in excess, we get flatulence, heartburn, acidity, and belchings tasting sour of the coffee, headache, vertigo, tinnitus aurium and confusion of mind.

Caffeine or the alkaloid of *Coffea Cruda* used as Citrated Caffeine in 1 to 5 gr. doses is a cerebral excitant. Is preceded by short drowsy stage, but soon get excited stage when we have wakefulness, muscular tremblings, halucinations, delirium, exhaustion, sopor, rise of temperature, convulsions and patient succumbs after paralysis has intervened; paralysis which brings on lowering of temperature. In the human subject it increases the appetite and digestive function by increasing secretions of gastric glands. Small intestines have increased peristaltic action accompanied by soft stools. Diuresis. Sexual symptoms: Erections in man. Stimulates heart and increases arterial tension. Also increases respiration, breathing increasing as dose is increased; the very large heart weakens; blood pressure is lowered; heart becomes paralyzed. Respiration ceases before heart stops beating.

Coffea Cruda—Tincture: one part of unroasted mocha coffee is powdered in a moderately hot mortar and macerated for eight days in six parts of alcohol and is then filtered. The filtrate is then boiled down with forty parts of distilled water so that filtrate and extract when added together make ten parts by weight and represent $\frac{1}{10}$ drug substance. This is the Tincture. Trituration of the bean is inadvisable.

Generalities—Mental and physical exhaustion; itching of skin and eruptions of different kinds; marked chilliness at 5 A. M. and also at 1 P. M. Later in A. M. in bed have heated body, but desire to remain covered. At 3 P. M. following chilliness, have heated body, red face with thirst. This followed by sweating, trembling of hands so patient is unable to hold anything.

Nervous Symptoms—Lively fancies and planning; tendency to headache, worse after eating and worse in open air; always returns upon going into warm room. Vertigo; feeling as though nail were driven into parietal region; all senses too acute; too loud and shrill. Sleep is heavy until about 3 A. M. and then patient dozes off from one nap to another and later doesn't arouse readily.

Circulatory Symptoms—Palpitation and oppression of heart.

Respiratory Symptoms—Rough larynx; frequent awakening with cough which is associated with hoarseness.

Digestive Symptoms—Toothache relieved by applying a very little at a time, cold; taste more acute; thirst; hunger before dinner with hasty eating; stomach distended so patient unbuttons vest to relieve.

Urinary Symptoms—Urine is increased.

Sexual Symptoms—Sexual desire increased, but patient is easily prejudiced against such thoughts; emissions. Women, menses increased.

SOPHOMORE LECTURE.

Cina.

Compositæ.

Artemisia Cina: 10,000 species. A small plant, 1 to 1½ ft. high.

Habitat—Asia.

Alkaloid—Santonine.

Parts Used—Leaves and flowers.

Special Pharmacy—Given in Castor Oil and in powdered sugar.

Fatal Doses—For child, 2 grs.

Medicinal Doses—Santonine, adult, 1 to 5 grs., child not exceeding $\frac{1}{4}$ gr.

Overdose Symptoms—Twitchings of eyelids and muscles, a dangerous symptom and one of poisoning.

Toxic Effects—Dilated pupils and twitchings of eyelids and muscles in general.

Physiological Effects—Small doses: ravenous appetite; abdominal pains; itching of nose and anus; frequent micturition; spasmodic cough; restless sleep; high fever. Sometimes enuresis; urine bloody and sometimes discolored.

Bad Effects—Color-blindness; chronic enuresis. Cataract in kittens. Similar in action to Spigelia Anthelmia.

For relief from round worm. An anthelmintic. Also expels thread worm.

JUNIOR LECTURE.

Cina.

Wormseed: Active principle, Santonine.

In animals, get depression of vital forces; get purple and yellow urine soon after taking in great quantities and they die slowly from exhaustion. Have opisthotonos alternating with convulsions and always get salivation and dilatation of pupils. Man: Soon get visual defects; everything looks yellow, later yellowish-green, then green, then purple and lastly red. 5 grs. gave dark urine in great quantities, urine becomes saffron and when it turns alkaline, becomes purple. 3 gr. dose gives nausea, vomiting, abdominal pains and diarrhœa. 5 grs. to two year old child gave amurosis lasting for two months. 2 grs. to child of same age gave heat and redness of face, dilatation of pupils, sterterous breathing and involuntary jerkings of arms. One child died in 35 minutes after taking 5 gr. dose. Effects individuals differently; in some people get no nervous symptoms, but violent vomiting, diarrhœa and rapid exhaustion. Urine is same in every case. In poisoning, resort to stimulants and artificial respiration; give purgatives and emetics.

P. M. Appearances. Heart, lungs, spinal cord and brain engorged with blood.

Tincture represents $\frac{1}{10}$ drug or 1x.

Physiological Effects—Sickly expression, extreme palor, great tossing and restlessness; convulsions, epileptic in character; pains tearing, stitching, pressing, squeezing and changing location; followed by bruised feelings of parts effected. Face cold and pale with marked whitish or bluish color about nose and lips; red rash of skin with great deal of voluptuous itching. Febrile condition: Chill at same hour daily followed by heat without thirst; heat mostly about head, cheeks very red, short breath; after sleeping, during fever upon waking, great thirst for cool drinks; sweat localized on forehead, nose and hands.

Nervous Symptoms—Delirium, not very boisterous but persistent; when conscious is earnest and sensitive; emotional sphere; easily upset; stupefying aching of head in open air; at first worse on crown, but finally settling in occiput. Have vertigo with headache, worse on lying and then trying to rise; blackness before eyes; faintness at heart with

tottering gait. Severe pain of drawing character in left frontal eminence and over root of nose. Intermittent weight on vertex which presses down into head. Convulsive movements of eyelids and pulsating of head; severe drawing and tearing pain in head, beginning in head and descending spine, leaving at sacrum with a bruised feeling. Dimness of vision and tearing jerking pains in external ear.

Circulatory Symptoms—Trembling of heart with small contracted pulse.

Respiratory Symptoms—Nose-bleed always excited by boring at nose with fingers, generally in children. Violent sneezing with fluid watery discharge; mucous is stringy at back of throat and hangs there, provoking cough, worse in A. M. After rising, sensation of dust in throat, worse from inspiration. Cough in evening, which is paroxysmal; respiration short and irregular; loss of some inspirations; stitching, tearing, pressing pains in chest; frequently get gurgling sound and catching at breath; choking sensation with anxiety.

Digestive Symptoms—Toothache and marked dryness of mouth; difficulty in swallowing from mucous in throat; sore glands. Desire for many different things; desires variable; soon after eating get great hunger and thirst for water. Vomiting of mucous and food followed by chilliness and then heat. Thirst after sleeping. Pinching, cramping, pressing pains in pit of stomach, or begin on one side and pass to other. After eating get twisting pains at umbilicus; watery diarrhoea.

Urinary Symptoms—Urine, saffron-colored with frequent urging and increased amount; turbid and get sediment.

Sexual Symptoms—Hæmorrhages from uterus in young girls.

SOPHOMORE LECTURE.

Spigelia Anthelmia.

Loganiaceæ.

Pinkroot, Wormgrass.

Habitat—S. America, West Indies and Europe.

Alkaloid—Spigelene (Volatile and never used like Santonine).

Parts Used—Freshly dried herb with flowers and seeds.

Special Pharmacy—O. S. preparation Fluidum Extractum Spigeliæ et Sennæ. Repeat dose as below every 3 or 4 hours till desired effect is produced.

Medicinal Doses—Fluid extract, 1½ tablespoonful for worms. Seldom used alone but with Senna. Dose adult, ½ oz., two year old child. ½ grain.

Toxic Effects—Hysterical nervousness; hot dry skin; stiffness and swelling of eyelids; strabismus; pupils dilated; drowsiness prominent. Later: Tremor of tongue; general tremblings and finally convulsions.

Physiological Effects—Neuralgias, in face especially; also all over body, supra-orbital and trigeminal nerves produce it. Pains relieved by hard pressure. Has a great many heart symptoms.

JUNIOR LECTURE.

Spigelia Anthelmia.

Loganiaceæ.

Pinkroot. Very poisonous. O. S. give it with Senna to expel round worms.

Alkaloid—Spigelene.

Generalities—Great sensitiveness to touch; shuddering; pains sudden and crawling pains all over body. Weakness and tiredness after

waking in morning which may be preceded by dreams. Itching of skin, better from scratching. Chill without thirst in morning after rising; heat at noon; worse on trunk and face; face red; no thirst during heat and chills are intermittent, tearing, stitching and jerking; bruised feeling in extremities extending into spine while walking.

Nervous Symptoms—Loss of memory; mental exertion difficult; burning pains in brain in evening; false steps; pressing out pains, more in left parietal, and washing out of brain; vertigo and tendency to fall while looking down. Sticking, tearing shooting pains in different parts of head, especially in left frontal eminence and eye; right eye more affected than left, worse in morning, also from straining at stool. Brain feels loose in calvarium. Eyes feel too large for orbits; vertigo felt when moving eyes so patient moves head when wanting to look. Dim vision; ringing in ears with shooting tearing pains in ears almost continually.

Circulatory Symptoms—Has prominent action on heart; extreme palpitation associated with anxious trembling, worse when sitting and especially aggravated when leaning forward; heart-beat violent; weight; cutting and digging pains in hypogastrium due to incarcerated flatus. Action of heart visible and audible with desire for fresh air while thus affected. Weak irregular pulse, now slow, now rapid with heavy aching through præcordium; heart has stabbing pains with inspiration.

Respiratory Symptoms—Sneezing; discharge of white and yellow mucus from anterior and posterior nares; catarrh in posterior nares involving posterior wall of pharynx and feeling as though had dropping of it back into pharynx. Tearing, sticking, cutting pains in chest: pains distressing just beneath left nipple, extending to scapula and upper arm, worse from deep breathing with a sense of constriction with anxiety.

Digestive Symptoms—Throbbing tearing pains in teeth, worse drinking cold water and better on lying down. Toothache in evening when smoking. Tongue coated white and cracked; mouth filled with frothy mucous or tenacious saliva; appetite variable; sticking pains in pit of stomach; feels as though would burst from flatus, worse in evening and relieved after stool. Stool difficult and diarrhoea due to catarrh. Marked itching relieved by scratching; sticking, boring pains in anus relieved by scratching.

Genito-Urinary Symptoms—Prostatic fluid increased and passed with urine, also with sexual excitement. Itching of right side of scrotum and penis with erection. Women: heat and itching in vagina. Menses too early, bright red in color and of foul odor.

SOPHOMORE LECTURE.

Matricaria Chamomilla.

Compositæ.

The above is the German variety which we use. O. S. use the English, *Anthelmis Nobilis* (very bitter).

Physiological Effects—Acts on nervous system. Irrascibility; sudden spitefulness. Patient cross and changeable. Children want the moon. Intolerance of pains and cries disproportionate thereto. Toothache relieved by it. Curative in spasmodic labor-like pains of uterus with mental conditions.

Digestive Symptoms—Excessive bile, some congestion of liver. Characteristic bowel troubles; stool changeable. Characteristic stool:

green, watery, exceedingly irritating. Produces rheumatic pains compelling patient to walk, aggravated by warmth at night.

JUNIOR LECTURE.

Chamomilla Matricans.

Compositæ.

German variety. No alkaloid.

Generalities—Acts on all mucous membranes and all nerves, especially of emotional sphere. Have marked objective symptoms: face pale, but one cheek becomes paroxysmally red; rash on forehead and cheeks; red and markedly unhealthy skin which is edematous and prone to ulcerate or suppurate; these spots itch and are accompanied by sweating. Chilliness, usually pronounced at 4 P. M. and in early evening. Chill all over body; face heated with burning of eyes; chill and fever alternate; heat in morning after drinking coffee and associated with sweating, and vomiting of bitter mucous and weakness of head followed by continued sweating. After drinking coffee, sweating ensues in parts lightly clad while those heavily clad are cold and dry. Heat at 6 P. M. all at once; face red; head hot; sweating the result of eating and drinking at that time. Sweat on covered parts of body at night; restlessness and burning of feet, worse at night and do not desire to put them against anything cold. Marked cracking of joints of lower extremities with boring pains in periosteum; weakened paralytic tendency of muscles which are tired and sore. Stiffness and tingling of hands; numbness; sense of touch lost; drop things; numbness as if frozen. Tossing, restlessness at night with stitching in joints. Paralytic weakness, sickness at heart; legs and arms feel as though bruised.

Nervous Symptoms—Patient nervous, whining, moaning and impatient, with anxiety, anger and intolerable pain. Opisthotonos in children especially, with head drawn back to a marked degree. Pressure in head begins slowly and then increases to maximum then recedes. Stitching in right half of forehead, extending through to occiput; electric sparks before eyes; a paroxysmal throbbing of head on one side, worse when mind is directed to it or on mental exertion. Eyes: stitching; sparks flashing; catarrhal process, agglutination of lids in A. M. with sense of compression in eyeballs; vision impaired with lachrymation. Stitching in ears, worse on stooping; tearing, worse on noise; tinnitus aurium; roaring.

Circulatory Symptoms—Stitching in heart; rapid irregular pulse.

Respiratory Symptoms—Crawling in nose; sneezing; stuffed-up sensation with fluid watery discharge; sight and smell sensitive; larynx raw, scraped and constricted; wheezing in trachea with rattling of mucous; cough from irritation low down in trachea with sense of suffocation.

Digestive Symptoms—Aching of teeth during and after eating and drinking, aggravated by warm drink, coffee and at night. Teeth feel too long, are sensitive to touch. Gums swollen especially about molars with sense of fullness and hardness over the alveoli. Tongue coated yellow or dirty white with blisters, giving stinging pains. Salivation which is sweet or metallic, also rancid or bitter. Pain in throat and fauces on swallowing; constriction of pharynx and great thirst; poor or lost appetite; eructations tasting like rotten eggs. Pressure in pit of stomach after eating; distension of abdomen from flatus. Cutting, griping, tearing pains about the navel. Diarrhœa with colic causing patient to bent double. Green, watery and hot stool covered with

mucous. Diarrhœa of undigested food, especially in children; looks like white of eggs with yolks chopped up in it, with considerable mucous. Corrosive stool with soreness and excoriation. Also marked constipation, stool once in 2 or 3 weeks. Gives rise to angry contention in mind; hæmorrhoids with or without bleeding; itching.

Urinary Symptoms—Burning at neck of bladder when urinating.

Sexual Symptoms—Male: In boys, itching of prepuce. Women: Great burning in vagina with excoriating discharge; excoriates vulva and thighs. Drawing pains from small of back that seem to include uterus. Gripping and pinching pains and discharge of clotted blood during menstruation; much clotting with labor-like pains down thighs; if examined will find them sore along the veins which are distended.

SOPHOMORE LECTURE.

Arnica Montana.

Compositæ.

Leopard's Bane. Plant 1 to 1½ ft. high. Flowers large and in heads, similar to daisy.

Alkaloid—Trimethylomene, found in hops, urine, cod-liver oil &c.

Parts Used—Homœo. Tinct., all parts. O. S. Roots and flowers.

Special Pharmacy—O. S. two preparations. Tincture from root and one from flowers, and also an extract; the one from flowers the most common Tincture. This is irritating to skin, from insects in flowers. Root Tincture non-irritating.

Medicinal Doses—Trimethylomene, 2 to 3 grs. used as an antipyretic by O. S.

Toxic Effects—Death from two cups of infusion from the flowers. Violent intestinal irritation; some spasmodic movements; intense muscular weakness.

Physiological Effects—Similar to those of bruises and contusions; tearing of fibrous and muscular tissues. For over-exercise, bruises &c. Strains about joints. Arnica is better for joints when bruised, Hamamelis, when strained. Venous system: Similar to Hamamelis. Stagnation of blood followed by hæmorrhages as in bruises. Second only to Hamamelis. Bowels: Violent tenesmus accompanied by fullness and distension of abdomen; canine hunger; no care for food when available; soreness from lying in bed.

JUNIOR LECTURE.

Arnica Montana.

Compositæ.

Leopard's Bane. Has two volatile oils and acts as an amoniacal alkaloid.

Generalities—Arnica often used as an infusion and acts as a stimulant to the nerves and gives increased temperature and increased urine and then depression, debility, tremors, lowered temperature, anæsthesia and death. Tincture is $\frac{1}{6}$ of drug strength and is made from root, flowers or whole plant. Get contamination from bugs in flower Tincture so should use that made from root. Never apply Tincture to any spot where skin is broken as it will be dangerous. Use root Tincture which is $\frac{1}{6}$ strength. It is an irritant to the skin, inflaming it and causing vesications. Get general systemic disturbances; inflammation of lymphatic glands; burning of throat and stomach; vomiting and increase of heart action; respiration; secretions of skin, of mucous membranes, of bronchial glands and kidneys giving diuresis, head-

ache and giddiness; cannot walk with ease; followed by disturbed sleep. Reacts with depression, lowering the pulse and respiratory efforts; pupils dilated; pulse more frequent and finally collapse and death. This with 2 oz.

Analysis—Acts on skin, mucous membrane and muscle. Blood loses its vitality, is too fluid, non-coagulable and so get frequent hæmorrhages. Hæmorrhages due to inflammation of muscles which rupture easily. Great soreness in mucous membranes and along course of arteries; weakness and later anæmia from loss of blood. Face pale and cold. may be red and hot with shining inflammation; puffiness of skin and mucous membranes and parts feel hard from infiltration of tissues and pressure elicits soreness. As blood is devitalized so arterial system is depleted and veins are overfilled which gives tissues a bluish appearance. Skin: Sore and tender; pimples and pustules, red, shining and bluish around them. Febrile symptoms: Shivering and coldness of whole body with heat in the head and hands cold. Back muscles and anterior surface of arms sore to touch. Marked in forehead and nose with heat of rest of face extending back behind ears; without thirst. Dry heat of whole body, worse in A. M., soon after waking and always attended with thirst and chilliness on uncovering and moving about in bed. Sweating, worse at night. Locomotor system: Pain in cervical vertebræ, worse on motion of head, also pain in lumbar region, worse in A. M. or from standing and bending, better during the day. Great weakness of back, parts feel bruised and so joints also feel paralytic during motion. Stitching, drawing, tearing pains or dislocated pains in joints and muscles

Nervous Symptoms—Loss of memory; inability to continue work; hypochondriasis; sensitive to mental and physical effects alternatively; sullenness and moroseness. Stinging pains in head between 3 and 8 P. M. also in A. M., especially when walking; also vertigo. Pains distressing, severe and cutting and dart from one side to other. Sensation of coldness in skull and stitching over eyes and in them causes patient to wrinkle forehead. Brain feels loose; felt most on approaching artificial heat. Soreness, drowsiness and sleep disturbed by bad dreams. Eyes ache; pupils contract or dilate. Eyeball and margin of lid feel too dry. Sore itching and burning of mucous membrane of ball and lid. Humming in ear with decreased hearing; bruised soreness of external ear.

Circulatory Symptoms—Stitching in heart from left to right; squeezing pains about heart with rapid, feeble, irregular pulse and tendency to hæmorrhage when straining.

Respiratory Symptoms—Tendency to epistaxis; larynx sore and swollen; voice low or extinct; cough, with itching or tickling low in trachæa; dry, short barking, worse in A. M. on rising; soreness of chest. Shaking brain; blood spitting; dyspepsia; short, panting breath; stitching tightness. Bruised pains and pains in joints of ribs and cartilages, worse on motion of chest.

Digestive Symptoms—Soreness of teeth and ulceration of gums, which bleed readily. Tongue white; sense of burning in mouth; bad taste, bitter and slimy; breath fetid; difficult swallowing, which gives rise to nausea; loss of appetite, especially for animal food; pinching of stomach and bowels as if pressed against vertebræ. Urging to stool, flatus offensive; stitching under ribs, especially interfering with respiration; constriction with attachment of diaphragm. Intermittent tearing in hypogastrium; digging pains in both hips but arising from ab-

dominal disturbances. Nausea; dysenteric stools with drowsiness following; tenesmus; thin, copious, pap-like stools which give relief to abdominal pains; diarrhœa at night with cutting pains in abdomen; stools brown and like fermented yeast, often involuntary, and then another, a small mucous stool followed by exhaustion, when patient is compelled to lie down.

Urinary Symptoms—Tenesmus; involuntary urination with ineffectual urging; urine passed by drops. Paretic condition of bladder and so cannot contract it. The retention of urine gives soreness of bladder. Urine dark brown with a brick-red sediment.

Sexual Symptoms—Effects penis and scrotum and produces swelling, hardness and soreness of testicles.

SOPHOMORE LECTURE.

Calendula.

Common Marigold. A plant 1 and 1½ ft. high.

Habitat—Southern Europe, but now grown in gardens generally.

Parts Used—Flowers.

Special Pharmacy—Infusion used domestically. Used by Homœopaths for healing of wounds, but not Homœopathic thus used.

Compositæ.

Gnaphalium Polycephalum.

Compositæ.

Common Everlasting, Life Everlasting. Plant 1 and 1½ feet high; leaves white and downy in appearance.

Physiological Effects—Intense pain in sciatic nerve; cramps in calves and feet; shoulder and back pains. Loose bowels and copious watery stools from large doses. Used for sciatica. Used domestically for bronchial troubles (proving not good) and also for diarrhœtic troubles.

Eupatorium Perfoliatum.

Compositæ.

Ague Weed, Boneset; Thoroughwort.

Habitat—Northern and Middle States, in marshy ground, along road sides, etc.

Physiological Effects—Chilliness followed by heat and bilious vomiting just before perspiration, which is scanty. Excessive soreness and intense aching of muscles. Catarrhal inflammation of mucous membranes of nose, bronchi and lungs. A laxative and in large enough doses, an emetic. Rivals quinine for La Grippe, chills and fever, malarial fever, influenzas of all varieties. Thirst with chills, which stops when fever comes on, and fever stops with profuse bilious vomiting.

Eupatorium Purpureum.

Compositæ.

Purple Boneset, Trumpet Weed.

Physiological Effects—Symptoms similar to those above, with marked action on kidneys. Gravel. Frequent urination and marked changes in the urine. Rheumatic pains in back and legs.

SOPHOMORE LECTURE.

Nux Vomica (Strychnos).

Loganiaceæ.

Almost all the species are tropical trees and all have bitter poison-

ous properties. A poison nut. Fruit size of an orange; seeds size of ordinary chestnut, with hard shells.

Habitat—Hindustan and East Indies.

Alkaloids—Nut has several; Strychnine, a white crystalline powder; and Brucine.

Parts Used—Seeds.

Special Pharmacy—Very bitter, can be tasted in 1 to 70,000 of H_2O . Dissolves in 1 to 8,000 H_2O , cold; 1 to 110 of alcohol.

Dangerous or Fatal Doses—Strychnine, $\frac{1}{2}$ to 2 grs.; $\frac{1}{2}$ gr. causes twitching of jaw muscles.

Medicinal Doses— $\frac{1}{60}$ to $\frac{1}{20}$ gr.

Toxic Effects—Symptoms a few minutes after administration, unless with opiate. Heightened sensibility; catching constriction of respiration; shuddering of entire body and convulsive seizures of a characteristic variety. General tetanic convulsions; opisthotonos; limbs extended; toes and thumbs incurved; abdominal muscles arched and tense; risus sardonius; respiration stopped; face cyanosed; evacuation of bowels; emissions of semen. Remission and interval of rest and then recurrence, the remissions getting shorter and spasms longer till death. Consciousness always present.

Physiological Effects—Still used in intermittent fever and dysentery. Hahnemann used it for gastric and intestinal troubles, especially constipation. Produces all symptoms of chronic alcoholism; headaches with full feeling; dizziness, so bad that only relieved by lying down. Extreme sensitiveness of Strychnine poisoning. Marked action on spinal cord. Hypersensitiveness and acuteness of all senses. Action on venereal desires. Increases excitability of retina, enlarging the field of vision.

JUNIOR LECTURE.

Nux Vomica.

Loganiaceæ.

Quaker Button. Small doses or fractional doses of Strychnine produce marked increase of respiratory power, circulation, digestion, sexual powers and special senses. It is thus a stimulant. Arterial tension is raised and arterioles are contracted. A full dose of $\frac{1}{10}$ gr. of Strychnine gives dilated pupils; marked convulsive jerkings of limbs; spasms of lower jaw; spasms of respiratory system; cerebral tension; shuddering; anxiety; sardonic smile; may have meaningless smile. Toxic dose depends on age; 1 gr. produces death in child two years old; $\frac{1}{100}$ killed one 3 months old; adult $\frac{1}{2}$ gr. Antidotes: Tannic acid, alcohol and bromide of potassium for sensory convulsions; chloral for motor convulsions. Post Mortem Appearances: Congestion of meninges; dilation of vessels and extravasation of gray matter of cord; rupture of heart muscles.

Strychnine Proving—Spasms of different portions of body, especially of rectum; also dynamic and intermittent fever. Effects pass off on diuresis or excessive flow of urine; frequent desire and painful swelling of left spermatic cord and testicle; marked fullness of head and eyes. Spasmodic cough due to irritation of external muscles; itching in nasal passages.

Tincture Effects—Emaciation an ultimate effect; tremors; shudderings from slight draughts of air; convulsive movements of certain muscles from unexpected touch; contractive pains in all parts of body; impressionable; senses acute, etc. Take cold readily; face usually pale,

sometimes takes the appearance of alcoholic intoxication; painful swelling of forehead; skin red and blotched with tendency to develop itching pimples. Pronounced chill in evening with blue nails, followed by heat; burning of hands; thirst, not followed by sweat, but by dry heat with skin chilly on uncovering body. Pains of muscles of back with burning sensations in long bones and joints, worse in A. M. and while lying in bed, better on rising; tottering gait.

Nervous Symptoms—Marked effect on mind. Patient jealous, irascible, easily insulted and all aggravated by conversation, music and bright lights. Hypochondriasis; anxious dread of all work. Headache, worse in A. M. on rising, may last through day, but better in evening when lying down. Pain in occipital region extending to forehead. Bruised feeling in frontal region and vertigo after full meal. Photophobia; dryness of eyes; lachrymation; hearing effected; itching with scratching and soreness. Sleepiness and then wakefulness for short time, then sleep again, then at 3 awakens and feels refreshed, falls asleep again and in morning feels as though had no sleep at all.

Circulatory Symptoms—Palpitation, worse after dinner or any full meal and worse while lying down.

Respiratory Symptoms—Pain throughout respiratory tract, marked in nostrils; heat; coryza; sneezing in A. M. while yet in bed; dryness of mucous membrane during night and fluent coryza on rising; crawling sensation; scraping in throat, attended with chilliness; throat rough; raw cough induced by soreness of larynx; dry cough, violent in A. M. before rising; aching of chest when cough is fully developed, worse when lying on back, relieved while lying on side. Dyspnœa.

Digestive Symptoms—Pain in teeth with sense of looseness, worse when air is taken into mouth or when eating, or on mental exertion; gums swollen; mucous membrane of mouth raw; tongue white, dry in A. M. Saliva sticky; breath offensive. After dinner, sour taste, marked in morning after food; appetite good; desire for coffee, the more given the greater the hunger; constriction in throat and pharynx: sour eructations; nausea in A. M. with sensation of chilliness and faintness, more marked in women; eating, drinking and smoking will aggravate the nausea. Retching and vomiting of sour mucous. Sensation of stone in stomach; heart-burn; cutting colic; incarcerated flatus in hypogastrium or lower down as if a hernia would protrude; pressure in bladder or rectum with ineffectual desire to stool; sharp sticking pains in rectum. After eating, gets stool; worse from mental application. Ineffectual desire to defecate. Stools dark and watery after period of marked constipation. Hæmorrhoids; itching, burning, smarting and bleeding bright red blood.

Urinary Symptoms—Burning at neck of bladder; involuntary or difficult urination, burning and often turbid and depositing a yellow sediment.

Sexual Symptoms—Increase of sexual desire; erections frequent, worse in A. M. and more marked in bed. Emissions frequent with lascivious dreams. In women, an internal swelling of vagina; burning, worse from digital examination. Menses early and profuse.

SOPHOMORE LECTURE.

Strychnos Ignatia.

Loganiaceæ.

Ignatia: a climbing shrub.

Habitat—Phillipine Islands.

Alkaloids—Strychnine and Brucine in larger proportion than in Nux Vomica.

Parts Used—Nuts.

Special Pharmacy—O. S. use it and Nux in alternation.

Physiological Effects—Ignatia has more action on functional nervous system than Nux. Increased sensibility of all nerves and pains in different parts. Hysterical ailments characteristic and also a peculiar alternation of conditions, e. g. irritability and hilarity, impatience and melancholia; tearfulness and hilarity; chill and fever, etc. For female complaints when nervous troubles are prominent. Males, in drunks and other excesses, etc.

JUNIOR LECTURE.

Ignatia Amara.

Loganiaceæ.

Called St. Ignatius' Bean. Alkaloids, Strychnine and Brucine. Contains greater per cent. of Strychnine than Nux Vomica. Administer Nux Vomica in evening to get most beneficial effects, give Ignatia in morning. Take Nux two hours after meals and just before going to bed. Tincture is strength of $\frac{1}{10}$ or 1x. Ignatia acts about nine days while Nux acts for two or three weeks. Small doses gradually increased give increased salivation; nausea; heavy, giddy head; pain in stomach with flatulence; extremities benumbed and go to sleep; great numbness with weakness about body; constipation followed by diarrhœa and tetanic spasms; intense anguish at pit of stomach and death by dyspnœa and asphixia, during exhaustion and tonic spasms.

Generalities—Trembling and twitching of muscles and restlessness at night; frequent change of position; distortion of facial muscles, noticed most when speaking; itching of skin; posterior parts of body cold, better in warm room or beside warm stove; shivering with red face, cold nose and hot knees; upper arms cold, but great heat of ears; thirst during chill; chilly on uncovering; heat without thirst in P. M. Heat of external skin and sweating of face; jerking, tearing pains of arms; delicate consciousness; irresoluteness; inconstancy.

Nervous Symptoms—Patients are contradictory. Joyous laughter followed by grief; angry at slight offenses; anxiety and feeling of having committed some crime; intellectual mistakes in writing and talking; weak memory; headache, having greatest pain in and about eyes; eyes burn and water; jerking and sudden pressure in head and frequently in some distant portion of body. Head symptoms worse on mental exertion, but better on coughing. Visual defects. White, flickering, zigzag lights before eyes; pain and itching in auditory canal; ringing in ears; sleep light and dreamy; jerkings and stitchings of muscles.

Circulatory Symptoms—Palpitation of heart due to emotional causes.

Respiratory Symptoms—Dryness of nasal cavities alternating with fluid coryza; itching and crawling of mucous membranes; feeling of dust in larynx; dry cough, mostly low down, better on effort to check; cough hollow and gives rise to more coughing; inspiration difficult, expiration easy.

Digestive Symptoms—Toothache, worse from eating; inco-ordination of cheek muscles with biting of cheek muscles; sticking from palate to middle ear; saliva and mucous sour in taste and sour eructations; sticking pains when not swallowing, but on swallowing are

relieved; choking; constrictive pains in œsophagus, plugging relieved by swallowing. Great appetite at 11 A. M.; loss of it at other times. If use tobacco, have especial aversion for smoking. Stomach feels relaxed and empty; sense of fasting; sticking, griping, distending pain and large quantities of wind; sharp constrictive pains in rectum with piles; ineffectual urging to stool with soft insufficient stool; soreness even when having no stool; hæmorrhoids, worse on frequent sitting, better on walking, worse with too much fresh air. Diarrhœa, thin, involuntary and full of wind.

Urinary Symptoms—Watery, limpid urine in large quantities; itching of genitals in bed, relieved by scratching; excoriation of prepuce.

Sexual Symptoms—Have desire with external heat of body and pain. In women, menses increased; irritation of clitoris is prominent; lascivious fancies; weakness and relaxation of the rest of the genital tract; body cool with lascivious ideas.

SOPHOMORE LECTURE.

Strychnos Toxicifera.

Curare is a dark brownish-black resinous extract with a very bitter taste.

Medicinal Dose—Dose $\frac{1}{30}$ to $\frac{1}{6}$ gr. hypodermically.

Physiological Effects—It is used but little in medicine. Paralyzes all voluntary muscles, is a heart depressant and has cured two cases of hydrophobia. Produces glycosuria and marked disturbances of vision.

Gelsemium Sempervirens.

Loganiaceæ.

Yellow Jessamine. The American Nux. Has beautiful yellow flowers.

Habitat—Southern States, though cultivated in Northern States.

Parts Used—Rootlets.

Dangerous or Fatal Doses— $\frac{1}{2}$ oz. of Tincture. 1 dr. of O. S. extract.

Medicinal Doses—O. S. Tincture, 5 to 30 m.

Toxic Effects—Languor; dizziness; ptosis; impaired vision; dilated pupils; numb sensation in scalp generally; feeble heart and respiratory action with great prostration; relaxation of all muscles; lack of co-ordination; tetanic convulsions as in Strychnine and death occurs in same way; respiratory paralysis.

Physiological Effects—Eye symptoms prominent. Small doses, ptosis; diplopia (double sight); divergent squint; paralysis of all eye and lid muscles. Pains in head. Most prominent symptoms, *fullness and congested headache*. Prostration and tired feeling. Grippe. Enuresis; rigid os in labor. Produces chills and fever (mild). Study this fever with those of Aconite and Belladonna. Fever worse at night; very little sweat, almost no sweating stage. Catarrhal symptoms of nose, throat, lungs, etc. Marked action on spinal cord. Patient fearful and easily frightened. Clinically used for catarrh of public speakers and singers. Eruptive fevers (measles). Catarrhal symptoms. Ptosis and complete muscular paralysis. Vertigo and effects of fright. Emotional symptoms.

JUNIOR LECTURE.

Gelsemium Sempervirens.

Loganiaceæ.

Yellow Jessamine, grows in Southern States. Alkaloid, Gelsemine;

also Gelsemic Acid. Dose of Extract, 5 to 10 m. Tincture, from 10 to 20 drs. Gelsemine, $\frac{1}{70}$ gr. or less, is a marked heart depressant.

Generalities—Paralyzes mobility; depresses sensibility and is a diaphoretic. When sweating, have slow pulse with languor and feeble muscularity. Marked ptosis and dilation of pupils.

Toxic Effects—In spoonful doses produces death. Get diplopia, vertigo, dilated pupils and paralysis of third pair of nerves; slow, feeble heart; dropping of lower jaw, staggering gait from muscular weakness, anæsthesia, profuse sweating, inability to articulate. Death by asphyxia from paralysis of respiratory muscles. Consciousness to last moment. Treatment for poisoning: Produce emesis; apply heat; use artificial respiration; stimulate hypodermically with alcohol, morphia and digitalis.

Provings—Great weakness and trembling of whole muscular system; relaxation of muscles; face, heavy, besotted, flushed and hot while body and extremities are cold; pupils dilated; ptosis; erythema; papules like measles; itching of skin; fever; chill along back, worse in P. M. and at night; followed by heat and great sweating.

Nervous Symptoms—Listlessness; languor; dullness; brain bruised and too heavy. Head symptoms relieved by free urination; (If have very bad case and he wants to make water do not let him get out of bed to do it, as he may die in a faint); worse from walking, standing or smoking. Hazy eyesight; pains above eyes; sticking in ears from occipital region; staggering gait.

Circulatory Symptoms—Heart feels as if it would stop beating unless person keeps in motion; intermission of tenth beat; pulse irregular from noon till 5 P. M.; palpitation of heart but with weakness and rapidity.

Respiratory Symptoms—Sneezing, with copious watery discharge; catarrhal symptoms in upper respiratory tract with aphonia from weakness of laryngeal muscles; slow, sighing and superficial respiration.

Digestive Symptoms—Tongue coated yellowish, enlarged and thick; cannot articulate; numbness; gullet dry; disposition to swallow continually; spasm of gullet and croup-like pains in œsophagus; difficult swallowing; pains in stomach with great weakness; urging to stools due to excitement; stools pappy, yellow, or cream-colored.

Urinary Symptoms—Frequent micturition with passage of clear limpid water, relieving dullness of mind and heaviness of head. Urine may flow in intermittent stream from parietic condition of bladder which is never empty, so feels as if he would never finish.

Sexual Symptoms—Weakness; emissions without erections or dreams; backache; headache; urging to urinate. Women have sharp, labor-like pains in uterus with tendency to extend up back.

SOPHOMORE LECTURE.

Atropa Belladonna.

Solanaceæ.

Deadly Nightshade. Plant 3 or 4 ft. high.

Habitat—Southern Europe and Asia. Cultivated in United States.

Alkaloid—Atropine.

Parts Used—Homœo., whole plant, Belladonna. O. S., Alkaloid.

Dangerous or Fatal Doses— $\frac{1}{8}$ to 2 grs. of Atropine.

Medicinal Doses—Atropine, internal dose, $\frac{1}{20}$ to $\frac{1}{60}$ gr. O. S. Tincture, 1 to 30 m.

Toxic Effects—Symptoms in one-half hour. Dilation of pupils; dryness of throat; this with inflammation and swelling which may make swallowing impossible; congestion. Heart rate slow at first, then exceedingly rapid. Brain, early congested as shown by severe throbbing headache with every grade of delirium. If patient survive long, a scarlet rash appears on skin, a smooth erysipelatous blush. Nervous system effected. Rigidity of muscles; general muscular twitchings and partial paralysis. Patient if not wild with delirium, in a stupor when he mutters, and from which he can be aroused. Death from failure of heart and respiration.

Physiological Effects—Local congestion, local irritation and inflamed tissue. Belladonna fever: Throat dry; all secretions arrested; extreme heat apparently disproportionate to touch; very high fever (104°); very little thirst which is remarkable; lump in throat and feeling as though swallowing over lump. Uterus: Congestive inflammation with characteristic spasmodic constriction of cervix. (Gelsemium has a constant spasm). Nerves: Neuralgia characteristic; probably an inflammation of neurolemma. Twitchings and jerkings, generally spasmodic and accompanied by severe, sharp, shooting pains; congestion and drowsiness of brain. Bedside characteristics: Fever with its very hot skin; starting, jumping and jerking. Neuralgias as above. Parts involved are colored; skin bright red and throat of a dusky hue. Headaches are extremely violent, painful and throbbing.

JUNIOR LECTURE.

Belladonna.

Solanaceæ.

Deadly Nightshade. Acts chiefly through its alkaloid, Atropine. Atropine produces great irritation and narcotism and is used chiefly as a local application. On account of its chemical action it is used in Morphia poisoning but dose must not exceed $\frac{1}{40}$ gr. in one hour or will have narcotism which is worse than the Morphia. It is generally used in the sulphate in small doses of $\frac{1}{200}$ gr. As an antidote, it is used in doses of $\frac{1}{120}$ gr. which may be repeated every 20 minutes. It seems to have a contradictory action, for, while it stimulates circulation and respiration, it also depresses them. If rubbed into skin, we get immediately dryness of throat, due to congestion; dilated pupils; head throbs which may end in pain and which may cause nausea and vomiting and reflexly flushed face and neck which may turn to an inflammation; and later we may get an exfoliation of skin. These symptoms always occur with large doses but not necessarily with small ones.

Belladonna is prepared from the leaves taken at flowering time, also from roots not over two years old. Homœo. Tincture from whole plant, and is $\frac{1}{2}$ drug strength. Duration of drug action is about two weeks.

Nervous Symptoms—Feverishness, febrile condition due to effect on nervous system; red face and flushed hot head even to stinging if heat is damp and pungent. Heat feels as though it could be abstracted and upon drawing hand away it seems to follow. Heat so great it can be felt before touched. Patient remains covered as slight draught gives chill. Nervous irritation. Inflammation pronounced and acute; senses all hyperacute, little light, touch or scent irritating and increasing suffering. Mind active at first; talkative delirium; hilarity; more and more delirium until patient gets wild and obstreperous, which indicates inflammation. Gnashing of teeth; staring and protrusion of eyes

and also dilation of pupils. Patient has wild look. When delirium subsides or in lighter attacks, when patient can tell symptoms, tells of fiery flecks before eyes; halo around light, reddish in color; halo sends out rays. Great heat of eyes; stiffness of eyelids from dryness; experience difficulty in moving eyeballs which are sore to touch; tearing pains in ears with lessened hearing although sensitiveness to some sounds is marked; roaring in ears. Head throbs; shooting pains in head come and go suddenly, worse from walking and going down decline; worse from sneezing and motion; pains shoot down from before back, or from side to side; better by sitting quietly; and bending head backward; external head sensitive to weight of hair; spasms of facial muscles, singly or in groups, generally semi-lateral, or in general convulsions like those of epileptic fits. Tendency to deep sleep, after exhaustion of delirium, from which it is difficult to arouse. No matter how sleepy or drowsy, cannot get the sleep needed, but if sleep does come on gets frightful dreams from which patient awakes with start. If patients are children it is difficult to calm them.

Circulatory Symptoms—Over-fullness of arteries; flushing; redness of skin; throbbing of large blood-vessels resulting from the irregular contractions of muscular fibres of coats; throbs most where there is great congestion and we may get localized inflammation. Palpitation of heart; pulse full and frequent.

Respiratory Symptoms—Dysphagia on account of dryness; dry barking cough; bloody expectoration if any; constriction of larynx; aphonia, or huskiness; respiration oppressed.

Digestive Symptoms—Dysphagia has effect on muscles of deglutition which is paretic or spasmodic; liquid or food forcibly ejected through nose when attempting to swallow; slimy mouth in morning; teeth painful; excessive drawing pains, especially in upper right side; gums red, hot and swollen; tongue deep-red and dry; strawberry tongue, especially in scarlet-fever; tongue swollen, inflamed and hanging down from mouth; intermittent contraction of oesophagus and epiglottis; have sense of rawness and heat; erosion; nausea and vomiting from reflex from cranium; tumefaction of abdomen; swelling and soreness of abdominal muscles, and patient lies on back with legs flexed; jerking, shooting and tearing in abdomen, anus and rectum.

Urinary Symptoms—Effects women especially. Painful urination with pain in bladder; desire to evacuate but cannot, or have spasm and then inability to hold urine; also a spasm will occur which will retain it.

Sexual Symptoms—Uterus and ovaries are congested and apt to have inflammation set in; shooting, tearing, throbbing, cutting pains, worse on motion, especially if motion is quick; great bearing down pains with desire to sit upright; feels as though everything were going to fall out.

SOPHOMORE LECTURE.

Atropia.

Atropine solution, 4 grs. to 1 oz. Aqua Distillata. Used to paralyze accommodation. Produces some anæsthesia of retina and some inflammation of conjunctiva, also quickens heart beat and in too large doses brings on toxic effects of Belladonna.

Action on Pupil—Starts after administration and mydriasis not complete till from 1 hour and 40 minutes to 2 hours. Recovery in from

10 to 14 days. No other drug has such complete paralysis. Used in inflammatory diseases of eye, to drain eye; glaucoma or where its symptoms are present.

Homatropia.

Derived from Atropia but not from Belladonna. Used for same purposes as Atropia. 4 to 8 grs. to 1 oz. of Aqua Distillata.

Action on Pupil—If given once every 10 minutes, mydriasis complete in 1 hour; 20 to 30 minutes often sufficient. Effects pass off in 24 hours. Dangerous in glaucoma, causing intra-ocular tension. Less irritating to conjunctiva, slows heart-action. Mydriasis not as perfect as with Atropia.

Duboisine.

Somewhat stronger than Atropia 1 gr. to 1 oz. of water.

Action on Pupil—In 10 minutes, full effect in 1 hour. Lasts 48 hours and produces least irritation of conjunctiva. Some toxic symptoms produced however.

SOPHOMORE LECTURE.

Datura Stramonia.

Solanaceæ.

Jamestown or "Jimson" Weed.

Parts Used—Tincture from whole plant.

Medicinal Dose—5 to 30 m.

Toxic Effects—Beastly intoxication, actions extremely amusing. Sensual.

Physiological Effects—Chief action on brain; furious delirium, not so much of fighting character as Belladonna, and is associated with sexual excitement and great thirst. Mania for light and company.

Characteristic Symptoms—Characteristic lifting of head and dropping back to pillow. Used for asthma. Leaves used in all smoking preparations for asthma.

JUNIOR LECTURE.

Stramonium.

Solanaceæ.

Jamestown Weed. Daturine is its alkaloid with action like other alkaloids of this order. Tincture represents $\frac{1}{10}$ drug substance or 1 x. Action is very rapid and is over in one day, or at most, two days. Acts very intensely.

Provings—Trembling of body; restlessness; chorea-like movements; convulsions; readily excited by excessive light; restlessness with thirst for water, but inability to swallow any; fancies in mind; laughs; sings; prays; curses; sees people, animals and vermin of all sorts, and changes very rapidly; fear expressed even in slight delirium; just like delirium tremens; pupils dilated; eyes staring and show fear; complexion dirty; want more and more light; horror of darkness, (opposite in Belladonna). Speech stammering, stuttering and unintelligible; dribbling of saliva when speaking; spasm of throat or dysphagia; dry fauces; drinking impossible sometimes, but generally can take little at a time by hasty swallows or gulps; desire for acids; spasm of glottis; forced voice; croaking sound to voice, alternating with croupy, barking cough with sense of suffocation; asthmatic breathing; red rash, shiny in appearance. Daturine given in doses of $\frac{1}{120}$ to $\frac{1}{60}$ gr.

SOPHOMORE LECTURE.

Hyoscyamus Niger.

Solanaceæ.

Habitat—Europe and America.

Alkaloids—Hyoscyamine and Hyoscyne.

Physiological Effects—All violent symptoms of Stramonium and Belladonna. Patient made more indecent than by any other drug. Shows genitals.

JUNIOR LECTURE.

Hyoscyamus Niger.

Solanaceæ.

Common name Sow Bean or Herbane.

Alkaloids—Hyoscyamine and Hyoscyne. Hyoscyamine is a mydriatic and excites the cerebrum and depresses spinal cord. Hyoscyne produces a hypnotic condition and is a sedative to brain; lowers pulse rate and respiration. Dose of Hyoscyamine, $\frac{1}{50}$ to $\frac{1}{100}$ gr. Hyoscyne can be given in larger doses and is used as a narcotic where there is cerebral excitation. Tincture is made from fresh plant and strength is $\frac{1}{2}$ for 1 x, take 2 to 8 of alcohol. Acts from 8 to 14 days. Alkaloids of Solanaceæ are so much alike that can not tell them apart although the Tinctures have a marked difference.

Provings—Twitching; frequent mild delirium and frequently rythmical movements of certain portions of body which are rather graceful; frequent desire to catch at flocks, to pull at bedclothes, to remove clothes from some part of body, later from genitals; excessive hurry; always animated; restlessness; inability to stay in bed; ludicrous actions; foolish laughter; singing; improper words and sentences, not always lewd but misplaced; invariable dread of thirst although thirsty; pupils dilated and insensible; face red, distended and swollen and finally more marked delirium; face full of excitement; face may be pale and anxious.

Respiratory Smtoms—Marked accumulation of mucous in larynx with hoarse voice; cough mostly at night, dry, frequently awakening, worse when in prone position, better when elevated and best when in sitting posture; sense of dryness in throat and tickling in trachea; great sense of constriction in chest; dysphagia, particularly when food or drink is taken and sometimes cannot swallow at all. Marked hiccough or spasm of diaphragm; pinching of abdomen and sticking about umbilicus, worse on deep inspiration.

Digestive Symptoms—Hypogastrium very sensitive; distension with cutting pains; diarrhœa which is usually accompanied by involuntary stools, especially while in bed.

Urinary Symptoms—Paresis of bladder; retention of urine.

Sexual Symptoms—Sexual appetite in both sexes; sexual appetite causes pain in genital region. In women these pains are labor-like, especially before menses; also pains in loins.

This drug effects those of a sanguine nature; nervous, excitable and readily irritated. Effects extremes of life. Belladonna seems to effect young children or young adults, people of light complexion, jovial, companionable and those not nervous when in good health.

SOPHOMORE LECTURE.

Nicotiana Tabacum.

Solanaceæ.

Alkaloids and Active Principles—Most important alkaloid in Nico-

tine. Others are Creosote, Hydrocyanic Acid, Hydrosulphurous Acid. Small amount of Nicotine in smoke.

Parts Used—Leaves.

Medicinal Doses—Nicotiana, 5 grs.; Nicotine, $\frac{1}{20}$ m. hypodermically.

Toxic Effects—Nicotine dangerously poisonous. Pale face; cold perspiration; clammy skin; sick feeling in pit of stomach; intense nausea and vomiting, accompanied by total exhaustion of entire body. Emesis from brain effect. Chronic physical effects from excessive use. Palpitation of heart with noticeable irregularity; tension of valvular sounds; insomnia accompanied by irritability of temper and feverishness; weakness of constitution; lessened, if any sexual power; inflammation of fauces, particularly posterior of pharynx.

Eye troubles: White atrophy of retina; amyrosis or blindness. Effects of Nicotine are shown in angina pectoris.

JUNIOR LECTURE.

Tobaccum.

Solanaceæ.

Its alkaloid is Nicotine, which is very powerful. One-tenth grain gives sickness of stomach, staring of eyes, one or two deep sighs and death. If tobacco used, and then morphine taken medicinally, cannot bear smell of smoke, which is very disagreeable. Plantago may or will help person to stop smoking if he wishes to stop and will exert some will-power. Cannot get good effects of tobacco if use it to smoke.

SOPHOMORE LECTURE.

Solanum Dulcamara.

Solanaceæ.

Bitter-Sweet. A climbing plant, 15 to 20 ft. high. Purple flower, red berries.

Alkaloid—Solanine, a violent narcotic poison.

Medicinal Dose—Salonine, $\frac{1}{30}$ gr.

Toxic Effects—Vertigo; paralysis of tongue; genital inflammation; nymphomania, etc., action on spinal centers.

Physiological Effects—A catarrhal and rheumatic remedy. Catarrhal inflammation of all mucous membranes, especially of bowels; yellow, watery diarrhoea, accompanied by colicky pains, aggravated by cold and damp weather (characteristic). Same is characteristic of catarrhal and rheumatic symptoms.

Capsicum Annum.

Solanaceæ.

Cayenne or Red Pepper.

Active Principle—Capsoicin, a volatile substance forming an extremely irritating vapor.

Special Pharmacy—O. S., 1 dr. of Tincture to 8 oz. of H₂O for gargle. Tincture, internal dose, 10 m. up. O. S. powders 5 to 10 grs.

Overdose Symptoms—Vomiting; violent gastric irritation; colic and purging.

Physiological Effects—Burning in mouth and throat and wherever it touches, bowels, kidneys and urinary passages. Burning superficial in character. A rubefacient. Inflammation of ear; pain in mastoid (Otitis); produces paroxysms of ague; three stages mixed. Contracts arterioles, resembling Ergot. Abolishes sexual instinct.

SOPHOMORE LECTURE.

Digitalis Purpurea.

Scrophulariaceæ.

Foxglove. A biennial plant.

Habitat—Europe, cultivated widely.

Alkaloids—Digitaline and Digitoxine.

Dangerous or Fatal Doses—Unknown. Recovery from 2 oz.

Medicinal Doses—Tincture 5 to 10 m. Fluid extract 1 to 3 oz.

Toxic Effects—Small doses, cumulative effect. Symptoms in three hours. Violent retching and vomiting; pulse first accelerated then slowed, is as slow as 35 to 1 minute sometimes. Nervous phenomena; noise in ears; tongue much swollen; breath fetid; profuse urination and diarrhœa; sometimes suppressed urine; patient generally dies in a convulsion.

Physiological Effects—1. Strong accelerated heart-beat. 2. Slowing but strong beat. 3. Weak but rapid. Clinical symptoms: Slow but strong heart-beat and great arterial tension; pulse quick, irregular, intermittent; heart weak; lower arterial tension; loss of muscular power and failing heart. Kidneys: Direct irritating action. 1. Profuse urination. 2. Lessening in quantity and degeneration of kidney tissue. Kidney troubles; small amount of urine and slow heart.

JUNIOR LECTURE.

Digitalis Purpurea.

Scrophulariaceæ.

Foxglove: Contains Digitaline, Digitoxine; Digitalein, Digitalin. Digitalin is sold for Digitaline in the drug shops. The drug is prepared from leaves of the wild plant during the second year of its growth. The juice of the leaves when mixed with equal parts of alcohol gives the Tincture which represents $\frac{1}{2}$ drug strength. An infusion or decoction is the strong form but the fluid extract is the strongest dose, being 1 or 2 m. If use the Tincture, will have to give 10 to 20 drops to get same effect. If you have poisoning by Digitalis, shove in alcohol which antidotes its action. It is a cardiac stimulant and a cardiac tonic; effects the sexual system, being an anaphrodisiac or capable of robbing male of sexual ability. It is a diaphoretic and an emetic. It has an accumulative action, effects coming on late but suddenly. A lethal dose being a poisonous one. Gives lessened reflexes; paralysis of muscles from both motor and sensory nerves; respiration becomes slow at first but later is increased and superficial. Have coma or convulsions. If you have a case of poisoning, keep in recumbent position, not even allowing to rise to urinate. *Keep patient quiet.* Brandy or alcoholic drink stimulates the heart and so antidotes the Digitalis. Sweet milk also inhibits its action. When collapse occurs, apply heat to epigastrium and abdomen. May give small and repeated doses of Aconite. May have coughing and vomiting but keep as quiet as possible. Catheterize and draw off slowly. Exerts a much greater action on people of light complexion and indolent natures.

Generalities—Weakness and fainting on rising; coldness of skin, extremities are icy; ashen-gray face; itching and burning of skin with prickling in spots.

Nervous Symptoms—Anxiety; fear of death; intolerance of music while so anxious; vertigo, worse on rising or coming on after standing; cold limbs; tearing in right temple; dilated pupils; burning of eyes and feel as if a veil was before them; sparks before eyes; red, green or yel-

low fringing about a light or bright object ; hissing or boiling sound in ears.

Circulatory Symptoms—Slowness of heart ; thready pulse, intermittent ; anxiety causing variable pulse ; feeble when irregular ; any movement of body will give marked increase to pulse beats. May give drop doses of Tincture if cannot get effect with smaller doses.

Respiratory Symptoms—Breathing slow with dyspnœa ; desire for deep breaths ; have edema of lungs ; irregular superficial breathing, easily changed to rapid respiration on slight exertion ; sighing ; cough dry, short and irritating ; expectoration gray, sweetish in taste, of offensive smell and may be mixed with blood. Preceding cough, chest feels constricted.

Digestive Symptoms—Nausea and vomiting ; appetite lost ; thirst excessive ; tongue usually clean but there may be a thin white coating. Anxiety in epigastrium (tobaccum). Diarrhœa violent ; stools ashen ; mucous discharges.

Urinary Symptoms—Dragging, with distended bladder ; frequent desire to urinate, but only pass a few drops at a time. Burning in urethra ; difficult urination ; dark-red urine.

Sexual Symptoms—Male organs : frequent and copious seminal emissions ; weakness and faintness. Penis flaccid ; no erection.

SOPHOMORE LECTURE.

Euphrasia Officinalis.

Scrophulariaceæ.

Eyebright. Small, white, axillary flower.

Habitat—Europe and White Mts.

Physiological Effects—Irritation of nose and conjunctiva. Inflammation does not extend below larynx. Fluid, watery, acrid discharge from eyes. Acts similarly on mucous membranes. Nasal discharges bloody.

JUNIOR LECTURE.

Liliaceæ.

Allium Cepa, Allium Sativa, Aloes, Sabadilla, Colchicum, Helonias, Lilium Tigrinum, Paris Quadrifolia, Scilla, Veratrum Viride, Veratrum Album.

Colchicum.

Used for gout and rheumatism. Look out for poisoning. Don't use alkaloid as patient may die, even weeks after its administration.

Scilla.

O. S. call it Squills. It is an ingredient of Cox's Hive Syrup which given to patients in large doses may kill, as it contains a large amount of Tartar Emetic.

Veratrum Album.

Liliaceæ.

It is found in Europe. It contains Jervine, Rubijervine, Veratrine, and Jervic Acid.

Generalities—Locally it is a marked irritant of mucous membranes, setting up sneezing. Irritation of mucous membranes of intestinal canal ; nausea ; vomiting ; purging, stools watery ; pain in abdominal cavity. Bloody evacuations, giving rise to extreme prostration. It is so great a poison that it should be used with extreme

caution as it induces cardiac failure. Do not use the Tincture as you will get pale face and sunken eyes, with nose pinched, expiration anxious, cold sweat on forehead, creeping chill from head to foot, thirst and cold skin.

Nervous Symptoms—Delirious; uncontrollable; over anxious; continually weeping and wailing; morose brooding over troubles; insanity; unreasonableness; melancholia; patient curses and prays; worse at night. Eyes surrounded by black rings; lids stiff and dry; eyeball congested with catarrhal symptoms of conjunctiva; agglutination of lids; tears very salty, excoriating lids and cheeks.

Respiratory Symptoms—Nose dry as if dusted with a powder; deep, hollow, dry cough which shakes patient.

Circulatory Symptoms—Palpitation of heart with slowing of pulse, worse in a warm room, on eating or in evening.

Digestive Symptoms—Tongue cold; saliva tasteless and without normal odor; mouth feels cold; thirst for cold drinks and hunger for fruit. Diarrhœa; liquid stools that are slimy and green. Cutting, stitching pains; distension of abdomen and great sensitiveness of abdominal walls with inability to pass flatus.

Veratrum Viride.

Contains Jervine, Veratroidine and Cevadine.

Jervine slows movements of muscles and relaxes them; produces convulsions resembling epilepsy; and paralysis. Depresses respiration and circulation.

Veratroidine is more irritating to mucous membranes, giving marked vomiting and purging, but it is not so convulsive. Stimulates respiratory center.

Cevadine produces catarrh of upper respiratory tract; sneezing and burning of tract. It excites heart at first but slows it later, lowering the temperature. Causes death by failure of respiration.

Veratrum Viride is used by O. S. in treatment of pneumonia, pleurisy, peritonitis and cerebritis, during acute primary stages with inflammation, with hyperæmia in robust constitutions and in adynamia.

Lycopodium Clavatum.

Lycopodiaceæ.

Wolf's Claw, Witch Meal. O. S. do not use it. Excites circulatory, digestive and genito-urinary systems. The functions are greatly increased under primary action.

Genito-Urinary Symptoms—Greatest affinity for genito-urinary system, producing frequent and painful urination, the urine being cloudy and depositing a yellowish-red sandy sediment in which are mucous and blood.

Nervous Symptoms—Causes indolence, irritability, anger easily on first awakening from sleep; weakness and lassitude. Complexion yellow and sallow; extremities are cold from poor circulation.

Digestive Symptoms—Anorexia; digestion slow and uncomfortable; excessive fermentation; a very little food fills; constipation marked; liver principally effected. Pains begin in hepatic region and range from it. Bitter taste; nausea and water-brash. All farinaceous food increases indigestion.

Respiratory Symptoms—Respiration greatly interfered with. Dyspnoea attended with pains in chest, varying in character, but the characteristic symptom is the flapping of the alæ nasi.

Marked aggravation at 4 P. M. and lasting till 8 P. M. One foot hot and other cold.

The triturations of this drug are better than the dilutions as drug is of an oily consistency.

SOPHOMORE LECTURE.

Animal Drugs.

Psorinum—A Nosode. A disease product. The contents or clear serum of the itch pustules. Secured by puncturing the pustule and preserving in alcohol. Evaporated to dryness, small, needle-shaped, transparent crystals are produced.

Physiological Effects—Similar to Sulphur. Clinically useful to stimulate reaction in patients suffering from psoric taint. Action: On lymphatic glands and on active secretions and enlargements of glands of body. The cerebro-spinal system is characterized by profound debility; vitiated blood; patients have cachectic appearance and the discharges from all parts of the body are very offensive. Profuse sweating. Used in sweats of phthisis and especially in those diseases following debilitating fevers. Herpetic eruptions with itching and oozing of foul-smelling excretions. Aggravated by warmth.

Tuberculinum—(Bacillinum), Heath. Produced from the disease itself, or its cheesy products.

Tuberculin—A modern preparation by Koch. An artificial preparation. Used for tubercular meningitis and on patients constantly taking cold.

Vaccinum—From small-pox vesicle.

Variolinum—From diphtheria vesicle.

Hydrophobium—Pasteur's preparation.

Syphilitinum—From syphilitic chancre.

Medorrhoein—From bubo.

Sepesin—From blood poison.

Gonorrhin—From gonorrhœa.

Anti-Toxin—From blood serum of animals infected with diphtheria germ.

Ambra Grisea.

Ambergis. A disease product of the sperm whale. Very valuable. Used some in the arts. Sells for \$3 an oz. Burns with the odor of onion. Used in artificial perfumes.

Habitat—Found floating on sea surface or thrown up on beach.

Medicinal Dose—O. S., 5 to 20 grs.

Physiological Effects—A nerve and blood stimulant. Has special affinity for sexual organs. Is given in low fevers. Produces spasmodic cough, accompanied with choking and vomiting. Cough unexpected, a nervous phenomenon. A remedy for whooping-cough. Mentally: Symptoms queer. Feeling on necessity to hurry; forgetfulness; spasmodic twitchings; itching of external genitals; hæmorrhages from uterus. An hysterical drug. Compare with Asafœtida, Musk and Valerian.

Musk.

The secretions of prepuccial glands of musk deer. Sac is $2\frac{1}{2}$ in. long with a capacity of 257 grs. It is expensive as the deer are dying out.

Habitat—From musk deer of China and India.

Medicinal Doses—O. S., 10 grs. Homœopaths never use higher than the 2 x.

Physiological Effects—An hysterical drug, producing hysterical paroxysms and palpitation of heart. Effects identical with globus hystericus and spasms.

Castoreum.

Habitat—From Castor beaver.

Medicinal Doses—O. S., 10 grs. Homœopathic dose, $\frac{1}{2}$ to 1 oz. of Tincture.

Castor Equi.

From rudimentary thumb of horse.

Mephitis.

Habitat—In prepuccial glands of skunk.

Physiological Effects—Same symptoms as musk. Particularly a spasmodic cough accompanied by marked laryngeal spasm and whoop with suffocating feeling. Child's exhalations obstructed. More powerful and useful than musk.

Snake Poisons.

Not used till recently, though Hering proved them in the fifties.

Venomous snakes divided into two groups, according to teeth; those with bifid grooved teeth (Protogryphes) and those with canals in teeth (Solenogryphes or vipers). Fangs are movable and the poison is generally clear or opalescent and, when dry, looks like dessicated albumen.

Habitat—In glands lying between the pterygoid muscle and angle of jaw.

Toxic Effects—Toxicity depends on time of year and species of snake. The venom is more poisonous if snake is hungry or angry. Snake poisoning is not painful. It produces a numbness, followed by fainting spells and syncope. The local effect is according to the species; some produce swelling, sharp pain and hæmorrhage; others extensive edema and little or no pain. General effects are the same for all species of venomous snakes, differing only in degree. Nausea, vomiting; dyspnœa; arrest of respiration; heart beats after respiration ceases; pupil unaffected; patient conscious; sphincters all relaxed and death from asphyxia. Rigor mortis begins quickly and exists till after putrefaction sets in. Most characteristic symptoms: Inflammation of cellular tissues, followed by profuse hæmorrhages in same, therefore ecchymosis is prominent; finally hæmorrhage from all parts of body. Bladder found nearly filled with blood. Acts on blood; though there is no change in corpuscles or character of blood itself. Infusion of the venom is very rapid. Death followed in 1 minute after injection into tail of rat. Temperature of 160° destroys venomous power; alcohol will also do according to British Pharmacopœia.

Treatment—Suck wound. Tie ligature between bite and heart. Inject Indigo into wound. Give alcohol in large quantities. Blood-letting and saline injections. Drug antidotes: Jaborandi extract; Lycopus Virginians (Texas); Sisyrrinchium; Anti-toxin for snake poisoning. Venomous snakes cannot be poisoned by others.

Venomous Snakes.

North America—Crotalus Horridus (Rattler). Trionocephalus Cantartrix (Copperhead).

South America—Elaps Corallinus (Coral snake). Crotalus Adamanteus. Bothrops Braziliensis (Jararaca). Lachesis Mutus.

West Indies—Bothrops Lanceolatus (Ferdilance).

Europe—Vipers.

Asia—Cobra Capella (Naja Tripudians).

SOPHOMORE LECTURE.

Lachesis.

Physiological Effects—Acts on left side. Heart markedly affected; great difficulty in breathing due to pressure on chest; a constricted feeling, a heart symptom; nervous disturbance of heart; great hyperæsthesia of skin, especially marked about throat.

Clinically—Throat cannot bear pressure of collar; symptoms aggravated after sleep; hæmorrhages from mucous surfaces; stool contains black particles of blood. Mental symptoms: Patient's mind jumps from one subject to another in rapid succession.

JUNIOR LECTURE.

Lachesis Trionocephalus.

All snake poisons show in the blood changes and nervous phenomena and the subjective and objective symptoms are traceable to nervous effects.

Lachesis is the poly-chrest of animal remedies and other snake poisons act very similarly.

Nervous Symptoms—Shock to nervous centers; epileptiform or tetanic convulsions immediately, with rapid prostration, inducing paralysis and death. Symptoms slower in appearing if taken *per oram*, but if individual remains conscious, gets vertigo; marked headache, frontal or orbital; general nervous tremblings; neuralgic pains about head and neck. By dilutions or smaller doses the vagus is irritated and then we have laryngeal, respiratory and circulatory symptoms. Nervous symptoms are very like those of other snake poisons. Excitability; loquacity; changeability in conversation during excitable stage; dread of being poisoned; excitable stage preceded by depression, sadness and inability to think. Headache; heaviness; vertigo; reflex nausea; throbbing, undulating pain in forehead, worse after sleep and stooping; present from a cold frequently and with a coryzal discharge which relieves headache; marked headache over eyes and extending to root of nose and burning in vertex, especially in women and at climacteric.

Circulatory Symptoms—Fibrin non-coagulable; red corpuscles disorganized and their functions destroyed, giving ecchymosis and hæmorrhages of dark spots in skin or mucous membranes. If we get hæmorrhage, it is dark, fluid and non-coagulable. Associated with these conditions we get jaundice which is due to blood changes. Get asthenic inflammation of low type where we have no reactive ability. Inflammation is a cellular or an erysipelatous one, being dark-red, purple or blue, with tendency to gangrene.

Respiratory Symptoms—Effects throat and larynx. Throat dark-red especially on left side with tendency to spread to right; breath

offensive; tonsils covered with exudations; cellular tissues infiltrated; glands large and sensitive, worse after sleep; extremely weak pulse; surface of body blue and cold.

Digestive Symptoms—Ineffectual urging to stool; offensive; pain in rectum increased on effort to defecate; hæmorrhoids which are apt to protrude on efforts to defecate and are very painful, being relieved by warmth; great beating in anus; sharp stitches in piles which are worse when coughing or sneezing.

Sexual Symptoms—Especially prominent in women. Nymphomania; the menses being delayed, scanty and with headache. Menstrual colic; pains intense and stabbing and almost always referred to left side; leucorrhœa, marked before menses, excoriating; bruised feeling about hips which is relieved by menstrual flow.

SOPHOMORE LECTURE.

Elaps.

Physiological Effects—Acts on right side. More lung and less throat symptoms than Lachesis; hæmorrhages from lungs instead of from bowels; greater constriction about throat.

Crotalus.

Physiological Effects—Yellow skin due to hæmorrhagic tendency. Nervous symptoms predominant; convulsions and twitchings; hæmorrhages from stomach and black vomit. Characterized by great debility.

Naja.

Physiological Effects—Most action of all on heart, producing a most tumultuous beating thereof. Gasping for breath; suffocation on lying down. Symptoms aggravated by sleep. Nervous symptoms predominant; frontal headaches; angina pectoris; valvular diseases of heart.

Oleum Morrhuæ.

Cod-liver Oil. Contains Iodine, Phosphorus and the bile products of the fish.

Habitat—Taken from the liver of the cod.

Medicinal Dose—O. S., one tablespoonful three times daily.

Physiological Effects—Of great use in chest troubles. Clinically it takes the place of milk and cream as a food. Good for debilitating diseases. Taste covered by salt in mouth previous to taking; coffee, malt, fruit juices, pickles, wine, cider, mint drops, etc., used to hide taste.

Morrhuas: A French preparation containing all the valuable properties of the oil, 3 drops of it being equal to 1 dr. of the oil.

Hoarseness and soreness of chest; burning in palms; fever toward night; cough, either dry or with slimy expectorations.

SOPHOMORE LECTURE.

Sepia Officinalis.

Sepiadeæ.

An ink-like matter. Fishes use it for protection. India ink from same source. Proving by Hahnemann. A valuable drug.

Habitat—Sac of Cuttle-Fish.

Physiological Effects—Sexual system of women. Produces conges-

tion of all the genital apparatus. Scanty menses; tendency to prolapsus uteri; hæmorrhages and leucorrhœa. Most characteristic symptom, prolapsus. Uterine symptoms accompanied by flashes of heat and weak faint feelings similar to those of climacteric. Venous system: Effects portal system especially. Throbbings all over body; cold hands and feet; hot head and irregularities of circulation. Skin symptoms: Itchings; redness; herpetic vesicular eruptions; eczemas, worse on flexor sides of knee and elbow joints. Chloasma cured by it; yellowishness under eyes and across nose. Lycopodium, Nux and Sepia produce chloasma. Mind symptoms: Cry easily; low spirited; irritable; don't find fault. Compare with Puls. and Natrum Mur. Kidneys: Scanty urine; excess of urates; reddish clay-colored sediment adhering to chamber like paint. Stomach symptoms: Similar to Hydrastis. Weak, empty, gone feeling in stomach. Produces prolapsus of rectum like Podophyllum.

JUNIOR LECTURE.

Sepia Succus.

Sepiadeæ.

Circulatory Symptoms—Effects most prominently the circulatory system. Disturbed circulation with ebullitions of heat and accompanied by sweat and weak faint feeling. Congestion of certain organs with sluggishness of circulation and the part congested loses its functional activity with weight and displacement of the organ. Liver thus affected; organ congested, weighty and functional activity lost. Likewise the uterus, with prolapsus.

Skin Symptoms—Symptoms due to lack of nutrition; cold; humid; tendency to gangrene and eruptions; exormias with abundant desquamation especially in bends of joints. Pronounced burning in region of eruptions, with itching.

Nervous Symptoms—Sadness and foreboding of evil; weeping; great sensitiveness to noise and odors; restlessness, when any emotion causes palpitation; apathy, especially to those she ought to love. Headache; periodical throbbing of face and hot flushing of head; shooting in head with production of reflexes; intolerance on light which aggravates headache; headache always relieved in dark quiet place; somewhat relieved in open air and better after a long sleep and temporarily relieved after meals.

Digestive Symptoms—Liver especially effected; bad taste, sour and bitter, worse in A. M. when there is nausea, vomiting, fullness in right hypochondrium, better when lying on right side; stools scanty and caustive, soft ones even being passed with effort.

Sexual Symptoms—Cutting in abdomen and distressing bearing down; patient crosses legs and holds them so to relieve the bearing down. Sometimes if patient does not sit down after some exertion she would actually get prolapsus. Uterus sore; cervix indurated; discharge from cervix and vagina acrid, green and watery, alternating with milky discharge; always erosion; soreness, redness, swelling of vulva from irritating discharges.

SOPHOMORE LECTURE.

Murex Purpurea.

Muricidæ.

An animal substance resembling Sepia in character and used for similar symptoms. It has a rose color in the 3 x trituration.

Physiological Effects—A valuable drug covering nearly the same ground as Sepia in uterine action, differing in producing amenorrhœa. Great sexual excitement; sensation of sore spot in pelvis; also inflammations and pains in the uterine region, extending to breasts. Study Sepia, Murex Purp. and Lilium Tigrinum together.

JUNIOR LECTURE.

Murex Purpurea.

Muricidæ.

Generalities—Very like Sepia; weakness and goneness in epigastrium; aching, drawing and burning in pelvis; sudden urging to urinate at night; sharp pain passing up from right side and diagonally across to left mamma; backache and pain in hips, worse in bed; cutting pains in uterus; conscious of uterus. Symptoms more acute. Sepia, intolerance of sexual desire, the opposite in Murex.

Asterias Rubens.

Asteriadæ.

Star Fish.

Generalities—Head symptoms like Sepia. Head suddenly feels too full with throbbing and flushing and head feels as if it were surrounded with hot air at a distance from it. Shocks in head as from electricity; carotids throb; pulse is hard and tense; boring pains over left eye, coming and going suddenly. Muscles of eye feel contracted and top of head feels bruised.

SOPHOMORE LECTURE.

Cantharis Vesicatoria.

Cleoptera.

Spanish Fly, Hungarian Fly. A beetle very common in these countries. They gather on trees in large numbers and becoming torpid in the cold mornings, are shaken off and plunged into hot vinegar and H₂O. They are also brought to ground by burning sulphur under trees.

Active Principle—Cantharidin, C₁₀H₁₂O₄. .002 gr. will blister. Soluble in alcohol, insoluble in H₂O.

Special Pharmacy—Emplastrum Cantharidis. Requires 8 hours to complete blistering. Generally 5 or 6 hours is enough for patient. Follow plaster with flax-seed poultice.

Physiological Effects—O. S. use it to produce blisters and to effect burns when blistering occurs. Effects: 1. Redness. 2. Burning sensation. 3. Forming of blister. 4. Pain. 5. Deep inflammation. 6. Actual sloughing. According to O. S. there is always danger of producing strangury and should never be given when there is irritation of the kidneys.

Homoeopathic Provings—Violent inflammation of mucous membranes, but especially of those of the genito-urinary organs. Urine increased in quantity; pain on urinating and burning causing inability to pass urine. Kidneys profoundly effected; albumen and blood in urine; violent endo-nephritis set up. Excessive sexual desires. Alimentary canal: Mouth burns; stools covered with blood-streaked mucous; typical dysentery with burning at anus. Seldom of use in dysenteric troubles unless urinary troubles are present also. Heat and burning in lungs and also pleurisy and pneumonia. Compare with Corrosive Mercury, Turpentine, Capsicum, Arsenic, Nitric Acid and Apis.

JUNIOR LECTURE.

Cantharis Vesicatoria.

Cleoptera.

Generalities—Cantharis produces heat, redness, pain, swelling and serous effusions which raise epidermis and produce blisters on skin. Erythematous nodules or pustules about blistered surfaces and also vesicles as in eczema; ulceration and the destructive process follows. Same action on the mucous membranes.

Nervous Symptoms—Delirium; fear of water, the sight of it causing convulsions; insanity.

Digestive Symptoms—Warmth in mouth, stomach and intestines, with increased secretions. Toxic doses given, constrict œsophagus, causing great anguish; desire for water but inability to drink; bruised sensation in stomach and intestines; burning and vomiting of blood and shreds of mucous membrane. Diarrhœa abundant or in small oft-repeated stools, which are mucoid or muco-bloody with griping and burning in abdomen.

Genito-Urinary Symptoms—Aching in lumbar region and frequent calls to urinate; tenesmus, growing greater and greater; urine scanty, albuminous and bloody; priapism giving exhaustion and may get gangrene of penis or vulva.

SOPHOMORE LECTURE.

Apis Mellifica.

Hymenoptera.

Prepared in two ways, either by triturating the whole bees in alcohol or by removing the sacs and extracting virus. Any good Tincture should have the following effect: dip needle in it and puncture skin. This should produce swelling and redness of the size of a cent.

Physiological Effects—Key-note, "Edema." Red varnished appearance of membranes in throat, with stinging pains along uvula, which is dropsical. Bowels: thin, watery, involuntary stool. Anus wide open in children. Urinary organs: Edema urine scanty and often albuminous; no thirst. Ovarian symptoms: Acts on right ovary (Lachesis left). Soreness in right ovary with burning, stinging sensations. Bruised, tired feeling in muscles; drowsiness; perfect intolerance for heat; skin waxey and transparent as in hives (urticaria); obstruction in breathing. Inflammatory action on cellular tissues; ascites; inflammation of all mucous membranes; chemosis; sudden edema of throat, causing choking, sometimes even to death.

JUNIOR LECTURE.

Apis Mellifica.

Hymenoptera.

Generalities—When one is stung by bees the result may be fatal. Skin and mucous membranes effected alike. Tincture of virus is Apium Virens. Skin has puffy, glossy swelling, which is tense and sore; burning and stinging followed by great itching; edema of the tissues about the swelling. Eruptions; erythema is bright and intense and may be that of urticaria, or we may get a localized erythema with swellings or erythema nosodum. When the rash is fully developed it covers the whole body and is rough to the feel. Skin hot and dry and so may have febrile symptoms. Get quick but weakened pulse and breathing which is quick, weak and oppressive. Face flushed; fullness

in head; eyes suffused. Mucous membrane of upper air passages sore; difficulty in swallowing; throat glossy and inflamed; exudation; patches on palate and tonsils, gray in color; febrile conditions with these symptoms; fever greatest at 3 P. M. Drowsiness with the febrile state and these febrile conditions may be intermittent. Chill is usually pronounced at 3 P. M. Ushered in with numbness and dead feeling in hands. Chill worse from warmth. Heat follows chill in form of flushes, giving hot head and chest, but with sense of shivering. When skin gets hot, the hot flushes are associated with sweat. No thirst with heat or at any time. Mucous membranes of eyeballs and lids especially effected; conjunctiva swollen or edematous; eyes and lids very sore; lachrymation excessive and hot; eyes are over-sensitive to light and tire easily on use.

Digestive Symptoms—Mucous membranes of stomach and intestines effected; appetite lost; thirst abolished; swallowing difficult; mouth hot and dry; heaviness in stomach, worse after food; vomiting after meals, largely of mucous; abdominal soreness with diarrhœa; stools yellow, green and watery, worse in A. M. and may give pain; dysentery; soreness and rawness in alimentary canal, especially at rectum and anus; paretic condition of sphincters and involuntary stools.

Urinary Symptoms—Get diminished urine; after urine comes on, must not go too far but stop drug.

Sexual Symptoms—Increased sexual desire; bearing down in uterus as though menses were coming on; right ovary effected; pains worse during menses; pains extend up toward left chest involving heart, giving palpitation, dyspnœa, cough and stabbing pains. Both ovaries may be effected; shooting pains and soreness on deep pressure; mammae sore, hard and edematous.

JUNIOR LECTURE.

Abies Nigra.

Coniferæ.

Black or Double Spruce.

Generalities—Produces deranged digestion, causing pain and feeling as if hard-boiled egg were in stomach.

Abies Excelca.

Coniferæ.

Pinis Sylvestris or Scotch Pine.

Generalities—Has action on respiratory system. Pix Liquida is a form in which it is used. It produces violent vomiting and purging and pains in bowels. It is a diuretic and a soporific. It also increases secretion of mucous membranes of respiratory tract, giving a cough and sore spot in apex of left lung.

Juniperus Communis.

Coniferæ.

Common Juniper.

Hæmaturia, uræmia with convulsions and death.

Juniperus Sabina.

Coniferæ.

Sabina contains a volatile oil and Gallic Acid.

Generalities—Oleum Sabinæ is distilled from fresh tops and is a marked stimulant and emmenagogue, producing a menstrual flux. It is also an oxytocic and is capable of emptying a gravid uterus, causing

rapid dilatation of cervix and discharge of fœtus; especially apt to work between the third and fourth months; but will poison a woman if given in large doses. The Tincture is made from the fresh tops. It produces pain in small of back, coming around the body and associated with sense of drawing. Aching in hypogastrium and pelvis, pains extending down thighs. Sexual desire is increased; a catarrhal inflammation set up with excessive discharge of an acid leucorrhœa which gives eruptions about vulva. Menses increased, early and profuse.

Thuja Occidentalis.

Coniferae.

Generalities—Thuja will produce a perfect picture of gonorrhœa; irritates the postate and gives proctitis. Cutaneous tissues show chondolomata or warty excrescences. Polypi may be treated with this remedy. Diarrhœa coming on especially after being vaccinated; stools profuse and attended with gurgling; streaming out of anus, worse after breakfast. Those addicted to tea drinking are very susceptible. Neuralgias of face and sciatic nerve. Relief in warm air, if dry, either out or indoors; aggravated by rest and heat of bed; worse in forenoon and damp weather.

Terebinthina.

Oil of Turpentine. Spirits of turpentine are distilled from vegetable exudates and this substance is most commonly used.

Generalities—Moderate or small doses produce heat in abdomen with sense of burning in mouth, and salivation. At first, it is stimulating to vaso-motor centers and so raises arterial tension but later has just the opposite effect. During the secondary action we get depressed functions of brain, spinal cord and medulla so that muscular power is lost and co-ordination impaired, patient appearing as if intoxicated. In large doses it is a gastric irritant, producing vomiting and diarrhœa. Suppression of urine; pain in lumbar region; hæmaturia and strangury.

Toxic Effects—Complete muscular relaxation; reflexes abolished; insensibility; pupils dilated; face cyanotic and breathing stertorous.

Death from paralysis of respiration. It is excreted by and irritates all organs of excretion, especially the kidneys. Post Mortem appearances: changes not marked as death is due to nervous derangement. May find irritated condition of gastro-enteric system and may also find lungs and kidneys congested. If get poisoning, should empty stomach and give emulsive drinks; stimulate. Antidote, Phosphorous. If working in phosphorous, one should constantly inhale old Oil of Turpentine. Aggravations in early morning and early evening, from damp weather and when lying. Ameliorated by slow exercise, daytime and dry weather.

SOPHOMORE LECTURE.

Spider Poisons.

Toxic Effects—Symptoms of bites similar to those of snakes but less violent. Symptoms stop short of gangrene. Most characteristic effect is the nervous phenomenon, spasmodic, hysterical, choreic symptoms with great mental anxiety, frenzy and fear from bite. Patients very restless and nervous, which condition is followed by great prostration. Nerves of entire body sensitive.

Tarantula Hispana.**Araneidea.**

Lycosa Tarantula. Preparations are triturations of entire spider in sugar of milk.

Effects—Those characteristic of other spider poisons but greatly exaggerated. Part bitten is swollen and discolored, anæsthesia following after a few hours. Convulsive shiverings; cramps in legs; loss of muscular power; cellular tissues of neck inflamed with spasm of pharyngeal muscles; great thirst; offensive stools; intense restlessness, followed by great prostration. Sexual excitement present. Neuralgias of entire body.

JUNIOR LECTURE.**Tarantula.****Araneidea.**

Generalities—Nervousness; depression of spirits with unappeasable restlessness; exercise followed by prostration: neuralgic pains in upper parts of body and head; respiration and circulation embarrassed; twitching of muscles. When patient hears music or sees some bright color, restlessness is relieved.

SOPHOMORE LECTURE.**Tarantula Cubensis.****Araneidea.**

Cuban Spider.

Effects—Perfect picture of carbuncle.

Theridion Curassavicum.**Araneidea.**

Orange Spider. Infests the orange trees of the West Indies. Drug from whole spider.

Effects—Similar to all spider bites in restless symptoms. Peculiar symptoms: Throbbing and shooting pains in head, worse over left eye, aggravated by sun and noise and accompanied by weakness and coldness of extremities, mental anxiety and restlessness. Migraine, feeling as if top of head would fly off.

JUNIOR LECTURE.**Theridion.****Araneidea.**

Generalities—Headache as though head were too thick and did not belong to person; nausea and vomiting induced by motion; when eyes are closed, there is a flickering before the eyes. Worse on motion.

SOPHOMORE LECTURE.**Arania Diadema.****Araneidea.**

Diadem Spider, Papal Cross Spider.

Effects—Produces coldness and chilliness and fever and ague, attacks recurring at definite hour every day. (Similar to Cedron). Peculiar symptoms: Boring digging pain in os calcis and more or less numbness in that region.

JUNIOR LECTURE.**Agaricus Muscarius.****Fungi.**

Toadstool, Bug Agaric, Fly Agaric. Contains Muscarine or Agaricine. Dose, $\frac{1}{8}$ to $\frac{1}{30}$ gr.

Generalities—Markedly depresses respiratory and circulatory centers; lowers arterial tension; increases saliva and sweat; weakness and dyspnoea from anæmia and lack of oxygen in blood. Pain in spleen and pancreas; gastro-intestinal irritation, colic, vomiting and purging; reduces temperature of body and lessens excretions. It is eliminated from body unchanged. Atropine is its exact opposite and thus its antidote. Never give *in toto* more than $\frac{1}{30}$ gr. of Atropine. Best given in doses of $\frac{1}{120}$ gr. Tincture is made from the fresh plant.

Nervous Symptoms—Mind effected as in alcoholism, but vertigo is greater primarily while delirium is greater secondarily. Neuralgic pains with feeling of icy coldness. Sensory nerves loose power of resistance. Pain lasts a long time for so slight a pain. Choreic actions and tremblings; spine irritated; marked pain between 8th and 9th dorsal vertebræ. Gait unsteady; eyes heavy-looking. Anxiety from an oppressive aching pain in region of heart; dry cough and expectoration of mucous; dyspnoea.

Digestive Symptoms—Flatus of nervous origin, inodorous and in great quantities; coldness along spinal cord; spinal and lumbar symptoms aggravated when walking in open air.

Skin Symptoms—Formication attended with chilliness and sense of burning as after a frost bite. Hives and Urticaria present.

Sexual Symptoms—Sexual desire stimulated and secondarily depressed with great loquacity after sexual indulgence. Women: Pruritis vulvæ; pain during menses as if tearing out. Antidoted by Atropine.

Bovista.

Puff-ball.

Nervous Symptoms—Patient feels as though every part of body were puffed up. Great heat of head which feels as if it would burst. Periodical chills daily from 7 to 10 P. M.; fever heat with circulatory disturbances.

Circulatory Symptoms—Predisposition to epistaxis in A. M.; only get a few drops at each flow. Bleeding of gums with disposition to suck them.

Sexual Symptoms—Hæmorrhage from genitals of women, both at flow and between times; menses too early, worse at night and in early A. M. or from exertion; and are followed by leucorrhœa of a mixed character, always acrid and may be yellowish-green, white, ropy or like white of egg and aggravated when walking. Sexual desire greatly increased.

Skin Symptoms—Urticaria; eczema with great burning and itching and having a thick crusting; skin edematous, either generally or locally, and pits on pressure, pits lasting for a long time.

Secale Cornutum.

Fungi.

Ergot. A disease product of rye. Contains Ergotinic Acid, which has a marked effect on heart and respiratory and nervous systems. Sphacelic Acid effects vaso-motor centers, increasing their activity and giving rise to gangrene and sphacelus; probably it is this which is so dangerous. Cornutum gives rise to convulsions. Ergotin (not an alkaloid, but a mixture of active principles) varies greatly in strength. Squibbs Ergotin is almost equal in strength to the extract of Ergot. Acute Ergotism: Gastro-enteric irritation; nausea; vomiting; great pain in abdomen and stomach; colic and purging.

Generalities—Produces difficult micturition; slow heart action; raises arterial tension; dilates pupils; pale face; vertigo with frontal headache. Secondly, anæmia; veins distended; unstriped muscles stimulated, causing tonic contraction, especially in uterus and circular fibres of intestines and sphincters.

Nervous Symptoms—Brain effected; spinal anæmia; coldness of body; tetanic rigidity and spasms and finally tonic and clonic spasms; convulsive form of chronic Ergotism; marked convulsions; flexor muscles tetanized; involuntary muscles tetanized; finally coma ensues and person dies from asphyxia. Chronic gangrene; numbness; coldness; formication; diseased sensibility; abolition of special senses. Blood degenerates; large blebs and blood icterus followed by dry or moist gangrene, especially effecting lower extremities and buttocks. Epileptiform convulsions, coma and death. No matter how cold patient is, will not tolerate heat or coverings.

SOPHOMORE LECTURE.

Iodium.

Iodine, from sea-weed or "Kelp." Present in sea-water, mineral springs, eggs, oysters and land plants. Extracted by Ammonia, Phenol, Soap Liniment and Sulphide of Soda.

Special Pharmacy—O. S. Tincture 8%. Homœopathic 1 to 100, dose 2 x. Liquor Compositus Iodii for vocal applications, Iodine 5 parts, KI 10 parts, H₂O 85 parts.

Medicinal Dose—20 to 30 drops in ½ glass of water.

Overdose Symptoms—A great counter irritant. Never give more than three coats at one application or vesication will ensue. Locally, a disinfectant; decomposes Sulphureted Hydrogen; irritates skin and mucous surfaces internally; coughing, sneezing, dyspnoea and pain in chest. Antidote, starch in large quantities.

Toxic Effects—Prolonged use gives anæmia, emaciation, mental depression, KI symptoms; Acne-form eruptions on face and legs; frontal headache; ptialism; saline taste in mouth; dysphagia; impotence; acute catarrh of all mucous surfaces; lymphatic glands enlarged; atrophy of testes and mammæ.

Physiological Effects—Emaciation; polyuria with albumen (nephritis). Clinically, controls inflammations of excessively high temperatures and those occurring in parenchymatous structures. Inflammation of lungs. True croupous pneumonia. Hepatization of lungs and great tendency to scrofula and lymphatic gland enlargement.

Blatta Orientalis.

Eastern Cockroach.

Physiological Effects—*Orientalis*. Asthma, worse in rainy spells, when it is of nervous and bronchial type and not of gastric origin.

American species produces pain in chest, shortness of breath and weariness.

Spongia Tosta.

Burnt Turkish Sponge; roasted brown. Contains Iodine, Oxilate of Iron, Silisia and Sulphate of Calcium.

Physiological Effects—Pain, swelling and tenderness of thyroid gland (goitre). Suffocating spells, worse at night; dry painful cough accompanied by great hoarseness; breathing obstructed as by plug in

Ceratospongiæ.

throat. Cough harsh and croupy, worse after sleep and better by eating and drinking; worse in slight draught of air. Used in valvular troubles of heart which cause smothering sensations in breathing. Suffocation upon awakening.

Iodoform.

Preparation—Dissolve two parts of Sodium Carbonate in ten parts of water, then add 1 part of Alcohol and heat to 80° and then add 1 part of Iodine and the Iodoform crystals separate out.

Special Pharmacy—Suppositories contain 5 grs. Thymol, Oil of Roses or of Bitter Almonds in proportion of 2 drops to 1 dr. cover the odor fairly well. Oil of Murbane is 6 gtt. to 15 grs.

Toxic Effects—Produces dangerous toxic symptoms. Temperature as high as 104° with persistent vomiting; severe headaches with quick pulse; great anxiety and restlessness; narcosis and collapse. Test urine with HNO₃ and a dark ring will appear at point of contact. Antidote NaCO₃.

Physiological Effects—Not germicidal, but antiseptic. An antidote to toxins of bacteria. Must be aseptitized before using.

Potassii Iodatum.

Kali Iodatum.

Special Pharmacy—O. S. compound syrup of sarsaparilla contains guaiacum, pale rose, licorice, senna, sassafras, wintergreen, anise, sugar and alcohol. Stomach bears KI best with NaCO₃ added. Stomach retains it and it is almost tasteless. Liquid rennet with milk and Fowler's solution of Arsenic are also good.

Medicinal Doses—5 to 480 grs. Always given well diluted, generally in saturated solution when 1 m. equals 1 gr. Given in water, milk or syrup of licorice.

Overdose Symptoms—Skin eruptions; catarrhal condition; coryza; tears; red lids; nose running in stream; sudden vomiting; sudden danger from edema of glottis, cutting off breathing. Continued use: Metallic taste (persistent); teeth sore and tender; gums inflamed; salivation; frontal headache; morning nausea; severe sore throat; pustular eruption of skin.

Toxic Effects—More persistent use: Nervous phenomena; twitchings of muscles; neuralgia; loss of power of certain muscles; wasting and emaciation in mammae, testes and glands; impotence; loss of vision; ultimate paralysis. Iodism.

Physiological Effects—Used by O. S. as a cure for syphilis and is the main remedy in the tertiary forms of syphilis when nervous phenomena are present. Used for scrofular troubles with enlarged glands; metallic poisoning. O. S., use it on theory based on empirical formula. Asthma; certain lung troubles; pleurisy; hydro-thorax; hydro-pericardium; hydro-cephalus, and in the last stages of pneumonia.

Finer Effects—Similar to those of Iodine with less fever and more depression and prostration; emaciation; sadness; anxiety; headaches with catarrhal symptoms; salivation; swelling of thyroid and other glands; ulcerated throat; characteristic cough with expectoration like soapsuds; asthmatic symptoms; difficult breathing; lung symptoms like Iodine. Rheumatic troubles, aggravated at later part of night, are characteristic.

Kali Carbonica.

Medicinal Dose—O. S., 2 to 20 grs.

Physiological Effects—Important effect on respiratory organs; inflammation of chest; purulent expectorations; *persistent sharp stitching pains in chest walls accompanied by a dry, hard cough which is aggravated toward morning*; puffiness of upper eyelids; mucous membranes irritated causing a catarrhal condition. Female sexual organs profoundly effected; pain and weakness in small of back; menses too early and profuse; amenorrhœa; headache; suppression; great exhaustion.

The Twelve Tissue Remedies.

Kali Phosphoricum, Muriaticum and Sulphuricum.

Natrum Phosphoricum, Muriaticum and Sulphuricum.

Calcarea Phosphorica, Fluorica and Sulphurica.

Magnesia Phosphorica. Ferrum Phosphoricum. Silicia Phosphorica.

All Kali remedies are poisoners, paralyzers and weakeners. They lessen temperature, increase amount of urine and its solids, produce tendency to paralytic symptoms and have morning aggravation and muscular weakness.

Kali Phos.

A constituent of all fluids of the body, of nerves, brain, muscles and blood cells. All highly nutritious foods contain large quantities of it.

Physiological Effects—It is a nerve remedy or tonic. A great neuralgia remedy. Should be remembered for muscular debility after all diseases where blood has been affected. Clinically: Neuralgias relieved by excitement; pains worse when patient is alone and when accompanied by great weakness.

Kali Mur.

Kali Chloride.

No provings. Schussler argued that it was an ingredient of all fibrins of the body and therefore would answer to all forms of croupous inflammations where there were fibrinous exudates, pleurisy, croup, etc. It is required to produce new cell structures in brain. Compare with Bryonia, Spongia, Iodine, Pulsatilla and Sulphur.

Physiological Effects—Recommended for boils in second stages and for abscesses in exudative stages.

Kali Sulph.

Sulphate of Potassium.

Physiological Effects—A functional remedy of epithelial tissues of body. Deficiency of it causes slimy yellow deposits on tongue and slimy, greenish discharges from mucous membranes. Worse in evening and relieved in open air. Probably found in Puls. in minute quantities.

SOPHOMORE LECTURE.

Causticum.

Hydrated Causticum (Hahn.) Produced by a caustic principle of

Potassium. A distillation of mixture of caustic lime fused by bisulphate of Potassium; the result a clear liquid, the Causticum of the drug shops.

Physiological Effects—Three important spheres of action: 1. Paralytic effections; great weakness; inflammation of mucous membrane of throat; aphonia and rheumatic paralysis of stiff joints. 2. Hoarseness; soreness on sternum; cough relieved by cold drinks; nervous sensation of chest; dry, hoarse, hollow cough; deep hoarse voice. Study with *Populus Candicans*. 3. Upper eyelids, face, tongue, lips, certain muscles of throat and bladder as after diphtheria.

Nitrate of Potassa.

Saltpetre, KNO_3 .

Special Pharmacy—Mistura Glycerrhizæ Composita has sweet Spirits of Nitre as its chief constituent. Spiritus Etheris Nitrosa (Nitric Ether), Sweet Spirits of Nitre is used by O. S. to produce sweating and profuse urination. Dose, 20 to 30 gtt. in ordinary water.

Physiological Effects—A gastric irritant, a diuretic and a violent poison. Chief use as an ingredient of papers used for cure of asthma.

Kali Permanganas.

A valuable antiseptic and deodorizer. One of most value because it is non-poisonous. Used as an antiseptic wash, its stains being removed by Oxalic Acid, Muriatic Acid in weak solution, H_2SO_4 and Fe_2SO_4 .

Special Pharmacy—Condy's Fluid contains 2% of it.

Medicinal Doses—Nose and throat, 1 gr. to 1 oz. H_2O . Gonorrhœa, 2 grs. to 1 oz. H_2O . Vagina, 2 to 4 grs. in 1 oz. H_2O removes all offensive discharges. Internal dose, 8 to 10 grs. without serious effects.

Toxic Effects—An extremely dangerous drug as it is an explosive. The Potassium element produces general paralysis, poisons heart, increases urine, diminishes temperature. The concentrated solution is a violent caustic. The Manganese element produces muscle paralysis. The Oxygen element is readily liberated in the body.

Physiological Effects—According to H. C. Allen. Intense ulcerations of throat on pushing it very far and therefore good for diphtheria. Used for croupous forms of diphtheria and membranous croup. Throat symptoms: Mucous membrane reddened, then made raw, then inflamed, then exudations of bloody discharges, then the discharge from fibrous parts comes on; muscles of neck are stiff with pain on swallowing; cervical glands painful; excoriating discharge from nose; nose bleeds easily. 1 gr. in $\frac{1}{2}$ glass of water if given early before death will save the child. Heisenger claims that KMnO_4 will clear up blood and set the system right.

Kali Chloricum.

Chlorate of Potash.

Special Pharmacy—Forms an explosive with almost any granular substance such as sugar, etc.

Toxic Effects—It is most poisonous next to the Cyanide of Potassium and produces an intense irritation of kidneys.

Physiological Effects—Used for sore throat, aphthous ulcers in mouth and is Homœopathic for scarlet fever which has acute nephritis following.

Kali Bichromicum.

Bi-chromate of Potash. Used by O. S. because of its caustic action, as an application for warts.

Dangerous or Fatal Dose—2 to 4 drs.

Physiological Effects—Chief action on mucous membranes and very similar to Hydrastis. Secretions and excretions ropery and stringy or else pustular. Produces false membranes in larynx and ulceration ensues from continued use; pus forms; discharges bloody; deep ulcers in mouth and alimentary canal; stools gelatinous or profuse and watery. Digestive troubles: Tongue yellow, thick and mapped. Skin: Papules, pustules and ulcers; ulcers excoriated with over-hanging edges. Bones: Periosteal pains; nodosities; tearing pain in joints; supra-orbital neuralgias. Suits fat chubby children and light-haired and light-complexioned people, and like *Calcarea Carbonica* is used for syphilitic patients. 2 x trituration in 1 gr. doses, in $\frac{1}{2}$ glass of water, which produces a solution of an old gold color, and of which a teaspoonful should be given at a dose. It also comes in compressed tablets.

SOPHOMORE LECTURE.

Phosphorus.

Put up in waxy sticks and kept in water as it takes fire on exposure. It has a characteristic odor.

Special Pharmacy—Homœopathic Tincture is made up of 95% alcohol with an excess of Phosphorus; placed in an open bottle over hot water, melted and poured off. Strength about the 3 x which is the only Tincture possible.

Dangerous or Fatal Dose— $\frac{1}{8}$ gr. More dangerous when dissolved in oil and the substance divided.

Medicinal Doses—*Pilulæ Phosphorici*, $\frac{1}{100}$ gr. In Homœopathy, the 6 x is as strong as is wise to use. There is an odor to the 3 x.

Toxic Effects—1. Bones: enlargement, inflammation and necrosis, especially of the mandible. 2. Nervous symptoms: a great variety of phenomena. 3. Wide-spread fatty degenerations.

Physiological Effects—Marked action of the sexual organs. Most action on the respiratory organs. Hæmorrhages. Diathesis. Small wounds bleed easily and profusely. Rivals *Crotalus*. Mental effects: Great mental exhaustion; insanity, in form of exaggerated self-importance (very rich, high in social position, etc.) Stomach: Nausea and vomiting, worse in hot weather and better from cold drinks. Biliary diarrhœa; stool involuntary with undigested particles like grains of tallow in them. Little thirst and burning in stomach as in Arsenic. Constipation; stools long, thin and narrow like a dog's; these occur in tall thin persons and those who have cough, laryngitis and great sensitiveness of larynx and so on to aphonia.

Summation—Cough, aggravated on left side and at night when it is hacking and dry; excretions frothy and what is most characteristic, tightness and oppression in chest. A tendency to hæmorrhagic conditions. It is the most likely drug to save incipient tuberculosis patient. Burning pain between scapulæ and night sweats from least exertion. O. S. use it as a nerve tonic. Homœopaths for lung troubles. O. S. give it almost universally with good results as hypobromites of lime and soda.

Phosphoric Acid.

Nervous Symptoms—Debility and mental effects similar to grief.

Sexual Symptoms—Sexual side prominent. Remedy for sexual neurasthenia from masturbation, etc.

It is an excellent tonic at the close of typhoid conditions when emaciation and weakness are prominent and it has considerable kidney action, producing polyuria and sugar in urine. It is a curative remedy in diabetes.

Arsenicum Album.

Arsenious Acid. A pure white powder. Solution made of it of 1 to 30 in hot water and of 1 to 80 in cold water.

Special Pharmacy—Homœopathic Tincture, 1 part of powdered Arsenious Acid boiled in 60 parts of distilled water and filtered; water is then added to make 90 parts, and then 10 parts of 95% alcohol are added. Triturations run up to the 6 x and the dilutions from there on. Liquor Potassii Arsenitis is the Fowler's solution of the O. S. and is the same as the 2 x in strength. Arsenic is used in the form of paste by quacks for local applications. It is a painful escharotic, killing the tissues.

Dangerous or Fatal Dose—Adult $2\frac{1}{2}$ grs.

Medicinal Doses—Ordinary dose of 6 x, 2 to 10 m. O. S. dose $\frac{1}{50}$ to $\frac{1}{10}$ gr. Best given after meals.

Overdose Symptoms—1. Puffiness of eyelids (anasarca); edema of lids. 2. Salivation. 3. Nausea and vomiting. 4. Diarrhœa and dysentery; irritation of kidneys; albuminuria; tube casts and Bright's disease; eczemas of skin.

Toxic Effects—Nausea, vomiting, diarrhœa and intense burning in stomach.

Physiological Effects—Stimulates digestion and improves the appearance of the skin, making it white. Increases sexual appetite and leads to immorality. Characteristic effects: Rapid and great prostration (in any disease) which is out of proportion to other symptoms; extreme restlessness as in Aconite. Body and mental symptoms similar to Aconite. Fear of death; mental anguish; great thirst which is peculiar, wants little but wants it often. Dyspnœa so cannot lie down. Burning pains in stomach and all over body. All symptoms aggravated during latter part of the night. Patient always cold; wants wraps. Thin watery nasal discharge, excoriating nose and lip.

Arsenicum Iodatum.

Arsenious Iodide. It forms orange-red crystals and loses Iodine on exposure to air and light. Its triturations should therefore be kept in bottles protected from the light.

Medicinal Dose—O. S. $\frac{1}{20}$ to $\frac{1}{8}$ gr.

Physiological Effects—Profuse muco-purulent expectorations from lungs and bronchi, the more profuse the expectorations the better the indications for AsI_3 . Accompanying this we have the arsenicum coryza; a burning acrid discharge. Evidence of great debility and prostration which is profound and comes on rapidly. Pulse irritable and a recurring fever every 24 hours. Much sweat and emaciation.

JUNIOR LECTURE.

Arsenicum Album.

O. S. use it in Liquor Potassii Arsenitis which contains the bicarbonate of potash, and in which 1 m. represents $\frac{1}{100}$ of the Arsenious Acid. It is given on a full stomach. Use this in the higher triturations. As soon as the O. S. find puffiness of the eyelids, they stop its use.

Generalities—Arsenious Acid is an escharotic being irritating to the mucous membranes. In small doses get stimulation of digestive (appetite), circulatory, respiratory, mental, and sexual functions. Intestinal peristalsis is stimulated; person becomes fair in complexion and fat. Tolerance may be established, but will finally be overcome. Full doses ought never to exceed $\frac{1}{100}$ gr. Even a dose of this size produces nausea and vomiting of mucous, increased salivation, colic with diarrhoea, bilious faecal matter which soon becomes green or yellow, with epigastric soreness and pain. Heart is irritable; respiration feeble, difficult and impeded, giving dyspnoea. Itching of eyelids. Sensibilities disordered; urticaria; herpes; eczema; jaundice; urine shows albumen.

Toxic Effects—Marked burning in oesophagus and stomach and as these increase, get constriction of throat, a metallic acrid taste, violent vomiting and purging; urine suppressed; extremities cold; pulse small, feeble and fast; labored respiration; painful abdominal muscles with soreness; surface of body cyanosed; anxiety; cramps; convulsions; coma and death. May get a narcosis very similar to Morphia in some susceptible cases and will sometimes have symptoms exactly like Asiatic cholera. Chronic poisoning may ensue from injudicious use of Arsenic for cosmetic purposes or from ray arising accidentally from wall papers. Have chronic febrile condition. Appetite decreased with temporary voracious appetite. Colicky pains followed by mucous stools. Eyes effected; lachrymation; watery coryza running from the nose; cough; headache; languor; wasting; urea increased.

Nervous Symptoms—Irritable; depressed; restless; fidgety; areas of numbness; insomnia; muscular tremors on attempting exercise; muscular stiffness; convulsions and paralysis.

Thin coating on the tongue which has a glistening silvery appearance.

The periodicity is remittent or intermittent; then comes adynamia or a progressive loss of strength; faintness and a tendency to degeneration and malignancy. Blood is dark-red; the secretions fetid. Restlessness with anxiousness; excessive thirst; wants large quantities of water; periodicity.

Post Mortem appearances: Mucous membranes swollen; brown and red patches seen, the tissues having broken down; soft diphtheritic exudate; ulcerations in small intestines; serum containing particles of mucous membrane, the flakes being epithelial in character and resembling those of Asiatic Cholera.

SOPHOMORE LECTURE.

Antimonium Tartaricum.

Tartar Emetic.

Special Pharmacy—Vinum Antimonii is not the pure Sb., but is Tartar Emetic in Sb. similar to Vinum Ipecacuanhæ. Syrupus Scillæ Compositus (Hive syrup) contains $\frac{3}{4}$ gr. in every ounce. Pilula Anti-

monii Composita. Antimonii et Potasii Tartras. Plummer's Pill has for its principal ingredients Sb. and Hg.

Medicinal Doses—Antimonii et Potassii Tartras, $\frac{1}{100}$ to 2 grs. Emetic dose 1 to 2 grs. O. S. use $\frac{1}{100}$ to $\frac{1}{200}$ gr. to produce vomiting as a relief for croup and lung troubles.

Overdose Symptoms—Prolonged and violent vomiting; muscular relaxation; faintness with great prostration; making it a dangerous drug.

Toxic Effects—The above symptoms aggravated with respiration greatly affected and death. Lungs found emphysematous and hepatization is present or appearances of second stage of pneumonia.

Physiological Effects—1. Lung affections. Characteristic effect on chest; rattling, wheezing breathing, rales very fine and in smaller passages while those of Ipecac are large and do not obstruct. 2. Skin: Pimples, carbuncles, boils, pustules and eruptions like those of small-pox. 3. Bowels. Slimy, grass-green stools as in Ipecac.

Antimonium Crudum.

Per-sulphide of Sb. Impure containing As. Pb. and Cu. Not used by O. S. and considered by them as practically useless.

Physiological Effects—Three spheres of action: 1. Chronic gastric troubles; gastric catarrh with white-coated tongue. 2. Skin symptoms: Nettle rashes, soreness and tenderness. 3. Soles of feet. Produces callouses and large horny growths on soles.

Mental condition like that of Cham. and Nux. Cross and irritable.

Mercury.

Mercurius Vivus, Quicksilver, Mercurius Solubilis (Hahn). Merc. Sol. is prepared by mixing quicksilver and HNO_3 and then precipitating the quicksilver by the action of caustic NH_3 which results in a subdivided powder, an impure oxide of quicksilver.

Special Pharmacy—O. S. Blue Mass, 1 to 3 pills as an alterative dose.

Physiological Effects—Profound anæmia from degeneration of red blood corpuscles. This degeneration probably shown in tendency to produce ulcerations of skin, mouth and all mucous membranes. Breath fetid; profuse salivation except in child under three years of age; destruction of gums with red lines on them; loss of teeth; enlargement of glandular structures, especially the lymphatics. Nervous phenomena of syphilis instead of its ulcerative condition; paralysis agitans; neuralgias; characteristic trembling condition and jerking as in St. Vitus' dance. Bones: It attacks the flat bones, whereas syphilis attacks the long ones; liver and kidneys have a tendency to accumulate secretions. Some doubt whether it increases the secretion of bile, but it undoubtedly alters the secretion, as whatever bile is in the intestinal tract is thrown off more profusely than before.

Summation—Redness of, and lines on gums; fetid breath; sore throat; sensitiveness to cold; ulcerations (superficial and with tendency to spread). Stools: dysenteric; straining long continued. Pain in abdomen. All symptoms aggravated at night. Catarrhal troubles in mucous tract with excoriating discharges. Fever like that accompanying pus formation, coming on at certain times in the day.

JUNIOR LECTURE.

Hydrargyrum.

Mercury or Mercurius Vivus or Mercurius Solubilis Hahnemanni.

Generalities—Anæmia; blood degenerated, especially the red corpuscles; fibrin and albumen are diminished; blood more fluid and less coagulable. Emaciation, body emitting a foul odor; face pale, earthy and puffy; skin tettery and superficially ulcerated; ulcerations having a whitish look with a tendency to gray; bleed easily, exude a thin ill-conditioned serum and become serpiginous; vesicles; erythema and papular rashes. Always produces chilliness, worse in open air, causing person to clothe himself warmly even in summer. Hands and feet cold; sweat easily induced in A. M. Sweat worse at night in bed, when it is oily, stiffening and staining the linen, yellow. Acts on lymphatic and other glands of body. Sublingual, submaxillary, carotid, inguinal, parotid and all lymphatic glands become red, painful and swollen with a tendency to suppurate. Mercury liquifies these tissues. There is also a marked effect on the bones which become necrotic with marked painfulness of the periosteum. Weakness from effect on the bones, but patient is always hasty in action and trembles. Joints become dry, and crack on motion; jerking pains in joints, shooting to distant parts of body.

Nervous Symptoms—Delirium; illusions of running water especially; but other hallucinations are present. Patient is distrustful but apologetic; will-power lost; headache with sense of tension or band-like constriction; sensations of vibrations in brain; when lying down, head rotates; vertigo and stammering. Special senses: Eyes feel as though drawn together, worse on trying to look at anything and from heat or bright light; floating specks before the eyes; heat and biting in eyes and may have inversion of lids. Ears: Inflammation of internal and external ear; cramp-like, swelling and sticking pains in ears; loss of hearing and bloody offensive discharges, especially of right ear and then may have total loss of hearing; roaring.

Respiratory Symptoms—Liquifaction; profuse offensive coryza; pains in bones of nose; sneezing always with acrid discharge and bleeding from nasal mucous membrane during sleep; sore throat with tendency to enlargement of tonsils and suppuration; tissues appear bluish; feel dry, although they appear glossy; viscid mucous; glands swollen; throat worse at night; difficulty in and sticking pains on swallowing. Larynx irritated and inflamed with erosions; painful cough present; chest feels sore and dry; dry cough which rings, with expectoration of little salty mucous. Dyspnœa; sticking in chest, especially left lung; pain in anterior and upper part of lungs.

Digestive Symptoms—Teeth feel too long and loose; teeth may later become black and carious and fall out; sensitive to touch of tongue; painful at night with jerking, pulsating pains which extend to ears; tongue coated and takes the imprint of the teeth; may have black tongue with red edges; saliva has a sweetish taste, especially of bread. If not eating, taste is metallic or like bad eggs; mouth and mucous membranes covered with aphthæ which are serpiginous; person continually swallowing; thirst day and night; appetite ravenous; abdomen distended, hard and sore; constipation; stools scanty, whitish gray in color and sometimes bloody. As a rule there is a diarrhœa of greenish mucous with protrusion of rectum, and cutting, griping pains in bowels with constriction; feeling of tenesmus always present.

Urinary Symptoms—Constant desire to pass water, but little is passed and it is dark, red, turbid and albuminous. Green, painless discharge of mucous from urethra and swelling of glans.

Sexual Symptoms—Itching of pupenda; leucorrhœa, worse in evening, green and excoriating and burning after scratching has removed itching. Menses profuse; tendency to abortion and coitus easy. Male: Redness of penis, especially of glans at meatus; small vesicles which ulcerate and bleed, giving a raw appearance; bases cheesy. Seminal emissions profuse and may get bleeding with coitus.

SOPHOMORE LECTURE.

Mercurous Chloride.

Hydrargyri Chloridi Mite. Calomel, $Hg_2 Cl_2$.

Dangerous or Fatal Dose—30 to 40 grs.

Medicinal Doses— $\frac{1}{10}$ to 10 grs. Laxative dose, 1 gr.

Physiological Effects—O. S. use it as a laxative in the beginning of all acute diseases, for biliousness and acute glandular affections of the neck. It is little used in Homœopathy as the action of Calomel on the liver is not known; whether it is changed into Corrosive Sublimate or decomposes in intestines into the gray oxide which passes off three months later. Never give with Iodides, Bromides, HCl, or alkaline chlorides as the combination would equal Corrosive Sublimate.

Mercuric Chloride.

Mercurius Sublimatus Corrosivus. Bichloride of Mercury, $HgCl_2$.

Dangerous or Fatal Dose—2 to 6 grs.

Medicinal Doses—O. S., internal dose, $\frac{1}{80}$ to $\frac{1}{10}$ gr. For antiseptic purposes never use it stronger than 1 to 1 or 2,000.

Toxic Effects—In application to external wounds: Abdominal pains, bloody stools and tenesmus. Internally: Most violent pains due to corrosive action; collapse and death by convulsions. Is incompatible with all drugs excepting KI and Ammonium Chloride.

Physiological Effects—Used for antiseptic purposes and here generally combined with Tartaric Acid to prevent formation of mercuric albuminoids in tissues of body.

Mercurous Iodide.

Protiodide of Mercury. Hydrargyrum Iodatium. Hydrargyrum Iodatium Flavum.

Medicinal Dose— $\frac{1}{10}$ to $\frac{1}{3}$ gr.

Physiological Effects—Mildest of the two Iodides of Mercury. Used for syphilitic troubles and Bright's disease.

Homœopathic Provings—Symptoms of sore throat; diphtheria spots on right side of throat and tonsil; yellow coat at base of tongue; tenacious mucous in throat; disgust for food; iritis. Aggravations at night.

Mercurius Iodatus Ruber.

Red Iodide of Mercury. Biniodide of Mercury. Deutiodide of Mercury. Mercuric Iodide. Hydrargyri Iodium Rubrum.

Medicinal Dose— $\frac{1}{30}$ to $\frac{1}{15}$ gr.

Physiological Effects—A valuable antiseptic. Used for third stage

of syphilis with KI. Otherwise similar to corrosive mercuries. Diphtheritic sore throat on left side; enlargement of cervical glands.

Hydrargyrum Cyanidum.

Similar to Red Iodide but more powerful.

Medicinal Dose—Dose $\frac{1}{100}$ to $\frac{1}{50}$ gr.

Physiological Effects—Used in severest types of diphtheria.

Mercurius Iodatus Flavus.

Yellow Oxide of Mercury.

Medicinal Dose— $\frac{3}{80}$ to $\frac{1}{20}$ gr.

Physiological Effects—Used by oculists in eye troubles, as an ointment to eye. Dose, 1 to 2 grs. in 1 dr. of water.

Turpeth Mineral.

Yellow Subsulphate of Mercury.

Used as an emetic (2 to 6 grs.) and as a remedy in croupous conditions.

Nitrate of Silver.

Special Pharmacy—O. S., either in a watery solution or as a pill.

Dangerous or Fatal Doses—Unknown, there are many fatal cases due to physicians' carelessness.

Medicinal Doses— $\frac{1}{6}$ to $\frac{1}{12}$ gr. Dose in gonorrhœal infection, 1 to 2 grs. in 1 oz. of water. For urethral injection, 1 to 5 grs. in 1 oz. of water. In gonorrhœal vaginitis, 1 gr. in 1 oz. of water.

Toxic Effects—Never use when ulceration of cornea is present. Antidote: Salt.

Physiological Effects—Used by oculists to paint conjunctiva to control ophthalmia. Produces fatty degeneration of heart. Is used in kidney and liver diseases. Intense tissue waste. Slate line on gums. Paralysis or lack of co-ordination; convulsions. Has cured epilepsy.

Homoeopathic Provings—Irritates mucous membranes of bowels and produces mental affections.

Ferrum Metallicum.

It is used as a reduced iron or Ferrum Redactum. This preparation of iron is so finely reduced that it will ignite like powder. Provings made with Acetate of Iron.

Special Pharmacy—O. S., Tinctura Ferri Chloridi.

Medicinal Doses—O. S., Tincture 5 to 20 gtts. Full strength is used for local applications.

Physiological Effects—In taking internally, it should be thoroughly diluted and taken through a glass tube to protect the teeth. O. S. consider it a specific for erysipelas and use it for anæmia, and as a tonic in Bright's disease. It is excreted entirely through the bowels. Hughes says the iron preparations are medicines and foods, and marked its action in anæmic conditions.

Ferrum Phos.

Rivals Aconite, Gelsemium and Bryonia for first stages of inflammatory troubles. Produces as marked a fever as Aconite.

JUNIOR LECTURE.

Sulphur.

It is the remedy for all undiagnosable diseases and when given is readily absorbed and appropriated, and appears in sweat, milk, urine and stools. It is a laxative, giving soft fæcal odorous stools. All secretions and temperature increased. The waste by excessive secretions results in emaciation. The sulphur individual is one who is extremely irritable, alternating with indolence. Top of head hot; general flushes of heat followed by faint feeling; desire for beer or brandy at 11 A. M. Awakened frequently at night with cramps in legs. Always fatigued in A. M. Always has cold feet and sometimes soles of feet burn and beat. Careless in dress and habits. Dirty, sloppy, slovenly.

Aurum Metallicum.

Chloride of gold.

Medicinal Dose—Dose from $\frac{1}{30}$ to $\frac{1}{10}$ gr. O. S. use it to prevent hyperplasia of connective tissue. Best to use trituration with sugar of milk.

Auric Fever: There is an orgasm of blood in all the veins and veins feel as though boiling water surged through them; then we have excessive sweat and diuresis simultaneously. Glandular organs of the body enlarged, especially the thyroid. Skin covered with pustules which discharge and form scab. When there is auric fever, these come on upper lip especially.

Nervous Symptoms—Mind: Suicidal tendency; anguish with wish to commit suicide by shooting; peevishness with desire to contradict and get angry if contradicted; seeks solitude and is anxious and fearful at little noises; vertigo, more marked when standing or stooping; feeling as if turned in circle, relieved by grasping head; tendency to fall to left, especially if in open air. Patient is compelled to lie down and slight motion brings on vertigo (Bryonia). Violent, boring, burning pain through head, worse on motion. Visual:—Diplopia, great tension, hemiopia; lachrymation; weakness; pressing pains of eyes, aggravated by motion; lids agglutinated in A. M.; burning in inner canthus; drawing and itching of lids. Aural:—Roaring; sensitiveness to slightest noise which gives fear.

Circulatory Symptoms—Violent palpitation; anxiety and trembling in præcordium, giving restlessness. Palpitation worse at night when lying on back. Hyperæmia.

Respiratory Symptoms—Discharge viscid or sticky mucous, when nostrils adhere and give trouble in breathing; itching, stitching and smarting. Nasal bones are sore; crusts in nose; smell always too acute. Pain in throat of sticking character. Dyspnœa, marked at night. Stitching in chest from weak inspiration; desire to take in air; cannot breathe deeply enough. Lungs hyperæmic. Sense of crushing weight over sternum, worse on exercise.

Digestive Symptoms—Aching in teeth with drawing sensations, worse if cold air strikes them. Painfulness in upper molars, worse when chewing. Taste putrid and bitter. Salivation. Appetite sharp, not appeased by eating; eat hastily. Pressure in stomach; rumbling and cutting pains in bowels; distension of abdominal walls; hard knotty stools; hæmorrhoids; cutting pains with stools.

Urinary Symptoms — Diminished or profuse urine which may resemble buttermilk.

Sexual Symptoms—Women: Menses retarded. Men: Sexual pollutions nightly; swelling of right testicle, worse at 6 P. M. and better at 11 P. M.; great sensitiveness; induration; sense of tension with bruised soreness. (Study with Merc., Spigelia). May antidote with Hepar.

Acids.

Organic and Inorganic.

Organic are vegetable acids and give great weakness without much irritability.

Mineral acids give great weakness with much irritability.

Both produce pseudo-membranes but mineral acids alone destroy tissue and thus act as escharotics. Sulphuric Acid produces a black and deep scar. Nitric, a yellow and superficial one. Carbolic and Hydrochloric, a white one. Both classes of acids diminish the acid of the gastric juice. Antidotes: Alkalis, magnesia, soda, lime, soap, eggs, milk, oil. Never use a stomach pump. Don't give warm water, as that produces emesis, which is not desirable in such cases.

Acetic Acid.

Glacial or Concentrated. Ordinary and Dilute.

Ordinary $\frac{1}{3}$ the strength of Concentrated and Dilute used in $\frac{1}{8}$ its strength. Vinegar sometimes used. Glacial and Dilute mostly used.

Glacial Acetic is extremely caustical, producing inflammation and pain if locally applied; also vesication; mucous membranes become blanched. This is only used to destroy tissue.

Dilute Acetic is used internally and is only moderately irritating to mucous membranes; but if strong will give symptoms of indigestion. In small doses, secretions increased; in large, are decreased and indigestion results, giving burning in throat and stomach, pains in abdominal cavity, distended abdomen, reflex tightness of chest with dyspnoea and desire to cough. Tongue becomes white, dry, cold and tremulous. There is a sense of a load in stomach with desire to vomit and with labored breathing; pulse is small and weak and there is a cold, clammy sweat. In large doses, decomposes the blood, expels the oxygen from red blood corpuscles and produces tendency to faint. Rigors and muscular tremors followed by rise in temperature. Coagulates the albumen, making blood serous, giving anæmia. Pale, waxey skin; vomiting of all food; pain after eating; intense thirst; dry, hot skin or excessive sweat. Passes great quantities of urine. Weak heart and tendency to anasarca.

Lactic Acid.

Found in natural state in gastric juice but obtained medicinally from fermentation of sugar of milk.

Generalities—It increases the functions of circulation. Blood quickly rises to head and gives rise to bursting heat; fullness, feels as if eyes were pushed out. Heart action increased; due to irritations of the linings of ventricles and valves. There is bad thickening near valves which is due to edema.

Locomotor Symptoms—Acute articular pains in all joints, but especially in fingers and toes, which become red and swollen. Long

bones painful and hot, which give rise to a fever and an acid sweat, which is mostly marked about the feet. Mucous membranes, especially of fauces and larynx, give a swelling sense of fullness which swallowing does not relieve. Parts dry; dryness with sense of constriction; ringing cough; expectoration of mucous; temporary aphonia.

Digestive Symptoms—Mucous membranes of stomach. Nausea; hot sour eructations; flatulency; burning and weight in stomach, increased by using tobacco; diarrhœa hurried.

Benzoic Acid.

Respiratory Symptoms—Acts on fauces and upper respiratory tract. Produces sneezing.

Circulatory Symptoms—Circulation increased, giving warmth about epigastric region. Pulse increased. Heat is gradually produced and as gradually subsides; sweat ensues and secretions of body are increased.

Urinary Symptoms—Acid eliminated by renal system and while being eliminated, the urine is acid; bladder irritable and urine retained with difficulty. Hippuric acid formed. Urine offensive and ammoniacal.

Digestive Symptoms—Digestion deranged. Diarrhœa, consisting of watery, grayish, offensive and frothy stools; frothy from air in them. They are pungent and ammoniacal. Confusion of head.

Muriatic Acid.

Hydrochloric Acid, HCl.

Generalities—At first increases the digestive function but get quickening pulse; flushing of face. It increases saliva and urine. Some cerebral excitement and giddiness. Redness of skin; purple rash; petechial mucous membranes; mucous membranes red or bluish from venous congestion; ulceration with bluish base and circle; intense burning and flushing of face; giddiness; confusion of senses; irritability; peevishness and finally prostration.

Digestive Symptoms—In atonic dyspepsia, small doses with pepsin must be administered after meals, unless there is acidity of stomach, in which case give before meals. HCl should be given before and alone. Alimentary canal: Dry, red tongue; discharges from mouth, fauces and gullet, which are excoriating. Foul discharges from bowels with proneness to diarrhœa, due to intestinal ulceration. Tongue may be ulcerated or blistered. When bowels move there is irritation and burning and itching of anus; straining along with stool and prolapsus ani.

Nitric Acid.

Aqua Fortis or Hydrogen Nitrate.

Marked effects. Dilute is used of strength from 11 to 17%. O. S. generally give 3 m. but dilute it.

Generalities—Special affinity for muco-cutaneous outlets. Parts red, glazed and prone to ulcerate from acidity of secretions or excretions. Splinter-like pains at these outlets. Digestion impaired by inaction of liver. Marked constipation with clay-like stools. Downward pressure in pelvis with desire to urinate and defecate and feeling as if menses were coming on. Outward pressure of the vulva. Urine concentrated and of strong odor. Symptoms made worse from riding.

Febrile Conditions—Chilliness in evening, worse on motion or upon uncovering; feet and legs cold; flushes of heat, local or general; blood hot; hands and head hot. Tendency to sweat. Pricking pains. Restless after midnight; irritable, prostrated or depressed. Anxiety and tearfulness, worse at night.

Genital Organs—Genital excrescences or fungoid growth; fissures giving rise to pain at anus, vulva and urethra. In women these are cherry-colored or green; foul.

Phosphoric Acid.

Generalities—Not corrosive to animal tissues. Used chiefly in doses of from 3 to 10 gtt. of the dilute, well diluted. Marked debility without great irritability. Over-worked people most affected. Mucous secretions excessive. Diarrhoea excessive, watery, almost colorless and painless. Urine phosphatic, due to waste of nerve tissue; also alkaline, profuse, colorless and may be saccharine. Albumen. Seminal emission or sexual orgasm easily provoked, but there is impotency with dragging of testicles. Bones degenerated, being rachitic and feeling as if scraped.

Sulphuric Acid.

Generalities—Great tremulousness without tremor; excessive weakness and great desire to hurry. Flushes of heat. Acidity of stomach with apathy, hiccough. Stools sour, green, watery, saffron colored, sometimes stringy and may resemble whites and yolks of eggs chopped, and this is very offensive. Skin: Chronic urticaria with itching, tingling and formication. Ecchymosis of skin. Neuralgic pains in intercostal and abdominal muscles, which subside and give rise to isolated spots which are hyperæsthetic.

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