mm above the insertion of the prophyll, slightly shorter than it and almost completely covered by it, 4-7 cm long, 4-6 mm wide, membranaceous and fibrous; peduncle 5-7 cm long, 1-2 mm diameter at the apex, minutely verrucose and with deciduous, scattered, reddish-brown scales; spike 7-11 cm long, 2.5-3 mm diameter in flower, up to 4 mm diameter in fruit, cylindrical, not narrowed between the flowerpits, the apex with an acumen ca. 5 mm long, minutely verrucose, covered with reddish and furfuraceous trichomes, green in flower, reddish in fruit; pits bilabiate, in 5 spirally arranged rows, the pits in each row separated 3-4 mm; upper lip short but projected and conspicuous; lower lip projected and bifid. Staminate flowers 4-5 mm long, whitish; sepals 3-3.5 mm long, lanceolate-elliptic, acute, carinate; petals 3.5-3.6 x ca.1 mm, connate at base for ca. 1.5 mm, lanceolate, acute; filaments connate in a tube ca. 2 mm long; anthers strongly reflexed from the filaments. Pistillate flowers elliptic-oblong, 4-4.5 mm long; sepals elliptic-lanceolate, obtuse, thick; petals 3.5 mm long, connate for 2 mm at base; staminodial ring shortly crenulate; pistil oblong-elliptic. Fruits ellipsoid, acute at apex, 8-9 x 4-5 mm, black at maturity, minutely striate-verrucose.

Distribution and habitat. Known only from the type locality on the northwestern side of the Eastern Cordillera in Colombia, an area classified as very wet premontane forest (bosque muy húmedo premontano) in Holdridge's life zone system (IGAC 1977). This is the same forest area where *Aiphanes graminifolia* (described above) was found. In contrast with the latter, *G. santanderensis* is a very common species in the forest understory.

Common name. San Pabla; cubarra de Castilla. No uses have been recorded.

Etymology. This species is named after the Deparment of Santander, where it was discovered.

Comments. This new species cannot be keyed out in Wessels Boer's (1968) treatment of the geonomoid palms. It shows some resemblance in morphology and in its high elevation habitat, to *G. monospatha*, recently described from Panama (de Nevers & Grayum 1998). Nevertheless, *G. monospatha* has a very small, almost absent peduncular bract (a character shared only with *G. stricta*), whereas *G. santanderensis* has a well developed peduncular bract, similar to the prophyll and almost enclosed by it (as, e. g., in *G. arundinacea* and *G. aspidiifolia*). Also, *Geonoma monospatha* has leaves that are proportionally longer (2.5-3.1 times as long as wide vs. < 2.5 times), shorter spikes (2-4 vs. 7-11 cm), petals and sepals twice as short, and smaller fruits (4.8-5.2 vs. 8-9 mm long) that are globose (vs. ellipsoid) and rounded at apex (vs. acute).

Additional specimens examined. COLOMBIA. **Santander**: Suaita, San José de Suaita, ca. 6° 10'N, 73° 27', 1700-1900 m, 28 Jul 2001, *G. Galeano et al. 6811* (AAU, COL, K, MO).

Geonoma wilsoni Galeano & R. Bernal, sp. nov. (Fig. 4-5)

Type. COLOMBIA. **Caquetá**: Municipio de Florencia, Florencia-Suaza road, km 35, vereda Las Brisas, 1° 44'N, 75° 44'W, 1600-1700 m, 8 Aug 2001, *R. Bernal & W. Malagón 2900* (holotype, COL; isotypes, AAU, COAH, HUA, MO, NY).

Diagnosis. Ab omnibus speciebus generis foliis lamina simplicis vel pinnae in quoque latere duabus, rachidis perbrevis, apice profunde bifida, atque inflorescentia simplex differt.

Stem solitary, 0.2-1 m tall, 8-10 mm diameter, grayish-green to yellowish, internodes ca. 1 cm. Leaves 14-15, arranged in an hemispheric crown, simple and bifid or with two pinnae per side; sheath 5-6 cm long, with few yellowish-brown scales; petiole 23-47 cm long, 2-3 mm wide at apex, adaxially concave, with deciduous, yellowish-brown scales, abaxially convex; rachis 4.5-8 cm long, adaxially acute, glabrous, abaxially with deciduous, flattened yellowish-brown scales; leaf blade simple or divided in one or both sides in up to 2 pinnae, 0.7-1.4 times as long as wide, bifid at apex in 70-77% of its length, simple leaves with the segments oblong-lanceolate, acute to acuminate, 22-25 x 3.5-5 cm, forming an angle of ca. 50-60°, divided leaves with falcate to sigmoid pinnae 21-23 x 3.5-5 cm, separated 2-4 cm at the insertion; primary veins 11-15 on each side, forming an angle of 18-58° with the rachis, prominent and acute on both sides, with deciduous scales abaxially; secondary veins impressed adaxially, prominent and scaly abaxially, the surface papiraceous, glabrous. Inflorescence interfoliar, spicate, dark red in fruit; peduncle 7.5-8 cm long, 4-5 mm diameter, covered with small, yellowish-brown, deciduous scales; prophyll 4.5-5 x 1.2-1.5 cm, membranaceous to subcoriaceous, thin, striate, with yellowish-brown scales; peduncular bract similar to the prophyll, inserted 1.5-2 cm above the prophyll insertion, 3.5-4.5 cm long, almost enclosed by the prophyll or exceeding it for less than 1 cm; spike 17-20 cm long, 2-3 mm diameter, folded and twisted in bud, not cylindrical but narrowed between the distant flowerpits, smooth, with few elongated, appressed, yellowish-brown scales, at the apex with a slender point up to 1 cm long; pits bilabiate, 2-3 mm wide, spirally and loosely arranged, almost decussate at the middle, the pits of each row separated 6-8 mm; lips strongly projected up to 2 mm beyond the spike surface, upper lip emarginate, lower lip conspicuously bifid. Staminate flowers ellipsoid-obovoid, ca. 4 mm long; sepals elliptic-lanceolate, 4-4.5 mm long, acute, carinate to subcarinate; petals elliptic, ca. 4 x 2 mm, acute, thick; stamens 6, filaments connate for ca. 2 mm at base; anthers 2-2.5 mm long, strongly reflexed from the filaments; pistilode 1-1.5 mm long, deeply trifid. Pistillate flowers ovate-ellipsoid, ca. 5 mm long; sepals 3.5-4 mm long, acute, carinate; petals 4-4.5 mm long, acute, connate for 2 mm at base; staminodial tube ca. 4 mm long, truncate to slightly dentate; pistil ovate-elongate. Fruits ellipsoid, acute at apex, 8-9 x 6-7 mm, black, the surface with minute and elongate tubercles.

Distribution and habitat. Known only from the type locality, a very wet premontane forest on steep slopes on the eastern slope of the Andes in Colombia.

Etymology. *Geonoma wilsoni* is named after the student of biology Wilson Mario Malagón, who studied the palm flora on the eastern slopes of the Andes near Florencia, a research that led to the discovery of the new species.

Comments. This species is completely different from any other species of *Geonoma,* on account of its leaf blade deeply bifid, wider than long or scarcely longer than wide, simple or with up to two pinnae on a short rachis, and its long spicate and loosely pitted inflorescence. In Wessels Boer's (1968) treatment of the Geonomoid palms the new species cannot be keyed out. The most similar species is *G. arundinacea* Mart., which resembles *G. wilsoni* only in its inflorescence. Although inflorescences of *G. arundinacea,* as circumscribed by Henderson (1995) are variable, those of some specimens, e. g., the type (pl. 218 in Dahlgren 1959), Martius's (1823) plate, *J. Torres et al. 9994* (COL), resemble inflorescences of *G. wilsoni* in size and in the arrangement and shape of the flower pits, and shape and size of the prophyll and the peduncular bract. However *G. arundinacea* has smaller pits (up to 2 mm vs. 2-3 mm), and smooth fruits (vs. with

minute and elongate tubercles). On the other hand, the two species are completely different vegetatively. *G. arundinacea* is cespitose (vs. solitary) and has leaf blades oblong to oblong-obovate, 2.2-2.5 times as long as wide (vs. blade obovate to oblate in profile, 0.7-1.4 times as long as wide), bifid at apex in 23-37% of its length (vs. bifid in 70-77%), with 16-23 primary veins (vs. 11-15).

Additional specimens examined. COLOMBIA. **Caquetá**: Municipio de Florencia, Florencia-Suaza road, km 35, vereda Las Brisas, 1° 44' N, 75° 44' W, 1600-1700 m, 8 Aug 2001, *R. Bernal & W. Malagón 2901* (COAH, COL, HUA, K, PSO, QCA).

Aiphanes simplex Burret, Notizbl. Bot. Gart. Berlin-Dahlem 11: 567. 1932.

This species, endemic to Colombia, was known only from the río Cauca basin, and from some isolated populations on the western slopes of the Western Cordillera in Antioquia and Valle, where the mountain chain has elevations lower than 2000 m (Borchsenius & Bernal 1996). Recent exploration of the Eastern Cordillera has revealed its occurrence at two localities, in Caquetá and Santander, separated from each other ca. 550 km. Comparison of specimens from both localities with specimens of *A. simplex* from the basin of río Cauca leaves no doubt as to their identity. There are, however, some differences that are worth being discussed.

First, in the specimens from the Eastern Cordillera, the bracts subtending the flower triads are short, with smooth margins, and they do not cover the pistillate buds. Most specimens from the río Cauca basin have large bracts, with spinulose margins, that cover the pistillate bud almost completely. But even within the specimens of *A. simplex* treated by Borchsenius & Bernal (1996) there is variation in this character. One of the specimens with branched inflorescence collected on the western slopes of the Western Cordillera (*Idrobo & Fernández 198*, COL) also has poorly developed bracts, reminiscent of those found in some specimens of *A. erinacea* (Karst.) H. Wendl.

Second, in the specimens from Santander the staminate flowers of each triad are arranged perpendicular to the axis, so that flowers appear triangular and compressed from above. In all other specimens, both from the río Cauca basin and from the population in Caquetá the staminate flowers in each triad are appressed to the rachilla axis and they are elongate. The significance of this variation in respect to pollinators cannot be ruled out. Otherwise, floral morphology is similar in plants from the three localities, except for a greater density of spinules on the inflorescence axes of plants from Caquetá.

Third, plants from Santander have a solitary and thicker stem, whereas stems in the palms from Caquetá are cespitose and thin, like in plants from the río Cauca Basin. The yellowish spines on the leaf sheath and the petiole, which are so characteristic of *A. simplex* in the río Cauca basin do not occur on the plants from Santander, and they are only occasionally present on individuals from Caquetá.

Finally, the number of pinnae of plants from Caquetá (15-22 per side) is larger than the range so far known for *A. simplex* (9-16).

Aiphanes simplex was considered by Borchsenius & Bernal (1996) as closely related to *A. erinacea*, and these authors suggested that specimens of *A. simplex* with a branched inflorescence might represent a transition between both species. As *A. erinacea* grows also on the western slopes of the Andes in Ecuador, the finding of *A. simplex* farther north on the same slope is an additional evidence of the continuous distribution of both species, suggesting that *A. simplex* might be only a reduced form

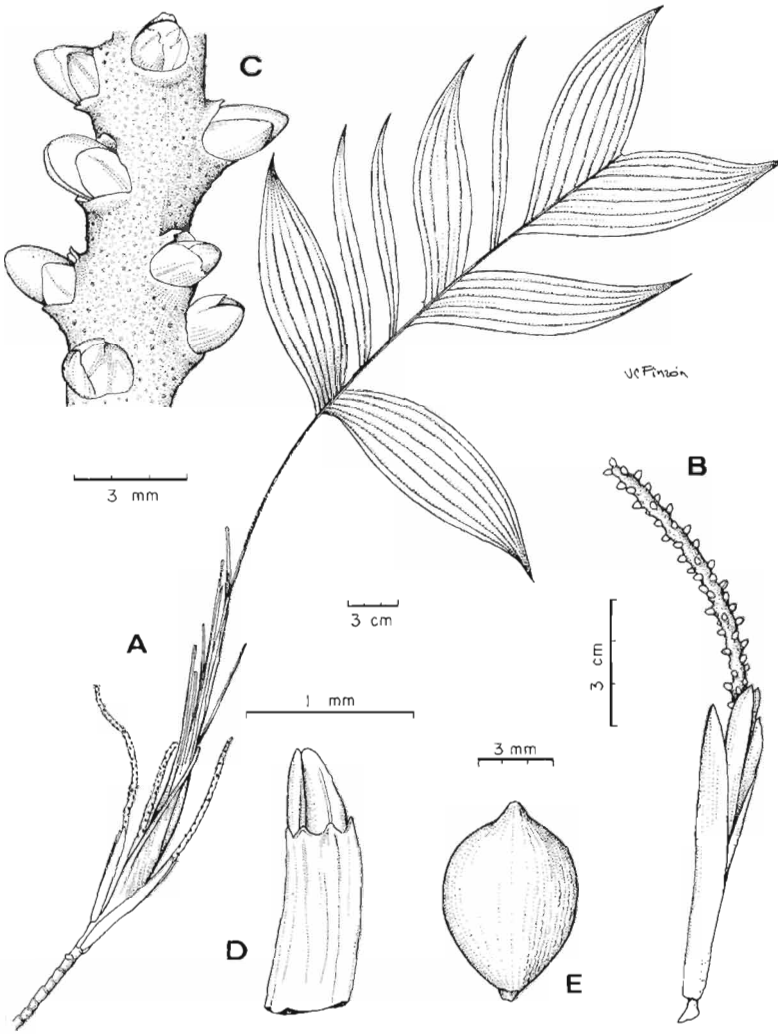

Figure 3. *Geonoma santanderensis* Galeano & R. Bernal. A. Stem with leaf and inflorescences B. Inflorescence. C. Detail of rachilla. D. Staminodial tube. E. Fruit (From *Galeano et al. 6884*).

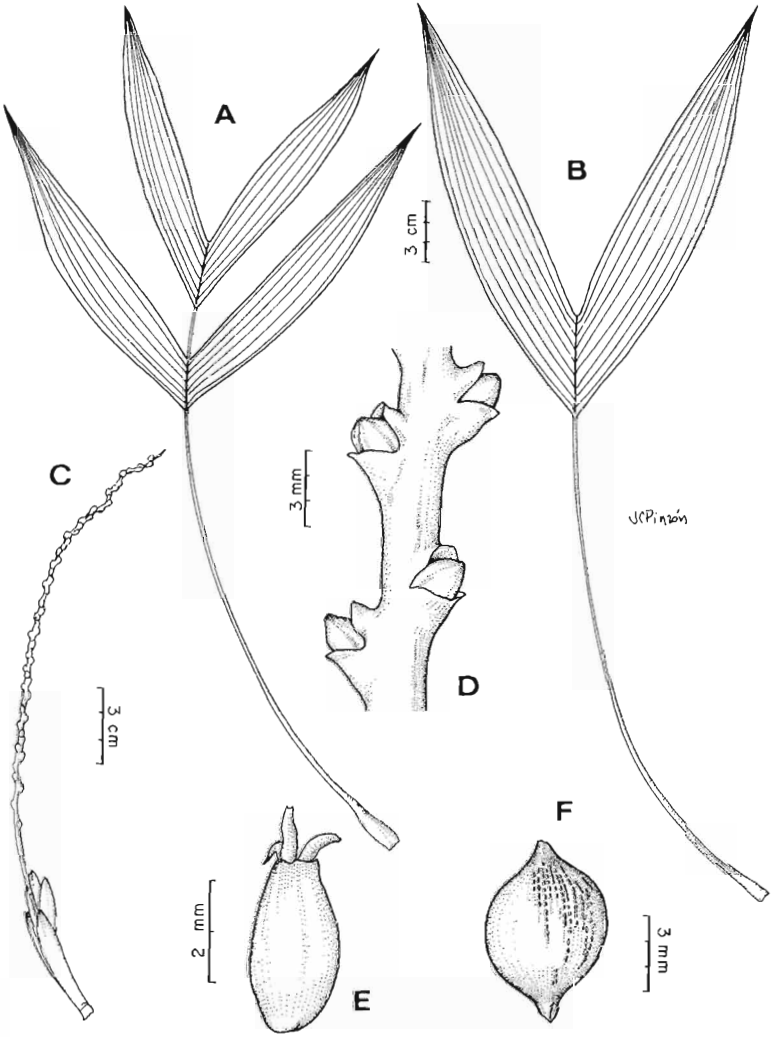

Figure 4. *Geonoma wilsoni* Galeano & R. Bernal. A. Pinnate leaf. B. Simple leaf. C. Inflorescence. D. Detail of rachilla. E. Staminodial tube. F. Fruit (A, from *Bernal & Malagón 2901*; B-F, from *Bernal & Malagón 2900*).

Figure 5. *Geonoma wilsoni.* Habit at the type locality (Photo: R. Bernal)