

## FERNS AND FERN ALLIES

### CYATHEACEAE

Plants terrestrial. Stems arborescent, rarely short-erect, scaly. Leaves monomorphic, 3.25–13 feet long. Petioles exuding copious mucilage when cut. Blades 1- to 4-pinnate, but most commonly 2-pinnate-pinnatifid. Sori abaxial, round, usually borne at the fork of a vein. Indusium present or absent. In Belize, consisting of 3 genera and 9 species. Uses for 1 genus and 1 species are reported here.

#### *Cyathea myosuroides* (Liebm.) Domin

To **promote sweat** to treat **fever**, 1 handful of leaves and stems is boiled in 1 gallon of water for 10 minutes and used hot as a bath once daily, at bedtime or naptime, until better [B2601; HR]. If a bath is not desirable, the leaves are placed on the bed, and the person rests upon them [B2601].

### DENNSTAEDTIACEAE

Plants terrestrial. Stems long-creeping, hairy. Fronds 3–20 feet long, monomorphic or slightly dimorphic. Laminae often large and decompound, sometimes with indeterminate growth, the apex resting while the pair of pinnae below it develop. Sori round and in marginal cups or elongate to linear and covered by false indusia. In Belize, consisting of 6 genera and 12 species. Uses for 1 genus and 1 species are reported here.

#### *Pteridium caudatum* (L.) Maxon

*belecho* [Spanish]

To ease **cold sweats**, usually occurring with asthma, exhaustion, excessive coughing, or with anemic babies, 9 leaves along with 9 lemon tree leaves (*Citrus limon*) are steeped in 1 gallon of water and used tepid as a bath [B2142; BW].



*Pteridium caudatum* [RM].

## GLEICHENIACEAE

Plants terrestrial. Rhizomes long-creeping, frequently dichotomously branched, bristly or scaly. Fronds 3–20 feet long, monomorphic, indeterminate, often resting on the surrounding vegetation. Pinnae opposite, typically forked repeatedly with a resting bud between the forks, the ultimate divisions pectinate or pinnatifid. Sori round, abaxial, non-indusiate, with relatively few (2–10) sporangia. Spores yellow. In Belize, consisting of 2 genera and 3 species. Uses for 1 genus and 1 species are reported here.



*Dicranopteris pectinata* [RM].

*Dicranopteris pectinata* (Willd.) Underw.  
*belecho* [Spanish]

For **fever sores** and other **skin ailments**, 1 handful of leaves is boiled in 1 gallon of water for 10 minutes and used as a bath [B2610]. To treat **leishmaniasis (baysore)**, the leaves are toasted, crushed into a powder, and applied directly to the affected area once daily after bathing with the same leaf decoction as described above for fever sores [B2610].

## LYCOPODIACEAE

Plants terrestrial, epiphytic, or rarely rupestral, habit erect or pendulous. Stems dichotomously branched, occasionally with lateral branching. Leaves 0.2–0.8 inch long, simple, entire or rarely denticulate, one-veined, homophyllous (leaves all alike) or anisophyllous (with reduced leaves, usually spore-bearing, in the terminal divisions). Sporangia solitary in the leaf axils or on the upper side of the leaf, reniform or nearly globose. In Belize, consisting of 2 genera and 7 species. Uses for 1 genus and 1 species are reported here.

*Lycopodiella cernua* (L.) Pic. Serm.  
fern [English]

To **improve blood circulation**, 1 entire plant is boiled in 1 gallon of water for 10 minutes and used warm as a bath for 30 minutes twice daily, at noon and bedtime, for 3 days [B2609]. Alternatively, the leaves and a pinch of salt are mashed and applied as a poultice over the affected area [B2609].



*Lycopodiella cernua* [MB].

## LYGODIACEAE

Plants terrestrial or epipetric. Rhizomes short-creeping, hairy, the hairs multicellular. Fronds up to 10 feet long, twining. Petioles containing a C-shaped vascular bundle. Pinnae short-stalked, once-forked with an inconspicuous resting bud in the fork. Sori born in marginal finger-like lobes about 0.25 inch long. Sporangia solitary on a vein tip, each covered by a flap of green tissue. In Belize, consisting of 4 genera and 13 species. Uses for 1 genus and 3 species are reported here.

### *Lygodium heterodoxum* Kunze

To treat a **fever** caused by evil magic (*obeab*), 9 leaves are mashed, steeped in 1 gallon of cold water, and used cold as a face wash for 9 Fridays [B2481].

The stems of the leaves are used as **cordage** to weave baskets [B2481].

### *Lygodium venustum* Sw.

wire wis [English]; *alambre, bejuco de alambre, corremiento* [Spanish]; *xix el bá* [Mopan]

To relieve **headache**, 9 leaves are mashed in water and applied as a poultice to the head once or twice daily as needed [B1780; Arvigo and Balick, 1998].

To treat **foot or skin fungus**, 2 cups of leaves are boiled in 1 quart of water for 10 minutes and used as hot as can be tolerated as a bath over the affected area [A935, B1780, B2446; Arvigo and Balick, 1998]. This anti-fungal decoction is never to be used internally [A935].

To treat **sores, rash**, or other **skin ailments**, fresh plant juice is applied directly to the affected area [Arvigo and Balick, 1998]. To relieve **itchy skin**, 2 cups of leaves are boiled in 1 quart of water and rubbed directly on the skin 2–3 times daily as needed [B2110]. Alternatively, 1 entire plant along with the leaves and young stems of polly red head (*Hamelia patens* var. *patens*), the leaves and young stems of pomegranate



*Lygodium venustum* [MB].

(*Punica granatum*), and the leaves and young stems of arnica (*Montanoa speciosa*), are mashed in water and used as a wash over the affected area [B2190]. To treat **rash**, refer to stinkin' bush (*Cornutia pyramidata*) [B2104].

To relieve the pain of **wind** (*viento*), either 9 small vines, 6 medium vines, or 3 large vines are boiled in 2 gallons of water with a pinch of salt for 10 minutes and used as a bath once daily, at bedtime, until better [B2292].

To **cleans**e the **urinary tract** when the urine turns a dark, reddish color and smells strong and bad, 1 entire plant is boiled in 2 quarts of water and sipped all day long until finished. This treatment is repeated the following day, if necessary [B3688].

As a **calmative**, for when a person experiences fear during a thunder and lightning storm, 1 entire plant is burned and the smoke inhaled [B3541]. To calm babies suffering from **fright** (*susto*), 2 quarts of the vine and leaves are boiled in 1 gallon of water for 20 minutes and used warm as a bath once daily, at bedtime, for 3 days. This treatment is repeated as needed [A935].

This plant was **sacred** to the ancient Maya and used as an altar decoration during **ceremonies** [Arvigo and Balick, 1998].

### *Lygodium volubile* Sw.

fever fern [English]

To treat **rash**, 1 large handful of leaves is boiled in 1 gallon of water for 20 minutes, 1 cup consumed cold, and the remainder used cool as a bath over the affected area [B2624]. For **fever**, 1 cup of this same decoction is consumed cool 3 times daily [B2624]. To treat **skin infection**, 1 large handful of leaves is boiled in 2 quarts of water for 20 minutes and poured over the affected area twice daily, in the morning and in the evening [B2624].

## NEPHROLEPIDACEAE

Plants terrestrial, epiphytic or rupestral. Rhizomes erect to suberect, short, generally producing numerous wiry stolons, scaly, the scales peltate. Leaves monomorphic, 1.5–10 feet long. Petioles with several vascular bundles arranged in a U-shape. Blades 1-pinnate, typically with a small fiddlehead remaining at the apex. Rachises grooved adaxially, the old dead ones persistent, bearing circular scars at the point of pinna attachment. Pinnae numerous. Veins free. Sori discrete, round, indusiate. In Belize, consisting of 2 genera and 5 species. Uses for 1 genus and 2 species are reported here.

### *Nephrolepis biserrata* (Sw.) Schott

quash tail [English]; *cola de pisote* [Spanish]

To treat **urine retention** (**stoppage of water**) caused by renal obstructions, 1 rhizome (the larger “root”) is scraped clean of its scales, boiled, and mashed with a stone to release a liquid, and 2 tablespoons are consumed once daily for 1 day [B2597]. To treat “**cancer**” (this reflects the local use of the word to describe a type of **open sore**, as in **ulcer**, or an **internal growth**), the liquid prepared above is consumed daily [B2597].

*Nephrolepis brownii* (Desv.) Hovenkamp & Miyam.

For **urine retention (stoppage of water)**, though not as highly regarded as the maidenhair fern treatment (*Adiantum tenerum*), the roots and leaves of 3 medium-sized plants are boiled in 2 quarts of water for 10 minutes and consumed throughout the day [B2681].



*Nephrolepis brownii* [RM].

## POLYPODIACEAE

Plants epiphytic, less often terrestrial or epipetric. Rhizomes creeping, scaly. Leaves 3–28 inches long, monomorphic or (less commonly) dimorphic. Laminae simple to 1-pinnate, rarely more divided. Sori round or rarely elongate to linear, non-indusiate. Spores yellow. In Belize, consisting of 9 genera and 28 species. Uses for 3 genera and 3 species are reported here.

*Microgramma percussa* (Cav.) de la Sota  
*xox pim* [Q'eqchi']

To treat **deep sores**, the leaves are mashed with a stone and applied as a poultice to the affected area [B2494].



*Microgramma percussa* with close-up of sori (right) [RM].

***Niphidium crassifolium*** (L.) Lellinger

To treat **swollen, pus-filled skin ailments**, 1 leaf is mashed and applied as a poultice to the affected area as often as necessary until better [B2499]. This is 1 of 12 plants used in an unspecified antidote to treat **snake-bite** from the Tommy Goff, a group of pit vipers in the genus *Bothrops* [B3551].

***Phlebodium decumanum*** (Willd.)

J. Sm.

bear paw fern [English]; *cola de mico* [Spanish]; *calawalla, canawana, tallawalla* [Creole]; *sic k'en* [Q'eqchi']

To treat **stomach ulcer, stomach pain, gastritis (ciro), chronic indigestion, high blood pressure**, or to reduce a “**cancerous**” (**diagnosis uncertain**) **tumor** at an early stage, one 3-inch piece of root is boiled in 2 cups of water for 10 minutes and ½ cup consumed 4 times daily for 6 weeks [Arvigo and Balick, 1998]. To treat **systemic “cancer” (internal growth)**, 1 air-dried root is powdered, 1 teaspoon of the powder is mixed with ½ cup of tepid water, with some healers adding 1 teaspoon of dried boa snake meat (an undetermined species), and this beverage is consumed 3 times daily until better [B1844]. For **internal tumors** (growths or perhaps what is locally called “cancer”), refer to the God Almighty bush (*Struthanthus cassythoides*) [LR].

To treat **high blood pressure**, six 4-inch pieces of root are boiled in 1 quart of water for 5 minutes and ½ cup consumed cool twice daily, in the morning and in the evening, every other day for 4 days. After a 4-day treatment, the blood pressure is checked; treatment is stopped if the pressure is down but repeated if the pressure has not decreased [LR].



(top) *Niphidium crassifolium* [RM].

(bottom) *Phlebodium decumanum* [MB].

## PTERIDACEAE

Plants terrestrial, epipetric, or epiphytic. Rhizomes erect or creeping, scaly or hairy. Leaves 0.3–10 feet long, monomorphic or dimorphic. Blades 1- to 6-pinnate. Sori borne on the lower surface of the lamina, often following the veins. In Belize, consisting of 11 genera and 40 species. Uses for 3 genera and 6 species are reported here.

*Acrostichum aureum* L.

tiger bush [English]; *helecho* [Spanish]

To treat **crainess**, the rhizome is scraped and cleansed to get at the “slimy part,” which is then eaten [A352]. Alternatively, the rhizome scrapings are boiled with the rootlets in 1 quart of water for 10 minutes and 1 cup consumed twice daily [A352].

*Adiantum tenerum* Sw.

black stick, maidenhair [English]; *palo negro* [Spanish]; *roq ch'ikwan* [Q'eqchi']; *oc en su cun* [Mayan]

For **cough**, as an **expectorant**, as an aid to **detoxify an alcoholic**, to **increase lactation** in a nursing mother, to aid in **kidney function**, or to treat **intestinal parasites**, 3 stems with leaves are steeped in 3 cups of boiling water for 20 minutes and sipped all day [Arvigo and Balick, 1998].

To treat **headache** caused by evil magic (*obeab*), 1 handful of leaves is boiled in 1 quart of water for 10 minutes, 1 cup consumed hot once daily, and the remainder sprinkled over the body as a bath [B2560].

For **urine retention (stoppage of water)**, 1 entire large plant with roots is washed well, boiled in 1 quart of water for 10 minutes, and ½ cup consumed every hour until the urine passes normally [LR].

To help break a woman's **amniotic fluid** during childbirth, 1 leaf is boiled in 1 cup of water for 5 minutes and consumed during labor [B2356].

For babies who **cry** too much when the cause may be the **evil eye (mal ojo)**, 9 leaves with stems are boiled in 2 quarts of water for 10 minutes and used as a bath once daily, at bedtime, for 3 days [BW]. Alternatively, 1 root is mashed in olive oil and used to massage the baby [BW].

To treat **dandruff**, the leaves are macerated and applied directly to the scalp [Arvigo and Balick, 1998].

The leaves are used as a **decoration** on ceremonial altars [A134].

*Adiantum villosum* L.

*roq ch'ikwan* [Q'eqchi']

To treat **fits** or **convulsions**, 1 entire plant is mashed in water and used as a tea and a bath [B3653]. For **kidney infection**, an unspecified treatment is prepared and used as a cold tea and a bath [B2706].

*Adiantum wilesianum* Hook.

*roq ch'ikwan* [Q'eqchi']

To treat **influenza** or **fright (susto)**, 1 entire fresh plant is mashed in warm water and used as a bath once daily, at bedtime, for 5 days [C40].

*Adiantum wilsonii* Hook.

*Santa María* [Spanish]; *rah li ch'och*, *ru'uj raq ajtza* [Q'eqchi']

To revitalize a person who is **tired** or **weak**, 1 handful of leaves along with 1 handful

of *Santa Maria* leaves (*Aphelandra aurantiaca*, another plant with the same common name) are mashed in 1 quart of cold water, soaked in the sun for 1 hour, and consumed cool as a beverage as needed [R28, R23]. To clear **congestion** and quell a **cough** caused by “the morning mist,” 1 handful of leaves is boiled in 1 gallon of water for 10 minutes and used as a bath over the head and face once daily, in the morning, as needed [B2477].

*Pityrogramma calomelanos* (L.) Link var.  
*calomelanos*

silver leaf, silver leaf fern [English]

To relieve **anxiety** or **nervousness**, the leaves are used to prepare a bath [B2647]. As local healer Hortense Robinson noted, “All ferns are good for nerves” [B2647].

## SELAGINELLACEAE

Plants terrestrial, on rocks, or rarely epiphytic. Stems creeping or erect, branched regularly or irregularly, the branches flattened with 4 rows of leaves. Leaves 0.1–0.4 inch long, one-veined. Strobili (clusters of overlapping sporophylls) compact, cylindrical or quadrangular or flattened, usually simple, entire, borne at the branch tips. In Belize, consisting of 1 genus and 14 species. Uses for 1 genus and 3 species are reported here.

*Selaginella sertata* Spring

To **improve blood circulation**, 1 entire plant is boiled in water and used as a tea and a bath [B2707].

*Selaginella umbrosa* Lem. ex Hieron.

*roq ak'ach* [Q'eqchi']

For a variety of **bladder ailments**, including a **bladder infection**, ½ quart of stems, leaves, and roots is boiled in 1 quart of water for 10 minutes, steeped for 30 minutes, and ½ cup consumed hot all day until finished; this treatment is repeated for 3 days [B2705]. Additionally, this same decoction is used cool as a bath, in combination with the tea [B2705].

To treat **skin fungus**, the leaves are mashed and applied as a poultice to the affected area several times daily as needed [B2512]. To treat **craziness**, 1 entire plant is dried, burned, and the smoke inhaled. This treatment is repeated until better [B3540].



(top) *Pityrogramma calomelanos* RM].

(bottom) *Selaginella sertata* [RM].



*Selaginella* sp.

To reduce **swollen feet**, 1 handful of leaves is boiled in 1 gallon of water, cooled slightly, and used warm to soak the affected area [R26].

**TECTARIACEAE**

Plants mostly terrestrial. Rhizomes short-creeping or decumbent, less commonly erect or long-creeping. Leaves 8–40 inches long. Laminae simple to 4-pinnate-pinnatifid, often pubescent with short (<1 mm) and jointed hairs, especially on the upper surfaces of the axes. Veins netted. Sori typically round, indusia present or absent. In Belize, consisting of 6 genera and 17 species. Uses for 1 genus and 2 species are reported here.

*Tectaria panamensis* (Hook.) R.M. Tryon and A.F. Tryon  
*rah li ch'och* [Q'eqchi']

To treat **arthritis** (“burning bones”) or **bone pain**, 9 leaves along with 9 *sák e pú chuch* leaves (*Piper tuerckheimii*) and 9 Spanish elder leaves (*Piper schiedeianum*) are boiled in 1 gallon of water for 30 minutes until the liquid is dark, and 1 cup is consumed hot 3 times daily, before meals, for 9 days, followed by rest for 9 days, until better [R30, R31, R34]. Additionally, this same decoction is used as hot as can be tolerated as a bath to soak the affected areas once daily, at bedtime, for 9 days, followed by rest for 9 days, until better [R30, R34].

To treat a terrible **itch** or **swelling** on the body, caused by stepping where snakes have been fighting or defecating at night on the path to one's *milpa* when one is asleep, the leaves are mashed, steeped in cool water, 1 cup consumed, and the remainder used as a bath over the affected area [B2478, B2478a].

*Tectaria heracleifolia* (Willd.) Underw. var. *heracleifolia murciélago* [Spanish]; *q'eq curuz i pim* [Q'eqchi']

The leaves are a component of a Maya bath formula [B2243]. Generally, as a **panacea** to treat many ailments, and specifically to treat **swelling**, **pain**, or **sores**, 1 handful of the vine and leaves is boiled in 1 gallon of water for 20 minutes and used as a bath once daily as needed [B1895, B2243; RA]. To treat **biliousness**, resulting from a congested gallbladder and liver, 1 handful of the root is boiled in 3 cups of water for 10 minutes, cooled, and 1 cup consumed warm as needed [B1895].

To treat **epileptic seizures**, 1 handful of fresh leaves along with 1 handful of fresh *sák e pú chuch* leaves (*Piper tuerckheimii*) are boiled in 1¼ cups of water for 8 minutes and consumed warm 2–4 times daily for 5 days [C33, C34]. For this treatment, the leaves are collected only on Mondays and Tuesdays [C33].



*Tectaria heracleifolia* var. *heracleifolia* [NYBG].