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Taxonomy and Floristics / Taxonomía y Florística

Hechtia cerrostlatilpae (Hechtioideae; Bromeliaceae), a new species from Morelos, Mexico

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Abstract

Background: As a result of botanical explorations carried out for the project Bromeliaceae of Mexico, we collected plants of the genus *Hechtia* within the Sierra de Huautla Biosphere Reserve, in Xochipala, municipality of Tlaquiltenango, Morelos, Mexico. However, this plant does not resemble any known species.
Question: Do the *Hechtia* populations in Xochipala correspond to an undescribed taxon?
Studied species: Species of *Hechtia* previously reported from Morelos and all the taxa with greater morphological similarity to the new proposed taxon.
Study site and date: Xochipala, municipality of Tlaquiltenango, Morelos, Mexico, 2023.
Methods: Our research involved field work, review of herbarium specimens, protologues, and type material of all the species of *Hechtia* distributed in Morelos, in the neighboring states of Puebla and Guerrero, and of the most morphologically similar taxa.
Results: After a careful and detailed review of the living material and herbarium specimens, we conclude that those plants belong to an undescribed taxon that we propose here. A morphological description, images, and a distribution map of *Hechtia cerrostlatilpae* are included, as well as an identification key and a list of examined specimens of all *Hechtia* species known from the state of Morelos.
Conclusions: The discovery of a new species of *Hechtia* in Xochipala, Morelos, Mexico increases the plant diversity of Morelos, particularly at the Sierra de Huautla Biosphere Reserve. *Hechtia cerrostlatilpae* presents unique vegetative and floral characters that allow its recognition as a new species within the genus.
Keywords: Balsas Basin, monocots, Poales, saxicolous, Sierra de Huautla biosphere reserve.

Resumen

Antecedentes: Como resultado de exploraciones botánicas realizadas para el proyecto Bromeliaceae de México, se recolectaron plantas del género *Hechtia* dentro de los límites de la reserva de biosfera Sierra de Huautla en Xochipala, municipio de Tlaquiltenango, Morelos, México. Sin embargo, esta planta no se parece a ninguna especie conocida.
Pregunta: ¿Las poblaciones de *Hechtia* en Xochipala corresponden a un taxón no descrito?
Especies de estudio: Especies de *Hechtia* reportadas para Morelos y todos los taxa morfológicamente más similares al nuevo taxón propuesto.
Sitio y año de estudio: Xochipala, municipio de Tlaquiltenango, Morelos, México, 2023.
Métodos: Nuestra investigación implicó trabajo de campo, revisión de especímenes de herbario, protólogos y material tipo de todas las especies de *Hechtia* distribuidas en Morelos, en los estados vecinos de Puebla y Guerrero y también, de los taxones más similares morfológicamente.
Resultados: Tras una cuidadosa y detallada revisión de material vivo y de ejemplares de herbario, concluimos que estas plantas son un taxón no descrito que aquí proponemos. Se incluye una descripción morfológica, imágenes y un mapa de distribución de *Hechtia cerrostlatilpae*, así como una clave de identificación y una lista de especímenes examinados de todas las especies de *Hechtia* conocidas en el estado de Morelos.
Conclusiones: El descubrimiento de una nueva especie de *Hechtia* en Xochipala, Morelos, México, aumenta la diversidad de plantas en Morelos, particularmente en la reserva de la biosfera Sierra de Huautla. *Hechtia cerrostlatilpae* presenta caracteres vegetativos y florales únicos que permiten su reconocimiento como una nueva especie del género.
Palabras clave: Depresión del Balsas, Monocotiledóneas, Poales, reserva de la biosfera Sierra de Huautla, saxícola.

Bromeliaceae subfam. Hechtioideae Givnish (Givnish *et al*. 2007) includes herbaceous plants with succulent leaves arranged in acaulescent to short-or rarely long-caulescent rosettes, with spinose or rarely minutely serrate to entire margins, lacking stellate chlorenchyma, having unisexual flowers, capsular fruits, and winged to almost naked seeds (Givnish *et al*. 2007, Espejo-Serna *et al*. 2020). The subfamily is distributed from the southern United States to northern Central America, and the entire subfamily is endemic to Megamexico 3 (Rzedowski 1991, Espejo-Serna & López-Ferrari 2018, Espejo-Serna *et al*. 2020). Hechtioideae comprises 98 taxa, 96 of them distributed in Mexico and 94 endemics to the country (Espejo-Serna *et al*. 2020, Gouda *et al*. 2024). The Mexican states with the highest number of species are Oaxaca (30), Puebla (21), Guerrero (14), and Jalisco (11) (Espejo-Serna *et al*. 2020). The genus *Hechtia* Klotzsch (Klotzsch 1835) is a member of this subfamily and Gouda *et al*. (2024) recorded 98 species of *Hechtia* in their list. However, Ramírez-Morillo *et al*. (2018) proposed to divide *Hechtia* (*sensu lato*) in three genera: *Bakerantha* L.B.Sm. (Smith 1934), *Hechtia* (*sensu stricto*), and *Mesoamerantha* I.Ramírez & K.J.Romero (Ramírez-Morillo *et al*. 2018).

As a result of botanical explorations carried out for the project Bromeliaceae of Mexico (Espejo-Serna & López-Ferrari 2018), we collected plants of *Hechtia* in lands of Xochipala, municipality of Tlaquiltenango, in the state of Morelos, Mexico, within the Sierra de Huautla Biosphere Reserve. Initially, we thought that this population could correspond to *Hechtia isthmusiana* Burt-Utley (Burt-Utley 2012), *H. medusae* Hern.-Cárdenas, Siekkinen, López-Ferr. & Espejo (Hernández-Cárdenas *et al*. 2020) or *H. mooreana* L.B.Sm. (Smith 1954). However, after a careful and detailed revision of the living material, as well as herbarium specimens, type material, and protologues of all species of the genus distributed in Morelos and some species of the neighboring states, we conclude that these plants belong to an undescribed taxon that we propose here.

Materials and methods

Staminate and pistillate individuals of the new taxon were collected. The material was prepared for herbarium specimens, analyzed, measured, and then descriptions were prepared. Measurements were mostly taken from dried specimens, but fresh material was included. The vouchers were deposited at UAMIZ and XAL collections (acronyms according to Thiers 2024). We revised herbarium material deposited at FCME, HUMO, IBUG, IEB, MEXU, UAMIZ, and XAL, as well as the protologues, the type material, and herbarium specimens of all *Hechtia* species previously reported from Morelos: *Hechtia caulescens* López-Ferr., Espejo & Mart.-Correa, *H. chichinautzensis* Mart.-Correa, Espejo & López-Ferr., *H. matudae* L.B.Sm., and *H. montis-frigidi* Gonz.-Rocha, Espejo, López.-Ferr. & Cerros (Smith 1956, López-Ferrari *et al*. 2009, Martínez-Correa *et al*. 2010, González-Rocha *et al*. 2014, 2016, Espejo-Serna *et al*. 2020) (Appendix 1). The morphological terms used in the description follow Radford *et al*. (1974) and Scharf & Gouda (2008). To name the vegetation type and the biogeographic provinces where the new species grows, we use the classification proposed by Rzedowski (1978) and Morrone *et al*. (2017) respectively.

Results

Hechtia cerrostlatilpae Hern.-Cárdenas, Espejo & López-Ferr., sp. nov. (Figures 1-3).

Type. Mexico, Morelos, municipio de Tlaquiltenango, reserva de la biosfera Sierra de Huautla, cañada que desemboca al río Amacuzac, aprox. 5.9 km al SW del poblado de Xochipala, 18° 24’ 13” N; 99° 05’ 13.3 W, 780 m, 29 July 2023, *R. A. Hernández-Cárdenas, S. Lara-Godínez & D. Valenzuela-Galván 2757*♂ (Holotype: UAMIZ (6x); Isotype: XAL).

Diagnosis. The new species is similar to *Hechtia medusae* Hern.-Cárdenas, Siekkinen, López-Ferr. & Espejo (Hernández-Cárdenas *et al*. 2020) but differs in the arrangement of the staminate and pistillate inflorescences (twice branched *vs*. once branched), in the number of primary branches in staminate inflorescences (10-15 *vs*. 20-25), in the shape of staminate floral bracts (widely ovate *vs*. triangular to ovate), and in the shape of petals of the pistillate flowers (triangular *vs*. ovate).

Figure 1. *Hechtia cerrostlatilpae* Hern.-Cárdenas, Espejo & López-Ferr. A. Landscape of the Sierra de Huautla biosphere reserve. B-C. Rosettes in the type locality. D. Detail of the basal portion of the rosette. E. Detail of the apical portion of the rosette. (Photographs A-C by R. Hernández Cárdenas; D-E by R. Cerros Tlatilpa).

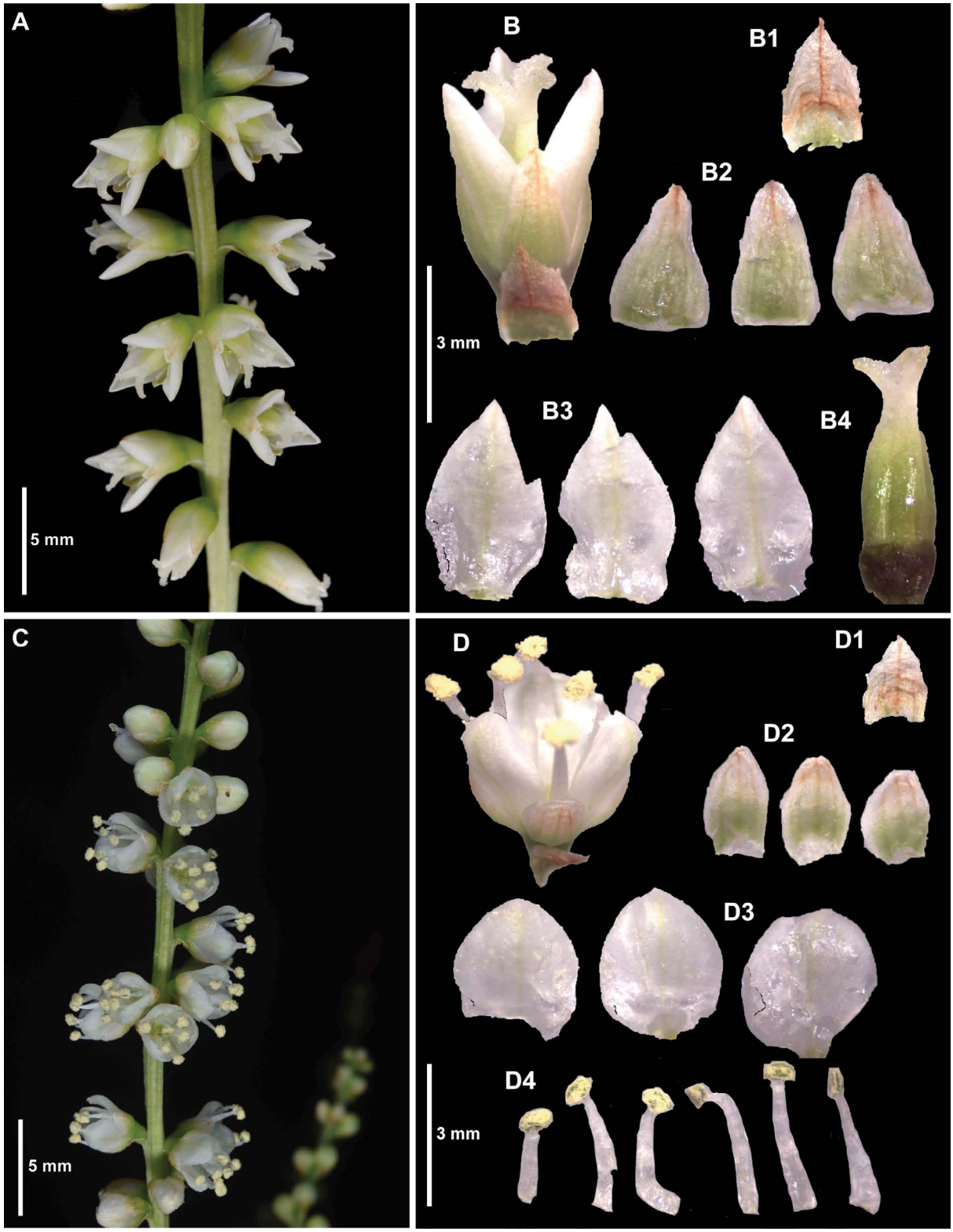

Figure 2. *Hechtia cerrostlatilpae* Hern.-Cárdenas, Espejo & López-Ferr. A. Detail of pistillate spike. B. Pistillate flower. B1. Floral bract. B2. Sepals. B3. Petals. B4. Pistil. C. Detail of staminate spike. D. Staminate flower. D1. Floral bract. D2. Sepals. D3. Petals. D4. Stamens. (Photographs A, C by R. Cerros Tlatilpa; B-B4, D-D4 by R. Hernández Cárdenas).

Description. Plants saxicolous, in flower 130-150 cm high, rosettes largely caulescent, 40-60 cm high, 40-60 cm diameter, cespitose, forming large clumps; stolons10-15 cm long, 2-4 cm wide. Leaves 15-20, recurved towards the apex; *sheaths* white with brown at the base to pale yellow toward the apex, very widely ovate, 2-3 cm long, 2.5-3 cm wide, with minute marginal sharp teeth, glabrous near the base and lepidote distally on both surfaces; *blades* green, narrowly triangular, 25-35 cm long, 1.8-2.3 cm wide at the base, long attenuate, very densely white lepidote on the abaxial surface, white lepidote near the base and towards the apical portion adaxially, margin with divaricate to ascending sharp teeth, green to pale yellow, 2.5-3.5 mm long, 3.5-5 mm wide, 1-1.5 cm apart. Inflorescences terminal, erect, twice branched in staminate and pistillate plants. Staminate inflorescence 100-115 cm long; *peduncle* green, terete, 0.5-0.6 cm diameter, glabrous, internodes 4-9 cm long; *peduncle bracts* green, foliaceous, sheaths widely deltate to deltate, 0.8-1.2 cm long, 1-1.5 cm wide, glabrous on both surfaces, hyaline at the margin, blades linear, 10-17 cm long, 0.3-0.4 cm wide, lepidote on the abaxial surface, glabrous on the adaxial surface, entire, the basal ones larger than the internodes, the upper ones shorter; *primary bracts* light brown, triangular, 1-1.5 cm long, 0.7-1 cm wide when extended, caudate, entire and hyaline at the margin, glabrous on both surfaces; *main axis* 60-68 cm long, internodes 4-8 cm long, ascending to divaricate branches; *primary branches* 10-15, terete, 15-25 cm long, 1-1.2 cm in diameter, *secondary branches* 6-10, terete, 5-8 cm long, 0.8-1 cm in diameter; *floral bracts* green at the base brown toward the apex, widely ovate, 1.5-2 mm long, 1.3-1.5 mm wide, longer than the pedicels, apiculate to acute, entire to erose at the margin, glabrous on both surfaces. Staminate flowers more than 30; *pedicels* 0.5-0.8 mm long; *sepals* green at the base, brown toward the apex, ovate, 1.8-2.2 mm long, 1.5-1.8 mm wide, obtuse, hyaline and entire, glabrous on both surfaces; *petals* white, widely elliptic to orbicular, 2.7-3.2 mm long, 2.3-2.8 mm wide, obtuse at the apex, entire, glabrous on both surfaces; *stamens* equal in length; *filaments* white, narrowly oblong, flattened, 2.5-2.8 mm long; *anthers* green in living and dry material, oblong, 0.6-0.8 mm long, versatile; pistillode inconspicuous, green, glabrous. Pistillate inflorescence 95-110 cm long; *peduncle* green, terete, 0.5-1.2 cm in diameter, glabrous, internodes 4-8 cm long; *peduncle bracts* green, foliaceous, sheaths widely deltate to deltate, 1-1.3 cm long, 1-1.3 cm wide, glabrous on both surfaces, hyaline at the margin, blades linear, 4-18 cm long, 0.3-0.5 cm wide, lepidote on the abaxial surface, glabrous on the adaxial surface, entire, the basal ones larger than the internodes, the upper ones shorter; *primary bracts* light brown, triangular, 1-1.2 cm long, 0.6-1 cm wide when extended, caudate, entire and hyaline at the margin, glabrous on both surfaces; *main axis* 50-70 cm long, internodes 3-8 cm long, ascending to divaricate branches; *primary branches* 12-15, terete, 6-23 cm long, 1-1.2 cm in diameter; *secondary branches* 2-6, terete, 2-6 cm long, 0.8-1 cm in diameter; *floral bracts* green at the base brown toward the apex, ovate, 2.5-3 mm long, 1.8-2.2 mm wide, longer than the pedicels, acute, hyaline and entire to erose at the margin, glabrous on both surfaces. Pistillate flowers more than 30; *pedicels* 1-1.5 mm long; *sepals* green at the base, brown toward the apex, ovate, 2.6-3 mm long, 2-2.5 mm wide, acute, hyaline and entire, glabrous on both surfaces; *petals* white, brown with white when dry, triangular, 3.7-4 mm long, 2.2-2.5 mm wide, acute, entire, glabrous on both surfaces; *staminodes* rudimentary, white, narrowly triangular, 2-2.5 mm long; *ovary* superior, green oblong, 3.2-3.8 mm long, 1.8-2.3 mm diameter, glabrous; *stylar* branches white, recurved, slender, 1-1.2 mm long, stigmas papillose. Capsules and *seeds* not seen.

Distribution and ecology. *Hechtia cerrostlatilpae* is only known from the municipality of Tlaquiltenango, in the south-western region of the state of Morelos, in the Sierra de Huautla Biosphere Reserve and the Balsas Basin Biogeographic Province (according to Morrone *et al*. 2017) in Mexico (Figure 3). *Hechtia cerrostlatilpae* is a saxicolous plant that grows in tropical deciduous forest, with some species of Anacardiaceae R.Br. (*Cyrtocarpa* Kunth and *Pseudosmodingium* Engl.), Apocynaceae (*Plumeria* Tourn. ex L.), Asparagaceae (*Agave* L.), Burseraceae (*Bursera* Jacq. ex L.), Cactaceae (*Pachycereus* (A.Berger) Britton & Rose, *Stenocereus* (A.Berger) Riccob., and *Mammillaria* Haw.), Fabaceae (*Lysiloma* Benth., and *Conzattia* Rose), and Malvaceae (*Ceiba* Mill.), at elevations between 770 and 790 m asl.

Conservation status. Due to the lack of detailed information on the species distribution and abundance, we cannot assess *Hechtia cerrostlatilpae* to some category of the IUCN (2024) guidelines.

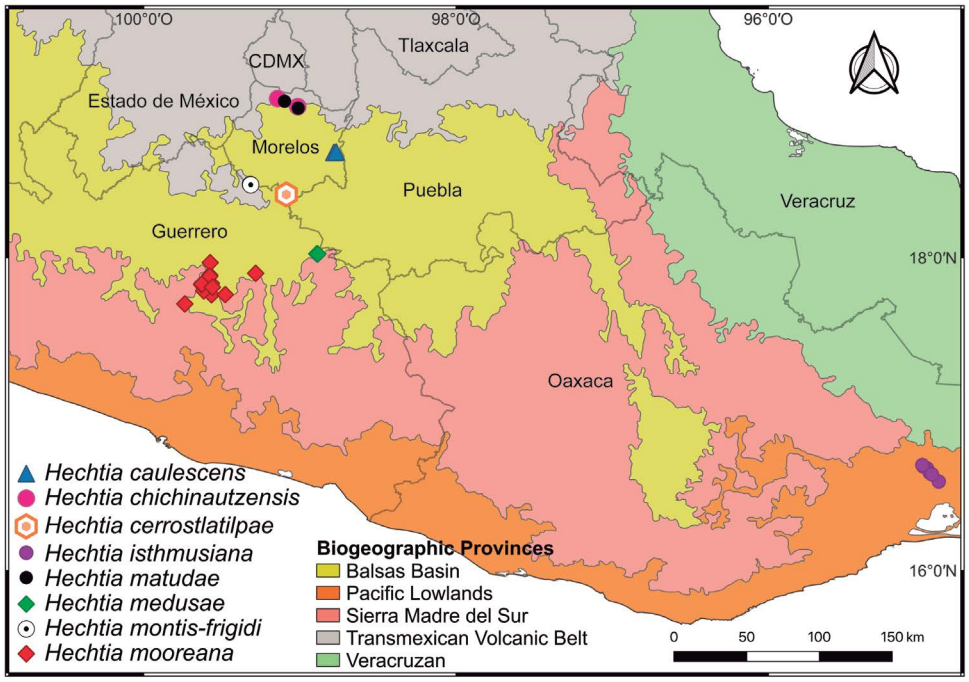

Figure 3. Distribution map of the *Hechtia* species present in the state of Morelos and of *H. isthmusiana*, *H. medusae*, and *H. mooreana.*

Phenology. The plants of *Hechtia cerrostlatilpae* blooms from July to August.

Etymology. The specific epithet honors Dra. Rosa Cerros Tlatilpa, botanist colleague and friend, who has made significant contributions to the knowledge of the flora and vegetation of the state of Morelos and the Sierra de Huautla region, where the new species grows.

Additional specimens examined. Mexico, Morelos, municipio de Tlaquiltenango, reserva de la biosfera Sierra de Huautla, cañada que desemboca al río Amacuzac, aprox. 5.9 km al SW del poblado de Xochipala, 18° 24' 13" N; 99° 05' 13.3 W, 780 m, 29 July 2023, *R. A. Hernández-Cárdenas, S. Lara-Godínez & D. Valenzuela-Galván 2754*♀ (UAMIZ, XAL).

Discussion

The new species is characterized by its rosettes largely caulescent, cespitose, and forming large clumps, the arrangement of the inflorescence in staminate and pistillate plants (twice branched), the shape of the floral bracts of the staminate inflorescence (widely ovate), the shape of petals in staminate flowers (widely elliptic to orbicular), the number of the primary branches of the pistillate inflorescence (12-15), and the shape (triangular) and length of petals in pistillate flowers (3.7-4 mm). Including the new species herein proposed as new, the subfamily Hechtioideae comprises 100 taxa, 97 of them distributed in Mexico and 95 endemics to the country.

Hechtia cerrostlatilpae shares some similarities with *H. isthmusiana*, *H. medusae*, and *H. mooreana* including the rosettes largely caulescent and the blades narrowly triangular and densely white lepidote abaxially. However, *Hechtia cerrostlatilpae* differs from *H. isthmusiana* in the length of the leaf blade (25-35 *vs*. 12-32 cm), in the arrangement of the inflorescence in staminate and pistillate plants (twice branched *vs*. once branched), in the length of the primary branches of the staminate plants (15-25 *vs*. 2.5-7.5 cm), in the shape of the floral bracts of the staminate inflorescence (widely ovate *vs*. ovate to oblong), and in the length of the primary branches of the pistillate plants (6-

23 *vs*. 1.5-3.5 cm). *Hechtia cerrostlatilpae* differs from *H. medusae* in the length of the leaf sheaths (2-3 *vs*. 3-4 cm) and leaf blades (25-35 *vs*. 12-25 cm), in the width of the floral bracts of the staminate inflorescence (1.3-1.5 *vs*. 1.5-2 mm), in the shape of petals in staminate flowers (widely elliptic to orbicular *vs*. ovate to elliptic), in the wide of the sepals (2-2.5 *vs*. 1.8-2 mm), and the size of petals (3.7-4 × 2.2-2.5 *vs*. 4-4.5 × 2.5-2.8 mm) of the pistillate flowers. *Hechtia cerrostlatilpae* differs from *H. mooreana* in the shape (very widely ovate *vs*. suborbicular to ovate) and size (2-3 × 2.5-3 *vs*. 3.8-4 × 3.6-4 cm) of the leaf sheath, in the width of the leaf blades (1.8-2.3 *vs*. 0.8-1.5 cm), in the arrangement of the inflorescence in staminate and pistillate plants (twice branched *vs*. once branched), in the shape of the floral bracts of the staminate inflorescence (widely ovate *vs*. narrowly triangular), and in the size of the sepals of the pistillate flowers (2.6-3 × 2-2.5 *vs*. 1.9-2.2 × 1-1.2 mm), see also Table 1.

Table 1. Morphological comparison among *Hechtia cerrostlatilpae*, *H. isthmusiana*, *H. medusae*, and *H. mooreana*.

Characters	***H. cerrostlatilpae***	***H. isthmusiana***	***H. medusae***	***H. mooreana***
Leaf sheath	very widely ovate; 2-3 × 2.5-3 cm	widely depressed ovate; 2-4 × 4-8 cm	widely ovate to depressed ovate; 3-4 × 2-3 cm	suborbicular to ovate; 3.8-4 × 3.6-4 cm
Leaf blade size (cm)	25-35 × 1.8-2.3	12-32 × 1.5-3	12-25 × 1.5-2	15-35 × 0.8-1.5
Staminate plants (♂)				
Inflorescences	twice branched	once branched	once branched	once branched
Primary branches number	10-15	ca. 14	20-25	10-15
Primary branches length (cm)	15-25	2.5-7.5	10-20	ca. 10
Floral bracts	widely ovate; 1.5-2 × 1.3-1.5 mm	ovate to oblong; 2-3.5 × 1-2.5 mm	ovate to triangular; 1.9-2.3 × 1.5-2 mm	narrowly triangular; 1-1.2 × 0.9-1 mm
Sepals	ovate; 1.8-2.2 × 1.5-1.8 mm	ovate-triangular; 1.5-2.7 × 1-1.8 mm	ovate; 2.2-2.6 × 1.8-2 mm	ovate to triangular; 1.5-1.7 × 0.6-0.8 mm
Petals	widely elliptic to orbicular; 2.7-3.2 × 2.3-2.8 mm	elliptic to ovate-elliptic; 3.5-4.5 × 1.9-3.3 mm	ovate to elliptic; 4.5-4.8 × 2.5-2.8 mm	elliptic; 2.9-3.1 × 1.6-1.8 mm
Pistillate plants (♀)				
Inflorescences	twice branched	once branched	once branched	once branched
Primary branches number	12-15	ca. 19	15-25	25-32
Primary branches length (cm)	6-23	1.5-3.5	3-10	3-10
Floral bracts	ovate; 2.5-3 × 1.8-2.2 mm	ovate-triangular to oblong; 2-3.5 × 1.2-2 mm	ovate to triangular; 2-2.3 × 1.8-2 mm	unknown
Sepals	ovate; 2.6-3 × 2-2.5 mm	triangular; 1.8-2.5 × 1.2-1.5 mm	ovate to triangular; 2.5-3 × 1.8-2 mm	ovate; 1.9-2.2 × 1-1.2 mm
Petals	triangular; 3.7-4 × 2.2-2.5 mm	triangular; 4-5 × 1.5-2.5 mm	ovate; 4-4.5 × 2.5-2.8 mm	triangular; 3.2-3.4 × 1-1.1 mm

In order to facilitate the recognition of all the species of *Hechtia* present in the state of Morelos (González-Rocha *et al*. 2016), we include an identification key.

Artificial key to the species of Hechtia from Morelos, Mexico.

1. Basal primary bracts longer than the primary branches; petals pink to magenta ……..……..... *H. matudae*

1’. Basal primary bracts equal to shorter than the primary branches; petals white to green …..……..……..... 2

2. Staminate plants ……..……...……..…….. 3

2’. Pistillate plants …………….……………………...……………….…………..…………………………..…. 6
3. Peduncle lepidote …………………………………………………………………………………………….…. 4
3’. Peduncle glabrous ……………………………………...………………………..……………………..…. 5
4. Inflorescences twice branched; primary branches 2.6-5.4 cm long ……………………….........*H. chichinautzensis*
4’. Inflorescences thrice branched; primary branches 9-18 cm long ……...…...…………………….. *H. montis-frigidi*
5. Floral bracts triangular, 2.2-2.5 mm long; petals elliptic, 3.5-4 mm long ……….………………….... *H. caulescens*
5’. Floral bracts widely ovate, 1.5-2 mm long; petals widely elliptic to orbicular; 2.7-3.2 mm long .... *H. cerrostlatilpae*
6. Peduncle lepidote …………………………………………………………………………………………….…. 7
6’. Peduncle glabrous ……………………………...………………………………..……………………..…. 8
7. Primary branches 2.2-5.5 cm long ……………………………………..…...…………………... *H. chichinautzensis*
7’. Primary branches 6-23 cm long …………………………………….....…...…………………….. *H. montis-frigidi*
8. Sepals 1.3-1.7 mm wide; petals narrowly triangular, 1.1-1.4 mm wide ……...….……………………..... *H. caulescens*
8’. Sepals 2.0-2.5 mm wide; petals triangular, 2.2-2.5 mm wide ………...……. …………………....*H. cerrostlatilpae*

Acknowledgements

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Appendix 1. Examined specimens.

Hechtia caulescens López-Ferr., Espejo & Mart.-Correa. Morelos: *E. González-Rocha et al. 147*♂ (UAMIZ), *148*♂ (UAMIZ); *E. González-Rocha & F. Bonilla 151*♀ (UAMIZ); *G. Hernández-Barón et al. 230A*♂ (HUMO).

Hechtia chichinautzensis Mart.-Correa, Espejo & López-Ferr. Morelos: *A. Aguilar 1*♀ (FCME); *E. Guízar Nolazco 2769*♀ (IEB, MEXU); *R. Hernández-Cárdenas et al. 189* (UAMIZ); *S. Magallón s.n.*♀ (FCME); *N. Martínez Correa et al. 38*♀ (IEB); *F. Miranda 1255*♂ (MEXU); *M. Ortiz Olguin 88*♂ (FCME); *B. Reiche 325*♂ (MEXU); *M. Rocio Vázquez s.n.*♂ (FCME); *M. Rojas Aréchigi*♂ (MEXU); *B. Rojas Soto s.n.*♀ (FCME).

Hechtia isthmusiana Burt-Utley. Oaxaca: *P. Carrillo-Reyes & D. Cabrera-Toledo 6592-B*♀ (IBUG); *C. Gallardo Hernández 1489*♂ (MEXU), *1490*♀ (MEXU); *J. Meave del Castillo & E. Pérez-García 1766*♀ (MEXU); *E. Pérez García 928*♂ (MEXU), *1387*♂ (MEXU); *F. Sánchez et al. 708*♂ (MEXU), *1303*♂ (MEXU); *A. Saynes et al. 3289*♀ (MEXU).

Hechtia matudae L.B.Sm. Morelos: *A. Espejo & J. Espejo 6946*♂ (UAMIZ); *A. Ramírez G. 355*♂ (FCME, HUMO); *J. Vázquez 3638*♂ (MEXU).

Hechtia medusae Hern.-Cárdenas, Siekkinen, López-Ferr. & Espejo. Guerrero: *J. Calonico 829*♀ (FCME); *A. Rincón 108*♀ (FCME); *A. Siekkinen et al. 1424*♂ (UAMIZ), *1427*♀ (UAMIZ), *1428*♀ (MEXU), *1431*♂ (UAMIZ).

Hechtia montis-frigidi Gonz.-Rocha, Espejo, López.-Ferr. & Cerros. Morelos: *E. González-Rocha et al. 249*♀ (MEXU), *250*♀ (IEB, MEXU), *251*♀ (IEB); *A. R. López-Ferrari et al. 2205*♀ (UAMIZ).

Hechtia mooreana L.B.Sm. Guerrero: *J. Calonico 6925*♂ (FCME); *G. Castelo & C. Campos 33*♂ (FCME), *40*♀ (FCME), *90*♀ (FCME); *R. Fonseca 130*♀ (FCME); *C. Franco 11*♀ (FCME); *M. Gual 290*♂ (FCME), *291*♀ (FCME); *A. López-Ferrari et al. 3136*♀ (UAMIZ); *F. Miranda 3962*♀ (MEXU); *S. Peralta 218*♀ (FCME); *J. Rzedowski 22627*♀ (IEB); *Saldívar-Sánchez s.n.*♀ (FCME); *S. Valencia 1205*♀ (FCME); *A. Vargas-Pérez 169*♀ (FCME); *C. Velázquez 90*♀ (FCME).