



A note on the typification of *Hechtia galeottii* (Hechtioideae, Bromeliaceae)

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Abstract

We explain why the lectotypification of *Hechtia galeottii* proposed by Smith & Downs is inaccurate and in serious conflict with the protologue and should be discarded. Accordingly, we propose a new lectotype and include a more detailed description of the species.

Resumen

Se explica porque la lectotipificación de *Hechtia glaeotti* propuesta por Smith & Downs es inadecuada y está en serio conflicto con el protólogo, por lo cual debe ser deshechada. Se propone, por lo tanto, un nuevo lectotipo y se incluye una descripción detallada de la especie.

When Mez (1919: 71) described *Hechtia galeottii*, he cited two collections: *Galeotti 5440* from Oaxaca, and *Pringle 6703* from Tomelin Canyon [Cañón de Tomellín] (see Appendix 1) in the protologue. These two gatherings are therefore the syntypes and are deposited in the Berlin herbarium (B) where there are three specimens, one of Galeotti's number and two of Pringle's number.

Smith & Downs (1974: 587) selected as lectotype (as holotype, see McNeill et al., 2012, Art 9.9) of *Hechtia galeottii* the Galeotti's specimen deposited at B [B 10 0144795] (Fig. 1, [Röpert, 2000–]).

It should be noted that the Galeotti specimen (Fig. 1) is very incomplete as it comprises only three fragmentary spikes from a staminate inflorescence, one 3 cm long and the other two 7.5 and 12 cm long respectively, and has neither leaves nor pistillate flowers or inflorescence parts. Obviously, the description provided by Mez in the protologue (see Appendix 1) can not be based alone on this incomplete gathering. Moreover, the only known duplicate of this collection in Geneva (G–DEL) is equally incomplete (Fig. 2). It is important to mention that Carl Mez's herbarium was added to the Berlin herbarium during the year 1933 (Hiepko, 1987: 245), and that the Königsberg University herbarium, which contained much of Mez's material, was destroyed during an air-attack in September 1944, shortly after Mez's death. Therefore, many of the Mez types may be found at B, M, and G (Stafleu & Cowan, 1981).

On the other hand, the Pringle specimens are more complete and comprises each a portion of a leaf, a staminate twice divided spike, a simple pistillate spike, as well as a fruiting simple spike (Fig. 3, [Röpert, 2000–]). Moreover, of this gathering there are at least 15 duplicates in several herbaria. A careful comparison (Table 1) of the syntypes with the original description (Appendix 1) allows us to conclude that for making the description Mez used mainly the Pringle specimens.

TABLE 1. A careful comparison of these syntypes with the original description

	Protologue	Galeotti 5440	Pringle 6703
Leaves	Folia ad 0.4 m longa, supra glabra subtus in valleculis densissime lepidota pallida, spinis hamatis, vix ultra 4 mm longis, in axillis haud barbigeris horrida	ABSENT	present, 30–40 cm long, glabrous adaxially, finely appressed white lepidote abaxially; spines hamate, +4 mm long, basally densely lepidote [IN AGREEMENT WITH PROTOLOGUE]
Inflorescence	Inflorescentia myriantha, laxe 3 pinnatim panniculata [twice branched], valde elongata, subcylindrica; ramis elongatissimis usque ad 0.3 m longis mihi visis, fere e basi flores innumeros densissime cylindrice gerentibus, per anthesin vix ultra 8 mm diam. metientibus	Staminate Inflorescence only present, 2 pinnate [once branched]; longest primary branches 14 cm long Pistillate inflorescence ABSENT	Staminate Inflorescence 3 pinnate [twice branched]; longest primary branches 28 cm long [IN AGREEMENT WITH PROTOLOGUE] Pistillate inflorescence 2 pinnate [once branched]; longest primary branches 15 cm long
Floral bracts	Bracteolis floriferis ad 2 mm longis, cum sepalis dorso lepidotulis, sepala superantibus, e late ovato late acutis, margine dentatis, suberectis.	Floral bracts 2.3–2.9 mm long, longer than sepals [IN AGREEMENT WITH PROTOLOGUE] ovate-triangular, acute, erose [IN AGREEMENT WITH PROTOLOGUE]	Floral bracts ca. 2 mm long, sparsely lepidote [IN AGREEMENT WITH PROTOLOGUE] shorter or equaling the sepals ovate-triangular, acute, erose [IN AGREEMENT WITH PROTOLOGUE]
Flowers	Flores subsessiles, virentes, utriusque sexus subpatentes, 2–2.5 mm longi	Flores white, fragrant [see label at G specimen] (staminate only present)	Staminate flowers greenish, densely black punctate, ca. 2.5 mm long [IN AGREEMENT WITH PROTOLOGUE] Pistillate flowers greenish, ca. 2.5 mm long
Sepals	Sepalis ad 1.5 mm longis, squamiformi-triangularibus, lepidotulis	Sepals 1.6–1.7, oblong (staminate only)	Sepals ca. 1.5 mm, broadly ovate-triangular, sparsely lepidote (staminate & pistillate) [IN AGREEMENT WITH PROTOLOGUE]
Petals	Petala ex elliptico foeminea breviter, mascula brevissime acutiuscula, libera	Pistillate petals ABSENT Staminate petals, elliptic, 2.5–2.8 mm long, acute [IN AGREEMENT WITH PROTOLOGUE]	Pistillate petals elliptic, 3.3–3.4 mm long, acute Staminate petals elliptic to ovate elliptic, 2.5–2.8 mm long, acute [IN AGREEMENT WITH PROTOLOGUE]
Ovary	Ovarium glabrum	ABSENT	Present, glabrous [IN AGREEMENT WITH PROTOLOGUE]

Additionally, the herbarium sheet labels are much more complete and have more data in the Pringle specimens (Fig.1–3, [Röpert, 2000–]) and a detailed travel diary (Burns Davis, 1936) of this important collector exists. According to Burns Davis (op. cit., p. 159), Pringle gathered this *Hechtia* near the train station of El Parián (17°24'48.59"N; 97°00'49.74"W) in the Cañón de Tomellín:

“Friday, July 9

I [Pringle] try again to reach Santa Catarina but our train can get no further than El Parián and thereabouts I collect 6703 *Hechtia stenopetala* Klotzsch, ...”

There is also an account of Galeotti’s botanical work in Mexico (McVaugh, 1978). But the itinerary there presented is partial and incomplete.

Because of the above facts we conclude that the type selection of Smith & Downs is inaccurate and in serious conflict with the protologue, and therefore, according to the article 9.19b of the ICNAPF (McNeill et al., 2012), should be discarded.

Accordingly, we present here an updated description of *Hechtia galeottii* and a new proposal for a lectotype.

***Hechtia galeotti* Mez**, Repert Spec. Nov. Regni Veg. 16: 71–72. 1919. **Lectotype**:—MEXICO. Oaxaca, municipality of San Jerónimo Sosola: in dry slopes Tomelin Canyon, ca. 1520 m, 9 July 1897, *C.G. Pringle* 6703 (Lectotype designated here: B! [B 10 0144921]!; Isolectotypes: B! [B 10 0144796], BR!, ENCB!, G!, GH!, HBG!, M!, MEXU(x2)!, P(x2)!, UC!, VT!, WU!, Z!); Oaxaca, cordillera, ca. 1980 m, *H. G. Galeotti* 5440 (Syntypes: B!, G!).

Terrestrial rosette forming plants, flowering to 2 m high. Leaves numerous; sheaths light brown, oblong to semiorbicular, 5.2–6 x 5–5.5 cm, glabrous and lustrous basally, becoming densely white-lepidote distally on both surfaces; blades green, linear-triangular to narrowly triangular, 30–40 x 3.5–4.5 cm, glabrous adaxially, finely appressed white-lepidote abaxially, attenuate, pungent, margin spinose; spines stout, dark to light brown or green, curved, antrorse, with a conspicuous triangular base, ca. 4 mm long, 2–4 cm apart. Inflorescence terminal, erect, very sparsely floccose-lepidote or/to glabrescent; peduncle dark brown, cylindric, ca. 2 cm in diameter basally; peduncle bracts light brown, linear-triangular to triangular, pungent. Staminate inflorescence twice branched, with numerous, divaricate to ascending, 16–35 cm long primary branches, with two short, 2.5–13 cm long secondary branches at the base; floral bracts light brown, ovate-triangular, ca. 1 mm long, sparsely lepidote, acute, margin erose, shorter than the sepals; flowers ascending, sometimes appearing verticillate, subsessile or very short pedicellate; pedicel stout, conical, ca. 1.5 mm long; sepals broadly ovate, ca. 1.5 x 1.4–1.6 mm, obtuse; petals densely black-punctate, elliptic to ovate-elliptic, 2.5–2.8 x 1.9–2 mm, rounded; stamens longer than the petals; filaments greenish, linear-triangular, 2.5–2.8 mm long; anthers greenish, oblong, ca. 1 mm long; ovary vestigial, inconspicuous. Pistillate inflorescence once-branched, with numerous, divaricate to ascending, 12.5–28 cm long primary branches; floral bracts light brown, dark brown toward the base, ovate-triangular, ca. 1.5 mm long, lepidote, margin erose, shorter than the sepals; flowers ascending, densely to laxly disposed, sometimes appearing verticillate, subsessile; sepals ovate to triangular, 1.8–2 x 1.4–1.5 mm, acute; petals narrowly triangular, 3.3–3.4 x 1.4–1.5 mm, acute; staminodes with linear triangular filaments, flattened, ca. 2 mm long; anthers absent; ovary ellipsoid, ca. 2.5 mm long, ca. 1 mm in diameter, glabrous; stigma lobes linear, recurved. Capsule dark brown, ovoid, 7.5–8 mm long, acute, with a stout 2.5–3 mm long pedicel. Seeds reddish brown, oblong, ca. 3.5 mm long, with a circumferential wing.

Specimens examined:—MEXICO. Oaxaca, municipio de San Jerónimo Sosola: 20 km al SE de Asunción Nochixtlán, autopista Oaxaca -Tehuacán, 17°21'26"N, 97°04'20"W, 1830 m, bosque de encino con burseras, en cañada, 11 septiembre 1995, *A. Espejo, A. R. López-Ferrari & J. Ceja* 5319 (IEB[x2], UAMIZ[x2]); municipio de Asunción Nochixtlán: arroyo Tinú, carretera de cuota Oaxaca - Nochixtlán,

17°22'14"N, 97°05'51"W, 1859 m, selva baja en cañada, 10 noviembre 2005, A. Espejo, A. R. López-Ferrari, J. Ceja, A. Mendoza & G. Carnevali 6843 (UAMIZ[x5]).

Distribution and habitat:—*Hechtia galeotti* is an endemic species known until now only from a relative small region in the north-central part of the Mexican state of Oaxaca, in the municipalities of Asunción Nochixtlán and San Jerónimo Sosola, between 1500 and 1860 m elevation (Fig. 4). The species grows in deciduous tropical forests (selvas bajas caducifolias) or dry *Quercus* forests (bosques de encino) with *Bursera* and other tropical trees.

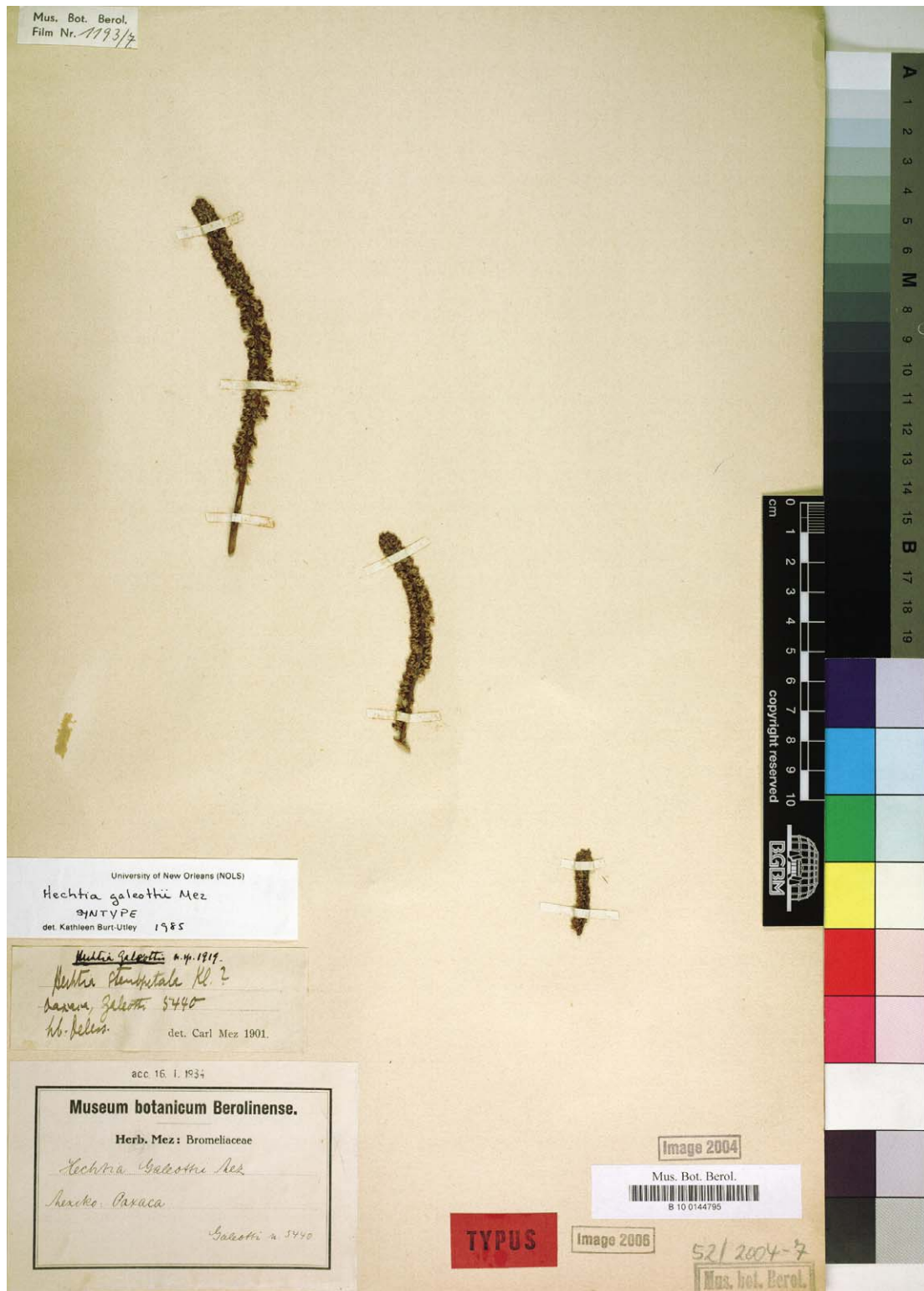


FIGURE 1. Galeotti's 5440 specimen at B.

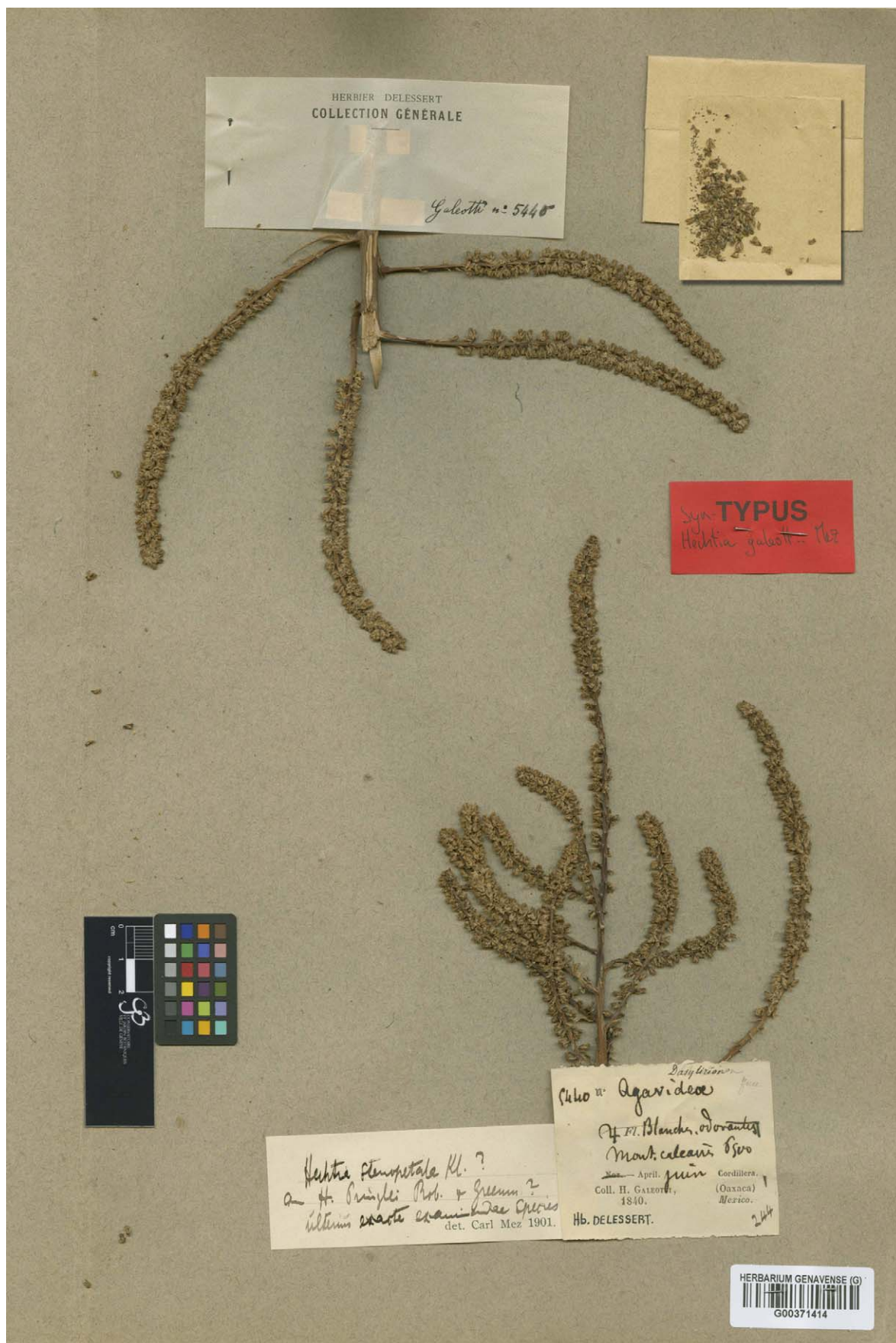


FIGURE 2. Galeotti's 5440 specimen at G.



FIGURE 3. Pringle's 6703 specimen at B.

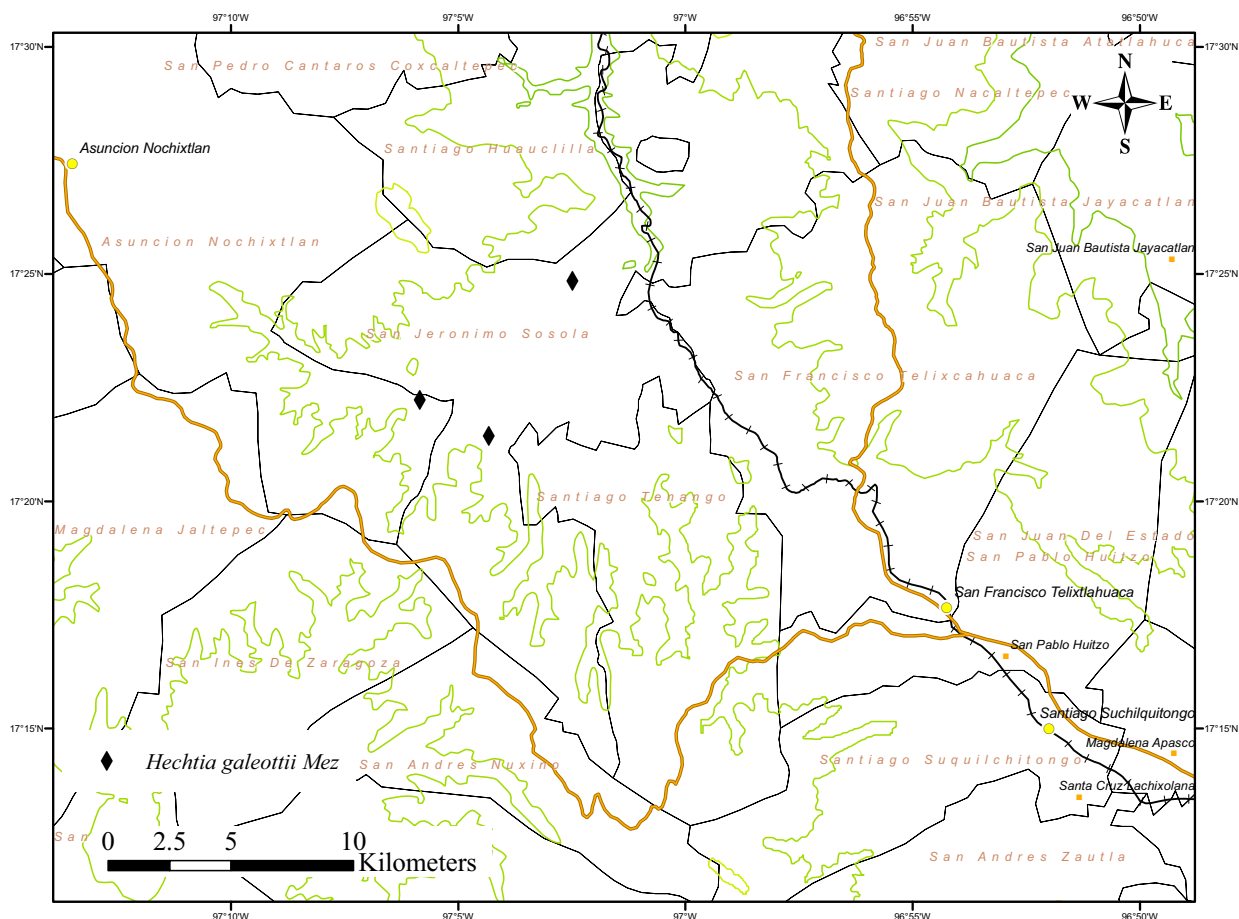


FIGURE 4. Map of known distribution of *Hechtia galeottii* Mez.

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Appendix 1

Original description (protologue) of *Hechtia galeottii*

Folia ad 0.4 m longa, supra glabra subtus in valleculis densissime lepidota pallida, spinis hamatis, vix ultra 4 mm longis, in axillis haud barbigeris horrida. Inflorescentia myriantha, laxè 3 pinnatim panniculata, valde elongata, subcylindrica; ramis elongatissimis usque ad 0.3 m longis mihi visis, fere e basi flores innumeros densissime cylindrice gerentibus, per anthesin vix ultra 8 mm diam. metientibus; bracteolis florigeris ad 2 mm longis, cum sepalis dorso lepidotulis, sepala superantibus, e late ovato late acutis, margine dentatis, suberectis. Flores subsessiles, virentes, utriusque sexus subpatentes, 2-2.5 mm longi; sepalis ad 1.5 mm longis, squamiformi-triangularibus, lepidotulis. Petala ex elliptico foeminea breviter, mascula brevissime acutiuscula, libera. Ovarium glabrum.

Mexico, Oaxaca (*Galeotti* no. 5440), im Tomelin Canyon (*Pringle* no. 6703).