Anales del Instituto de Biología Universidad Nacional Autónoma de México,
Serie Botánica 70(1): 1-12.1999

Novelties in Mexican Orchidaceae, mainly from the Uxpanapa-Chimalapa region, Veracruz and Oaxaca

Gerardo A. Salazar*

Resumen. Un estudio de las Orchidaceae de la región de Uxpanapa-Chimalapa, en el Istmo de Tehuantepec, estados de Veracruz y Oaxaca, México, llevó al descubrimiento de nuevas especies y nuevos registros para el país y mostró la necesidad de algunos cambios nomenclaturales. En este trabajo se describe e ilustra a dos especies nuevas (*Encyclia uxpanapensis* y *Habenaria matudae*). Dos géneros (*Eltroplectris* y *Kegeliella*) y seis especies (*Campylocentrum hondurense*, *Eltroplectris roseoalba*, *Epidendrum buenaventurae*, *Kegeliella atropilosa*, *Oncidium subcruciforme* y *Schiedeella wercklei*) son registrados por primera vez en México. *Odontoglossum subcruciforme* es transferida a *Oncidium* y se propone un nombre nuevo (*Notylia leucantha*) en substitución de *Notylia multiflora* Hook. non Lindl. Se designa un lectotipo para este último binomio.

Palabras clave: Orchidaceae, Mesoamérica, México, Uxpanapa, Chimalapa, Veracruz, Oaxaca.

Abstract. A study of the Orchidaceae of the Uxpanapa-Chimalapa region, in the Isthmus of Tehuantepec, states of Veracruz and Oaxaca, Mexico yielded new species, new records for the country, and showed that several nomenclatural changes are required. In this paper two new species (*Encyclia uxpanapensis* and *Habenaria matudae*) are described and illustrated. Two genera (*Eltroplectris* and *Kegeliella*) and six species (*Campylocentrum hondurense*, *Eltroplectris roseoalba*, *Epidendrum buenaventurae*, *Kegeliella atropilosa*, *Oncidium subcruciforme*, and *Schiedeella wercklei*) are reported for the first time from Mexico. *Odontoglossum subcruciforme* is transferred to *Oncidium* and a new name (*Notylia leucantha*) is proposed to replace *Notylia multiflora* Hook. non Lindl. A lectotype is designated for the latter binomial.

Key words: Orchidaceae, Mesoamerica, Mexico, Uxpanapa, Chimalapa, Veracruz, Oaxaca.

* Departamento de Botánica, Instituto de Biología, Universidad Nacional Autónoma de México. Apartado postal 70-367, 04510 México, D.F. México. Current address: Jodrell Laboratory, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3DS, United Kingdom.

The Uxpanapa-Chimalapa region is located in the Atlantic watershed of the Isthmus of Tehuantepec, encompassing portions of the states of Veracruz (the Uxpanapa section in the north) and Oaxaca (the Chimalapa section in the south). The region, which covers some 770 000 ha, is physiographically complex and includes lowland flats, steep hilly terrains, and relatively high sierras in an altitudinal range of 100 to 2250 m above sea level. Such a rough landscape displays a mosaic of plant formations, including evergreen and semi-evergreen tropical rain forest, lowland oak and pine forests, montane pine-oak forest, and cloud forest (Márquez *et al.*, 1981; Wendt, 1989, 1997). Physiographically and floristically, the region might be considered as the northern limit of Mesoamerica, as it includes the northernmost and westernmost extension of the Sierra Madre of Chiapas. The latter forms part of the Transisthmian Ranges (Rzedowski, 1978), which run across all of Central America. Many definitely Mesoamerican plant taxa (including several orchids) meet there the northern limit of their distribution (see, e.g., the introduction to *Flora Mesoamericana* by Davidse *et al.*, 1995).

The Uxpanapa-Chimalapa region contains some of the largest tracts of undisturbed lowland and montane rain forests remaining in Mexico (mostly in Chimalapa). Much of what is known about the flora and vegetation of the region has been summarised by Márquez *et al.* (1981) and Wendt (1989, 1997). Wendt (1997) has estimated that some 3500 species of vascular plant species may occur there, but noted that the botanical inventory is still far from complete.

In the course of a study aimed at the preparation of a complete inventory of the Orchidaceae present in the Uxpanapa-Chimalapa region (Salazar and Hágsater, unpublished data), several undescribed species and various genera and species that had not been previously recorded for Mexico were found. A few other taxa were shown to require nomenclatural changes to comply with current taxonomy. These novelties and changes are presented here. Records of these taxa from other areas in Mexico are also included.

Campylocentrum hondurense Ames, Schedul. Orchid. 5: 37. 1923. TYPE: **HONDURAS.** Lancetilla Farm near Tela, 250 ft alt., Mar. 16, 1923, *O. Ames II 210* (holotype **AMES**).

Campylocentrum steyermarkii Foldats, Acta Bot. Venez. 3: 316. 1968. TYPE: **VENEZUELA.** TACHIRA: El Piñal, Río Frío, 250-300 m alt., Aug. 27, 1966, *J. A. Steyermark and M. Rabe 96715* (holotype **VEN**).

Campylocentrum hondurense had been recorded previously from Belize, Honduras, Peru, and Venezuela (Carnevali and Ramírez, 1993). In Mexico, it was found for the first time in the bordering area of Veracruz and Oaxaca in the Uxpanapa-Chimalapa region, north of the Sierra de Tres Picos. Shortly afterwards it was also collected in Chiapas (G. Carnevali, pers. comm. 1997).

This dwarf species lives as a twig-epiphyte in tropical rain forest at 100-300 m altitude. The flowers are cleistogamous and developing fruits with persistent floral

segments were observed from March to May. It is easily distinguished from its relatives by the stems less than 15 mm long, linear-elliptic leaves up to 7 mm wide, distichous racemes bearing 3-10 flowers, and spur conspicuously longer than the floral segments.

Specimens examined. **MEXICO.** CHIAPAS: Cascadas de Agua Azul, 17°15'08" N, 92°06'33" W, alrededores de la cascada, epífita en ramitas, con frutos, May 1, 1997, *G. Carnevali et al. 4399* (**AMO, CICY, MEXU**). OAXACA: municipio de Santa María Chimalapa, al pie de la ladera norte de la Sierra de Tres Picos, 210 m, April 1, 1996, *G.A. Salazar et al. 5529* (**AMO**). (Another plant, sterile, was seen in the Veracruz side a few kilometres north of the Chimalapa locality.)

Eltroplectris roseoalba (Rchb.f.) Hamer et Garay, Las Orquídeas de El Salvador I: 160.1974.

Pelexia roseoalba Rchb.f., Bonplandia 2: 11. 1854. TYPE: **VENEZUELA.** Caracas, *Wagener s.n.* (holotype **W-R**, microfiche!).

Centrogenium roseoalbum (Rchb.f.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6: 54. 1919.

This genus had not been previously recorded in Mexico. The species was found in tropical deciduous forest and pine-oak forest from 700 to 1300 m altitude. Flowering was recorded in October.

Eltroplectris roseoalba is also known from Guatemala, El Salvador, Colombia, Venezuela, Bolivia and Brazil. It is distinguished from other Mexican Spiranthinae by the large pink flowers with a definite spur and recurved tepal apices, and the flowering occurring when the plant bears functional leaves. *Sacoila lanceolata* (Aubl.) Garay also has spurred flowers which are usually pink, but in this species the apices of the perianth segments are not recurved and the flowers open after the leaves are shed.

Specimens examined. **MEXICO.** CHIAPAS: municipio de Cintalapa de Figueroa, km 22 de la carretera Tapanatepec-Tuxtla Gutiérrez, 16°27'09.4" N, 94°05'06.7" W, 700 m, Oct. 12, 1995, *J. L. Panero and C. Clevinger 6229* (**MEXU**). OAXACA: municipio de Santa María Chimalapa, cabecera del Arroyo de las Señoritas, ca. 7 km en línea recta al NW de Benito Juárez, ca. 43 km en línea recta al NNE de San Pedro Tapanatepec, 16°45' N, 94°11' W, 1300 m, Oct. 26, 1985, *S. Maya 2409* (**CHAPA**).

Encyclia uxpanapensis Salazar, sp. nov. TYPE: **MEXICO.** VERACRUZ: municipio de Minatitlán, Cerro Blanco, ca. 7 km al NE de Uxpanapa en el camino al Poblado 15, 17°14' N, 94°09' W, 450 m, cima del cerro, muy pedregosa con afloramientos de caliza, selva de ca. 10-15 m de altura con *Pseudobombax, Coccoloba, Amphitecna regalis, Plumeria rubra, Guettarda combsii*, etc., May 29, 1983, *T. Wendt, A. Villalobos, and I. Navarrete 4168* (holotype **CHAPA**; isotype **AMO.**) (Fig. 1.)

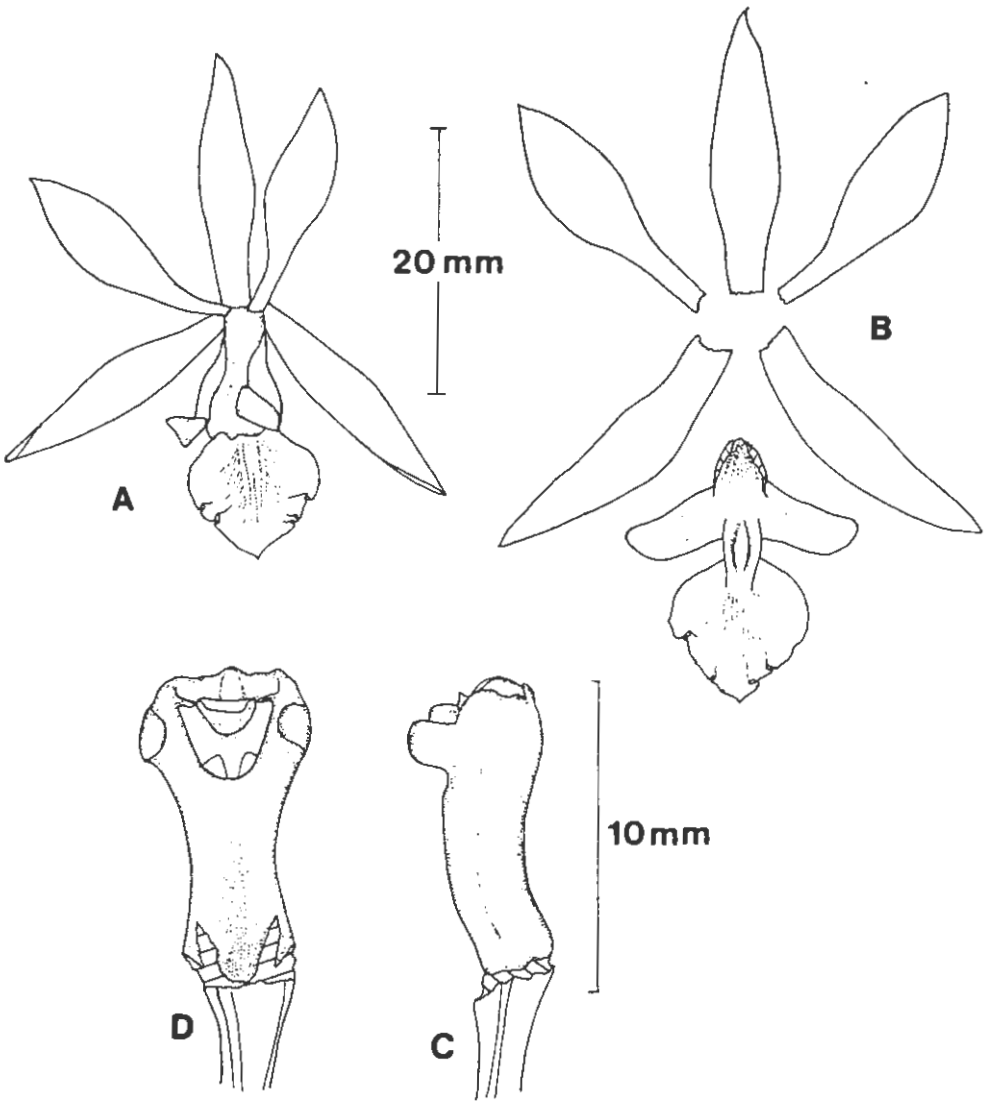

Fig. 1. *Encyclia uxpanapensis*, from the type (*Wendt et al. 4168*). A, flower. B, perianth segments, spread out. C, column, from side. D, column, from bottom.

A *E. ceratisti* (Lindl.) Schltr. rhachidi inflorescentiae glabro, sepalis tenuioribus, lobo mediano labelli immaculato, obtuso, apiculato, auriculis columnae prominentibus, subquadrato-rotundatis differt; a *E. chiapasensi* Withner et D.G.Hunt ovario glabro, sepalis petalisque viridibus, lobis lateralibus labelli oblongis tenuioribus, callo glabro et columna auriculata differt.

Plant about 35 cm in height without the inflorescence. Roots white, terete, flexuous, 2-3 mm in diameter. Pseudobulbs conical-ovoid, 4-6 cm long, 2-3 cm in diameter, bearing three leaves at the apex and almost completely concealed by several fibrous sheaths. Leaves ensiform, conduplicate at base, rounded-obtuse at the somewhat oblique apex, chartaceous, with a low median keel on the underside, 26-30 X 2-3 cm. Inflorescence a terminal panicle to ca. 1 m long, with many (20 or more) simultaneous flowers; peduncle and rachis completely glabrous; bracts of the peduncle chartaceous, brownish-yellow, tubular, subacute, shortly aristate, the lowermost 4-5 imbricating, the others spaced apart, 18-25 mm long; bracts at the base of the branches chartaceous, clasping, ovate, acute, 3-13 mm long. Floral bracts scarious, brownish, ovate, acute, 2-3.5 mm long. Flowers resupinate, 3-3.5 cm in diameter; sepals and petals green, lip white, the lateral lobes with a central purplish-red blotch and the midlobe with radiating, purplish-red veins that do not reach the margin, the callus and the anther yellow. Ovary glabrous, straight, somewhat tapering to the base, 1.5-2 cm long, ca. 1 mm in diameter near the middle. Sepals and petals spreading, 7-veined. Dorsal sepal shallowly concave, lanceolate-elliptic, acuminate, 20-21 X 4.5-5 mm. Lateral sepals shallowly concave, obliquely lanceolate-elliptic, narrowly acute and minutely aristate, 20-21 X 4.5 mm. Petals slightly convex, spathulate-elliptic, shortly acuminate, 20 x 5.3-5.5 mm. Lip basally fused to the column for ca. 1 mm, deeply 3-lobed, 17 mm total length, 17 mm wide across the flattened lateral lobes; lateral lobes clasping the sides of the column, strongly reflexed on the apical third, when flattened divergent, oblong-triangular, obliquely obtuse, 9 mm long (from the base of lip), 3 mm wide at the middle of the free portion; midlobe separated from the lateral lobes by a conspicuous isthmus ca. 2 X 2.5 mm, broadly ovate-suborbicular, rounded at base, obtuse and shortly apiculate at apex, margins wavy, crenulate, 10.5 X 10 mm, with 5 central, smooth, prominent veins running down to the apical third, the central one reaching the apex, the lateral ones much branching; callus glabrous, situated mostly on the isthmus, somewhat fleshy, with an elliptic longitudinal excavation, ca. 4.5 mm long. Column slightly recurved, conspicuously broadened towards the apex, dorsiventrally compressed, 9 mm long, 5 mm maximum width, with a subquadrate, rounded, deflexed auricle ca. 1.6 X1.4 mm at each side near the apex (the position of these auricles corresponds exactly with the sinuses between the lateral lobes and the isthmus of the lip); column apex shallowly and broadly emarginate, with a median triangular, rounded apicule ca. 0.5 mm long. Anther 4-celled, more or less flattened from the front, subquadrate in outline, emarginate, ca. 2 X 2.3 mm. Pollinia 4 in two pairs, hard, yellow, strongly compressed laterally, obliquely ovate-triangular; each pair united to a linear, granulose caudicle shorter than the pollinia. *Rostellum* large, more or less ovate, rounded, somewhat deflexed, bearing a semicircular viscarium. Stigma obtriangular, concave, with prominent lateral lobes. Capsule not seen.

This new species was found in low tropical rain forest on limestone outcrops at 450 m altitude, in an area that had remained unexplored. It is similar to *E. ceratistes* (Lindl.) Schltr., but the latter is distinguished by the verruculose rachis and the

minute, triangular auricles ca. 7 X 7 cm (see Dressler and Pollard, 1974). On the other hand, in Mexico *E. ceratistes* lives in humid oak forests and cloud forests above 1000 m altitude. *Encyclia chiapasensis* Withner et D.G. Hunt, another recently described species similar to *E. ceratistes* (Withner and Hunt, 1994), differs from *E. uxpanapensis* in the rough ovary, the brown sepals and petals, the proportionately shorter and broader lobes of the lip, the puberulent callus and the complete lack of auricles in the column.

The specific epithet refers to the Uxpanapa region, where the new species was found.

Epidendrum buenaventurae F.Lehm. et Kraenzl., Engler Bot. Jahrb. 26: 470. 1899. TYPE: **COLOMBIA**. VALLE DEL CUACA: Río Dagua, Buenaventura, 300-500 m, *F. C. Lehmann 8313* (isotype **NY**).

This member of the *E. nocturnum* Jacq. Complex can be distinguished by the relatively small plants with up to five leaves per stem, the sublinear, thin, not coriaceous leaves that are entirely purple on the underside, and the small flowers (floral segments 40-46 mm long). The Mexican specimens match well the isotype at NY and are indistinguishable from modern Colombian collections examined in AMO. The species has been recorded previously only from the Pacific slope of Colombia and Ecuador, and its discovery in Mexico suggests a noticeable geographical disjunction. However, the floristic inventory in Central America is still incomplete and the species could eventually be found there.

In Mexico *E. buenaventurae* has only been found in the Uxpanapa-Chimalapa region, living as an epiphyte in tropical rain forest at 150-300 m above sea level. It has been collected in flower in January and February.

Specimens examined. **MEXICO**. OAXACA: municipio de Santa María Chimalapa, región del Río Verde en área de explotación forestal, ca. 8-10 km en línea recta al N de Santa María, al N del Río Verde y al S del Arroyo Hamaca, 17°0' N, 94°41' W, 300 m, Jan. 29, 1986, *H. Hernández 2037* (**CHAPA**). VERACRUZ: municipio de Jesús Carranza, región de Uxpanapa, cerca de Rancho Alegre sobre el brazo oriental del Río Solosúchil, junto a una milpa al pie del lomerío al norte de la Sierra de Tres Picos, 17°10' N, 94°29' W, 180 m, March 30, 1996, G.A. *Salazar et al. 5530* (**AMO**).

Habenaria matudae Salazar, sp. nov. TYPE: **MEXICO**. CHIAPAS: Nuevo Amatenango, 1300 m, Jul. 17-20, 1941, *E. Matuda 4728* (holotype **MEXU**). Fig. 2.

A *H. crassicorni* plantae perparvae, spica secunda laxe 5-9-flora, floribus minimis, viridibus, ovario graciliter cylindraceo-fusiformi brevi, in lineis papilloso (papillis conicis brevibus), usque ad 13 mm longo, sepalis carinatis, carina et margo papillosis, 5.5 mm longis, petalis labelloque glabris (colliculatis), calcare graciliter usque ad 18 mm longo differt.

Plant terrestrial, 17-22 cm in height; upper part of stem, rachis, leaf margins, ovary and dorsal keel and margins of the sepals provided with short, conical papil-

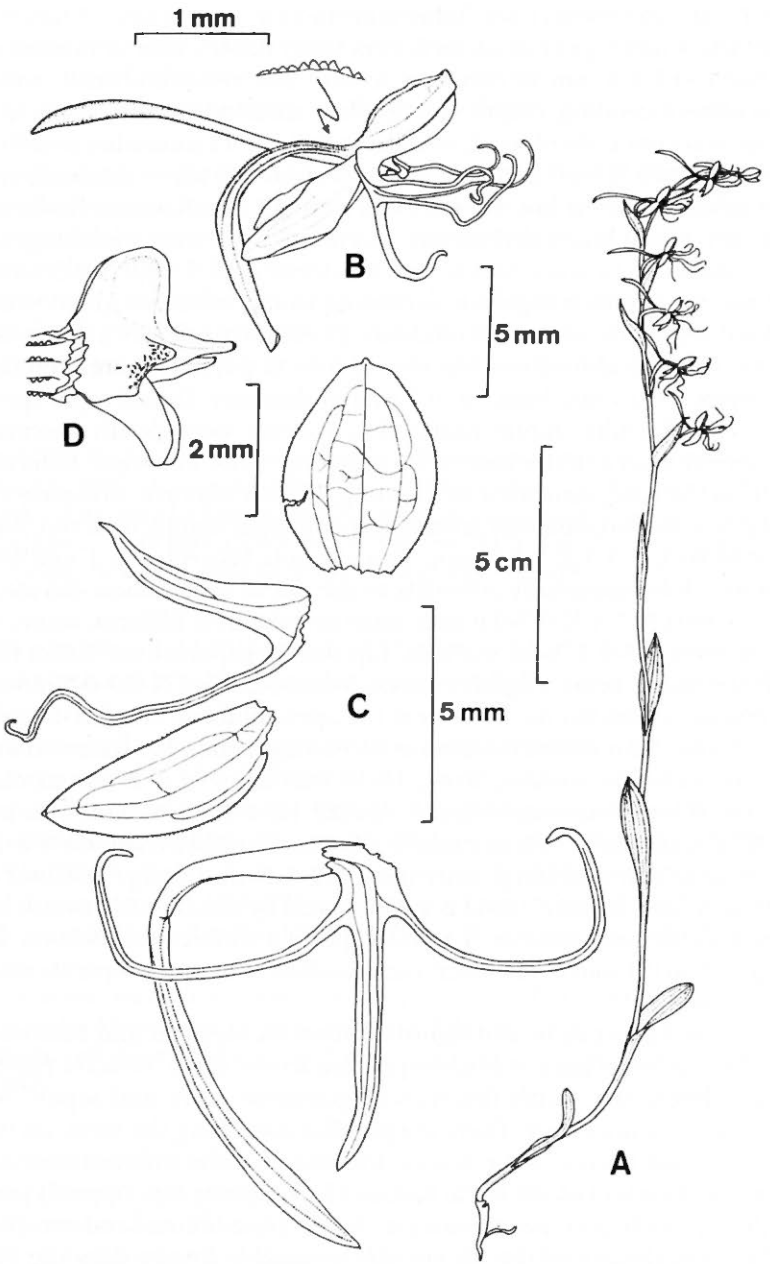

Fig. 2. *Habenaria matudae*, from the type (*Matuda 4728*). A, habit. B, Flower, from side. C, perianth segments, spread out. D, column, from side.

lae, which form conspicuous rows. Tuber ellipsoid, ca. 10 mm long, 5 mm in diameter. Roots few, simple, pubescent, to 3.5 cm long, 0.5-0.7 mm in diameter. Stem several-keeled, 0.7-1.5 mm in diameter. Leaves 5-6, relatively small, sometimes rather bract-like, ascending, elliptic to lanceolate, sheathing at base, acute to acuminate at apex (exceptionally obtuse), aristate, with 3 nerves somewhat prominent on the underside, 12-35 X 6-10 mm wide; the uppermost 2-3 leaves gradually reduced. Spike one-sided, relatively lax, 4-7 cm long, with 5-9 simultaneous flowers; rachis several-keeled. Floral bracts herbaceous, ascending, somewhat sheathing, ovate to lanceolate, attenuate to acute, aristate, with a dorsal keel, 7-15.5 X 3-5 mm. Flowers small for the genus, resupinate, according to one collector green with white centre; floral segments minutely colliculate ("cellular-papillose"). Ovary ascending, arcuate, cylindrical-fusiform, the several rows of papillae more prominent towards the apex, 10-13 mm long, ca. 0.7 mm in diameter. Dorsal sepal spreading, slightly concave, broadly elliptic, rounded to truncate, occasionally obscurely apiculate, 3-nerved, with a dorsal keel, 4.5-5 mm long, 3.5-4 mm wide. Lateral sepals reflexed from the base, somewhat descending, slightly concave, obliquely oblong-elliptic, obtuse-rounded, minutely aristate, upper margin slightly recurved, 3-nerved, with a dorsal keel, 5-5.5 X 2-2.5 mm. Petals deeply bipartite ca. 1 mm from the base; posterior lobe marginally adhering to the dorsal sepal, linear-falcate, acute-attenuate, 1-nerved, 3-4 X 0.7-0.8 mm; anterior lobe free, filiform, acute, slightly falcate, 1-nerved, 8.5-9.5 X ca. 0.3 mm. Lip deeply tripartite ca. 1 mm from the base; midlobe linear, acute, slightly convex, 3-nerved, 5.5-6 X 0.7-0.8 mm; lateral lobes divergent, somewhat incurved near the apex, filiform, acute, 1-2-nerved, 9-11 X ca. 0.4 mm. Spur distinctly retrorse-ascending, somewhat incurved and narrowly clavate above the middle, acute, 16-18 mm long, ca. 0.8 mm in diameter. Column very short, somewhat reflexed. Anther 1.5-2 X ca. 2 mm, with partially adnate lateral staminodia rich in raphide idioblasts; anther channels 0.8-1.2 mm long; stigmatic arms oblong, antrorse, 1.2-1.5 mm long. Pollinaria (or hemipollinaria; see Dressler, 1981) 2, each formed by an obliquely ovoid, laterally compressed sectile pollinium ca. 1 mm long and a filiform caudicle ca. 1.5 mm long and less than 0.1 mm in diameter; each caudicle ends into a separate viscidium. Capsule not seen.

Habenaria matudae can be distinguished from its Mexican and Mesoamerican congeners by the following combination of characters: small, delicate plants, one-sided, lax inflorescence, small flowers with papillose ovary and sepals, and retrorse-ascending, slender spur. There are papillae also along the stem, on the margin and the dorsal nerves of the leaves, the rachis of the inflorescence, and the margins and dorsal keel of the floral bracts. The posterior (or "upper") petal lobe is linear-falcate, acute and the anterior (or "lower") one filiform and conspicuously longer. The lateral lobes of the lip are also noticeably longer than the midlobe. *Habenaria crassicornis* Lindl. (including *H. adenantha* A.Rich. et Galeotti) is similar in the peculiar position of the spur and in the presence of conspicuous papillae.

However, it has larger and more stout plants, larger flowers (ovary over 15 mm long, sepals over 7 mm long), noticeably broader spur, and much larger papillae which often are cylindrical or clavate and are especially abundant on petals and lip. Moreover, the latter species seems to flower at a different time (late August to early November).

The new species is known only from the northern slope of the Sierra Madre de Chiapas (Río Grijalva basin) in Chiapas and adjacent Oaxaca. It lives as a terrestrial in pine-oak forest and tropical semi-deciduous forest at 800-1300 m altitude. It flowers in July and early August.

The specific epithet honours late Prof. Eizi Matuda, botanist at the Herbario Nacional de México (MEXU). Professor Matuda devoted much time to the botanical exploration of the Sierra Madre de Chiapas and was the first collector of this species.

Paratypes. **MEXICO.** CHIAPAS: camino al Cañón del Sumidero, terrestre, escasa, primaria, 800 m, agosto 13, 1967, *A. Gómez Pompa 2583* (**MEXU**). OAXACA: municipio de Santa María Chimalapa, cerro entre La Esperanza y Arroyo de los Sastres, ca. 6 km en línea recta al NE de Benito Juárez, ca. 43 km en línea recta al N de San Pedro Tapanatepec, 16°45'N, 94°06'W, 1200 m, escasa, en ladera, julio 23, 1986, *S. Maya 3647* (**CHAPA**).

Kegeliella atropilosa L.O.Williams et A.H.Heller, Fieldiana, Bot. 31: 39. 1964. TYPE: **NICARAGUA.** CHONTALES: Pistacho peak, near Babilonia Mine, 570 m alt., *A. H. Heller 6511* (holotype **F**).

When not in flower, the plants of this species are reminiscent of those of the genus *Gongora*, but can be distinguished because of the deciduous leaves that are entirely purple on the underside. Besides the specimen from southern Uxpanapa indicated below, this species has been recorded recently also from the Río Lalana area, in Oaxaca (*S. Reynaud s.n.*, cultivated plant). It grows as an epiphyte, in shade in tropical rain forest at 100-400 m above sea level. It is also known from Guatemala, Nicaragua, Costa Rica, and Panama (according to Dressler and Whitten, 1992).

Specimen examined. **MEXICO.** VERACRUZ: municipio de Jesús Carranza, región de Uxpanapa, cerca de Rancho Alegre sobre el brazo oriental del Río Solosúchil, lomerío al N de la Sierra de Tres Picos, coll. March 30, 1996, pressed in cultivation in June 1996, G. A. *Salazar et al. 5542* (**AMO**).

Notylia leucantha Salazar, nom. nov.

Replaced synonym. Notylia multiflora Hook., London J. Bot. 3: 315. 1844 (non. Lindl., 1825), *nomen illeg.* TYPE: A cultivated plant in the collection of the Duke of Bedford, believed to have been introduced from Mexico (holotype not located and apparently not preserved. Lectotype [here designated]: the plate accompanying the original description [Hooker, 1844] which was prepared from the original live plant).

No specimen of this taxon could be located at Kew, where Hooker's herbarium is housed. However, the illustration selected here as lectotype allows for the identification of the species, distinguished from its relatives by the white flowers with sparse orange spots, straight, slightly concave dorsal sepal that is recurved at the apex, lateral sepals connate for up to 1/2 of their length and recurved at the apex, and lip with a slightly raised basal keel and abruptly narrowed above the middle. *Notylia albida* Klotzsch, a white-flowered species from southern Central America and South America is easily separated from *N. leucantha* by the larger flowers, the much larger, broadly elliptic dorsal sepal and the broadly ovate lip not narrowed above the middle.

The Mexican specimen indicated below agrees with the lectotype of *N. leucantha* except in that it has the lateral sepals free from near the base. However, the degree of sepal fusion is known to vary noticeably in some *Notylia* species, as *N. barkeri* Lindl. (G. A. Salazar, unpublished data) and that sort of variation is assumed to occur in assigning the Chimalapa specimen to *N. leucantha*.

This species is known only from Mexico (N Oaxaca and most probably adjacent Veracruz), growing epiphytically in tropical rain forest at about 250 m altitude. The new specific epithet refers to the white colour of the flowers.

Specimen examined. **MEXICO**. OAXACA: municipio de Santa María Chimalapa, entre Sarabia y El Corte, km 65, ca. 250 m, coll. April 24, 1987, pressed in cultivation March 4, 1991, *I. Aguirre 1193* (**AMO**).

Oncidium subcruciforme (A.H.Heller) Salazar, comb. nov.

Odontoglossum subcruciforme A.H.Heller, Fieldiana, Bot. 32: 73, fig. p. 75. 1969. TYPE: **NICARAGUA.** JINOTEGA: Yalí, 1100 m, epiphyte, flowers brown maculate, Feb. 1968, flowered in cultivation May, 1968, *A. H. Heller 11305* (holotype **F**).

Odontoglossum subcruciforme, obviously a member of *Oncidium* as currently understood, was considered by Jiménez and Soto (1992) as a synonym of *Oncidium maculatum* (Lindl.) Lindl. However, these two taxa have been found growing in the same area in the surroundings in southern Chimalapa and differ in several features. *Oncidium maculatum* has short ovoid pseudobulbs conspicuously spotted with purplish-brown, unbranched inflorescence usually less than 40 cm long and proportionately broad floral segments, especially the ovate-pandurate lip. *Oncidium subcruciforme*, on the other hand, has oblong-ovate, unspotted pseudobulbs, loosely branching inflorescence over 60 cm long and narrower floral segments. The lip in the latter species is hastate-lanceolate. There are also differences as to their habitat preferences and phenology: *O. maculatum* thrives in open oak forest on the upper slopes and flowers from November to March (Jiménez and Soto, 1992), whereas *O. subcruciforme* is restricted to ravines with a transition of tropical semi-deciduous forest to cloud forest and flowers from May to July.

Oncidium subcruciforme was previously known only from Nicaragua. According to a knowledgeable orchid grower (J. L. Linares, pers. comm. 1997) it is found in Honduras too.

Specimen examined. **MEXICO.** OAXACA: municipio de San Miguel Chimalapa, cañada del Arroyo Caracol, al NW de Benito Juárez, 16°43' N, 94°09' W, ca. 1100 m, Jul. 25, 1996, *G. A. Salazar et al. 5862* (**AMO**).

Schiedeella wercklei (Schltr.) Garay, Bot. Mus. Leafl. 28(4): 358. 1982.

Spiranthes wercklei Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 482. 1911. TYPE: **COSTA RICA.** Without further data, *Werckle s.n.* (holotype **B**, destroyed).

Schiedeella wercklei is a rarely collected species that was previously known only from Nicaragua and Costa Rica (Szlachetko, 1992). It is terrestrial and was found in cloud forest at 1700 m altitude.

Specimen examined. **MEXICO.** OAXACA: municipio de San Miguel Chimalapa, Cerro Sabinal (pico occidental del Cerro Guayabitos, al N de la Colonia Díaz Ordaz, ca. 40 km en línea recta al N de San Pedro Tapanatepec, al S de la cima del cerro), 16°44' N, 94°11' W, 1700 m, Dec. 20, 1984, S. *Maya 1099* (**CHAPA**).

Acknowledgements. I thank Dr. Tom Wendt (TEX) for putting at my disposal numerous orchid specimens gathered by him and his collaborators in Uxpanapa-Chimalapa. Dr. Stephen Koch and the staff at CHAPA were extremely helpful during my visits. Ing. Eric Hágsater (AMO) contributed with information and logistic support. Omar Rocha, Miguel Soto, Liliana Cervantes, Lidia Cabrera, Mr. Heriberto Hernández, and Mr. Salomón Maya participated in collecting trips. Dr. Germán Carnevali provided information on *Campylocentrum hondurense* in Chiapas. José L. Linares provided information on *Oncidium subcruciforme* in Honduras. Field and herbarium work relative to this study were partially supported by the Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (Conabio) under project G-024.

Literature cited

CARNEVALI, G. and I. RAMÍREZ. 1993. New or noteworthy orchids for the Venezuelan flora IX: new taxa, new records, and nomenclatural changes, mainly from the Guayana Shield and northern Amazonas. *Novon 3:* 102-125.

DAVIDSE, G., M. SOUSA and S. KNAPP (eds.). 1995. *Flora Mesoamericana*, vol. 1. Universidad Nacional Autónoma de México, Missouri Botanical Garden and The Natural History Museum (London). Mexico, D.F.

DRESSLER, R. L. 1981. *The orchids: natural history and classification*. Harvard University Press, Cambridge, Massachusetts.

DRESSLER, R. L. and G. E. POLLARD. *1974. The genus Encyclia in Mexico*. Asociación Mexicana de Orquideología, México, D.F.

DRESSLER, R. L. and W. M. WHITTEN. 1992. *Kegeliella. American Orchid Society Bulletin 61*: 684-687.

JIMÉNEZ, R. and M. A. SOTO. 1992. El complejo *Oncidium maculatum*. *Orquídea (Mexico, D.F.) 12*: 297-316.

HOOKER, W. J. 1844. Brief description of a new *Notylia*. *Hooker's London Journal of Botany 3*: 315, t. 10.

MÁRQUEZ, W., A. GÓMEZ-POMPA and M. VÁZQUEZ. 1981. Estudio botánico y ecológico de la región del río Uxpanapa. Núm. 10. La vegetación y la flora. *Biotica 6*: 181-217.

SZLACHETKO, D. 1992. Genera and species of the subtribe Spiranthinae (Orchidaceae). 2. A revision of *Schiedeella*. *Fragmenta Floristica et Geobotanica* (Cracovia) *37*: 157-204.

WENDT, T. 1989. Las selvas de Uxpanapa, Veracruz-Oaxaca, México: Evidencia de refugios florísticos cenozoicos. *Anales del Instituto de Biología Universidad Nacional Autónoma de México, Serie Botánica 58*: 29-54.

WENDT, T. 1997. Uxpanapa-Chimalapa region, Mexico. *In*: S. D. Davis, V. H. Heywood, O. Herrera-MacBryde, J. Villalobos and A. C. Hamilton (eds.) *Centres of plant diversity: a guide and strategy for their conservation. Vol. 3. The Americas.* IUCN Publications Unit, Cambridge, pp. 130-134

WITTINER, C. L. and D. G. HUNT. 1994. A new species of Mexican orchid, *Encyclia chiapasensis*, with some miscellaneous comments. *Orchid Digest 58*: 13-14.