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Botanical Medicine Monographs and Sundry

ANALYSES OF AMERICAN PLANTS.

Abstracts from Theses.

Rhus glabra.—Mainly with the view of determining the amount of tannin present at different periods, Jos. A. Palen, Ph. G., collected two lots of leaves, July 15th and August 30th, from plants growing on the bluffs bordering the Mississippi river near Dubuque, Iowa.

These were dried and powdered, and yielded the following analytical results:

	July.		August.	
Petroleum extract	.....	5·72	.....	5·12
Volatile oil	·2	.....	·1	.....
Wax	1·5	.....	1·22	.....
Fats	4·02	.....	3·8	.....
Ether extract	.....	5·6	.....	4·85
Of which soluble in water	1·3	.....	1·55	.....
Alcohol extract	.....	14·3	.....	13·6
Tannin	10·8	.....	10·1	.....
Altered tannin, resin, etc	3·5	.....	3·5	.....
Water extract	.....	10·92	.....	12·15
Glucose	·87	.....	·63	.....
Cane sugar	·18	.....	·21	.....
Other carbohydrates	3·04	.....	4·2	.....
Mucilage	4·78	.....	6·35	.....
Extracted by soda	.....	13·29	.....	12·05
Albuminoids	6·21	.....	5·6	.....
Extracted by HCl	.....	4·72	.....	5·54
Calcium oxalate	3·36	.....	3·87	.....
Treatment with Cl (hydrocellulose)	.....	6·72	.....	9·17
Treatment with HNO_3 (incrusting matter)	.....	1·41	.....	3·76
Moisture	.....	4·6	.....	4·4
Ash	.....	·34	.....	·34
Residue	.....	25·2	.....	27·84

A separate estimation of tannin was made by precipitating the decoction of the leaves with gelatin, and multiplying the weight by 0.54. The July lot yielded 16.36 per cent., the August lot 15.75 per cent. The tannin strength of both samples is practically alike, but is not so large as that of sumac leaves from Virginia, which yield

from 20 to 25 per cent.

The coloring matter exists in very small amounts, and is probably alike with that of quercitron bark. The ethereal and alcoholic extracts of the leaves were examined; cloth prepared with different mordants, like ferric acetate, stannous chloride, copper sulphate, potassium bichromate and alum, was dyed, the color being like that obtained with quercitron bark.

Helianthemumcanadense was examined by Wm. Crutcher, Ph. G. Petroleum benzin extracted 1.15 per cent., containing a little volatile oil, wax and saponiflable fat. Ether dissolved 1.4 per cent. wax chlorophyll, etc. Alcohol took up 23.05 per cent., nine-tenths of which was soluble in water; the tannin was estimated by precipitating with lead acetate and cupric acetate, the results of both experiments indicating 10.8 per cent. of tannin. Water dissolved from the powder 7 per cent. mucilage, sugar, etc.; and dilute soda solution took up a little over 4 per cent. of pectin and albuminoids. The presence of starch was determined, but its amount not estimated. The airdry powder contained 7 per cent. of moisture and 3 per cent. of ash. Indications of a glucoside having been obtained, the alcoholic extract was treated with water and the solution agitated with benzol; on evaporating this liquid fine needles were left, but not further examined.

Pilea pumila.—Frank R. Weiser, Ph.G., reports that this plant has some reputation for counteracting the effect produced by *Rhus Toxicodendron*. The fresh plant is bruised, and then applied either by binding it on the eruption, or by rubbing the affected parts with it; the effect seems to be instantaneous, allaying the itching and preventing the spreading of the eruption. The plant is popularly known as clearweed and richweed, and grows from Canada to Florida. After drying it has a somewhat fragrant tea-like odor. An analysis of the dried and powdered plant yielded the following results:

Extracted by petroleum spirit (volatile oil, ·26; fat, ·70; wax, ·28; chlorophyll, ·08)	1·32
" by ether (mostly chlorophyll)	1·52
" by alcohol (glucoside, etc.)	1·00
" by water (mucilage, dextrin, sugars, etc.)	8·89
" by dilute HKO	4·90
" by dilute HCl	9·02
Lignin	3·25
Wood fibre, ash and moisture	66·33

A portion of the alcoholic tincture obtained above on being allowed to evaporate spontaneously, yielded crystals, which responded to the tests for glucosides. Half pound of the powder was then percolated with alcohol, the tincture concentrated by distillation, the extract treated with water, and the aqueous solution agitated with chloroform; the residue obtained on evaporating the chloroform was redissolved in water and evaporated in a desiccator, when a substance was left, having a strong vanilla-like odor, and which did not respond to tests for either alkaloids or glucosides.

GLEANINGS FROM THE GERMAN JOURNALS.

By FRANK X. MOERK, PH. G.

Mel Depuratum.—Becker recommends 5 lbs. crude honey, 3 lbs. distilled water and 2 lbs. alcohol to be mixed, allowed to stand a few days, filtered, the alcohol distilled off and the residue evaporated. The product indefinitely preserves its light color.—*Pharm. Ztg.*, 1888, 313.

Detection of Salicylic Acid in Beverages and Foods.—Dr. Ripper offers the following, based on the solubility of the acid in a mixture of equal volumes of ether and petroleum-ether, in which extractive and tannin are almost insoluble. 50 cc. of the liquid, or if a solid a definite. quantity mixed with water, are acidulated with 5 cc. of dilute H_2SO_4, and agitated with 50 cc. mixed ether and petroleum-ether in a separating funnel; should the liquids not separate readily, addition of a little alcohol will assist. The ethereal solution is removed and agitated with 50 cc. of ether-saturated water, to extract acetic acid which is present especially in beverages, the ethereal layer filtered, the solvent evaporated and the residue dissolved in 20 cc. water. If a qualitative test is all that is required, a drop of Fe_2Cl_6 is added; for a quantitave test, a few drops of phenol-phthalein solution are added and the liquid titrated with $^1/_{50}$ normal KOH.—*Pharm. Ztg.*, 1888, 317.

Hyoscyamine and Atropine.—A communication of the "Chemische Fabrik auf Actien," (formerly E. Schering,) to *Pharm. Ztg.*, 1888, 333, details results of the change of hyoscyamine into atropine. Attention was first attracted by the same lot of belladonna root, yielding varying mixtures of the two alkaloids or only atropine. Later experiments proved that by suitable methods, either alkaloid could be gotten in the pure state; that belladonna as well as hyoscyamus contains only hyoscyamine preformed; and that atropine is merely a molecularly re-arranged hyoscyamine. Atropine is formed by heating hyoscyamine at 110ºC. for some time (this change was announced by E. Schmidt in *Pharm. Ztg.*, 1887, 542, almost a year previous to the above publication); on a large scale it may be obtained by treatment of hyoscyamine with alkalies, and by a number of other methods.

Carbonated Milk, used in. dyspepsia, lung troubles, etc., as a substitute for kefir and koumys, is made. by charging in a soda water apparatus fresh milk with 2 or $2^1/_2$ volumes of CO_2. To render it more palatable 1.5—1 gm. NaCl and 0.5 $NaHCO_3$ are added to each quart; these additions also prevent change for a time.—*Palm, in Rundschau*, 1888, 376.

Cichory in Coffee.—Karz suggests the determination of chlorine as the means of establishing the purity of coffee. Coffee contains 0.03 per cent., cichory 0.28 per cent. of chlorine. 25 gms. should be used for incineration and the ash examined volumetrically with silver nitrate.—Rundschau, 1888, 390.

Grains of Paradise in Pepper.—The detection is based on the former containing tannin from which both black and white pepper are free. The tannin is extracted with a mixture of two parts alcohol and one part ether, and after maceration, separation,

and evaporation of the solvents, the addition of F_2Cl_6 produces green color.—*Ztschr. f Nahrungsm. Unters.* 1888, p. 88.

To prevent Mould in solutions of Gum.—Hirschberg (*Pharm. Post*, 1888, p. 394), recommends the addition of a few drops of sulphuric acid which precipitates the lime as calcium sulphate, after the deposition of which the clear solution is decanted or strained. This solution shows no tendency to become mouldy even after standing eighteen months.

ABSTRACTS FROM THE FRENCH JOURNALS.

Translated for THE AMERICAN JOURNAL OF PHARMACY.

THE FLOWERS OF THE HORSE BEAN, *Vicia Faba*, Lin., constitute a popular remedy in some parts of France. Dr. Bouloumié has verified their good effects in sub-acute nephritic colics with uric and phosphatic gravel, and in the pains symptomatic of renal calculus; also in a case of urethral pains from enlarged prostrate. He failed to relieve in a diabetic case of acute nephritic colic. The dose is 50 or 60 flowers per cup of water, two cupfuls to be taken at beginning of pain.—*Bull. de la Soc. méd. prat.*, May 31, 1888.

SOYA HISPIDA, as described by M. Lecerf (*Soc. de méd prat.*, May 27) 1888), is a leguminous plant of Asiatic origin-now cultivated in Austro-Hungary—which possesses more proteic substances, phosphoric acid, potash and fatty matters than any other vegetable growth, and contains but 3.21 per cent of amylaceous and saccharated products.. The analysis gives: Water, 9.37; proteids, 36.63; fats, 17.00; acid phosphor, 3.16 potash, 1.47. The Asiatics, prepare a sort of milk from it which the Chinese make into cheese. The Japanese convert it into an alimentary liquid which they call shoyu. Bread made from it keeps fresh for several days. Dr. Dujardin-Beaumetz exhibited a sample of the latter at the *Acad. de Méd.*, May 29th, and recommended its use for diabetic patients.—*Arch. de phar.*, July 5, 1888.

SUBSTITUTE FOR GUM ARABIC.—According to the *Union pharm.*, May, 1888, Trojanowsky believes be has discovered such a product in linseed mucilage. He boils the seed in water for an hour, filters, and precipitates with two volumes of alcohol. The mucilage goes down in flakes which he separates and dries, thus attaining a grayish-brown mass equal to 10 per cent. of the raw material. It is soluble in water, and is almost tasteless and odorless. The alcohol is recovered by distillation.