

connatis ferenti; pars fertilis usque 27 capitula ferens, thyrsoides ramosa bracteataque ad 5 paribus ramorum 5-1 capituliferorum instructa; axis dense albo-lanatus et plus minusve floccoso-barbulatus, rami bracteae involucraque dense crasse lutescente crispo-lanata. Capitula ligulis amotis in sicco circa 2.5 cm diam. Phyllaria sterilia 18-15 (-12) x 10-5 (-3) ovato-oblonga subobtusata dense crispo-lanata interiora acutata, fertilia oblongo-ovata acutata 12-8 x 5-2.5 mm extus lanata et sparse glandulosa. Flores 144-275 in capitulo, radii 41-85, disci 103-190. Corolla radii 12-15 mm longa tubo 0.8-1.5 mm, densis pilis brevibus crassis subconicis obtusis 0.1-0.2 mm et glandulis sparsis obsito, lamina oblonga circa 3 mm lata extus glandulis subsessilibus vel breviter pediculatis sparsis. Achaenia triangulata 2.6 x 1.3 mm, interiora quadrangulata 2.7 x 1 mm. Corollae disci 7-8 mm, apice tubi et basi limbi parvis pilis brevissimis (0.05-0.2 mm) crassis obtusis et parvis glandulis breviter pediculatis, lobis abaxiale sparsis glandulis.

Typus: Colombia, Meta: Páramo de Sumapaz, Cerro Nevado del Sumapaz, páramo propiamente dicho, seco, con Calamagrostis effusa, vertiente SW hacia el Alto del Buque, 3650 m alt, caulirrésula 1 m, hojas grisáceas verdosas, lígulas amarillas, "frailejón", 29 Jan 1972, Antoine M. Cleef 1372; holotypus, US; isotypus, COL, U. Paratypus: id. Cerro Nevado del Sumapaz, límite con el superpáramo, vertiente W-NW, 4060 m alt, asociado con Chusquea, en vallecito abrigado, caulirrésula 0.50-1 m, hojas grisáceo-verdosas, lígulas amarillas, 18 Jan 1973, A.M. Cleef 8054 (COL, U, US).

ESPELETIA GRANDIFLORA var. ATTENUATA Cuatr. nov. var.

Caulirosula usque ad 2 m alta. Folia attenuato-lanceolata, lanceolato-linearum quam var. grandiflora angustiora usque basim gradatim angustata pseudopetiolo brevi vel obsoleto. Lamina 21-38 x 22-4.5 (-4.7) cm, ratio 7:1-10:1 (-11:1) supra basim 7-12 mm lata, pseudopetiolo obscuro 1-3(-4) cm, vagina (5-)6-7.5 x 4-5.6 cm, nervis secundariis 4-7(-9) mm inter se distantibus, angulo 40-50°(-60°) ascendentibus. Inflorescentiae thyrsoides quam rosula sequi-vel usque duplo longae, 50-76(-105) cm altae, 7-23 capitula ferentes, 1-4 paribus foliorum sterilium, cyma terminali 3-1 cephalis et 3-5 paribus ramorum fertilium. Rami 1-2 inferiores 3-2-cephali, alteri monocephali, interdum omnes monocephali. Capitula in sicco ligulis amotis, (20-)25-35 mm diam. Phyllaria 5-7 exteriora 21-15 x 11-5 mm, aliquando 10-12 aditionalia 2-seriata 15-10 x 5-3 mm, ovato-triangulata vel ovato-oblonga; phyllaria fertilia exteriora 14-10 x 6-2.5 mm oblongo-attenuata acuta extus dense lanata; paleae 8.5 x 3 mm anguste ovals acutae extremo barbato et minutis glandulis. Receptaculum 10-16 mm diam plano-convexo glabro. Flores (133-)157-296 in capitulo,

radii (45-)63-106, disci (88-)94-200. Corollae radii (10-)13-17 mm longae, tubo 1-2.5 mm longo dense piloso pilis crassiusculis obtusis interdum acutis patule curvato-ascendentibus et parvis glandulis obovoideo-oblongis minute pediculatis; lamina linearis 1.8-2.6 mm lata abaxiale glandulis oblongo-obovoideis, clavatis 0.025 mm; corollae disci 8-8.5 mm longa tubulo et basi limbi copiosis pilis subacutis vel obtusis vel acutis deorsum incrassatis 0.1-0.4 mm et parvis glandulis, lobis copiosis glandulis obovoideis, subclavatis 0.025 mm. Achaenia oblonga 2.4 x 1.8 mm triangulata basi obtusiuscula, intima 3 x 1 mm, quadrangulata.

Typus: Colombia, Cundinamarca: Macizo Bogotá-Sumapaz: Páramo de Chisacá, around Laguna de Chisacá, 3700 m alt, caulirosula with short stem, leaves grayish green, heads yellowish, ligules yellow, 29 Dec. 1959, Cuatrecasas & Jaramillo 25748; holotypus US, isotypus COL. Other collections: Id. around Laguna Negra, 3700-3720 m, caulirosula 1 m, leaves white, inflorescence yellowish, involucre yellowish, ligules and disc corollas yellow, anthers brownish, 11 Sep. 1961, Cuatrecasas & Jaramillo 25908 (paratypes, US, COL). Id. Alto de Caycedo páramo 3800-3820 m, stem 0.5 m, chromosome number $n=19$, Jan 9, 1969, Cuatrecasas 27094 (US, COL).

ESPELETIA KILLIPII var. CHISACANA Cuatr. var. nov.

Capitula ligulis amotis 3.5-4 cm diametro. Circulus ligularum 40-55 mm, discus 22-25 mm diametro. Phyllaria sterilia externa latiora, ovata vel oblongo-ovata, obtusa vel subacuta, 33-24 x (23-)19-13 mm, 5-8 medialia 24-20 x 14-6 mm oblongo-ovalia vel oblongo-elliptica obtusa vel subacuta, et 0-15 interiora 20-11 x 10-4 mm tenuiora oblonga acutata vel subacutata. Corollae radii (20-)24-27 mm longa lamina 2.5-3.5 mm lata, tubulo 1.5-2(-3.5) mm longo. Corollae disci 9-12.5 mm longa. Inflorescentia praecipue 5, interdum 7 vel 3 capitulis. Lamina foliorum 35-45 x 3.5-6 cm, basi usque ad 1.6-1 cm lata angustata oblonga saepe magis acuminata nervis lateralibus 5-8(-10) mm distantibus angulo 50-60°(-70°) ascendentibus.

Typus: Colombia, Cundinamarca: Páramo de Chisacá, NW end of the high plateau of Macizo de Bogotá-Sumapaz, 3680-3700 m alt, trunk 50 cm high, rosette very broad, inflorescences pale yellowish, rays and disc corollas yellow, 16 Sept 1961 Cuatrecasas & Jaramillo 25986; holotypus, US; isotypi: COL, US. Other collections: Id. Páramo de Chisacá, open hill at the left side of the road, 3680-3700 m, trunk 60 cm high, 8-9 inflorescences pale yellow, rays and florets yellow, 16 Sep 1961, Cuatrecasas & Jaramillo 25988 (paratype US, COL, P); id. near the lake 3650-3700 m, caulirosula, stem up to 1.5 m high, covered with marcescent leaves, rosette and inflorescences grayish white, heads yellowish whitish, 29 Dec 1959, Cuatrecasas & Jaramillo 25744 (paratypes, US, COL, P); Id. loc. 1-2 m tall, chromosome number $n=19$, abundant, 18 June 1965, King, Guevara & Forero 5659, 5658 (F, NY, US).

TAGETES ERNSTII (TAGETEAE: ASTERACEAE), A NEW SPECIES

FROM OAXACA, MEXICO

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The most recent major work on the genus Tagetes is an unpublished thesis (Neher, 1965, University of Indiana) which recognized 40 species. Study of the Neher keys and descriptions and review of specimens in the U. S. National Herbarium (US) convinces us that a collection, W. R. Ernst 2219 (Fig. 1) from Oaxaca, represents a new species.

The unique feature of the new species is the heteromorphic pappus with partial or complete fusion of squamae. The pappus may be interrupted by one or two subulate squamae or by a single division but it often is completely undivided, forming a continuous sheath around the base of the corolla (Fig. 2). This completely fused and truncated pappus is characteristic of the inner disk flowers. Outer disk flowers usually have one subulate squama, sometimes two. Ray flowers usually have two subulate squamae.

The only two species of Tagetes reported (Neher, 1965) as lacking subulate squamae in either the disk or ray flowers are T. linifolia Seaton and T. hartwegii Greenman, both of Mexico. In T. linifolia the ray flowers lack subulate squamae and the disk flowers have them, just the opposite of the new species. In T. hartwegii the disk flowers have the unique character of typically being completely epappiferous. The new species also differs from T. linifolia and T. hartwegii by having upper leaves more often alternate, in having branches bearing several heads, and in having strikingly smaller ray corollas (6-8 mm long vs. 10-16 mm). Both T. linifolia and T. hartwegii are known only from their type localities, T. linifolia from Esperanza on Mt. Orizaba, Puebla, and T. hartwegii from the Bolaños Valley in northern Jalisco.

If one emphasizes the size of ligules, as Neher (1965) did by making it the opening character in his key to the subgenus Tagetes, the new species would seem most similar to T. jalis-censis Greenman which is distributed from northern Mexico to Costa Rica. This species differs not only in having the pappus of all flowers with subulate squamae, but in having a more fusiform involucre, fewer disk flowers (only 10-12 vs. 25), larger achenes (8-10 mm long vs. 5-7 mm), and shorter peduncles (2-4 cm long vs. 5.0-7.5 cm).

We name the new species in honor of the collector, Wallace

Roy Ernst, our former colleague (cf. Thomas & Shetler, 1973). This new species was found in the process of identifying, labelling and distributing the materials from Dr. Ernst's collecting trip to Oaxaca in January-February, 1966.

Tagetes ernstii H. Robinson & D. H. Nicolson, species nova.

Plantae suffrutescentes usque ad 0.7 m altae, perennes (?) plerumque glabrae. Caules teretes vel leniter sexangulares. Caules majores et rhachides foliorum pilis minutis perbrevis uniseriatis pauciseptatis eglandulosi sparse obsiti. Folia inferiora opposita superiora alternata profunde pinnatifida plerumque 3-5 cm longa, pinnis plerumque oppositis utrinque 3-5 anguste ellipticis 7-15 mm longis et 1.5-3.0 mm latis argute serratis apice breviter acuminatis margine inter dentes prominente uniglandulopunctatis, punctis minoribus interioribus in pinnis majoribus. Inflorescentia corymbosa, pedunculis elongatis 5.0-7.5 cm longis inferne pauca bracteatis superne glabris sub involucri sensim distincte incrassatis, bracteis subbasalibus 0.5-1.2 cm longis pectinatis vel pinnatis aristiferis. Involucra late fusiformia vel cylindrica 1.3-1.5 cm longa ca. 3.5 mm lata 5-lobata, lobis ca. 1.5 mm longis latioribus quam longioribus apice breviter acutis, punctis glandulosi in valvis omnino biseriatis inferne elongatis ad 1 mm longis. Flores ca. 30, radiis 5; corollae radiorum 6-8 mm longae aurantiacae, tubis 3-4 mm longis, limbis subquadratis leniter bilobatis 3-4 mm longis et latis. Flores disci ca. 25; corollae 6.5-8.0 mm longae superne rufescentes extus glabrae, lobis linearibus ad 2.5 mm longis margine et intus setiferis; filamenta in parte superiore 0.6-0.7 mm longis; thecae ca. 1.8 mm longae; appendices antherarum ca. 0.4 mm longae et 0.15 mm latae. Achaenia subfusiformia 5-7 mm longa superne 0.5-0.7 mm lata plerumque in costis minute setifera; carpodia minuta; squamae pappi 1-3 in floribus radiis 1-2 subulatae 6-7 mm longae, in floribus disci plerumque 0-1 subulatae, squamis brevioribus 2.5-3.5 mm longis omnino 1 saepe integris indivisis apice vix lobatis minute scabrellis extus sparse scabrellis. Grana pollinis 25-27 μ in diametro.

MEXICO: Oaxaca: near San Lorenzo, northeast of Mitla, pine-oak-manzanita woodland, rays orange, disc brown, 19 January 1966, W. R. Ernst 2219 (Holotype: US-2725920; Isotypes: to be distributed).

Literature Cited

- Neher, R. T. 1965. Monograph of the genus Tagetes (Compositae). 306pp. Ph.D. Thesis, Indiana University, Bloomington.
- Thomas, J. H. and Shetler, S. G. 1973. Wallace Roy Ernst, 1928-1971. Madroño 22: 207-213.



Robinson, Harold E and Nicolson, Dan H. 1975. "Tagetes ernstii (Tageteae: Asteraceae), a new species from Oaxaea, Mexico." *Phytologia* 32(4), 327–330.

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