COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON UNOFFICIAL STANDARDS.

The following portion of the report of the Committee on Unofficial Standards presents the tentative monographs for certain crude drugs and is published in the JOURNAL in order to afford opportunity for discussion before the standards proposed are finally adopted.

Manufacturers, importers, analysts and others interested in the proposed standards, are requested to send their criticisms and comments to the *Chairman of the Committee*, E. N. GATHERCOAL, 701 S. Wood St., Chicago.

ACHILLEA.

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Yarrow.—Milfoil.

Achillea consists of the dried flowering herb of *Achillea Millefolium* Linné (Fam. *Compositæ*).

Achillea contains not more than 2 per cent of harmless foreign organic matter and yields not more than 1 per cent of acid-insoluble ash.

Underground Achillea.—Stem furrowed and grayish hairy, branched at the top. Leaves up to 15 cm. long and 5 cm. broad, twice or thrice pinnatifid into linear divisions and more or less hairy. Inflorescence a dense, flat-topped corymb. Involucre cylindrical, 4 or 5 mm. long, its scales straw colored, rarely with dark margins, imbricated and keeled; receptacle flat and chaffy; the pistillate ray flowers 5 to 10, white or rarely crimson-tinged, 1.5 to 2.5 mm. long; the disk flowers yellow, perfect and fertile. Odor mildly aromatic. Taste mildly aromatic, bitter and astringent.

Powdered Achillea.—Light green or grayish green; leaf fragments, frequently the conical ends of the pinnæ terminating in a white point, with small-celled rather dense chlorenchyma, small spiral tracheæ and epidermis bearing hairs and rather narrowly oval stomata up to 0.040 mm. long; unicellular hairs numerous, colorless, shiny, mostly less than 0.020 mm. wide and up to 1.600 mm. long, or these hairs may be multicellular with 2 to 7 short uniseriate cells at the base and one very long terminal cell; glandular hairs few, yellowish brown, nearly globular, 1- or 2-celled, up to 0.050 mm. across; corolla fragments nearly colorless, lobes papillose, tubular base with short-stalked, colorless glands up to 0.075 mm. in diameter; pollen grains spheroidal, strongly spinose, up to 0.030 mm. across; involucral bract fragments with marginal cells elongated into papillæ or hairs and sometimes of a brown color and inner cells elongated, narrow, lignified, finely pitted; nearly colorless fragments of anther and of achene and rarely of yellowish brown papillose stigma; stem fragments with long hairs, lignified bast and tracheary tissue.

AGRIMONIA.

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Stickwort.

Agrimony consists of the dried flowering herb of *Agrimonia parviflora* Aiton (Fam. *Rosaceæ*).

Agrimony contains not more than 2 per cent of harmless foreign organic matter and yields not more than 1 per cent of acid-insoluble ash.

Unground Agrimony.—Stems up to 5 mm. in diameter, villous with brownish hairs. Leaves obovate or oblanceolate, imparipinnate, up to 15 cm. long and 9 cm. wide. Leaflets 9–17, spreading, lanceolate or linear-lanceolate, serrate, acuminate, glabrous above, pubescent beneath, very glandular, with 4 or 5 pairs of intermixed leaflets of small but variable sizes; stipules acuminate, lacinate. Flowers yellow, small, numerous, 6–10 mm. broad. Fruit turbinate, reflexed, small glandular, with an elevated disk and hooked prickles from erect to spreading. Odor faintly aromatic. Taste bitterish and astringent.

Powdered Agrimony.—Green or grayish green; thick-walled small-celled stem epidermis bearing hairs of three kinds, *viz.* (1) unicellular, smooth, thick-walled, lignified, brown-lumened

hairs frequently on multicellular pedestals and up to 3 mm. long and 0.050 mm. wide at the base; (2) unicellular, curved or wavy, pointed, verrucose, thick-walled, lignified hairs up to 0.300 mm. long and 0.015 mm. wide; (3) short multicellular hairs up to 0.075 mm. across, with a 1- or 2-celled stalk and 2- to 8-celled head; lignified bast masses with fibers up to 1 mm. long and 0.025 mm. wide associated with elongated, pitted parenchyma cells; masses of wood with pitted tracheids, wood fibers and wood parenchyma containing starch; masses of large, thin-walled pith parenchyma cells containing circular or angular starch grains, sometimes 2- or 3-compound and up to 0.025 mm. in diameter; leaf fragments with hairs like (2) described above, abundant on undersurface and along the leaf edge, small-celled chlorenchyma bearing many circular, yellowish, translucent secretion cells up to 0.060 mm. across and with the epidermis bearing broadly oval stomata up to 0.030 mm. long.

ANETHI FRUCTUS.

Dill Fruit.

Dill Fruit is the dried ripe fruit of *Anethum graveolens* Linné (Fam. *Umbelliferæ*).

Dill Fruit contains not more than 5 per cent of other fruits, seeds or other harmless foreign organic matter and yields not more than 0.5 per cent of acid-insoluble ash.

Unground Dill Fruit.—Cremocarps broadly oval, dorsally compressed, up to about 3 mm. in width and about 6 mm. in length; mericarps usually separated and free from a slender pedicel which may be up to 12 mm. in length; apex with a ring-like disk and two short projecting style remnants; externally brownish or greenish brown, each mericarp with three dorsal yellowish ridges and two broad lateral wing-like ridges. Odor and taste characteristic and aromatic.

Structure.—Mericarps somewhat pentagonal in transverse section; epidermis thin; mesocarp of tangentially elongated thin-walled cells bearing 6 oil-tubes, 2 on the commissural side and 1 on each of the lateral and dorsal sides, and a fibro-vascular bundle in each ridge, those in the 2 wing-like ridges much broadened, extending nearly to the outer edge of the wing; endodermis of tangentially elongated cells with thin, yellowish walls; a seed coat consisting of broad, brownish outer epidermal cells and several rows of collapsed cells; endosperm of polyhedral cells with somewhat thickened walls, the cells containing numerous oil globules, aleurone grains, and rosette aggregates of calcium oxalate either within the aleurone grains or free within the cells.

Powdered Dill Fruit.—Brownish; numerous irregular fragments of pericarp showing portions of oil-tubes from 0.090 to 0.260 mm. in width; fragments with tracheæ and fibers; cells of endosperm filled with aleurone grains, the latter up to 0.012 mm. in diameter and usually containing a rosette aggregate of calcium oxalate up to 0.006 mm. in diameter.

ANTHEMIS.

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English Chamomile.

Anthemis consists of the dried flower-heads of *Anthemis nobilis* Linné (Fam. *Compositæ*).

Anthemis contains not more than 2 per cent of harmless foreign organic matter and yields not more than 1 per cent of acid-insoluble ash.

Unground Anthemis.—Subglobular, 1.5 to 2 cm. in diameter; involucre hemispherical with two or three rows of nearly equal, elliptical, imbricated, pubescent bracts, having a yellow, scarious margin and a greenish middle portion; torus conical or convex, 3 to 4 mm. in height, solid or occasionally hollow; chaff scales similar to those of the involucre, about 2 mm. in length; ligulate corolla white or yellowish, 3-toothed, 4-nerved; ovary about 1 mm. in length, glandular, with a slender style and a 2-cleft stigma; tubular florets few or none, yellowish and perfect; achene oblong, with a pappus. Odor distinct; taste aromatic and bitter.

Powdered Anthemis.—Yellowish; numerous fragments of ligulate corollas, with epidermal cells modified into papillæ; fragments of involucral scales showing numerous long, unicellular, thin-walled, non-glandular hairs; pollen grains occasional, spheroidal, from 0.024 to 0.030 mm. in diameter; many long fibers from 0.006 to 0.012 mm. in width with strongly lignified walls; occasional rosette aggregates of calcium oxalate up to 0.010 mm. in diameter, from tissues of the achene or from basal portions of the ligulate florets.

ARNICÆ RADIX.

Arnica Root.

Arnica Root consists of the dried rhizome and roots of *Arnica montana* Linné (Fam. *Compositæ*).

Arnica Root contains not more than 5 per cent of leaves, stem bases, or other harmless foreign organic matter, and yields not more than 1 per cent of acid-insoluble ash.

Unground Arnica Root.—Rhizome cylindraceous, more or less curved or s-shaped, up to 10 cm. in length and 5 mm. in diameter; externally dark brown, with longitudinal or somewhat spiral furrows or at the upper portions with annular markings from leaf-scars, the upper surface having short stem-bases or stem-scars, the lower with numerous long coarse roots; fracture short. Roots brownish, numerous, curved, from 3 to 15 cm. in length and up to 1 mm. in diameter; longitudinally furrowed; fracture short and hard. Odor somewhat aromatic; taste aromatic and bitter.

Structure.—Rhizome.—An outer layer of several rows of brownish cork cells; a cortex of nearly isodiametric parenchyma cells, with numerous large resin-canals in the inner part, usually in pairs opposite the medullary rays; a distinct endodermis surrounding numerous collateral fibro-vascular bundles, separated by broad medullary rays; a pith of nearly spheroidal parenchyma with large intercellular spaces; in older rhizomes the pith may be partially or almost wholly hollow. Root.—Cork of a few layers of cells; cortex of isodiametric parenchyma cells with thick walls; resin-canals in an interrupted circle along the inner cortex; endodermis distinct, the cells with thickened inner and radial walls; a somewhat pentagonal, radial fibro-vascular bundle, with strongly lignified tracheæ and fibers.

Powdered Arnica Root.—Brownish gray; numerous fragments of cork showing rectangular or somewhat collapsed cork cells with brownish walls and usually a brownish amorphous content; fragments of cortical tissue of parenchyma cells associated with large resin canals; fragments of wood consisting of medullary ray cells, pith cells, strongly lignified wood fibers, or tracheæ with simple pores, or reticulate or spiral markings, the tracheæ from 0.012 to 0.045 mm. in diameter; irregular masses of inulin occurring either separately or within the parenchyma cells of pith, cortex or medullary ray. Portions of the powder when treated with Potassium Hydroxide, T.S. yield a golden-yellow solution.

CARTHAMUS.

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Safflower.—American Saffron.

Carthamus consists of the dried tubular florets of *Carthamus tinctorius* Linné (Fam. *Compositæ*) from which the immature ovaries have been removed.

Carthamus contains not more than 1 per cent of harmless foreign organic matter and yields not more than 2 per cent of acid-insoluble ash.

Underground Carthamus.—Florets from orange-red to brownish red, and up to 2 cm. long, frequently broken or compressed; corolla tube deeply five-lobed, lobes 5 to 10 mm. long and 0.5 to 1.0 mm. broad; stamen tube of 5 united anthers, yellow, 4 to 7 mm. long and sometimes projecting beyond the corolla lobes; stigma club-shaped, yellowish brown, projecting about 2 mm. out of the anther tube; akenes absent in the commercial drug. Odor weak, characteristic. Taste somewhat bitter.

Powdered Carthamus.—Corolla fragments red, epidermis papillose near the apex of the lobe and with undulate walls near the edges of the lobe; vascular bundles of the corolla with spiral tracheæ and accompanied by secretion tubes containing a reddish brown, resinous substance; stamen fragments yellow and composed of elongated cells with very porous walls; pollen grains globular, ovoid or rounded-triangular, 0.035 to 0.070 mm. in diameter, finely papillose and frequently showing 3 excrescences.

Tests for Identity.—Mounted in ferric chloride solution, powdered carthamus markedly darkens to a deep brown hue. Heat one part of powdered carthamus in 50 parts of water to boiling, filter, and to 5 drops of the filtrate add 1 drop of ferric chloride T.S.; a dark brown coloration and precipitate is formed. Carthamus imparts a yellow color to water, ethyl alcohol, methyl alcohol and to solutions of sodium hydroxide, potassium hydroxide and ammonia; to

pyridine an orange-red color. Macerate 0.1 Gm. of powdered carthamus in 5 cc. of ammonia water, filter a few drops into a white dish and evaporate to dryness; a drop of concentrated sulphuric acid gives a dark red color with the yellow residue and a drop of ferric chloride T.S. a dark brownish color.

CHELONE.

CHELONE.

Balmony, Turtle Head.

Chelone consists of the dried leaves of *Chelone glabra* Linné (Fam. *Scrophulariaceæ*).

Chelone contains not more than 5 per cent of other parts of the plant, nor more than 2 per cent of harmless foreign organic matter and yields not more than 1 per cent of acid-insoluble ash.

Unground Chelone.—Leaves oblong-lanceolate, up to 15 cm. long and 8 cm. wide, smooth, with about 10 prominent veins on each side of the midrib, serrate with appressed teeth, acuminate; petiole short; turning nearly black in drying. Inodorous. Taste, bitter.

Powdered Chelone.—Blackish green; leaf fragments with palisade and spongy chlorenchyma and spiral tracheæ; epidermis from upper surface with angular, mostly 5-sided cells up to 0.085 mm. long and without stomata, and from lower surface with very sinuous lateral cell walls and numerous broadly oval stomata up to 0.030 mm. long; epidermis from lower surface of veins with elongated 4-sided cells and bearing occasional 2- to 4-celled, pointed trichomes up to 0.350 mm. long and with finely papillose cell walls; occasional woody stem fragments with spiral and reticulate tracheæ; a few rounded, nearly smooth pollen grains up to 0.040 mm. in diameter; rarely, fragments of the winged akenes with large air-filled cells with unlignified walls having barred markings or fragments of capsule with small fiber-like, lignified cells and unicellular trichomes.

EUPATORIUM PURPUREUM.

PURPLE EUPATORIUM.

Queen-of-the-Meadow, Joe-Pye Weed, Purple Boneset.

Purple Eupatorium consists of the dried leaves and flowering tops of *Eupatorium purpureum* Linné (Fam. *Compositæ*).

Purple Eupatorium contains not more than 2 per cent of harmless foreign organic matter and yields not more than 2 per cent of acid-insoluble ash.

Unground Purple Eupatorium.—Stems not over 4 mm. thick, purple, puberulent, usually hollow. Leaves oval to lanceolate up to 25 cm. long and 15 cm. wide, tapering base, acute or acuminate, toothed, glabrous above, scabrous-puberulent beneath with raised pinnate venation. Inflorescence, convex panicles on long spreading branches; heads purple, narrowly cylindrical, 5-8 flowered, bracts few, obtuse, corollas 3 to 5 mm. long, usually not exserted and achenes 3 to 4.5 mm. long, nearly black with a whitish pappus. Odor and taste faintly aromatic.

Powdered Purple Eupatorium.—Green or brownish green; numerous leaf fragments with chlorenchyma, spiral tracheæ and epidermis with broadly oval stomata up to 0.030 mm. long and glandular and non-glandular hairs; glandular hairs few, short, with 1- or 2-celled head up to 0.075 mm. across, with yellow contents; non-glandular hairs frequently curved, up to 0.9 mm. long, uniseriate, 3 to 10 cells, the terminal cell pointed; numerous fragments of white pappus bristles, many-celled, barbellate; occasional fragments of the papillose club-shaped stigma; pollen grains numerous, 0.025 to 0.035 mm. in diameter, spheroidal, spinose; stem fragments with collenchyma, bast with long, narrow, lignified fibers, and wood with dotted and scalariform tracheæ.

LACTUCA.

LETTUCE.

Wild Lettuce, Wild Opium.

Lettuce consists of the dried leaves and tops of *Lactuca Serriola* Linné, *Lactuca canadensis* Linné and *Lactuca spicata* (Lam.) Hitch. (Fam. *Compositæ*).

Lettuce contains not more than 2 per cent of other parts of the plant or other harmless foreign organic matter and yields not more than 2 per cent of acid-insoluble ash.

Unground Lettuce.—Stems flattened, furrowed, occasionally prickly, not over 4 mm. in diameter; leaves lanceolate, oblanceolate or oblong, up to 30 cm. long, glabrous, green or blackish, pinnatifid, sinuate or entire and in *L. Serriola* spinulose-denticulate; petiole and midrib broad and flattened and in *L. Serriola* spinose beneath. Inflorescence in loose panicles; flowers pale yellow; achenes blackish, oval, flat, thin, capped by a filiform beak and with a white pappus. Odor, narcotic. Taste, bitter and acrid.

Powdered Lettuce.—Leaf fragments very thin with small round-celled chlorenchyma, spiral tracheæ and 3 or 4 layers of collenchymatous hypodermis at the margin; epidermis with oval stomata up to 0.030 mm. long on both upper and lower surface, trichomes absent; veins with bi-collateral bundles and a single row of latex cells 0.015 to 0.040 mm. across at the outer edge of both outer and inner phloem; spines on midrib up to 4 mm. in length, 0.500 mm. broad at base, multiseriate, the cells much elongated and somewhat lignified; marginal spines 0.160 to 1.500 mm. long and consisting of collenchyma covered by a papillose epidermis; occasional achene fragments, yellowish, with papillæ or club-shaped trichomes up to 0.150 mm. long; pappus hairs uni- or bi-serriate, each cell 0.050 to 0.075 mm. long, 0.005 to 0.008 mm. wide and ending in a very short projecting point.

PHYSOSTIGMA.

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Calabar Bean, Ordeal Bean.

Physostigma is the dried ripe seed of *Physostigma venenosum*, Balfour (Fam. *Leguminosæ*).

Physostigma yields not less than 0.15 per cent of the alkaloids of Physostigma, not more than 1 per cent of harmless foreign organic matter and not more than 0.5 per cent of acid-insoluble ash.

Unground Physostigma.—Oblong or ellipsoidal, reniform, somewhat compressed, from 15 to 36 mm. in length and from 10 to 15 mm. in thickness; externally reddish or chocolate-brown, smooth except near the brownish black groove where the surface is somewhat wrinkled, the groove being about 2 mm. in width and extending almost the entire length of the convex side and frequently bearing the remains of the whitish funiculus; the margin of the seed-coat on both sides of the groove somewhat elevated, thickened and of a yellowish or brownish red color; embryo large, white, with short hypocotyl and two concavo-convex cotyledons; taste at first starchy, afterwards acrid.

Structure.—A hard seed-coat consisting of an outer layer of palisade cells with non-lignified walls, much thickened on the outer and lateral sides except toward the inside ends where the side walls taper sharply, becoming very thin where they join the spongy layer beneath; a layer of 2 or 3 cells of spongy parenchyma, the cells triangular or branched, with somewhat thickened walls and a brownish amorphous content giving a black color with ferric chloride T.S.; a layer of 4 or 5 rows of tangentially elongated parenchyma with somewhat wavy, colorless walls; an endosperm layer of collapsed cells with bright yellow walls and with small spiral tracheæ running through it; cotyledons made up chiefly of nearly isodiametric parenchyma bearing starch and aleurone grains and surrounded by an epidermal layer of small cells. Along the groove a double layer of palisade cells the outer ones containing a blackish amorphous content, and a thicker spongy layer is found and directly at the base of the groove is a vascular bundle composed of tracheids with lignified reticulate thickenings.

Powdered Physostigma.—Grayish white; starch grains up to 0.150 mm. in diameter, numerous, ovoidal, ellipsoidal or reniform, usually with a distinct cleft and frequently with radiating or irregular fissures; fragments of seed-coat with very thick, reddish brown cells, being either palisade-like or irregular resembling stone cells; occasionally fragments showing tracheids with reticulate thickenings or very small spiral tracheæ. Excepting the walls of the tracheæ and tracheids, none of the tissue is lignified.

POLYGONUM.

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Smartweed, Waterpepper.

Polygonum consists of the dried herb of *Polygonum Hydropiper* Linné or of *P. acre* Humboldt, Bonpland and Kunth (Fam. *Polygonaceæ*).

Polygonum contains not more than 2 per cent of harmless foreign organic matter and yields not more than 2 per cent of acid-insoluble ash.

Unground Polygonum.—Stems up to 3 or 4 mm. thick, smooth, furrowed, nodes swollen, sheaths cylindrical, bristly fringed. Leaves lanceolate, up to 12 cm. long, acuminate, ciliate and like the calyx, pellucid-punctate. Flowers, greenish white or reddish, arranged in spikes which are erect or drooping, stamens 6 or 8 and styles 2- or 3-parted. Achenes black, dull or shining, minutely striate or smooth. Taste slightly acrid.

Powdered Polygonum.—Greenish brown or brown; leaf fragments numerous with brownish round-celled chlorenchyma, numerous globular secretion cells up to 0.060 mm. in diameter, occasional calcium oxalate rosettes up to 0.020 mm. in diameter and at the edge of the leaf, numerous appressed, multiserriate, non-glandular, pointed trichomes up to 1 mm. in length and 0.065 mm. wide at the base, with 4 to 10 narrow, thin-walled striated cells in each; leaf epidermis with broad oval stomata up to 0.030 mm. long, found on both surfaces of the leaf, and a striated cuticle on the lower surface; stem fragments with a heavy collenchymatous hypodermis, lignified bast and thin-walled wood fibers and dotted and spiral tracheæ up to 0.080 mm. in diameter; fragments of the stigma with sharp-pointed papillæ; achene fragments with a layer of small, angular, thick-walled, dark brown cells.

TANACETUM.

TANSY.

Double Tansy.

Tansy consists of the dried leaves and flowering tops of *Tanacetum vulgare* Linné (Fam. *Compositæ*).

Tansy contains not more than 5 per cent of stems over 3 mm. in diameter nor more than 2 per cent of harmless foreign organic matter and yields not more than 2 per cent of acid-insoluble ash.

Unground Tansy.—Stems nearly smooth, somewhat angled, inclined to purplish color. Leaves glabrous, short petiolate, pinnately dissected; ovate, oblong or obovate in general outline, up to 20 cm. long and 10 cm. wide; the pinnæ lanceolate or linear-oblong about 10 to 12 pairs, acute and pinnatifid, incised or crisped; midrib prominent and in European tansy both surfaces depressed-glandular and finely pellucid-punctate. Flower heads in terminal corymbs, yellow, up to 1 cm. across. Odor strongly aromatic. Taste slightly acrid and very bitter.

Powdered Tansy.—Green or dark green; leaf fragments, thin with spongy chlorenchyma, spiral tracheæ and epidermis cells on the lower surface with very sinuous and on the upper surface with nearly straight, delicate, lateral walls and on both surfaces broadly oval stomata up to 0.040 mm. long; hairs of four kinds, *viz.:* (1) non-glandular, uniseriate hairs up to 0.180 mm. long, with 4 to 10 rounded or somewhat oblong cells with yellowish brown contents; (2) non-glandular, unicellular, colorless hairs up to 0.500 mm. long, flattened, twisted and tangled; (3) glandular leaf hairs, 1- or 2-celled, globular to club-shaped, up to 0.120 mm. long, and which in European tansy are found in marked depressions and cause the pellucid-punctate appearance; (4) glandular achene hairs with short stalk and ellipsoidal head up to 0.085 mm. across. Fragments of involucral bracts with nearly transparent marginal cells and central portion with narrow, thick-walled libriform cells having numerous, simple pores; fragments of the yellow, tubular corolla with 5 short lobes and of the papillose, 2-parted stigma; pollen grains spheroidal, up to 0.030 mm. across and with fine spinose projections; nearly colorless achene fragments with attached yellowish glands.

NARCOTIC IMPORT QUOTAS CUT BY CONTROL BOARD.

The Federal Narcotics Control Board has announced its decisions regarding permits for the importation of crude opium and coca leaves for the calendar year 1930, involving a considerable reduction from the importations of last year.

WILLIAMSON BILL PASSED BY HOUSE.

The Willamson prohibition reorganization bill (H. R. 8574) transferring prohibition enforcement from the Treasury to the Department of Justice, was passed by the House, February 8th. The bill is now before the Senate.