

Contributions to the Flora of Northern Africa, I. New or noteworthy taxa

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Abstract:

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The following taxa are new to Morocco: *Erodium microphyllum* Pomel, *Orobancha leptantha* Pomel, *Scorzonera coronopifolia* Desf., to Algeria: *Potamogeton schweinfurthii* A.Benn., *Solanum sinaicum* Boiss., to Tunisia: *Helichrysum stoechas* (L.) Moench subsp. *conglobatum* (Viv.) Maire & Weiller. The following taxa are changed in rank: *Drimia maritima* (L.) W.T.Stearn subsp. *maura* (Maire) Förther & Podlech, *Hyacinthoides hispanica* (Mill.) Rothm. subsp. *algeriensis* (Batt.) Förther & Podlech, *Erodium maroccanum* (Maire) Förther & Podlech, *Aaronsohnia pubescens* (Desf.) Bremer & Humphries subsp. *maroccana* (Ball) Förther & Podlech. One species, *Pulicaria antiatlantica* Förther & Podlech and one subspecies, *Centaurea pungens* Pomel subsp. *austromaroccana* Förther & Podlech are described as new. *Teucrium demnatense* is reinstated as a legitimate name.

Zusammenfassung:

Folgende Sippen sind neu für Marokko: *Erodium microphyllum* Pomel, *Orobancha leptantha* Pomel, *Scorzonera coronopifolia* Desf., für Algerien: *Potamogeton schweinfurthii* A.Benn., *Solanum sinaicum* Boiss., für Tunesien: *Helichrysum stoechas* (L.) Moench subsp. *conglobatum* (Viv.) Maire & Weiller. Die folgenden Taxa werden in der Rangstufe verändert: *Drimia maritima* (L.) W.T.Stearn subsp. *maura* (Maire) Förther & Podlech, *Hyacinthoides hispanica* (Mill.) Rothm. subsp. *algeriensis* (Batt.) Förther & Podlech, *Erodium maroccanum* (Maire) Förther & Podlech und *Aaronsohnia pubescens* (Desf.) Bremer & Humphries subsp. *maroccana* (Ball) Förther & Podlech. Eine neue Art, *Pulicaria antiatlantica* Förther & Podlech und eine neue Unterart, *Centaurea pungens* Pomel subsp. *austromaroccana* Förther & Podlech werden beschrieben. *Teucrium demnatense* wird als legitimer Name wieder eingesetzt.

The flora of North Africa comprises of approximately 10.000 species of flowering plants according to HEYWOOD & DAVIS (1994). Morocco with about 3600 species and ca. 600–650 endemics has the richest flora of that area, but a complete actual inventory is still missing. The increasing human influence on this outstanding rich flora is serious. Population growth is directly or indirectly related to the loss of plant biodiversity. Deforestation, clearance of land for agriculture, overgrazing and excessive use of ground water leads to severe degradation of the original vegetation, loss of species diversity, soil degradation and desertification.

Since JAHANDIEZ & MAIRE (1931–1934), EMBERGER & MAIRE (1941) and the incomplete flora of MAIRE (1952–1980) only few general investigations of the floristic diversity took place. Since many years the “Institut für Systematische Botanik” makes efforts in documentation of the flora of that area. It is planned to publish the results of that efforts in a series of papers. The changed rating of taxa requires some nomenclatural corrections, new taxa are found to be described or hitherto less known taxa are worth to be more notified.

Potamogetonaceae

Potamogeton schweinfurthii A.Benn. in Dyer, Fl. Trop. Afr. 8: 220. 1901.

New to Algeria.

Algeria. Wil. Ouargla: Tassili n'Ajjer, Iherir, 1070 m; Wasserstelle, [8°24'E, 25°24'N], 31.3.1982, *Podlech* 36968 (G, LG, M, MSB).

Hyacinthaceae

W.T.STEARN in a paper about the genus *Urginea* has united this genus with the older genus *Drimia*. Within the wide-spread and polymorphic *Drimia maritima* (L.) W.T.Stearn (Syn.: *Urginea maritima* (L.) Baker) *Urginea maura* Maire as a montane taxon shows a geographic-ecological independence, but in the Flore d'Afrique du Nord (1958) it is only accepted as variety of *Urginea maritima*. Because of the morphological and geographic-ecological differences it is better placed in the rank of a subspecies:

Drimia maritima (L.) W.T.Stearn subsp. *maura* (Maire) Förther & Podlech, comb. nov.

Basionym: *Urginea maura* Maire, Bull. Soc. Hist. Nat. Afr. Nord 14: 158. 1923.

Specimens seen:

Morocco. Prov. Taroudant: Tizi-n-Test an der Straße von Taroudant nach Marrakech (501), 2100 m; stark überweidete Hänge an der Passhöhe, 9.8.1999, *Podlech* 55287 (MSB). – Prov. Azilal: ca. 30 km S Pont Naturel an der Straße von Demnate nach Toufrine, 1840 m, 13.8.1999, *Podlech* 55356 (MSB). – Prov. Ouarzazate: 5 km S unterhalb des Tizi-n-Tichka, an der Straße von Marrakech nach Ouarzazate, 2180 m, 14.8.1999, *Podlech* 55374 (MSB).

Hyacinthoides hispanica (Mill.) Rothm. subsp. *algeriensis* (Batt.) Förther & Podlech, comb. et stat. nov.

Basionym: *Endymion patulus* (Lam. & DC.) Dumort. var. *algeriensis* Batt., Bull. Soc. Bot. France 27: 164. 1880.

Because of the morphological and geographic-ecological differences this taxon is better accepted in the rank of a subspecies.

Specimen seen:

Morocco. Prov. Ifrane (Meknès): Mittlerer Atlas, Cascades des Vierges, NW Ifrane, 1570 m; feuchte Wälder, Trockenflächen, 13.5.1989, *Podlech* 46592 (G, LG, MSB).

Geraniaceae

Erodium maroccanum (Maire) Förther & Podlech, comb. nov.

Basionym: *Erodium hirtum* Willd. var. *maroccanum* Maire, Bull. Soc. Hist. Nat. Afrique Nord 14: 135. 1923. Typus: Cap Ghir, in pascuis arenosis et lapidosis calcareis Imperii Maroccani austro-occidentalis ad promontorium Ghir, ubi Martii et Aprili floret (Univ. Algier, RAB).

Perennial, branches up to 30 cm high, erect or ascending, basally stout and suffrutescent, loosely furnished with spreading greyish-white hairs. Petiole of basal leaves up to 10.5 cm long, very short in upper cauline leaves; lamina triangular-ovate in outline, 1.5–6 cm long, 0.8–5 cm wide, deeply 1–2-pinnatisect, the lobes pinnatifid or deeply dentate, surface puberulent, hispid or sometimes glabrescent; stipules ovate to widely triangular, purplish-brown, hispid, ciliate at the margin. Inflorescence 8–22 mm long, umbel consisting of 3–5 flowers; bracts scarious, light brown, widely ovate, hairy. Flowers pale pink or pink with violet centre, 14–18 mm in diameter. Pedicels 8–15 mm long, deflexed in fruit. Sepals 6–7 mm long, 3–4 mm wide, ovate-oblong, mucronate, hairy, only slightly enlarging in fruit. Petals ca. 8 mm long, obovate. Mericarps ca. 4–5 mm long, brown, with antrorse hairs, apical pits small, with two conspicuous furrows below; beak 4.4–6 cm long, not or scarcely spirally twisted, with numerous long, brownish hairs at the inner side.

Specimens seen:

Morocco. Prov. Layoune: 13 km N Daourah an der Straße von Tarfaya nach Layoune (P41), E-Rand der Sebkhä Oum-Deboua [12°58'W, 27°37'N], ca. 40 m, 11.4.1986, *Podlech 40473* (MSB). – Prov. Tan-Tan: 3 km S des Flughafens Tan-Tan am Steilabbruch zum Oued Ben Khlil S von Tan-Tan [11°09'W, 28°58'N], 60–100 m, 30.3.1990, *Podlech 48714* (G, LG, MSB, P, RAB) – Oued Aabar, ca. 7 km N Abtîh E der Straße von Tan-Tan nach Samara (P 44), 40–60 m; sandig-salzige Flächen, steinige Hänge [11°25'W, 28°00'N], 31.3.1990, *Podlech 48817* (MSB). – Prov. Goulîmime: S-Ufer des Oued Draa an der Straße von Goulîmime nach Tan-Tan (P41) [10°58'W, 28°32'N], 60 m, 10.4.1986, *Podlech 40398* (MSB).

Erodium maroccanum is an endemic of the dry coastal regions of south-western Morocco. It differs from *Erodium crassifolium* L'Hér. (Syn.: *A. hirtum* Willd.) in a more dense indument, the significant larger flowers and the much shorter fruits.

Erodium microphyllum Pomel, Nouv. Mat. Fl. Atlant.: 339. 1874.

New to Morocco:

Morocco. Prov. Ouarzazate: Paßhöhe Tizi-n-Tinfîf, ca. 20 km W Agdz an der Straße nach Ouarzazate (P31) [6°37'W, 30°44'N], 1650 m, 11.4.1990, *Podlech 49516* (MSB).

Formerly only known from Algeria and Tunesia the specimen cited above is the first record for the flora of Morocco.

Solanaceae

Solanum sinaicum Boiss., Diagn. pl. orient. ser. 1, 11: 135. 1849.

New to the flora of Algeria.

This suffruticose species has been detected in the Hoggar mountains in the central Sahara of Algeria. It seems to be rather common there at higher altitudes and replaces to a large extent the annual *Solanum nigrum* L. with which it was always confused. The plants agree completely with the type of *S. sinaicum* and other specimens from Sinai and they also have the same ecology.

Specimens seen:

Algeria. Wil. Tamanrasset: Hoggar-Massif, Umgebung des Guelta Afilale, nahe der Straße von Tamanrasset zum Assekrem, 2050 m; Felsen, Sand, sumpfige Stellen [5°45'E, 28°08'N], 24.3.1980, *Podlech* 33345, 33346 (MSB) – dto., 19.3.1981, *Podlech* 34904 (G, LG, M, MSB) – Hoggar-Massif, Guelta Issakarassene an der Piste von Hirafok zum Assekrem, 1930 m, Wasserstellen, Felsen und sandige Flächen [5°45'E, 23°25'N], 20.3.1981, *Podlech* 34971 (MSB) – Hoggar-Massif, Wasserstellen im Oued Ilamane, 10 km SW Ilamane, 1800 m, Sand, Felsen [5°24'E, 23°10'N], 24.3.1982, *Podlech* 36753 (MSB) – Tefedest-Gebirge, Guelta im Oued Dehine, 10 km (Luftlinie) NE Mertoutek, 1180 m, sandig-steiniges, salzhaltiges Oued [5°38'E, 24°16'N], 27.3.1982, *Podlech* 36874 (MSB).

Lamiaceae

Teucrium demnatense Batt., Contr. Fl. Atl.: 74. 1914.

GREUTER & BURDET have replaced the illegitime name *Teucrium collinum* Coss. & Balansa non Salisb. by *T. collincola* Greuter & Burdet, Willdenowia 15: 79. 1985. This species is identical with *T. demnatense* which therefore is the valid older name. The name *T. demnatense* is missing in GREUTER, BURDET & LONG (1986).

Orobanchaceae

Orobanche leptantha Pomel, Bull. Soc. Sci. Phys. Algérie 11: 110. 1874.

New to Morocco.

This species, described by Pomel from the surroundings of Oran in Algeria, could be found in Morocco near the frontier to Algeria.

Specimens seen:

Morocco. Prov. Oujda: Schlucht 3 km S Saidia; Felsen an der Straße P 18 nach Ahfir, 40 m, Wiese [2°13'W, 35°03'N], 8.4.1993, *Förther* 6630 (Herb. Förther), *Podlech* 51290 (BASBG, LG, MSB, RSA).

Asteraceae

Aaronsohnia pubescens (Desf.) Bremer & Humphries subsp. *maroccana* (Ball) Förther & Podlech, comb. nov.

Basionym: *Matricaria maroccana* Ball, J. Bot. 11: 367. 1873.

The subspecies is widely distributed in the western coastal regions of Morocco. Its area is distinctly separated from that of subsp. *pubescens* which inhabits the more desertic regions of Morocco and Algeria. It is easily to separate from the discoid subsp. *pubescens* by the ligulate marginal flowers.

Centaurea pungens Pomel, Bull. Soc. Sci. Phys. Algérie 11: 29. 1874

subsp. *austromaroccana* Förther & Podlech, subspec. nov.

Holotypus: Marokko, Prov. Tan Tan, 8 km SW Tan-Tan Plage an der Straße nach Tarfaya (P 41), sandig-steiniges Oued, 20 m [11°23'W, 28°26'N], 27.3.1990, D. Podlech 48570 (MSB); Isotypus: *Schuhwerk* 90/282 (M).

Differt a subspeciei typica foliis bipinnatifidis ad bipinnatis, subtus vel utrimque dense albi-tomentosis.

This new subspecies of the widely distributed *Centaurea pungens* is rather common in the coastal regions of south-western Morocco and replaces here to a large extent the typical subspecies. It is astonishing that this conspicuous and characteristic taxon has not been recognized up to now.

Specimens seen:

Morocco. Prov. Tan Tan: 10 km NE Tan-Tan an der Straße nach Goulimine (P 41), ca. 60 m [11°03'W, 28°29'N], 10.4.1986, *Podlech* 40418 (BASBG, MSB) – 4 km SW Tan-Tan Plage, breites sandiges Oued nahe der Küste, 10 m [11°21'W, 28°28'N], 10.4.1986, *Podlech* 40438 (MSB) – 8 km SW Tan-Tan Plage an der Straße nach Tarfaya (P 41), sandig-steiniges Oued, 20 m [11°23'W, 28°26'N], 27.3.1990, *Podlech* 48570 (MSB), *Schuhwerk* 90/282 (M) – Oued Chebeika, ca. 30 km SW Tan-Tan Plage an der Straße nach Tarfaya (P 41), ca. 30 m; felsige Hänge am N-Ufer, Sandflächen [11°30'W, 28°17'N], 27.3.1990, *Podlech* 48592 (MSB) – 3 km S des Flughafens Tan-Tan am Steilabbruch zum Oued Ben Khlil S Tan-Tan, 60–100 m, Felsen, sandig-steinige Rinnen [11°09'W, 28°25'N], 30.3.1990, *Podlech* 48747 (MSB), *Schuhwerk* 90/406 (M) – 46 km SSW Tan-Tan an der Straße nach Samara (P 44), 120 m, steiniges Oued [11°17'W, 28°08'N], 30.3.1990, *Podlech* 48772 (BASBG, MSB) – ca. 15 km N Abtih an der Straße von Tan-Tan nach Samara (P 44), ca. 40 m, steinige Hänge, sandiges Oued [11°21'W, 28°05'N], 30.3.1990, *Podlech* 48791 (BASBG, MSB) – Oued Aabar, ca. 7 km N Abtih E der Straße von Tan-Tan nach Samara (P 44), 40–60 m, sandig-salzige Flächen, steinige Hänge [11°25'W, 28°00'N], 31.3.1990, *Podlech* 48832 (MSB) – 8 km ESE Tan-Tan an der Piste nach Tilemsen, 70 m, sandiges Feld [11°03'W, 28°26'N], 2.4.1990, *Podlech* 48978 (BASBG, MSB). – Prov. Layoune: 5 km SE Tarfaya an der Straße nach Layoune (P 41), 30 m, sandige Flächen [12°52'W, 27°55'N], 28.3.1990, *Podlech* 48638 (MSB) – 7 km N Tak an der Straße 41 von Tarfaya nach Layoune, ca. 30 m [12°56'W, 27°44'N], 28.3.1990, *Schuhwerk* 90/343 (M).

Helichrysum stoechas (L.) Moench subsp. *conglobatum* (Viv.) Maire & Weiller, Bull. Soc. Hist. Nat. Afr. Nord 30: 281. 1939.

Syn.: *Gnaphalium conglobatum* Viv., Fl. Lib. Spec.: 54. 1824; *Helichrysum conglobatum* (Viv.) Steud., Nomencl. Bot., ed. 2, 1: 736. 1840.

Perennial shrublet, branches ascending, 10–25 cm long, densely tomentose, silvery-greyish or white. Leaves alternate, leathery, 6–25 mm long, the basal ones spatulate, 3.5–7 mm wide and clustered, the terminal ones linear, 1–2.5 mm wide, apically rounded or subacute, margins entire and revolute, lanate to white-tomentose on both sides, becoming glabrous above. Synflorescence compound with many capitula in a globose cluster 1.8–5 cm in diameter. Capitula on very short, wooly stalks, ovoid before anthesis, later globose to widely ovate, 4–6 mm in diameter. Involucre 4–6 mm long, equalling the florets. Involucral bracts loosely imbricate, bright sulphur or yellow, glabrous or somewhat lanate at the base, at the apex rounded to subacute, the outer ones ovate, the middle ones obovate and the inner ones narrowly spatulate to narrowly obovate. Marginal florets female, central ones bisexual. Pappus setae 22–30, ca. 2.5–3 mm long, scabrid. Corolla of central flowers ca. 3 mm long, tubular. Lobes 5, ca. 0.5 mm long, triangular, reflexed. Achene ca. 1 mm long, surface with shining white papillae.

New to Tunisia:

Tunisia. Gouv. Bizerte: Cap Blanc, 8 km N Bizerte [9°52'E, 37°20'N], 20 m, 3.4.1981, D. Podlech 35771 (M, MSB) – dto., 17.4.1982, D. Podlech 37292 (G, M, MSB).

Helichrysum stoechas is a variable species complex widely distributed in the Mediterranean area. A critical revision would be necessary. *Helichrysum stoechas* subsp. *conglobatum* was formerly treated in synonymy under *H. stoechas*, but we believe it is a distinct taxon. The subspecies differs from the subspecific taxa accepted by CLAPHAM in TUTIN & al. (1976: 129) by compact habit with very short branches, the spatulate and much wider basal leaves and the very compact clusters of capitula. The plants do not have an aromatic smell. It is growing in Tunisia on sand or rocks along the Mediterranean coast.

Pulicaria antiatlantica Förther & Podlech, spec. nov.

Holotype: Marokko, Prov. Tiznit, AntiAtlas, Col-du-Kerdous, an der Straße von Tiznit nach Tafraout, ca. 1100 m [29°32'57"N, 9°20'32"W], 6.8.1999, D. Podlech 55265 (MSB; Iso: E, K, M, MPU, RAB, Soc. Ech. Pl. vasc. Europe Bass. médit. no. 19760).

Differt ab *Pulicaria arabica* (L.) Cass. foliis brevioribus, angustissimis, 5–15 mm longis et 0,5–1 mm latis (nec 15–50 mm longis et 3–8 mm latis), basi angustatis (nec semiamplexicauli-auriculatis), brevissime aculeati-pilosis (nec dense sericeis), capitulis minoribus, 8–9 mm diametro (nec 10–13 mm diametro), saepissime homogamis sine floribus marginalibus ligulatis, raro floribus ligulatis evolutis.

Plants short-perennial, 20–40 cm tall. Stems erect, reddish-brown, branched, in upper parts rather densely covered with very short, acute hairs and sessile glands, mostly also with thin, spreading hairs ca. 0.5 mm long, in basal parts subglabrous. Leaves 5–15 mm long, 0.5–1 mm wide, linear, indistinctly attenuate towards the base, subacute at the apex, loosely covered with short rigid hairs and rather densely with sessile, mostly impressed blackish glands,

sometimes also with few longer simple hairs, flat or with upcurved margins or folded. Capitula in a loose panicle, solitary at the end of slender, erect or ascending side-branches 2–5 cm long. Capitula 8–9 mm in diameter. Involucrum hemispheric. Involucral bracts in $\pm$ three rows, greenish with reddish apex, linear, the outer ones 1–1.5 mm, the middle and inner ones 2.5–4 mm long, covered with short, subappressed hairs and sessile glands. Receptacle slightly convex, slightly alveolate. Flowers yellow. Ligulate flowers mostly missing, only in few capitula 2–5, very rarely up to 12, ca. 6 mm long, 1–2 mm longer than the involucrum, female, ligules with three narrowly triangular teeth, densely glandular on outer side. Tubular flowers numerous, hermaphroditic, ca. 5 mm long, in upper part glandular. Achenes cylindric, 1–1.2 mm long, distinctly ribbed, sparsely hairy. Outer pappus scales ca. 0.25 mm long, connate up to the middle, free tips narrow. Inner pappus 8–10 setae, ca. 3 mm long.

Within the subgenus *Pulicaria* the new species is most similar to *P. arabica*. It is easily to distinguish from the latter species by the short and very narrow not sericeous leaves, attenuate but not auricle-like half-clasping the stem, and the distinctly smaller capitula mostly without ligulate marginal flowers.

Scorzonera coronopifolia Desf., Fl. Atlant. 2: 220. tab. 44. 1799.

New to Morocco:

Morocco. Prov. Oujda: 15 km SE Oujda an der Straße S 408 nach Oued El-Heimer, 800 m; Brachacker, steinig-lehmige Flächen, Wiesen [1°57'W, 34°37'N] 8.4.1993, *Förther* 6568 (Herb. Förther), *Podlech* 51230 (BASBG, MSB).

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