

densely canescent calyx and corolla it differs from all other species of the genus now known.

Apparently this species has been cultivated for many years in California under the name of *Brahea Pimo*. Beccari had received fruit from Franceschi before his death in 1920 and in the herbarium of the Bailey Hortorium is a collection from young trees on the estate of J. Harrison Wright at Riverside, California, in 1927.

Label notes on a collection from a flowering tree on the C. B. Hale estate, Santa Barbara, indicate that this species has been grown under the horticultural name of "*Brahea calcarata*." Seed recently introduced from indigenous trees of Michoacán has germinated and is being grown by Mr. David Barry of Los Angeles, California and The Fairchild Tropical Garden, Coconut Grove, Florida.

The following specimens have been examined:

Mexico: Guerrero; Taxco, March 12, 1940, *L. H. Bailey 523* pro parte (BH.); México; District Temascaltepec; Barranca, Pungarancho, alt. 950 m., November 24, 1932, *G. B. Hinton 5250* (F., G-DEL., GH., MO., NY., US.); Michoacán; Monte de la Ventana, El Sirián, 14-1600 m., March 29, 1896, *E. Langlassé 82* (G-DEL. type, GH. isotype); Cerro Azul, vicinity of Morélia, alt. 1900 m., October 1909, *Bro. G. Arsène 2826* (US.); September 1909, *Arsène s.n.* (F.), August 17, 1906, *Arsène 66* (G-DEL.), September 26, 1912 *Arsène s.n.* (F.), October 20, 1910, *Arsène s.n.* (L.), August 3, 1909, *Arsène s.n.* (L.); La Escalera, Morélia, alt. 1600 m., November 6, 1911, *Arsène 6046* (L., US.); 9.3 miles from Temascal on road to Tzítzio and Huetamo, alt. 1920 m., November 13, 1949, *Moore, Hernandez & Porras 5721* (BH.); about 8 km. from Uruapan on road to Apatzingán, alt. 1330 m., November 14, 1949, *Moore, Hernandez & Porras 5749* (BH.).

† *Erythea salvadorensis*, (Wendl. ex Becc.) trans. nov.

*Brahea salvadorensis*, Wendl. ex Becc. in Webbia, ii, 105 (1907);  
Ann. Roy. Bot. Gard. Calcutta, xiii, 305, pl. 25 I (1931).

*Acelorraphe salvadorensis*, (Wendl. ex Becc.) Bartlett, in Carn.  
Inst. Wash. Publ. 461, 32 (1935).

*Acelorraphe Cookii*, Bartlett, l. c.

The type of *Erythea salvadorensis* was a portion of a spadix only and was lost with the great majority of other palm specimens when the Berlin Herbarium was burned. Beccari's description and illustration (Ann. Roy. Bot. Gard. Calcutta, xiii, pl. 25 I f. 1-2) are adequate to place it generically and to distinguish it from the remaining species now known.

Bartlett distinguished *Acelorraphe Cookii* from *A. salvadorensis* as follows:

Ovary glabrous..... *A. salvadorensis*  
 Ovary white-tomentose below, especially so as fruit develops, when basal  
 growth of the tomentose part minimizes small apical glabrous portion. *A. Cookii*

Flowers of the type specimen of *Acælorraphe Cookii* are indeed as described, having been fertilized. Dissection of younger flowers of another collection from the type region, *Cook & Doyle 277*, reveals, however, that the ovary before fertilization shows no canescence at the base and is a good match for that of the flowers of *Brahea salvadorensis* in a comparable stage of development as illustrated by Beccari. The petals of the latter are described and illustrated as glabrous while *A. Cookii* generally has petals with a small canescent patch at the base. However, occasional flowers with glabrous petals are seen in *Cook & Doyle 277* and the distinctions scarcely seem sufficient to warrant retention of both species. Accordingly, *A. Cookii* is placed in synonymy of the older name. Although there has been no material from El Salvador available for study, the affinity of the flora with that of Guatemala lends further weight to the union.

*E. salvadorensis* is maintained as a species distinct from *E. Pimo* because of clear-cut differences in floral characters and a more southerly area of distribution in Guatemala, El Salvador and Honduras. That there is great affinity between the two species is clear and it is not unlikely that future collections will show them to be less easily separated specifically than at present. The following collections may be cited:

Guatemala: Department Alta Vera Paz; between Santa Rosa and Salama, May 29, 1904, *O. F. Cook & C. B. Doyle 275* (US. type of *Acælorraphe Cookii*, MICH. isotype), *276* (US.), *277* (MICH.): Department Baja Verapaz; rocky hills near and above Santa Rosa, alt. about 1500 m., April 4, 1941, *Standley 91181* (F.), *91260* (F.): Department Zacapa; upper reaches of Rio Sitio Nuevo between Santa Rosalía and first waterfall, alt. 1200-1500 m., January 9, 1942, *Steyermark 42198* (F.); southwest-facing slopes and bluffs, Loma El Picacho, above Santa Rosalía, 1200-1600 m., January 15, 1942, *Steyermark 42716* (F.).

Honduras: Department El Paraiso; vicinity of Manzaragua, Rio Yeguaré drainage, 1400 m., April 4, 1948, *Williams & Molina 13990* (F.); Guinope, 1430 m., December 1943, *J. Valerio Rodriguez 1828* (F.): Department Morazán; slopes of Cerro de Uyuca, about 1500 m., November 25-December 5, 1946, *Standley & Williams 122* (F.); Valle Encantado on slopes of Mt. Uyuca, 1500 m., December 5, 1946, *Paul Allen 11182* (BH., F., US.); 12 kms. northeast of Sabana Grande near Los Artillos, 1000 m., December 23, 1947, *L. O. Williams 13590* (F.); slopes of Cerro de Uyuca, region of El Valle Encantado, 1300-1500 m., December 8, 1946, *Standley, Allen, Shank & Padilla 905* (F.); near Joya Grande, on road from El Zamorano to Suyapa, 1200-1350 m., February 25, 1947, *Standley & Molina 4522* (F.); Las Mesas, 900 m., November 23, 1946, *Standley & Williams 45*

(F.); El Quebracho, above El Zamorano, about 950 m., November 29, 1946, *Standley 323* (F.); near Hoya Grande, 1400 m., February 1947, *Williams & Molina 11982* (BH.).

**Paurotis Schippii**, Burret, in *Notizbl. Bot. Gart. Berlin*, xii, 304 (1935).

*Paurotis Schippii* is apparently a third species of this alliance judging from the description. Neither isotype nor matching collections have been located, hence formal combination is not made. It is obviously not a true *Paurotis* having as it does a thick solitary trunk and unarmed petiole. Nor does it appear to be conspecific with *E. salvadorensis*, differing in the white-ceraceous lower leaf-surface, unarmed petiole, fuscous rather than gray-tomentose rachillæ and glabrous flowers. The latter are glomerulate, hence it is not a *Brahea* as suggested by Burret in discussion where a provisional combination was made. Placement of this species must wait until authentic or topotypic specimens are available for study.

## BRAHEA

With the exception of a new taxon described herein, the species of *Brahea* have been discussed previously in this journal (*Gent. Herb.* vi, 177-195, 1943). They fall in two rather clearly defined subdivisions as indicated by the following synopsis and key to the new species. Complete flowering and fruiting series of all species are necessary before an expanded key can be prepared.

- A. Flower-buds and flowers sessile or slightly elevated on slender tomentellous rachillæ: rachillæ becoming more or less glabrous in fruit with prominent raised floral scars: leaves pliable, the segments nearly flat, green above and conspicuously waxy-glaucous below, the secondary veins scarcely distinct from the tertiary veins and not connected by cross-veinlets; petioles unarmed.
  - B. Arborescent: spadices more or less pendulous, at least in fruit: fruit large, 16-17 mm. long when fresh shrinking to 13-14 mm. when dry.
    - ..... *B. calcarea*, *B. prominens*
  - BB. Acaulescent or nearly so: spadices erect from outer circle of leaves: fruit small, 7-8 mm. long or less.
    - ..... *B. Moorei*
- AA. Flower-buds and flowers distinctly immersed in the thickish densely tomentose rachilla: rachilla remaining tomentose in fruit with sometimes conspicuous but scarcely elevated floral scars: leaves stiff, the segments strongly plicate and often drooping at the tips, green above and below or sometimes glaucous below, the secondary veins numerous, conspicuously coarser than the tertiary veins, connected by elevated cross-veinlets below; petioles denticulate to coarsely callous-dentate.
  - B. Petals glabrous or with rare scattered hairs; sepals prominent, glabrous with apical tuft of short hairs: ultimate rachillæ 4-8 cm. long, more or less rigid in bud and in fruit.
    - ..... *B. Berlandieri*, *B. bella*
  - BB. Petals prominently canescent at base, glabrous at apex; sepals scarcely prominent, canescent: ultimate rachillæ 5-15 cm. long, more or less flexuous at anthesis and in fruit.
    - ..... *B. dulcis*, *B. Conzattii*

† **Brahea Moorei**, L. H. Bailey, spec. nov. Fig. 90.

Planta acaulis: folia erecta, flabellata, supra atroviridia, subtus glaucescentia petiolis inermibus 37-47 segmentis linearibus ad 48 cm. longis et ad