

peduncles 25.5(3.5–171.0) cm long, 9.0(3.2–19.1) cm wide; rachillae 5(1–25), 33.3(7.5–85.0) cm long, 7.4(3.7–16.2) mm wide; proximal lips of flower pits regularly shaped, rounded, completely covering pits before anthesis and not or seldom recurved, or proximal lips of flower pits irregularly shaped, often acute or acuminate, completely covering pits before anthesis, or proximal lips of flower pits regularly shaped, rounded, not covering pits before anthesis, recurved; **fruits** compressed, obovoid in lateral view with an asymmetric base, ellipsoid in frontal view, with a pronounced longitudinal ridge on one side and several lesser ridges on opposite side, or fruits compressed, obovoid in lateral view with an asymmetric base, ellipsoid in frontal view, with a pronounced meridional ridge, or fruits scarcely compressed, obovoid, with obscure longitudinal ridges, or fruits widely obovoid, without pronounced longitudinal ridges, or fruits scarcely compressed, ellipsoid, with obscure longitudinal ridges.

### Key to the species of *Pholidostachys*

- 1 Prophylls and peduncular bracts fibrous, covering all or part of the rachilla(e) at anthesis ..... 2
- Prophylls and peduncular bracts woody, not covering rachilla(e) at anthesis ..... 4
- 2 Inflorescences spicate, with a short peduncle, absent rachis, and one rachilla, this erect at anthesis; central Panama .  
..... *P. panamensis*
- Inflorescences branched 1 order, with a well-developed peduncle, short rachis, and several rachillae, these erect at anthesis; eastern Panama, western Colombia, and western Ecuador ..... 3
- 3 Fruits 19.8(19.6–19.9) mm long, compressed in lateral view with an asymmetric base, ellipsoid in frontal view, with a pronounced meridional ridge; Colombia (Cordillera Central).....*P. sanluisensis*
- Fruits 12.2(8.8–16.3) mm long, scarcely compressed, obovoid, with obscure longitudinal ridges; western Colombia (Cordillera Occidental and Chocó) and western Ecuador.....*P. dactyloides*
- 4 Inflorescences branched 1 order, with an elongate peduncle, short rachis, and several rachillae, these pendulous at anthesis; western Colombia and western Ecuador .....*P. occidentalis*
- Inflorescences branched 1–2 orders, with a well-developed peduncle and rachis, and several rachillae, these spreading at anthesis, or inflorescences spicate, with a well-developed peduncle, absent rachis, and one rachilla, this arching or erect at anthesis ..... 5
- 5 Inflorescences branched 1–2 orders, with a well-developed peduncle and rachis, and several rachillae, these spreading at anthesis ..... *P. synanthera*
- Inflorescences spicate, with a well-developed peduncle, absent rachis, and one rachilla, this arching or erect at anthesis ..... 6
- 6 Proximal lips of flower pits completely covering pits before anthesis and not recurved; Nicaragua, Costa Rica, Panama, and Colombia ..... *P. pulchra*
- Proximal lips of flower pits not covering pits before anthesis, recurved; Peru .....*P. amazonensis*

#### 1. *Pholidostachys amazonensis* Henderson, *sp. nov.* (Appendix IV, Plate 1)

It differs from other species in its spicate inflorescence and proximal lips of flower pits regularly shaped, rounded, not covering pits before anthesis, recurved.

Type:—PERU. Amazonas: Bagua Province, along roadside from Chiriaco to Puente Venezuela, 43 km (by road) NE of Chiriaco, ca. 1050–2400 ft., 5 November 1978, *P. Barbour 4471* (holotype USM *n.v.*, isotype MO!).

**Stems** no data. **Leaves** number per stem no data; sheaths and petioles no data; rachises 42.0 cm long, 3.7 mm diameter; pinnae 6 per side of rachis; basal pinna no data; apical pinna length no data, 3.5 cm wide, forming an angle of 15° with the rachis. **Inflorescences** spicate, with a well-developed peduncle, absent rachis, and 1 rachilla, this arching at anthesis; prophylls and peduncular bracts woody, not covering rachilla at anthesis; prophylls and peduncular bracts no data; peduncles length no data, 3.2 mm diameter; rachilla 1, 18.7 cm long, 5.9 mm diameter; proximal lips of flower pits regularly shaped, rounded, not covering pits before anthesis, recurved; **fruits** no data.

**Distribution and habitat.** At 4°56'N and 78°10'W in Peru (Amazonas) at medium elevations in lowland rainforest (Fig. 5).

**Taxonomic notes.** For inflorescence bracts and proximal flower pit shape, *Pholidostachys amazonensis* shares the same character states as *P. synanthera*. Fruits are lacking on the single specimen available. However, inflorescences of the two are quite different. *Pholidostachys amazonensis* has spicate inflorescences with a well-developed peduncle, absent rachis, and 1 rachilla, this arching at anthesis. *Pholidostachys synanthera* has inflorescences branched 1–2 orders with a well-developed peduncle and rachis, and several rachillae, these spreading at anthesis.

**2. *Pholidostachys dactyloides* Moore (1967: 148).** *Calypstrogyne dactyloides* (Moore) Wessels Boer, 1968: 74. Type:—COLOMBIA. El Valle: Costa del Pacifico, río Yurumanguí, El Papayo, 10–20 m, 5 February 1944, J. Cuatrecasas 15982 (holotype BH!, isotypes COL!, F!, US!).

**Stems** 5.4(2.0–10.0) m long, 7.7(4.0–12.0) cm diameter, solitary. **Leaves** 15(6–25) per stem; sheaths 45.4(14.0–110.0) cm long; petioles 56.8(20.0–122.0) cm long; rachises 135.4(68.0–231.0) cm long, 13.3(7.9–20.1) mm diameter; pinnae 10(6–17) per side of rachis; basal pinna 57.9(34.0–92.0) cm long, 2.4(0.7–7.5) cm wide, forming an angle of 53(30–74)° with the rachis; apical pinna 45.0(36.0–58.0) cm long, 15.3(4.5–22.5) cm wide, forming an angle of 13(7–20)° with the rachis. **Inflorescences** branched 1 order (rarely 2 orders), with a well-developed peduncle, short rachis, and several rachillae, these erect at anthesis; prophylls and peduncular bracts fibrous, covering all or part of the rachillae at anthesis; prophylls 46.0(30.0–59.0) cm long; peduncular bracts 56.7(50.0–65.0) cm long, inserted 6.2(2.5–11.0) cm above the prophyll; peduncles 16.3(8.5–25.5) cm long, 10.4(4.7–19.0) mm diameter; rachillae 9(2–16), 35.5(15.5–75.0) cm long, 6.3(4.5–9.7) mm diameter; proximal lips of flower pits irregularly shaped, often acute or acuminate, completely covering pits before anthesis; **fruits** scarcely compressed, obovoid, with obscure longitudinal ridges, 12.2(8.8–16.3) mm long, 7.9(5.8–11.5) mm diameter.

**Distribution and habitat.** From 8°50'N–3°11'S and 76°03'–79°14'W in eastern Panama, western Colombia, and western Ecuador at 444(5–1440) m elevation in lowland or montane rainforest (Fig. 5).

**Taxonomic notes.** *Pholidostachys dactyloides* is a widespread and variable species with an unusually wide elevation range.

**Subspecific variation.** Specimens occur in several different populations. The northernmost specimens, from two localities in eastern Panama, are distinct in their short rachillae and acuminate proximal lips (Fig. 3A, left).

These Panamanian specimens strongly resemble others from the northern part of the Chocó region of Colombia, where they occur at both high and low elevations. However, some of these have rachillae of the more usual length.

Further south, in the Valle region of Colombia, specimens are similar to those from southwestern Colombia and northwestern Ecuador, and both populations have less acuminate proximal lips (Fig. 3A, right).

There is a large population in southwestern Colombia and northwestern Ecuador. One specimen from there (*Vargas 6108*) has inflorescences branched to 2 orders. Regression shows there are significant associations between elevation and four leaf and five inflorescence variables in this population. Squared multiple *R* for the regression of leaf number on elevation is 0.29, rachis width 0.40, number of pinnae 0.27, basal pinna angle 0.40, peduncle width 0.37, rachilla length 0.30, rachilla width 0.42, fruit length 0.62, fruit diameter 0.51. Values for these variables increase with elevation except for basal pinna angle. Notably, rachillae are thicker at higher elevations.

The southernmost specimens, in southwestern Ecuador, differ slightly from those in southwestern Colombia and northwestern Ecuador. Although there are too few specimens to test for differences, they have shorter and narrower apical pinnae.