(i) Heat 0.1 g of the residue with 1 mL of sodium hydroxide TS: a red color develops, and it disappears upon addition of excess hydrochloric acid (phenovalin).

(ii) Heat 0.1 g of the residue with 3 mL of diluted ethanol (7 in 10) and 4 drops of sulfuric acid: the odor of ethyl acetate is perceptible (phenovalin).

**(2)** Shake 1 g of Phenovalin and Magnesium Oxide Powder with 5 mL of dilute hydrochloric acid, add water to make 50 mL, and filter: the filtrate responds to the qualitative Test (1) for magnesium salt.

**Purity** **(1)** Heavy metals—Incinerate 1.5 g of Phenovalin and Magnesium Oxide Powder by strong heating, dissolve the residue in 20 mL of dilute hydrochloric acid, and evaporate on a water bath to dryness. Dissolve the residue in 35 mL of water and 2 mL of dilute acetic acid. Filter, if necessary. Wash the filter paper with water, combine the washing with the filtrate, and add water to make 50 mL. Perform the test using this solution as the test solution. Control solution: evaporate 20 mL of dilute hydrochloric acid to dryness, and add 2 mL of dilute acetic acid, 4.0 mL of Standard Lead Solution and water to make 50 mL (not more than 27 ppm).

**(2)** Arsenic—Incinerate 0.30 g of Phenovalin and Magnesium Oxide Powder by strong heating, dissolve the residue in 5 mL of dilute hydrochloric acid. Perform the test using Apparatus B with this solution as the test solution (not more than 6.6 ppm).

**Assay** To about 0.4 g of Phenovalin and Magnesium Oxide Powder, accurately weighed, add 10 mL of water and 4.0 mL of dilute hydrochloric acid, and shake. To this solution add water to make exactly 100 mL, and filter. Discard the first 20 mL of the filtrate, pipet 25 mL of the subsequent filtrate, and shake with two 5-mL portions of chloroform. Separate the water layer, add 50 mL of water and 5 mL of ammonia-ammonium chloride buffer solution, pH 10.7, and titrate with 0.05 mol/L disodium dihydrogen ethylenediamine tetraacetate VS (indicator: 0.04 g of eriochrome black T-sodium chloride indicator).

Each mL of 0.05 mol/L disodium dihydrogen ethylenediamine tetraacetate VS
= 2.0152 mg of MgO

**Containers and storage** Containers—Well-closed containers.

# Picrasma Wood

*Picrasmae Lignum*

ニガキ

Picrasma Wood is the wood of *Picrasma quassioides* Bennet (*Simarubaceae*).

**Description** Light yellow chips, slices or short pieces of wood; a transverse section reveals distinct annual rings and thin medullary rays; tissue dense in texture. Odorless; taste, extremely bitter and lasting.

Under a microscope, it reveals medullary rays consisting of 1 - 5 cells wide for transverse section, and 5 - 50 cells high for longitudinal section; vessels of spring wood up to about 150 μm in diameter, but those of autumn wood only one-fifth as wide; vessels, single or in groups, scattered in the xylem parenchyma; membrane of wood fibers extremely thickened; medullary rays and xylem parenchyma cells contain rosette aggregates of calcium oxalate and starch grains. Vivid yellow or red-brown, resinous substance often present in the vessels.

**Purity** Foreign matter—The amount of foreign matter contained in Picrasma Wood does not exceed 1.0%.

**Total ash** Not more than 4.0%.

# Powdered Picrasma Wood

*Picrasmae Lignum Pulveratum*

ニガキ末

Powdered Picrasma Wood is the powder of Picrasma Wood.

**Description** Powdered Picrasma occurs as a grayish white to light yellow powder. It is odorless, and has an extremely bitter and lasting taste.

Under a microscope, Powdered Picrasma Wood reveals fragments of vessels of various sizes, xylem fibers and xylem parenchyma cells; fragments of medullary rays containing starch grains; all tissues lignified; a few crystals of calcium oxalate observed. Starch grains are 5 to 15 μm in diameter.

**Total ash** Not more than 4.0%.

**Acid-insoluble ash** Not more than 1.0%.

# Pinellia Tuber

*Pinelliae Tuber*

ハンゲ

Pinellia Tuber is the tuber of *Pinellia ternata* Breitenbach (*Araceae*), from which the cork layer has been removed.

**Description** Slightly flattened spherical to irregular-shaped tuber; 0.7 - 2.5 cm in diameter and 0.7 - 1.5 cm in height; externally white to grayish white-yellow; the upper end dented, where the stem has been removed, with root scars dented as numerous small spots on the circumference; dense in texture; cross section white and powdery. Almost odorless; tasteless at first, slightly mucous, but leaving a strong acrid taste.

Under a microscope, a transverse section reveals mainly tissue of parenchyma filled with starch grains, and scattered with a few mucilage cells containing raphides of calcium oxalate. Starch grains mostly 2- to 3-compound grains, usually 10 - 15 μm in diameter, and simple grains, usually 3 - 7 μm in diameter; raphides 25 - 150 μm in length.

**Purity** Rhizome of *Arisaema* species and others—Under a microscope, no mucilage canal is revealed on the outer layer of cortex.

**Loss on drying** Not more than 14.0% (6 hours).

**Total ash** Not more than 3.5%.

# Plantago Herb

*Plantaginis Herba*

シャゼンソウ

Plantago Herb is the entire plant of *Plantago asiatica* Linné (*Plantaginaceae*), collected during the flowering season.

**Description** Usually wrinkled and contracted leaf and spike, grayish green to dark yellow-green in color; when soaked in water and smoothed out, the lamina is ovate to orbicular-ovate, 4 - 15 cm in length, 3 - 8 cm in width; apex acute, and base sharply narrowed; margin slightly wavy, with distinct parallel veins; glabrous or nearly glabrous; petiole is rather longer than the lamina, and its base is slightly expanded with thin-walled leaf-sheath; scape is 10 - 50 cm in length, one-third to one-half of the upper part forming the spike, with dense florets; the lower part of inflorescence often shows pyxidia; roots usually removed, but, if any, fine roots are closely packed. Odor, slight; tasteless.

**Identification** To 2.0 g of pulverized Plantago Herb add 10 mL of methanol, warm on a water bath for 3 minutes, cool, filter, and use the filtrate as the sample solution. Perform the test with this solution as directed under the Thin-layer Chromatography. Spot 10 $\mu$L of the sample solution on a plate of silica gel for thin-layer chromatography. Develop the plate with a mixture of 1-butanol, water and acetic acid (100) (7:2:1) to a distance of about 10 cm, and air-dry the plate. Spray evenly iron (III) chloride TS on the plate: a dark blue spot appears at the *R*f value about 0.5.

**Total ash** Not more than 15.0%.

**Acid-insoluble ash** Not more than 4.0%.

**Extract content** Dilute ethanol-soluble extract: not less than 14.0%.

# Plantago Seed

*Plantaginis Semen*

シャゼンシ

Plantago Seed is the seed of *Plantago asiatica* Linné (*Plantaginaceae*).

**Description** Flattened ellipsoidal seed, 2 - 2.5 mm in length, 0.7 - 1 mm in width, 0.3 - 0.5 mm in thickness; externally brown to yellow-brown and lustrous. Under a magnifying glass, the surface of the seed is practically smooth, with the dorsal side protruding like a bow, and with the ventral side somewhat dented; micropyle and raphe not observable. 100 seeds weigh about 0.05 g. Odorless; taste, slightly bitter and mucous.

Under a microscope, a transverse section reveals a seed coat consisting of three layers of epidermis composed of cells containing mucilage, a vegetative layer, and a pigment layer of approximately equidiameter cells; in the interior, endosperm thicker than seed coat, enclosing two cotyledons.

**Identification** (1) To 1 g of Plantago Seed add 2 mL of warm water, and allow the mixture to stand for 10 minutes: the seed coat swells to discharge mucilage.

(2) Boil gently 1 g of Plantago Seed with 10 mL of dilute hydrochloric acid for 2 minutes, and filter. Neutralize the filtrate with sodium hydroxide TS, to 3 mL of this solution add 1 mL of Fehling's TS, and warm the mixture: a red precipitate is produced.

**Purity** Foreign matter—The amount of foreign matter contained in Plantago Seed does not exceed 2.0%.

**Total ash** Not more than 5.5%.

**Acid-insoluble ash** Not more than 2.0%.

# Platycodon Fluidextract

キキョウ流エキス

**Method of preparation** Take coarse powder of platycodon, and prepare the fluidextract as directed under Fluidextracts using 25 vol% ethanol. An appropriate quantity of Ethanol and Purified Water may be used in place of 25 vol% ethanol.

**Description** Platycodon Fluidextract is a red-brown liquid. It is miscible with water, producing slight turbidity. It has a mild taste at first, followed by an acrid and bitter taste.

**Identification** (1) Shake vigorously 0.5 mL of Platycodon Fluidextract with 10 mL of water: a lasting fine foam is produced.

(2) Dissolve 1 drop of Platycodon Fluidextract in 2 mL of acetic anhydride, and add gently 0.5 mL of sulfuric acid: a red to red-brown color develops at the zone of contact.

**Purity** Starch—Mix 1 mL of Platycodon Fluidextract with 4 mL of water, and add 1 drop of dilute iodine TS: no purple or blue color develops.

**Content of the active principle** Transfer 5 mL of Platycodon Fluidextract, accurately measured, to a tared beaker, evaporate to dryness on a water bath, and dry at 105°C for 5 hours: the mass of the residue is not less than 0.50 g.

**Containers and storage** Containers—Tight containers.
Storage—Light-resistant.

# Platycodon Root

*Platycodi Radix*

キキョウ

Platycodon Root is the root of *Platycodon grandiflorum* A. De Candolle (*Campanulaceae*).