

The genus *Limonium* (Plumbaginaceae) in Tunisia

by

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The knowledge of the species of the genus *Limonium* from Tunisia consists of gaps and fragments. There is only little data published on plants from this area. But some newly discovered species of Tunisian plants are described by BONNET & BARRATTE (1895), MAIRE (1937) and PIGNATTI (1982). *Limonium* growing in Tunisia was first listed by BONNET & BARRATTE (1896) and more recently by POTTIER-ALAPETITE (1981). Numerous specimens of different populations of *Limonium* were collected on two excursions made to various parts of the coast and interior of Tunisia. Caryological and taxonomical research was carried out on exsiccata and living material cultivated in the Botanical Garden of Munich and Catania. Many new species were described while for others the taxonomical status was clarified, and species with a wide Mediterranean distribution were confirmed, e.g. *L. virgatum*, *L. pruinosum*, *L. ferulaeum* or *L. carbonense*.

I. New taxa

1. *Limonium byzaciun* Brullo & Erben, spec. nov.

Typus: Tunisia, Gouv. de Medinine: Ile de Jerba, c. 1 km E of the village Mount-Souk, sandy coast, 6.IX.1984. BRULLO & ERBEN 694 (Holotypus: H; Isotypi: CAT, herb. ERBEN).

Fig.: 1

Planta perennis, glabra, paucicaulis. Caudiculi breves, 1-3 cm longi. Folia basalia florendi tempore persistentia, 40-

160 x 20-55 mm, oblanceolato-spatulata ad spatulata vel ovata, obtusa ad rotundata, mucronata, mucrone ca. 2 mm longo, in petiolum brevem, 4-8 mm latum attenuata, 5-9-nervia, coriacea, glauca. Caulis 40-90 cm longi, erecti, subrecti, in partibus 3/4 superioribus ramosi. Rami fertiles subrecti, usque ad 30 cm longi, oblique sursum spectantes, formantes angulos 35°-50°, dense ramosi. Inflorescentia ampla, dense paniculata. Spicae dense dispositae, 7-15 mm longae, subrectae. Spiculae 4,0-4,5 mm longae, 2-7-florae, ad 7-8 in 1 cm dispositae. Bractea inferior 1,2-1,6 x 1,3-1,8 mm, triangulari-ovata, acuta ad acutiuscula, margine late albido membranaceo, parte centrali submembranacea, acuminata, acumine marginem non contingente. Bractea media 1,2-1,7 x 1,0-1,2 mm, oblonga ad oblongo-obovata. Bractea superior 3,0-3,4 (-3,8) x 2,2-2,8 mm, elliptica, obtusa ad acutiuscula, margine late membranaceo, parte centrali carnosula, 2,0-2,8 x 1,2-1,8 mm, oblongo-elliptica, acuminata, acumine 0,6-0,8 mm longo marginem non contingente; dorso leviter curvato. Calyx 2,9-3,4 (-3,8) mm longus, ex bractea superiore 0,5-1,0 mm exsertus, tubo unilateraliter dense piloso; dentes calycis ca. 0,5 x 0,7 mm, triangulari-ovati; costae calycis ad basin loborum calycis desinentes. Petala 6,7-6,9 x 1,8-2,0 mm, cuneata, submarginata, rubro-violacea. Corolla infundibuliformis, 4,0-4,5 mm diametro.

Ecology: growing on dry soils of salt marshes.

Distribution: coast and inland of S Tunisia.

Chromosome number: 2n = 27; collections counted: Li-1024, Li-1030 and Li-1041.

Collections examined:

Gouv. de Gafsa:

c. 5 km SE of Gafsa along the road P15; sandy places, 4.9.1984, BRULLO & ERBEN 667 (CAT, M, herb. ERBEN) -- Gafsa fossé dans l'oasis, 10.10.1883, ROBERT (P).

Gouv. de Gabès:

NW of the village Kebili, c. 1 km NW of the village Talmine on the road to Tombar; sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 677 (CAT, M, herb. ERBEN) -- NW of the village Kebili, c. 2 km SE of the village Menchia on the road P16; sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 672 (Li-1024) (CAT, M, herb. ERBEN) -- El Houina, Djared in palmetis et in arenosis, 7.6.1884, LETOURNEUX (P) -- Kebili, in salsuginosis ad Chott el Djerid, 1.1909, PITARD (MA).

Gouv. de Médenine: Ile de Jerba:

C. 1 km E of the village Hount-Souk, sandy coast, 6.9.1984, BRULLO & ERBEN 694 (Li-1041) (CAT, M, herb. ERBEN) -- Hount-Essouq, 22.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

Gouv. de Tozeur:

Tozzer, 12.5.1884, DAUMET, ADAMSON & BONNET (P) -- In paludosis près Oasis Tozzer, 2.5.1887, LETOURNEUX (P).

Plants from inland (Gafsa) show larger spikelets. It is closely related to *Limonium neapolense*.



Fig.: 1 *Limonium byzantium*

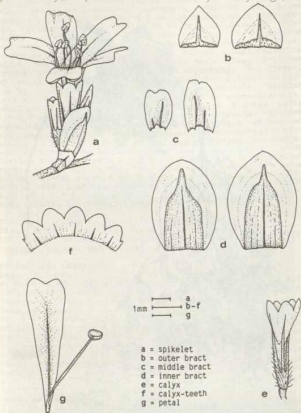


Fig.: 1 *Limonium byzantium*

2. *Limonium cercinense* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Sfax: Iles Kerkenah, El Ataya, 26. VI.1984, BRULLO & FURNARI (Holotypus: M; Isotypi: CAT)

Fig.: 2

Planta perennis, glabra, paucicaulis. Caudiculi breves, 1-2 cm longi. Folia basalia florendi tempore persistentia, 25-70 x 8-16 mm, oblanceolata ad oblanceolato-spatulata, obtusa, mucronata, mucrone 1-3 mm longe, in petiolum brevem, 3-4 mm latum attenuata, 1-5-nervia, coriacea, glauco-rubescens. Caules 25-65 cm longi, erecti, recti, in parte superiore ramosi. Rami steriles absentes vel nonnulli. Rami fertiles subrecti, usque ad 12 cm longi, oblique sursum spectantes, formantes angulos 45°-55°, simplices vel in parte superiore laxè ramosi. Inflorescentia laxè paniculata. Spicae laxè dispositae, 10-25 mm longae, rectae. Spiculae 5.5-6.0 mm longae, 1-2-florae, ad 4-5 in 1 cm dispositae. Bractea inferior 2,3-3,0 x 2,1-2,4 mm, triangulari-ovata, acuta, margine late membranaceo, parte centrali subcarnosula, longe acuminata, acumine marginem fere contingente. Bractea media 1,8-2,1 x 1,2-1,8 mm, oblongo-elliptica. Bractea superior 4,3-5,1 x 2,9-3,2 mm, elliptica, obtusa ad rotunda; margine late membranaceo; parte centrali subcarnosula, longe acuminata, acumine 1,2-3,2-3,8 x 1,4-2,0 mm, subcarnosula, acuminata, acumine 1,2-1,7 mm longo marginem fere contingente; dorso curvato. Calyx 4,1-4,3 mm longus, ex bractea superiore 0,8-1,5 mm exsertus, unilateraliter tubo sparse puberulo; dentes calycis ca. 0,8 x 0,8 mm, semi-elliptici; costae calycis ante basin dentium calycis desinentes.

Ecology: growing in saltmarshes, mainly on places submerged for short periods.

Distribution: endemic of Iles Kerkenah.

Chromosome number: 2n = 27; collections counted: Li-1127.

Collections examined:

Tunisia, Iles Kerkenah:

6.1854, ESPINE (P) -- 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- El Attaia, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (= Li-1127) (CAT).

The species is closely related to *Limonium rubescens*, which grows along the coast of S Tunisia. *Limonium rubescens* is characterized by longer petiolated and lanceolate leaves, longer spikes and smaller calyx.



HOLOTYPE

Herbarium, University of California

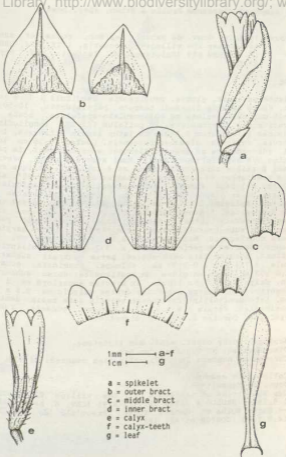
no. 7451A
Limonium cercinense (L.) G. Don

no. 7451B
(KALAMIAN)

no. 7451C
Limonium cercinense

1 1 1 1 1 1

Fig.: 2 *Limonium cercinense*



1mm ————— a-f
1cm ————— g

- a = spikelet
- b = outer bract
- c = middle bract
- d = inner bract
- e = calyx
- f = calyx-teeth
- g = leaf

Fig.: 2 *Limonium cercinense*

3. *Limonium clupearum* Brullo & Erben, spec. nova.

Typus: Tunisia, Gouv. de Nabeul: Cap Bon, rocks of sandstone near the village El Haouaria, 1.IX.1984, BRULLO & ERBEN 619 (Holotypus: M; Isotypi: CAT, herb. ERBEN)

Fig.: 3

Planta perennis, glabra, paucicaulis. Caudiculi 1-3 cm longi. Folia basalia florendi tempore persistentia, 10-50 x 3-15 mm, oblanceolata ad oblanceolato-spatulata, acuta ad acutiuscula, mucronulata, in petiolum 1/3-2/3 longitudinis laminae attingentem 1,5-2,5 mm latum sensim attenuata, 1-3-nervia, coriacea, glauco-rubrescentia. Caules 10-25 cm longi, adscendentes ad erecti, flexuosi ad subcurvati, in partibus 3/4 superioribus ramosi. Rami steriles pauci, breves. Rami fertiles subcurvati, usque ad 4 cm longi, oblique sursum spectantes ad patentes, formantes angulos 30°-40°, simplices vel laxe ramosi. Inflorescentia laxa paniculata. Spicae dense dispositae, 10-18 mm longae, subcurvatae ad rectae. Spiculae 6,5-7,0 mm longae, 2-4-florae, ad 4-7 in 1 cm dispositae. Bractea inferior 2,1-2,6 x 2,0-2,2 mm, triangulari-ovata, obtusa; margine late membranaceo; parte centrali subcarnosula, longe acuminata, acumine marginem fere contingente. Bractea media 2,1-2,4 x 1,9-2,2 mm, oblonga. Bractea superior 5,1-5,8 x 3,7-3,9 mm, elliptica, obtusa, margine late membranaceo, parte centrali subcarnosula, 3,7-4,1 x 2,0-2,2 mm, oblonga, acuminata, acumine 1,0-1,2 mm longo marginem non contingente; dorso subcurvato. Calyx 5,2-5,7 mm longus, ex bractea superiore ca. 1 mm exsertus, tubo sparse puberulo; dentes calycis ca. 0,6 x 1,0 mm, late semi-elliptici; costae calycis ante basin dentium desinentes. Petala 8,9-9,2 x 2,6-2,8 mm, cuneata, rubro-violacea. Corolla 6,5-7,0 mm diametro.

Ecology: rocky coast, sand- and limestone.

Distribution: NE Tunisia, Cap Bon.

Chromosome number: 2n = 27; collection counted: Li-979.

Collections examined:

Gouv. de Nabeul:

Cap Bon, rocks of sandstone near the village El Haouaria, 1.9.1984, BRULLO & ERBEN 619 (Li-979) (CAT, M, herb. ERBEN)

-- Entre Kurba et Menzel Temin, Frequ'ile du Cap Bon, 14.5.1883, COSSON et al. (P).



Fig.: 3 *Limonium clupearum*

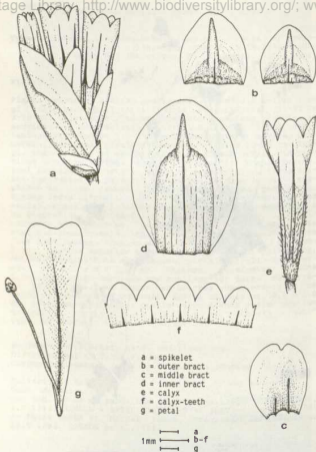


Fig.: 3 *Limonium clupearum*

4. *Lisochius confertus* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Nabeul: between Kelibia and Menzel Temine, c. 2 km NE of Menzel Temine, sandy places, 1. IX.1984, BRULLO & ERBEN 628 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 4

Planta perennis, glabra, uni- ad paucicaulis. Caudiculi 20-40 mm longi. Folia basalia florendi tempore persistentia, 20-95 x 5-15 mm, oblanceolata, acuta ad rotundata, mucronulata, in petiolum 1/3-1/2 longitudinis laminae attingentem 1,5-3,0 mm latum attenuata, 3-nervia, coriacea, glauca. Caules 10-60 cm longi, erecti ad adscendentes vel oblique sursum spectantes ad patentem, formantes angulos 35°-45°, laxo ramosi. Inflorescentia anguste ad ample paniculata. Spicae densissime dispositae, 10-20 mm longae, subcurvatae. Spiculae 5,5-6,5 mm longae, 3-12-florae, ad 8-12 in 1 cm dispositae, mutue attingentes. Bractea inferior 2,1-2,9 x 2,1-3,0 mm, late triangulari-ovata, acuta, margine late membranaceo, parte centrali crassiuscula, longe acuminata, acumine marginem fere contingente. Bractea media 2,0-2,3 x 1,7-2,0 mm, oblonga ad oblongo-obovata. Bractea superior 4,6-5,2 x 3,6-4,6 mm, obovata ad late obovata, rotundata, margine late membranaceo, parte centrali crassa, 3,0-4,0 x 2,1-3,0 mm, oblongo-elliptica, acuminata, acumine 0,8-1,0 mm longo marginem non contingente; dorso subrecto. Calyx 4,5-5,2 mm longus, ex bractea superiore ca. 1 mm exsertus, tubo inferne sparse piloso; dentes calycis ca. 0,4 x 1,0 mm, transverse semi-elliptici; costae calycis ante vel ad basin dentium calycis desinentes. Petala 8,7-8,9 x 2,9-3,0 mm, spatulato-cuneata, emarginata, rubro-vioacea. Corolla infundibuliformis, diametro 6,5-7,0 mm.

Ecology: growing in dry soils of salt marshes.

Distribution: NE coast of Tunisia: Between Bizerte and Hammanet.

Chromosome number: $2n = 27$; collections counted: Li-922, Li-925, Li-938, Li-971, Li-982, Li-983, Li-986, Li-987, Li-1059, Li-1064 and Li-1065.

Collections examined:

Gouv. de Tunis:

W of the village Grammarth, along the shore of Sebket Er Ariana; salty-sandy places, 27.8.1984, BRULLO & ERBEN 553 (Li-922), 557 (Li-925) (CAT, M, herb. ERBEN) -- Hamman el Lif, 8.5.1883, COSSON et al. (P) -- Fort de Sidi Bou-Hassen, 15.5.1888, BARRATTE (P) -- La Goulette, 19.5.1888, BARRATTE (P).

Gouv. de Bizerte:

Along the shore of Lac de Ghar El Melh, E of the village Acusja; salty-sandy places, 27.8.1984, BRULLO & ERBEN 569, (Li-938) (CAT, M, herb. ERBEN) -- Lac de Bizerte, along the



Fig.: 4 *Limonium confertum*

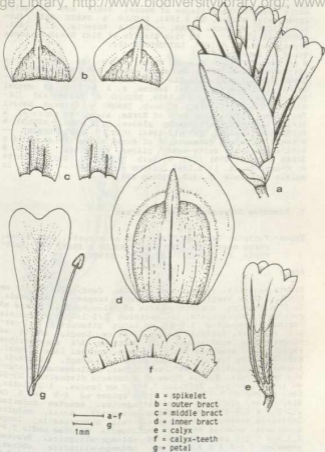


Fig.: 4 *Limonium confertum*

shore between the villages of Menzel Jenil and El Aziz; sandy-salty places, 28.8.1984, BRULLO & ERBEN 588, (Li-1065) (CAT, M, herb. ERBEN) -- Dune a Bizerte, 12.7.1883, COSSON et al. (P) -- Ad viam Bizerte et Sidi Hassoum prope ripam lacus, 28.6.1887, LETOURNEUX (P).

Gouv. de Nabeul:

N of Menzel Temime, Rass El Melah, along the shore of a little saltlake; salty and sandy soils, 1.9.1984, BRULLO & ERBEN 622 (Li-982), 623 (Li-983) (CAT, M, herb. ERBEN) -- Between Kelibia and Menzel Temime, c. 2 km NE of Menzel Temime; sandy places, 1.9.1984, BRULLO & ERBEN 627 (Li-971), 628 (Li-986) (CAT, M, herb. ERBEN) -- Between Menzel Temime and Korba, c. 5 km N of Korba, along the shore of a little saltlake; salty-sandy places, 1.9.1984, BRULLO & ERBEN 629 (Li-987), 710 (Li-1064) (CAT, M, herb. ERBEN) -- Between Korba and Hammanet, S of Korba along the shore of a little saltlake; salty-sandy places, 1.9.1984, BRULLO & ERBEN 634 (Li-1059) (CAT, M, herb. ERBEN) -- Entre Kourba et Menzel-Temin, 14.5.1883, COSSON et al. (P) -- Nabeul, in salsis maritimis, V.1910, PITARD 896 (G).

5. *Limonium hipponense* Brullo & Erben

Typus: Tunisia: Gouv. de Bizerte: N of Bizerte, Cap Blanc, rocky coast, 28.VIII.1984, BRULLO & ERBEN 580 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 5

Planta perennis, glabra, paucicaulis. Caudicali 30-65 mm longi, foliis vestiti. Folia florendi tempore persistentia, 30-65 x 9-11 mm, anguste cuneata ad oblanceolata, obtusa ad rotundata, mucronulata, in petiolum 1/2-2/3 longitudinis laminae attingentes 1,0-2,5 mm latum attenuata, 1-3-nervia, coriacea, viridia. Caules 25-40 cm longi, erecti ad adscendentes, subflexuosi, in partibus 3/4 superioribus ramosi. Rami steriles plures, breves, non vel laxe ramosi. Rami fertiles flexuosi, usque ad 20 cm longi, suberecti, forsan angulos 35°-45°, laxe ramosi. Inflorescentia anguste paniculata. Spicae dense et suberecte dispositae, 20-50 mm longae, rectae. Spiculae 7,5-8,0 mm longae, 1-2-florae, basi spicae ad 2-3 in 1 cm, apice spicae ad 4-5 in 1 cm dispositae, plerumque mutue attingentes. Bractea inferior 2,2-3,0 x 1,8-2,2 mm, triangulari-ovata, acuta, margine latissime membranaceo, parte centrali subcarnosula, longe acuminata, acumine marginem contingente. Bractea media 1,9-2,3 x 1,2-1,6 mm, oblonga ad oblongo-elliptica. Bractea superior 5,9-6,9 x 3,0-3,7 mm, oblongo-elliptica, obtusa, margine late membranaceo, parte centrali carnosula, 4,4-5,1 x 1,9-2,1 mm, oblonga, acuminata, acumine 1,0-1,3 mm longo marginem fere contingente. Calyx 5,7-6,2 mm longus, ex



Fig.: 5 *Limonium hipponense*

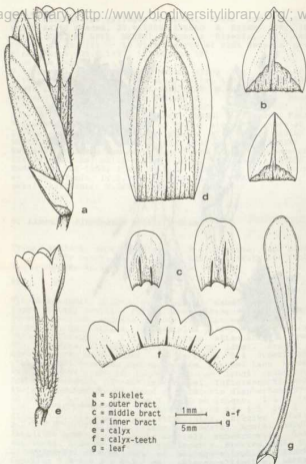


Fig.: 5 *Linonium hipponense*

bractea superiore, 1,0-1,3 mm exsertus, tubo dense piloso; dentes calycis ca. 0,7 x 1,2 mm, late semi-elliptici; costae calycis ante basin dentium calycis desinentes.

Ecology: growing on rocky coast, marly-soil.

Distribution: NE Tunisia, Cap Blanc near Bizerte.

Chromosome number: $2n = 27$; collection counted: Li-947.

Collections examined:

Gouv. de Bizerte:

N of Bizerte: Cap Blanc, rocky coast, 28.8.1984, BRULLO & ERBEN 580 (Li-947) (CAT, M, herb. ERBEN).

6. *Limonium intricatum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Bizerte: E of Bizerte, rocky coast on S side of Rass Sidi Ali El Mekki, 27.VIII.1984, BRULLO & ERBEN 564 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 6

Planta perennis, glabra, multicaulis. Caudiculi in parte superiore ramosi, 30-80 mm longi, foliis vestiti. Folia florendi tempore persistentia, 15-40 x 2-6 mm, anguste cuneata ad anguste oblanceolata, obtusa, marginibus subrevolutis, in petiolum $3/4-1/1$ longitudinis laminae attingentem 0,5-2,0 mm latum attenuata, 1-nervia, supra verrucosa, herbacea, atro-viridia. Caules 8-22 cm longi, erecti ad ascendentes, flexuosi, verrucosi, subarticulati, a basi dense dichotomiforme ramosi. Rami steriles plurissimi, breves, densissime dichotomiforme ramosi. Rami fertiles flexuosi, usque ad 12 cm longi, oblique sursum spectantes ad patentem, formantes angulos $45^{\circ}-55^{\circ}$, densissime dichotomiforme ramosi. Inflorescentia ampla, paniculata. Spicae margine inflorescentiae dense dispositae, 10-65 mm longae, rectae ad subcurvatae. Spiculae 6,5-7,0 mm longae, 2-5-floerae, ad 2-4 in 1 cm dispositae. Bractea inferior 1,4-1,9 x 1,5-2,0 mm, triangularis ad triangulari-ovata, acuta ad obtusa, margine late membranaceo, parte centrali submembranacea, acuminata, acumine marginem fere contingente. Bractea media 1,4-1,8 x 1,3-1,6 mm, oblonga. Bractea superior 4,5-5,1 x 2,2-2,6 mm, oblonga ad oblongo-obovata, rotunda ad obtusa, margine anguste membranaceo, parte centrali crassa, 3,5-4,2 x 1,7-2,0 mm, oblonga, acuminata, acumine 0,6-0,9 mm longo marginem fere contingente; dorso subcurvato. Calyx 5,2-6,1 mm longus, ex bractea superiore 2,0-2,5 mm exsertus, tubo sparse puberulo; dentes calycis ca. 0,5 x 0,8 mm, late semi-elliptici; costae calycis ad basin dentium calycis desinentes. Petala 8,2-8,5 x 2,3-2,5 mm, ciliata, rubro-violacea. Corolla 6,0-6,5 mm diametro.



Fig.: 6 *Limonium intricatum*

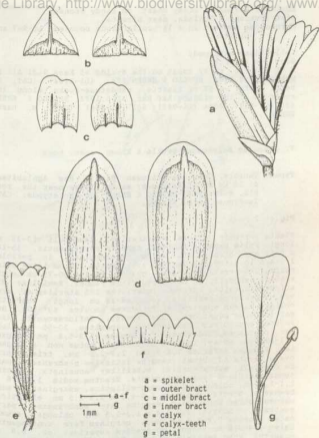


Fig.: 6 *Limonium intricatum*

Ecology: living on rocky coast, on sandy stones,
Distribution: N Tunisia, near Bizerte.
Chromosome number: $2n = 18$; collections counted: Li-967 and
Li-968.

Collections examined:

Gouv. de Bizerte:

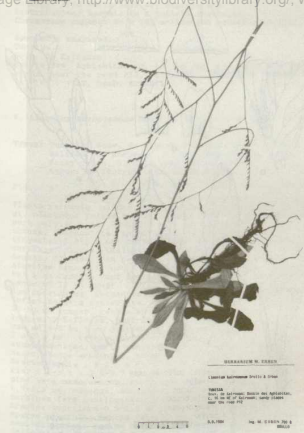
E of Bizerte, rocky coast on the S-side of Rass Sidi Ali El
Hekki, 27.8.1984, BRULLO & ERBEN 564, (Li-1134) (CAT, M, herb.
ERBEN) -- SE of Bizerte, sandstone-rocks along the coast NW of
the village Raf Raf, 31.8.1984, BRULLO & ERBEN 606 (Li-967),
606a (Li-968), 605 (Li-966) (CAT, M, herb. ERBEN).

7. *Limnium kairouanum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Kairouan: Bassin des Aghlabites,
c. 16 km NE of Kairouan; sandy places near the road
P12, 8.IX.1984, BRULLO & ERBEN 700 (Holotypus: CAT;
Isotypus: herb. ERBEN).

Fig.: 7

Planta perennis, glabra, paucicaulis. Caudiculi 10-35 mm
longi. Folia basalia florendi tempore persistentia, 35-100
 \times 8-18 mm, oblanceolata, acuta, mucronulata, in petiolum
1/2-4/5 longitudinis laminae attingentem 2-4 mm latum atten-
nuata, 3-5-nervia, coriacea, glauca. Caules 30-75 cm longi,
erecti, subrecti, in parte superiore ramosi. Rami laxè di-
stiche dispositi, interdum inferiores 1-3 steriles et bre-
ves, superiores fertiles, usque ad 18 cm longi, subrecti,
oblique sursum spectantes, formantes angulos 40° - 50° , non
vel in parte superiore laxè ramosi. Inflorescentia laxè
anguste paniculata. Spicae laxè dispositae, 20-50 mm lon-
gae, rectae ad subcurvatae. Spiculae 5,3-5,8 mm longae.
1-3-florae, ad 4-7 in 1 cm dispositae, mutue non attingen-
tes. Bractea inferior 1,8-2,1 \times 1,9-2,1 mm, triangulari-
ovata, acuta ad obtusa, margine latissime membranaceo, parte
centrali subcarnosula, subtiliter acuminata, acumina-
tenui, marginem fere contingente. Bractea media 1,5-1,8 \times
1,1-1,2 mm, oblonga ad oblongo-elliptica, emarginata, mem-
branacea. Bractea superior 4,0-4,3 \times 2,3-2,5 mm, elliptica,
obtusa, dorso subcurvato, margine late membranaceo, parte
centrali carnosula, 3,2-3,4 \times 1,3-1,5 mm, oblonga, acumi-
nata, acumine 0,7-0,8 mm longo, marginem fere contingente.
Calyx 3,4-3,8 mm longus, ex bractea superiore ca. 0,5 mm
exsertus, tubo imprimis unilateraliter dense breviter pi-
loso; dentes calycis ca. 0,4 \times 0,9 mm, transverse late
semi-elliptici; costae tubi ad basin dentium calycis desin-
entes. Petala 6,9-7,2 \times 1,9-2,1 mm, cuneata, emarginata,
rubro-violacea. Corolla infundibuliformis, 5,8-6,2 mm dia-
metro.



LIMONIUM N. COHEN

Limonium kairouanum Cohen & Cohen

TYPE
HOLOTYPE: Israel, District of Ashdod, C. 10 km SE of Kairoan, sandy dunes near the road #42



S.S. 1966 Ing. M. COHEN D.D. & M. COHEN

Fig.: 7 *Limonium kairouanum*

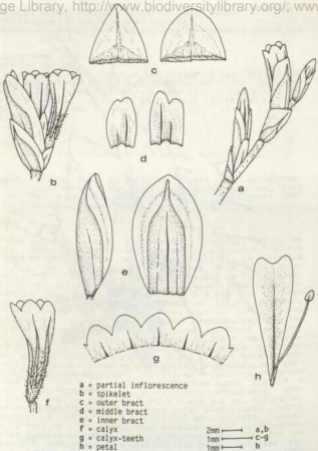


Fig.: 7 *Limonium kairouanum*

Ecology: arid soils near dry depressions.

Distribution: Endemic to C Tunisia (Kairouan).

Chromosome number: $2n = 18$; collection counted: Li-1047.

Specimens examined:

Tunisia

Gouv. de Kairouan:

Bassin des Aghlabites, c. 16 km NE of Kairouan; sandy places near the road F12, 8.9.1984, BRULLO & ERBEN 700 (Li-1047) (CAT, herb. ERBEN).

8. *Limonium korbousense* Brullo & Erben, spec. nova.

Typus: Tunisia, Gouv. de Nabeul: between the villages of Soliman and Korbous, 3 km from village Korbous, rocky coast, 31.VIII.1984, BRULLO & ERBEN 608 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

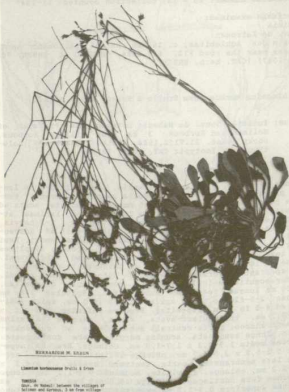
Fig.: 8

Planta perennis, glabra, paucicaulis. Caudiculi 3-8 cm longi, plerumque foliis vestiti. Folia basalia florendi tempore persistentia, 25-100 x 8-15 mm, oblanceolata, acuta ad obtusa, mucronulata, in petiolum longitudinem laminae attingentem 1,0-2,5 mm latum longe attenuata, 1-3-nervia, coriacea, glauca. Caules 20-55 cm longi, erecti ad adscendentes, flexuosi, in partibus 2/3 superioribus ramosi. Rami steriles nonnulli, usque ad 15 cm longi, rectae, simplices vel laxe ramosi. Rami fertiles subcurvati ad subflexuosi, usque ad 18 cm longi, subrecti ad subcurvati, oblique sursum spectantes, formantes angulos 35° - 45° , laxe ramosi. Inflorescentia paniculata. Spicae densiuscule dispositae, 20-50 mm longae, rectae ad subcurvatae. Spiculae 7-8 mm longae, 2-5-florae, basi spicae ad 2-3 in 1 cm, apice spicae ad 4-5 in 1 cm dispositae. Bractea inferior 1,8-2,4 x 1,8-2,2 mm, triangulari-ovata, acuta, margine latissime submembranaceo, parte centrali subcarnosula ad submembranacea, longe acuminata, acumine marginem fere contingente. Bractea media 1,9-2,3 x 1,7-1,9 mm, oblonga. Bractea superior 5,1-5,8 x 3,0-3,7 mm, oblongo-elliptica, obtusa, margine late membranaceo, parte centrali crassa, 3,9-4,3 x 1,9-2,2 mm, oblonga, acuminata, acumine 0,9-1,1 mm longo marginem fere contingente. Calyx 5,5-6,0 mm longus, ex bractea superiore 0,9-1,2 mm exsertus; unilateralter tubo sparse puberulo; dentes calycis ca. 0,6 x 1,1 mm, transversae semi-elliptici; costae calycis ad basin dentium calycis desinentes. Petala 9,2-9,6 x 2,9-3,2 mm, cuneata, rubro-violacea. Corolla 8,0-8,5 mm diametro.

Ecology: growing on rocky coast, limestone.

Distribution: NE Tunisia, near Korbous.

Chromosome number: $2n = 27$; collections counted: Li-971 und Li-972.



BERNARD H. SHAW

Limonium korbousense Shull & Gray

HERB.

Shull, in Baker, between the villages of
Sulaim and Korbous, 3 mi from village
Korbous, rocky coast.

71.8.1904

Fig. 8. 00000 000 0
00000



Fig.: 8 *Limonium korbousense*

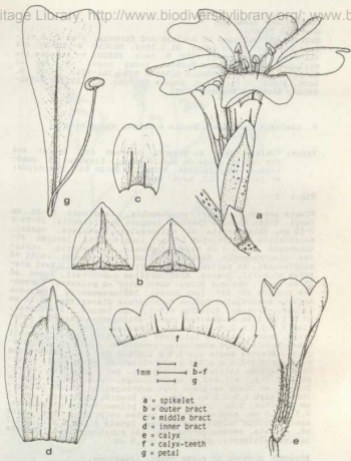


Fig.: 8 *Limonium korbousense*

Collections examined:

Gouv. de Nabeul:

Between the villages of Soliman and Korbous, 3 km from village Korbous; rocky coast, 31.8.1984, BRULLO & ERBEN 608 (Li-970), 607 (Li-969) (CAT, M, herb. ERBEN) -- Between the villages of Soliman and Korbous, rocky coast not far of Korbous, 31.8.1984, BRULLO & ERBEN 609 (Li-971) (CAT, M, herb. ERBEN) -- Cape Bon, presso Korbous, 1.7.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

9. *Limonium lacertosum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Bizerte: Between Cap Serrat and Cap Negro, plage de Didi Mechrig, fissures of sandstones, 29.VIII.1984, BRULLO & ERBEN 597 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 9

Planta perennis, glabra, paucicaulis. Caudiculi 10-25 mm longi. Folia basalia florendi tempore persistentia, 25-55 x 7-15 mm, oblanceolata ad oblanceolato-spatulata, obtusa, mucronulata, in petiolum 1/2-1/1 longitudinalis laminae attingentem 1.5-3.0 mm latum attenuata, 1-3-nervis, coriacea, glaucescentia. Caules 15-45 cm longi, erecti, recti ad subflexuosi, in partibus 3/4 superioribus ramosi. Rami steriles nonnulli, breves. Rami fertiles subcurvati, usque ad 17 cm longi, oblique sursum spectantes ad patentem, formantes angulos 35°-45°, laxe ramosi. Inflorescentia plerumque anguste paniculata. Spicae densiuscule dispositae, 15-50 mm longae, curvatae. Spiculae 6.5-7.0 mm longae, 2-4-florae, ad 4-5 in 1 cm dispositae, nutus attingentes. Bractea inferior 2.5-3.0 x 2.0-2.4 mm, triangularis ad triangulari-ovata, acuta, margine latissime membranaceo, parte centrali subcarnosula, longe acuminata, acumine marginem fere contingente. Bractea media 2.0-2.4 x 1.4-1.9 mm, oblonga. Bractea superior 5.0-5.6 x 3.7-4.1 mm, elliptica, obtusa ad rotundata, margine latissime membranaceo, parte centrali carnosula, 3.7-4.2 x 1.8-2.6 mm, oblonga, acuminata, acumine 1.0-1.2 mm longo marginem fere contingente; dorso subcurvato. Calyx 4.5-5.1 mm longus, ex bractea superiore ca. 1 mm exsertus, tubo sparse ad dense piloso; dentes calycis ca. 0.7 x 1.0 mm, semi-elliptici; costae calycis ad vel supra basin dentium calycis desinentes. Petala 8.1-8.4 x 2.6-2.7 mm, cuneata, submarginata, pallide rubro-violacea. Corolla infundibuliformis, diametro 5.0-5.5 mm.

Ecology: growing on rocky coast, limestone.

Distribution: N Tunisia, between Cap Serrat and Cap Negro.

Chromosome number: 2n = 27; collections counted: Li-958 and Li-959.



HERBARIUM B. GRILLI

Limonium lacertosum Griseb. & Speg.

1858
Soc. de Geografía Agrícola del Sur de Chile, Valdivia, Chile
C. J. Griseb.

U.S. GEO. SURV. No. 10, 1858, 1859



Fig.: 9 *Limonium lacertosum*

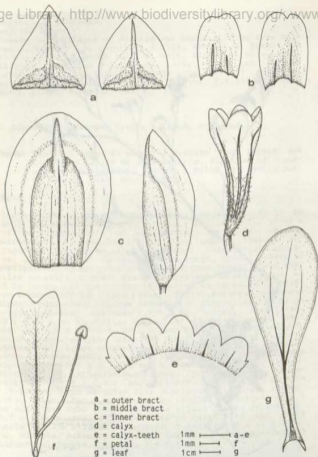


Fig.: 9 *Limonium lacertosum*

Collections examined:

Gouv. de Bizerte:

Between Cap Serrat and Cap Negro, plage de Didi Mechrig, fissures of sandstone, 29.8.1984. BRULLO & ERBEN 597 (Li-958), 598 (Li-959), 596 (Li-957) (CAT, M, herb. ERBEN).

10. *Limonium menigense* Brullo & Erben, spec. nova

Typus: Tunisia, Ras Tourguenes, Djerba, 23.VI.1984, BRULLO & FURNARI (Holotypus: M; Isotypus: CAT).

Fig.: 10

Planta perennis, glabra, paucicaulis. Caudiculi breves, 1-3 cm longi. Folia basalia florendi tempore persistentia, 50-140 x 12-30 mm, oblanceolata ad oblanceolato-spatulata, obtusa, mucronata, mucrone 1-1,5 mm longo, in longum petiolum 1,5-3,5 mm latum attenuata, 5-7-nervia, coriacea, glauca. Caules 50-80 cm longi, erecti, suberecti, in parte superiore ramosi. Rami steriles absentes vel rare nonnulli. Rami fertiles suberecti, usque ad 30 cm longi, oblique sursum spectantes, formantes angulos 55°-70°, laxe ramosissimi. Inflorescentia ampla, paniculata. Spicae laxae dispositae, 30-80 mm longae, suberectae. Spiculae 5,5-6,0 mm longae, 2-4-florae, ad 3-4 in 1 cm dispositae. Bractea inferior 2,2-2,5 x 2,0-2,3 mm, triangulari-ovata, obtusa ad acutiuscula, margine late membranaceo, parte centrali submembranacea, longe acuminata, acumine marginem contingente. Bractea media 2,0-2,1 x 1,3-1,4 mm, oblonga. Bractea superior 4,8-5,0 x 2,8-3,1 mm, elliptica, obtusa, margine late membranaceo, parte centrali carnosula, 3,2-3,5 x 1,8-1,9 mm, oblonga, acuminata, acumine 1,2-1,6 mm longo marginem fere contingente; dorso curvato. Calyx 4,1-4,6 mm longus, ex bractea superiore 0,6-1,0 mm exsertus, inferne dense piloso; dentes calycis ca. 0,5 x 0,8 mm, semi-elliptici; costae calycis ad basin dentium calycis desinentes.

Ecology: growing in the small sandy depressions of coast.

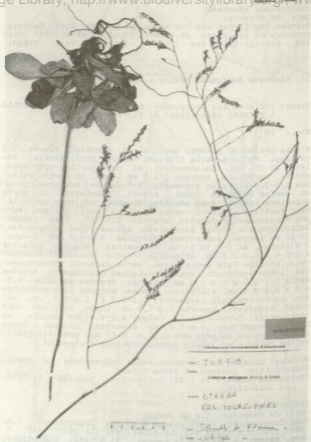
Distribution: endemic of Jerba Island.

Chromosome number: 2n = 26; collections counted: Li-1038, Li-1039.

Collections examined:

Gouv. de Medenine: Ile de Jerba:

Ras Torquerness, sandy places W of the light-house, 6.9.1984. BRULLO & ERBEN 689 (Li-1038), 690 (Li-1039) (CAT, M, herb. ERBEN) -- Tanit Sidi Gauros, 23.6.1984. BARBAGALLO, BRULLO & FURNARI (CAT) -- Sidi Yati, 23.6.1984. BARBAGALLO, BRULLO & FURNARI (CAT) -- El Bibane, 23.6.1984. BARBAGALLO, BRULLO & FURNARI (CAT) -- Ras Torquenes, 23.6.1984. BARBAGALLO, BRULLO & FURNARI (CAT).



HOLOTYPE

Herbarium Universitatis Göttingensis
 — TUB 518
 Limonium menigense Griseb. & Speg.
 — N 2886A
 CAS TOURCOULES
 on scrub in Pampa
 on 15-8-1944

1 cm

Fig.: 10 *Limonium menigense*

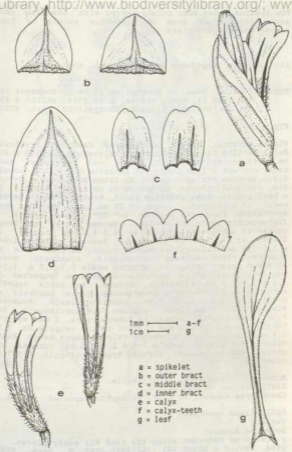


Fig.: 10 *Limonium menigense*

The species shows some relationships with *Limonium cerciense*. It differs from that species mainly in larger leaves and longer spikes.

11. *Limonium neapolense* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Sousse: c. 10 km of Hammamet along the road P1; sandy places, 2.IX.1984, BRULLO & ERBEN 641 (Li-998) (Holotypus:M; Isotypi:CAT, herb. ERBEN).

Fig.: 11

Planta perennis, glabra, paucicaulis. Caudiculi brevissimi. Folia basalia florendi tempore persistentia, 30-100 x 20-30 mm, oblanceolato-spatulata, obtusa vel rotundata, mucronata, mucrone 1-2 mm longo, in petiolum 1/2 - 3/4 longitudinis laminae attingentem 3-6 mm latum attenuata, 5-7-nervia, coriacea, glauca. Caules 30-70 cm longi, erecti, fere a basi ramosi. Rami steriles pauci, breves. Rami fertiles recti ad subcurvati, usque ad 20 cm longi, oblique sursum spectantes, formantes angulos 40°-50°, laxe ramosi. Inflorescentia ampla, paniculata. Spicae 10-25 mm longae, rectae ad subcurvatae. Spiculae 4,5-5,0 mm longae, 2-3-florae, ad 6-7 in 1 cm dispositae. Bractea inferior 1,6-1,7 x 1,6-1,8 mm, triangulari-ovata, acuta, margine late membranaceo, parte centrali subcarnosula, acuminata, acumine margines fere contingente. Bractea media 1,7-1,9 x 1,1-1,2 mm, oblongo-elliptica, membranacea. Bractea superior 3,3-3,8 x 2,2-2,9 mm, elliptica, obtusa, in parte superiore subcurvata, margine late membranaceo, parte centrali carnosula, 2,2-2,5 x 1,2-1,5 mm, subtriangularis, acuminata, acumine 0,9-1,0 mm longo, margines fere contingente. Calyx 3,6-4,0 mm longus, ex bractea superiore ca. 1 mm exsertus, tubo unilateraliter dense piloso; dentes calycis ca. 0,5 x 0,8 mm, semi-elliptici; costae calycis supra basin dentium calycis desinentes. Petala 7-8 x 2,1-2,3 mm, cuneata, emarginata, rubro-violacea. Corolla hypocratiformis, 6,5-7,0 mm diametro.

Ecology: saltmarshes, on dry soils.

Distribution: NE Tunisia.

Chromosome number: 2n = 27; collection counted: Li-998.

Collections examined:

Tunisia

Gouv. de Sousse:

c. 10 km of Hammamet along the road P1; sandy places, 2.9.1984, BRULLO & ERBEN 641 (Li-998) (CAT, M, herb. ERBEN).



Fig.: 11 *Linonum neapolense*

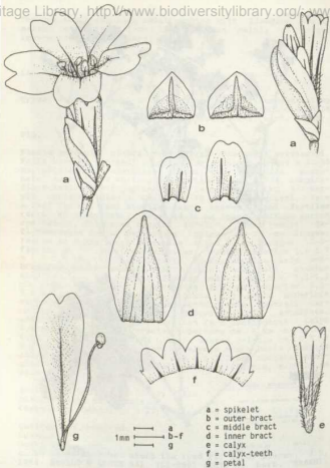


Fig.: 11 *Limonium neapolense*

12. *Limonium oblanceolatum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Tunis: between Grammarth and Souka, c. 1 km N of the village Mil, along the lakeside of Sebkheth Er Ariana: sandy, argillaceous places, 27.VIII.1984, BRULLO & ERBEN 549 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 12

Planta perennis, glabra, paucicaulis. Caudiculi 10-45 mm longi. Folia basalia florendi tempore persistentia, 15-55 x 5-14 mm, oblanceolata, acuta ad acutiuscula, mucronulata, in petiolum 1/2-1/3 longitudinis laminae attingentem 1,0-2,5 mm latum longe attenuata, 1-3-nervia, coriacea, glauco-rubrescentia. Caules 15-55 cm longi, erecti ad adscendentes, flexuosi ad subrecti, in partibus 3/4 superioribus ramosi. Rami steriles nonnulli, usque ad 15 cm longi, subcurvati, simplices vel laxe ramosi. Rami fertiles subcurvati, usque ad 10 cm longi, oblique sursum spectantes, laxe ad dense ramosi. Inflorescentia anguste ad ample paniculata. Spicae densiuscule dispositae, 10-20 mm longae, rectae ad subcurvatae. Spiculae 6,0-6,5 mm longae, 3-4-florae, ad 4-7 in 1 cm dispositae, nutae attingentes. Bractea inferior 1,9-2,5 x 1,9-2,2 mm, triangulari-ovata, acuta, margine late membranaceo, parte centrali crassiuscula, longe acuminata, acumine marginem fere contingente. Bractea media 2,2-2,6 x 1,4-1,9 mm, oblongo-elliptica. Bractea superior 4,8-5,2 x 3,6-4,1 mm, late elliptica, obtusa ad rotunda, margine late membranaceo; parte centrali crassa, 3,4-3,6 x 2,0-2,5 mm, oblonga, acuminata, acumine 1,0-1,1 mm longo marginem non contingente. Calyx 4,2-5,0 mm longus, ex bractea superiore ca. 1 mm exsertus, unilateraliter tubo sparse puberulo; dentes calycis ca. 0,5x0,8mm, semi-elliptici; costae calycis ante vel ad basin dentium calycis desinentes. Petala 7,7-8,1 x 2,7-2,8 mm, cuneata, emarginata, rubro-violacea. Corolla infundibuliformis, diametro 6,0-6,5 mm.

Ecology: Dry soils of salt-marshes.

Distribution: NE Tunisia, coast near Tunis.

Chromosome number: $2n = 27$; collections counted: Li-917, Li-918, Li-920, Li-921, Li-923 and Li-930.

Collections examined:

Gouv. de Tunis:
between Grammarth and Souka, c. 1 km N of the village Mil along the lakeside of Sebkheth Er Ariana: sandy-argillaceous places, 27.8.1984, BRULLO & ERBEN 548 (Li-917), 549 (Li-918), 551 (Li-920), 552 (Li-921) (CAT, M, herb. ERBEN) -- W of the village Grammarth, along the lakeside of Sebkheth Er Ariana: salty-sandy places, 27.8.1984, BRULLO & ERBEN 555 (Li-923) (CAT, M, herb. ERBEN) -- c. 13 km NW of the vil-



BRUNNEN W. BUCH

Limonium oblongeolatum Brullo & Brian

FORMA

50m. in Tusc. between Grosseto and Livorno, ca. 1 km S of the village M.L., along the lagoon of Sanudo, by Arno; sandy, argillaceous places

27.3.1906

leg. W. BRUNNEN et al.
Buccini

Fig.: 12 *Limonium oblongeolatum*

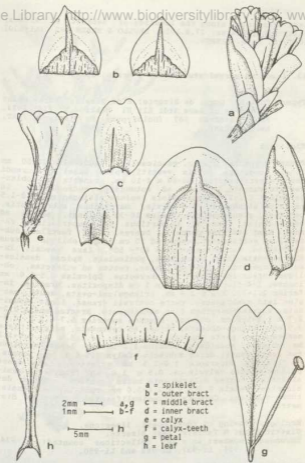


Fig.: 12 *Limonium oblanceolatum*

lage Grammarth, along the lakeside of Sebket Er Ariana; salty-sandy places, 27.8.1984, BRULLO & ERBEN 562 (Li-930) (CAT, M, herb. ERBEN).

13. *Limonium pyramidatum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Bizerte: E of Bizerte, rocky coast on S side of Rass Sidi Ali El Mekki, 27.VIII.1984, BRULLO & ERBEN 567 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 13

Planta perennis, glabra, paucicaulis. Caudiculi 20-50 mm longi, longiores foliis vestiti. Folia basalia florendi tempore persistentia, 20-60 x 4-10 mm, cuneata ad oblan- ceolato-cuneata, obtusa ad rotundata, mucronulata, in petiolum 1/2-2/3 longitudinis laminae attingentem 1,0-1,5 mm latum attenuata, 1-3-nervia, marginibus subrevolutis, coriacea, glaucescentia. Caules 10-35 cm longi, erecti ad adscendentes, flexuosi, in partibus 3/4 superioribus ramosi. Rami steriles nonnulli, breves. Rami fertiles subrecti ad subflexuosi, usque ad 10 cm longi, oblique sursum spectantes, formantes angulos 40°- 50°, laxe ramosi. Inflorescentia forma obtrullata, paniculata. Spicae densiuscule dispositae, 15-50 mm longae, rectae ad subrectae, oblique sursum spectantes ad subrectae. Spiculae 7,5-8,0 mm longae, 1-4-florae, ad 3-5 in 1 cm dispositae. Bractea inferior 2,1-3,0 x 2,0-2,6 mm, triangulari-ovata, acuta, margine late membranaceo, parte centrali crassa, longe acuminata, acumine margines fere contingente. Bractea media 2,2-2,7 x 1,3-1,8 mm, oblonga. Bractea superior 5,7-6,2 x 3,8-3,9 mm, oblongo-obovata, obtusa ad rotundata, margine late membranaceo, parte centrali carnosula, 4,1-4,8 x 2,0-2,2 mm, oblonga, acuminata, acumine 1,1-1,3 mm longo margines non contingente; dorso subrecto. Calyx 5,5-6,1 mm longus, ex bractea superiore 1,0-1,3 mm exsertus, tubo dense piloso; dentes calycis ca. 0,5 x 1,0 mm, transverse semi-elliptici; costae calycis ante basim dentium calycis desinentes. Petala 8,6-8,9 x 2,8-3,0 mm, cuneata, emarginata, rubro-violacea. Corolla infundibuliformis, 7,0-7,5 mm diametro.

Ecology: growing on rocky coast, limestone.

Distribution: N Tunisia, near Bizerte.

Chromosome number: 2n = 36; collections counted: Li-934, Li-936, Li-937, Li-942 and Li-950.

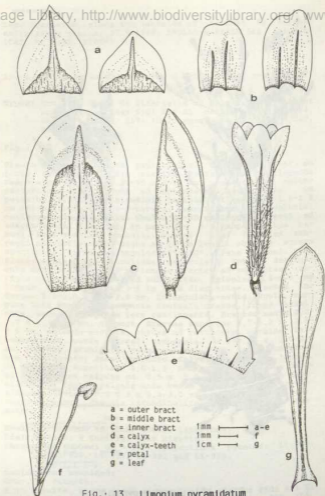
Collections examined:

Gouv. de Bizerte:

E of Bizerte, rocky coast on the S-side of Rass Sidi Ali El Mekki, 27.8.1984, BRULLO & ERBEN 567 (Li-936), 565 (Li-



Fig.: 13 *Limonium pyramidatum*



- a = outer bract
- b = middle bract
- c = inner bract
- d = calyx
- e = calyx-teeth
- f = petal
- g = leaf

1mm ——— a-e
1mm ——— f
1cm ——— g

Fig.: 13 *Limonium pyramidatum*

934), 589 (Li-937) (CAT, M, herb. ERBEN) -- rocky coast on the S side of Cap Bizerte, 28.8.1984, BRULLO & ERBEN 574 (Li-942) (CAT, M, herb. ERBEN) -- rocky coast W of Cap Blanc in direction of Sémaphore, 28.8.1984, BRULLO & ERBEN 584 (Li-950) (CAT, M, herb. ERBEN) -- Ile des Chiens, 9.5.1888, BARRATTE (F) -- Ile des Chiens, 31.5.1888, COSSON, BARRATTE & DUVAL (F) -- Ile Plane, 31.5.1888, BARRATTE, COSSON & DUVAL (F).

14. *Limonium rubescens* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Sfax: between Sfax and Gafsa, c. 15 km NE of the village of Mezrouna along the road P1; salty sandy places, 4.IX.1984, BRULLO & ERBEN 665 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

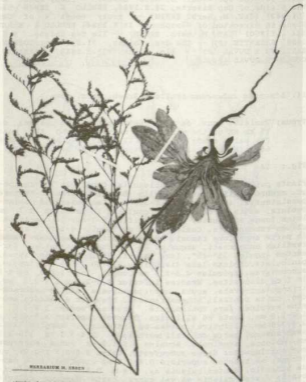
Fig.: 14

Planta perennis, glabra, paucicaulis. Caudiculi 1-5 cm longi, crebro foliis vestiti. Folia basalia florenti tempore persistentia, 40-130 x 7-20 (-30) mm, lanceolata ad oblanceolata, acuta ad obtusa, mucronulata, in petiolum 2-7 mm latum longe attenuata, subpennatifida 5-7-nerviis, coriacea, glauco-rubescens. Caulis 30-80 cm longi, erecti, recti, in parte superiore ramosi. Rami steriles absentes. Rami fertiles subcurvati, usque ad 25 cm longi, patentes, formentales angulos 35°-45°, laxi ramosi. Inflorescentia ampla, paniculata. Spicae laxae dispositae, 15-40 (-55) mm longae, subcurvatae. Spiculae 4,3-4,8 mm longae, 1-3-florae, ad 4-6 in 1 cm dispositae. Bractea inferior 2,0-2,8 x 1,8-2,2 mm, triangulari-ovata, acuta, margine anguste albedo-membranaceo, parte centrali submembranacea, breviter acuminata, acuminem marginem fere contingente. Bractea media 1,4-2,0 x 1,2-1,8 mm, ovata ad elliptica. Bractea superior 3,8-4,6 x 2,4-3,0 mm, elliptica, obtusa ad rotundata, margine late membranaceo, parte centrali carnosula, 2,4-3,2 x 1,6-2,1 mm, oblonga, acuminata, acuminem 0,9-1,3 mm longo marginem non contingente; dorso subcurvate. Calyx 3,0-3,7 (-4,0) mm longus, ex bractea superiore 0,4-0,8 mm exsertus, tubo densè puberulo; dentes calycis ca. 0,4 x 0,8 mm, triangulari-ovati; costae calycis ad vel supra basim dentium calycis desinentes. Petala 6,7-7,0 x 1,9-1,5 mm, cuneata, rubro-violacea. Corolla 4,0-4,5 mm diametro.

Ecology: growing in salt marshes, in dry or from time to time submerged places.

Distribution: W Tripolitania (Libya), S Tunisia in coast and inland, Ile de Jerbe, E Algeria.

Chromosome number: 2n = 17; collections counted: Li-1020, Li-1022, Li-1023, Li-1026, Li-1031, Li-1032, Li-1033, Li-1037, Li-1042, Li-1043, Li-1044, Li-1057.



LIMONIUM M. GRAY

Limonium rubescens Griseb. & Gray

THOMAS

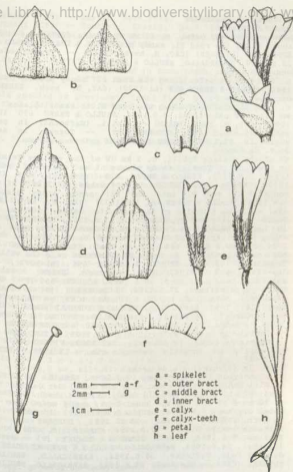
Drawn in pencil between Gray and Griseb.,
c. 18 on the hill of the village of Marroux
along the road to, sandy sandy places



1857-1858

Fig. 14. GRAY and GRAY
1857-1858

Fig.: 14 *Limonium rubescens*



1mm ——— a-f
2mm ——— g
1cm ———

a = spikelet
b = outer bract
c = middle bract
d = inner bract
e = calyx
f = calyx-teeth
g = petal
h = leaf

Fig.: 14 *Limonium rubescens*

Collections examined:

Gouv. de Sfax:

between Sfax and Gafsa, c. 15 km NE of the village of Mez-zouna along the road P1; sandy places, 4.9.1984, BRULLO & ERBEN 665 (Li-1020) (CAT, M, herb. ERBEN) -- Thyna, Sfax, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

Gouv. de Gafsa:

c. 10 km SW of Gafsa along the road P1; sandy places, 4.9.1984, BRULLO & ERBEN 669 (Li-1022) (CAT, M, herb. ERBEN).

Gouv. de Tozeur:

c. 4 km NE of Tozeur along the road C106; sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 670 (Li-1023) (CAT, M, herb. ERBEN) -- Kebili, (Mefzouna) in palmetis, 29.-30.5.1884, LETOURNEUX (P) -- Tozeur, in salsuginosis, II.1909, PITARD 3080 (G).

Gouv. de Gabès:

NW of the village Kebili, c. 1 km NW of the village Talmine on the road to Tombar; sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 678 (Li-1031), 679 (Li-1032) (CAT, M, herb. ERBEN) -- W of Gabès, c. 2 km W of the mouth of the road P16 into the P1; sandy stony places, 5.9.1984, BRULLO & ERBEN 681 (Li-1033) (CAT, M, herb. ERBEN) -- 29 km E Kebili on the road to Gabès, 100 m, in Oued, on salty and gypsous soils, 3.6.1984, PODLECH 38 578 (M, herb. PODLECH) -- c. 20 km SE of Gabès on the road P1, along the riverside of Oued El Ferch; sandy places, 5.9.1984, BRULLO & ERBEN 684 (CAT, M, herb. ERBEN) -- S of Gabès, sandy places of an oasis of palmtrees near the village Teboulbou, 7.9.1984, BRULLO & ERBEN 696 (Li-1043), 697 (Li-1044), 695 (Li-1042) (CAT, M, herb. ERBEN) -- Gabès, sables au bord de l'oued, 20.6.1886, ROBERTS 550 (P) - Oued Farek prope Kettana, 27.5.1884, LETOURNEUX (P) - Gabès, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Skhira (Gabès), 24.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Oued Akant (Gabès), 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Gabès, Oued Rahal, 17.III.1971, ROTHLES-BERGER (G) -- Kebili, in aridis salsuginosis, II.1909, PITARD 3078 (G) -- Chemin de Gabès, in palmetis, III.1909, PITARD 3079 (G) -- Kebili, in incultis salsuginosis, II.1908, PITARD 1472 (G).

Gouv. de Medenine: Ile de Jerba:

In littoribus insula Djerba, 19.6.1894, KRALIK (G). Plage de Sidi Mahrez, sandy coast near the hotel Dar Jerba, 6.9.1984, BRULLO & ERBEN 688 (Li-1037) (CAT, M, herb. ERBEN) -- c. 10 km E of the village Mount-Souk, sandy coast near the hotel Olyses, 6.9.1984, BRULLO & ERBEN 693 (Li-1057) (CAT, M, herb. ERBEN) -- Djerba, 24.10.1882, DUREGNE (P) -- In littoris insula Djerba, 19.6.1894, KRALIK (P, FI) -- El Kantana, 5.6.1884, DUMET, ADAMSON & BONNET (P) -- Meshaya (Djerba), 24.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Oued el Feja, Medinine, 30.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Ras Rmel, 22.6.1984, BARBAGALLO, BRULLO &

FURNARI (CAT) -- Zarzis, 24.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Souchet, Zarzis, 24.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Amchoune, Diof, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

ALGERIEN

Wilaya Biskra:

25 km MSW Biskra on the road to Sous-Saada, 120 m; gypseous sandy places, 5.6.1984, PODLECH 38 608 (M, herb. PODLECH).

This species is previously identified by various authors with *L. delicatulum*, which is an endemic of S Spain.

15. *Limonium serratum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Bizerte: Cap Serrat, rocky coast E of plage Cap Serrat, 29.VIII.1984, BRULLO & ERBEN 594 (Holotypus: M; Isotypi: CAT, herb. ERBEN)

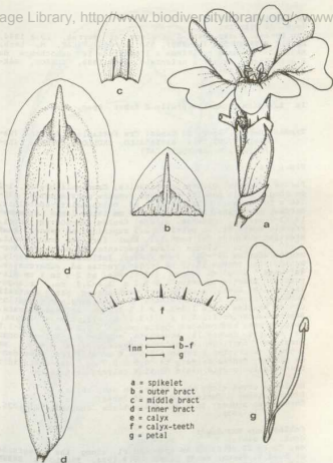
Fig.: 15

Planta perennis, glabra, paucicaulis. Caudiculi 2-7 cm longi, longiores foliis vestiti. Folia basalia florendi tempore persistentia, 10-60 x 4-7 mm, cuneata ad cuneato-spatulata, obtusa ad rotunda, marginibus subrevolutis, in petiolus 1/2-2/3 longitudinis laminae attingentes 2-4 mm latum attenuata, 1-3-nervia, coriacea, glauca. Caules 10-40 cm longi, erecti, flexuosi, in partibus 3/4 superioribus laxe ramosi. Rami steriles nonnulli. Rami fertiles subrecti ad subflexuosi, usque ad 20 cm longi, oblique sursum spectantes, formantes angulos 35°-45°, laxe ramosi. Inflorescentia anguste paniculata. Spicae dense dispositae, robustae, 10-45 mm longae, rectae ad subrectae. Spiculae 7,5-8,5 mm longae, 3-7-florae, ad 4-5 in 1 cm dispositae. Bractea inferior 2,3-2,8 x 2,2-2,5 mm, triangulari-ovata, margine latissime membranaceo, parte centrali subcarnosula, longe acuminata, acumine marginem fere contingente. Bractea media 2,0-2,3 x 1,4-1,7 mm, oblonga. Bractea superior 5,5-6,1 x 3,5-4,0 mm, elliptica ad oblongo-elliptica, obtusa ad rotundata, margine latissime membranaceo, parte centrali carnosula, 4,1-4,6 x 2,0-2,2 mm, oblonga, acuminata, acumine 1,0-1,2 mm longo marginem fere contingente; dorso subcurvato. Calyx 5,5-6,5 mm longus, ex bractea superiore 1,8-2,2 mm exsertus, unilateraliter tubo dense piloso; dentes calycis ca. 0,6 x 1,1 mm, transversae semi-elliptici; costae calycis ante basin dentium calycis desinentes. Petala 9,4-9,6 x 2,8-2,9 mm, cuneata, coeruleo-violacea. Corolla infundibuliformis, 7,0-7,5 mm diametro.

Ecology: growing on rocky coast, sandy stones.

Distribution: N Tunisia, Cap Serrat.

Chromosome number: 2n = 36; collections counted: Li-954 and Li-955.



1mm ——— a
————— b-f
————— g

- a = spikelet
- b = outer bract
- c = middle bract
- d = inner bract
- e = calyx
- f = calyx-teeth
- g = petal

Fig.: 15 *Limonium serratum*

Collections examined:

Gouv. de Bizerte:

Cap Serrat, rocky coast E of plage Cap Serrat, 29.8.1984, BRULLO & ERBEN 594 (Li-955), 593 (Li-954) (CAT, M, herb. ERBEN) -- Rochers maritimes a l'ouest de la embocheure du l'oued Barka, Krumirie orientale, 21.6.1888, COSSON, BARRATTE & DUVAL (P).

16. *Limonium tacapense* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Gabès: Tra Kettania e Zerkine (Gabès), 27.VI.1984, BARBAGALLO, BRULLO & FURNARI (Holotypus: M; Isotypi: CAT)

Fig.: 16

Planta perennis, glabra, paucicaulis. Caudiculi breves, 1-2 cm longi. Folia basalia florendi tempore persistentia, 30-140 x 10-40 mm, oblanceolata ad oblanceolato-spatulata, obtusa, mucronata, in petiolum 1-3 mm latum longe attenuata, 3-7-nervia, coriacea, glauca. Caules 30-100 cm longi, erecti, suberecti, in partibus 2/3 superioribus ramosi. Rami steriles absentes vel nonnulli. Rami fertiles subarcuati, 30-40 cm longi, oblique sursum spectantes ad patentes, formantes angulos 35°-50°, laxo ramosi. Inflorescentia ampla, paniculata. Spicae 10-19 mm longae, rectae ad subarcuatae. Spiculae 5.0-5.5 mm longae, 1-3-florae, ad 2-5 in 1 cm dispositae. Bractea inferior 1.9-2.2 x 1.8-2.2 mm, triangulari-ovata, acuta, margine late membranaceo, parte centrali submembranaceo, longe acuminata, acumine marginem ± contingente. Bractea media 1.8-2.0 x 1.2-1.5 mm, oblongo-obovata. Bractea superior 4.1-5.0 x 2.4-2.8 mm, elliptica, ± obtusa, margine late membranaceo, parte centrali 2.8-3.8 x 1.4-1.9 mm, oblonga, carnosula, acuminata, acumine 1.0-1.2 mm longo marginem ± contingente; dorso curvato. Calyx 3.8-4.1 mm longus, ex bractea superiore 0.6-1.0 mm exsertus, tubo dense piloso; dentes calycis ca. 0.5 x 0.7 mm, semi-elliptici; costae calycis ante basin dentium calycis desinentes.

Ecology: grows along the "wadis" on damp soils.

Distribution: S Tunisia, South of Gabès.

Chromosome number: 2n = 26; collections counted: Li-1035, Li-1036.

Collections examined:

Gouv. de Gabès:

ca. 20 km SE of Gabès on the road P1, along the riverside of Oued El Ferch; sandy places, 5.9.1984, BRULLO & ERBEN 685 (Li-1036), 683 (Li-1035) (CAT, M, herb. ERBEN) -- Tra Kettania e Zerkine, 27.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT, M).

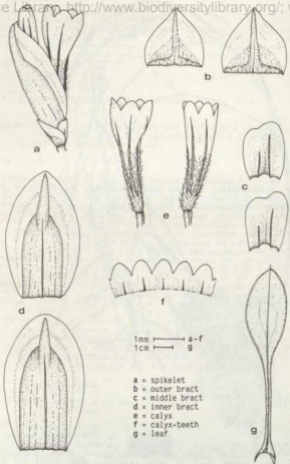


Fig.: 16 *Limonium tacapense*

The species is similar to *L. rubescens*, but it differs in a larger size, spatulate leaves, longer spikes and larger flowers.

17. *Limonium thaeiticum* Brullo & Erben

Typus: Tunisia, Gouv. de Sfax: sandy places near the salines of the village Tyna, 7.IX.1984, BRULLO & ERBEN 699 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 17

Planta perennis, glabra, paucicaulis. Caudiculi breves, 1-2 cm longi. Folia basalia florendi tempore persistentia, 30-120 x 10-25 mm, spatulata ad oblanceolato-spatulata, obtusa ad rotundata, in petiolum 1-3 mm latum longe cito attenuata, 3-7-nervia, coriacea, glauca, prostrata ad ascendentes. Caulis 40-125 cm longi, erecti, recti vel subrecti, in partibus 2/3 superioribus ramosi. Rami steriles absentes vel nonnulli. Rami fertiles subarcuati, usque ad 30-40 cm longi, oblique sursum spectantes, formantes angulos 35°-45°, dense ramosi. Inflorescentia densiuscula paniculata. Spicae laxae dispositae, 10-80 mm longae, subarcuatae. Spiculae 4,5-5,0 mm longae, 2-4-flores, ad 3-5 in 1 cm dispositae. Bractea inferior 1,7-2,0 x 1,5-1,9 mm, triangularis, acuta, margine late membranaceo, parte centrali submembranacea, longe acuminata, acumine margines fere contingente. Bractea media 1,6-1,9 x 1,0-1,2 mm, oblongo-elliptica. Bractea superior 3,4-4,0 x 2,1-2,7 mm, elliptica ad obovata, obtusa, margine late membranaceo, parte centrali 2,2-2,5 x 1,2-1,5 mm, carnosula, oblonga, in acumine margines non vel fere contingente attenuata; dorso curvato. Calyx 3,2-4,0 mm longus, ex bractea superiore 1,0-1,5 mm exsertus, inferne dense pilosus; dentes calycis ca. 0,7 x 0,9 mm, semi-elliptici; costae calycis ad basin dentium calycis desinentes. Petala 6,6-6,8 x 2,4-2,7 mm, cuneata, rubro-violacea. Corolla 5,0-5,5 mm diametro.

Ecology: living in saltmarshes, on dry soils.

Distribution: On the coast between Sousse and Sfax.

Chromosome number: $2n = 27$; collections counted: Li-1003, Li-1008, Li-1009, Li-1012, Li-1013, Li-1014, Li-1019 and Li-1046.

Collections examined:

Gouv. de Sousse:

Between Hammamet and Enfidaville, along the shore of a lake of Sebket Sidi Kralifa; salty-sandy places, 2.9.1984, BRULLO & ERBEN 646 (Li-1003) (CAT, M, herb. ERBEN) -- NW of Sousse, along the shore of a lake of Sebket Halk El Menzel; salty-sandy places, 2.9.1984, BRULLO & ERBEN 651 (Li-1009), 650 (Li-1008) (CAT, M, herb. ERBEN) -- Sebkat Sidi

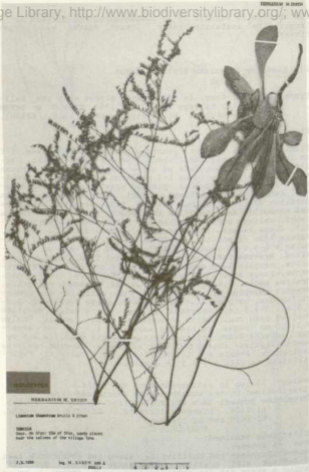
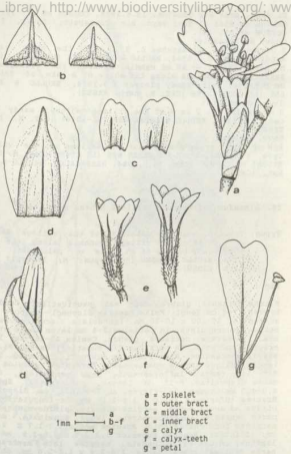


Fig.: 17 *Limonium thaenicum*



a = spikelet
b = outer bract
c = middle bract
d = inner bract
e = calyx
f = calyx-teeth
g = petal

Fig.: 17 *Limonium thaenicum*

El Hani, près Bir Toudjem, 15.6.1988, COSSON et al. (P)
Sebkha de Sidi el Hani vers Bir Tonaspeur, 15.VI. 1885,
COSSON et al. (G).
Gouv. de Monastir:

S of Monastir, saltmarshes c. 3 km S of the city; salty-
sandy places, 3.9.1984, BRULLO & ERBEN 654 (Li-1012) (CAT,
M, herb. ERBEN) -- NW of Mahdia, between the villages of
Bakalta and Teboulda along the shore of a lake of Sebkhet
de Moknine; salty-sandy places, 3.9.1984, BRULLO & ERBEN
655 (Li-1013), 656 (CAT, M, herb. ERBEN).

Gouv. de Mahdia:

S of Mahdia, c. 2 km N of the village Rejiche; sandy plac-
ces, 3.9.1984, BRULLO & ERBEN 657 (Li-1014) (CAT, M, herb.
ERBEN).

Gouv. de Sfax:

SSW of Sfax, sandy places near the salines of the village
Thyna, 7.9.1984, BRULLO & ERBEN 699 (Li-1046) (CAT, M, herb.
ERBEN) -- Thyna, Sfax, 26.6.1984, BARBAGALLO, BRULLO & FUR-
NARI (CAT).

18. *Limonium tritonianum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Gabès: NW of the village Kebili,
c. 4 km SE of the village Menchia along the road
P16; sandy places of an oasis of palmtrees, 5.IX-
1984, BRULLO & ERBEN (Holotypus: M; Isotypi: CAT,
herb. ERBEN).

Fig.: 18

Planta perennis, glabra, uni- vel paucicaulis. Caudiculi
breves, 1-4 cm longi. Folia basalia florendi tempore per-
sistentia, 50-100 x 10-20 mm, lanceolata, acutiuscula vel
obtusa, mucronulata, in petiolium 2-4 mm latum longe attenu-
ata, 1-3-nervia, coriacea, glauca. Caules 40-80 cm longi,
erecti, subrecti, in partibus 2/3 superioribus ramosi. Rami
steriles absentes. Rami fertiles subrecti, usque ad 25 cm
longi, oblique sursum spectantes, formantes angulos 45°-
55°, laxe ramosi. Inflorescentia laxe paniculata. Spicæ
dense dispositæ, 8-15 mm longæ, subcurvatae. Spiculæ
4,0-4,5 mm longæ, 2-3-floræ, ad 7-9 in 1 cm dispositæ.
Bractea inferior 1,8-2,0 x 1,8-2,1 mm, triangulari-ovata,
obtusa ad acutiuscula, margine anguste albido-membranaceo,
parte centrali submembranacea, longe acuminata, acumine
marginem fere contingente. Bractea media 1,3-1,7 x 1,1-1,4
mm, elliptica. Bractea superior 3,3-3,7 x 2,6-2,9 mm, el-
liptica, obtusa ad rotundata, margine late membranaceo,
parte centrali subcarnosula, 2,0-2,4 x 1,8-2,0 mm, oblonga,
acuminata, acumine 1,0-1,3 mm longo marginem fere contin-
gente; dorso subcurvato. Calyx 2,7-3,2 mm longus, ex brac-



HOLOTYPE

DECALEPHEM M. LANGE

Limonium tritonianum Decal. & Druce

TURKEY
Prov. de Gule, W of the village BELL,
c. 4 km SE of the village BELL on the
road Pto. road plate of the road
of pasture.

0 1 2 3 4

S.L. 1967 No. 11. 1967. 125 &
BELL

Fig.: 18 *Limonium tritonianum*

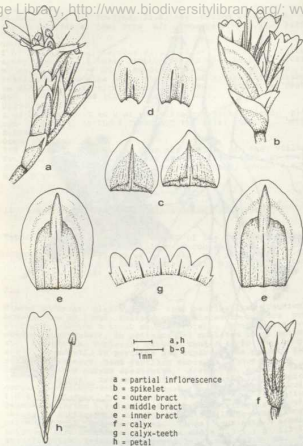


Fig.: 18 *Limonium tritonianum*

tea superiore ca. 0,4 mm exsertus, inferne puberulus; dentes calycis ca. 0,4x0,6 mm, triangulari-ovati; costae calycis supra basin dentium desinentes. Petala 6,4-6,7 x 1,4-1,6 mm cuneata, rubro-violacea. Corolla 4,0-4,5 mm diametro.

Ecology: growing on dampy places of salt soils.

Distribution: S Tunisia, around Chott El Jerid.

Chromosome number: $2n = 18$; collections counted: Li-1027 and Li-1028.

Collections examined:

Gouv. de Tozeur:

c. 4 km NE of Tozeur along the road C 106, sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 671 (Li-1024) (CAT, M, herb. ERBEN).

Gouv. de Gabès:

NW of the village Kebili, c. 3km SE of the village Menchia on the road P16; sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 673 (Li-1026) (CAT, M, herb. ERBEN) -- NW of the village Kebili, c. 4 km SE of the village Menchia on the road P16; sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 675 (Li-1028), 674 (Li-1027) (CAT, M, herb. ERBEN).

The species is closely related to *L. rubescens*. It differs from that one mainly in denser and shorter spikes, shorter inner bracts and calyces.

19. *Limonium xerophilum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Monastir: Monastir, rocky coast SE of the city, 2.IX.1984, BRULLO & ERBEN 653 (Holotypus: M, Isotypi: CAT, herb. ERBEN).

Fig.: 19

Planta perennis, glabra, paucicaulis. Caudiculi 1-5 cm longi, longiores foliis vestiti. Folia basalia florendi tenuia, persistentia, 18-50 x 3-9 mm, oblanceolata ad cuneata, acuta ad obtusa vel rotundata, mucronata, mucrone ca. 1 mm longo, in petiolum 2/3-1/1 longitudinis laminae attingentem 1,0-2,5 mm latum longe attenuata, 1-nervia, coriacea, glauca. Caulis 20-40 cm longi, subpatentes ad adscendentes, curvati, flexuosi, a basi fere ramosi. Rami steriles plures, curvati, non vel laxe ramosi. Rami fertiles subcurvati ad indistincte flexuosi, usque ad 20 cm longi, oblique sursum spectantes ad patentes, formentes angulos 45°-55°, laxe ramosi. Inflorescentia angusta ad ampla, paniculata. Spicae laxae ad densiuscule dispositae, 20-35 mm longae, subcurvatae. Spiculae 6-7 mm longae, 2-5-florae, ad 3-4 in 1 cm dispositae. Bractea inferior 2,0-2,3 x 2,0-2,1 mm, triangulari-ovata, acuta, margine latissime membranaceo, parte centrali subcarnosula, longe acuminata, acumine mar-



HOLOGRAPH

BERNARD M. SHAW

Limonium xerophilum Griseb. & E. B. S. P.

TYPE
Hort. de Mexico; Mexico, rocky coast
S. of the city

2.5.1900 by M. SHAW (22) &
SHAW



Fig.: 19 *Limonium xerophilum*

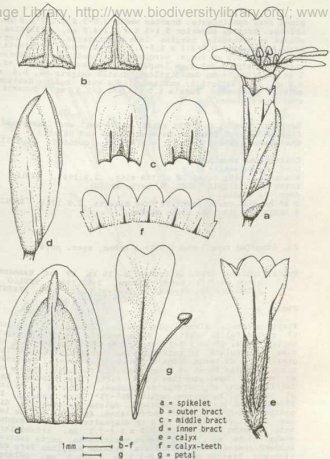


Fig.: 19 *Limonium xerophilum*

gines fere contingente. Bractea media 2,0-2,2 x 1,7-1,9 mm, oblonga. Bractea superior 5,1-5,6 x 3,1-4,0 mm, elliptica, obtusa ad rotundata, margine late membranaceo, parte centrali carnosula, 3,9-4,2 x 1,8-2,3 mm, oblonga, acuminata, acumine 1,1-1,2 mm longo, margines fere contingente; dorso curvato. Calyx 4,8-5,8 mm longus, ex bractea superiore ca. 1 mm exsertus, tubo dense piloso; dentes calycis ca. 0,5 x 0,8 mm, semi-elliptici; costae calycis ante basin dentium calycis desinentes. Petala 8,5-8,8 x 2,6-2,9 mm, cuneata, coeruleo-violacea.

Ecology: growing on rocky coast, marly-soil and limestones.
Distribution: E Tunisia, between Sousse and Salakta.
Chromosome number: 2n = 17; collection counted: Li-1011.

Collections examined:

Gouv. de Monastir:

Monastir, rocky coast SE of the city, 2.9.1984, BRULLO & ERBEN 653 (Li-1011) (CAT, M, herb. ERBEN).

Gouv. de Mahdia:

S of Mahdia, rocky coast of Rass Salakta, 3.9.1984, BRULLO & ERBEN 659 (CAT, M, herb. ERBEN).

20. *Limonium zeugitanum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Sousse: c. 10 km SW of Hammamet along road P1, sandy places, 2.IX.1984, BRULLO & ERBEN 643 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 20

Planta perennis, glabra, pluricaulis. Caudiculi 2-7 cm longi, crebro foliis vestiti. Folia basalia florendi tempore persistentia, 25-80 x 5-15 mm, oblanceolata, acuta ad obtusa, mucronulata, in petiolum longitudinem laminae attingentem 1-3 mm latum longe attenuata, 1-3-nervia, coriacea, glauca. Caulis 30-45 cm longi, erecti, flexuosi, fere a basi ramosi. Rami steriles multi, recti, laxe ramosi. Rami fertiles recti ad indistincte flexuosi, usque ad 18 cm longi, subrecti, formantes angulos 25°-35°, laxe ramosi. Inflorescentia angusta, paniculata. Spicae densiuscule dispositae, 15-50 mm longae, subcurvatae. Spiculae 6-7 mm longae, 1-4-florae, ad 3-5 in 1 cm dispositae, dorso subcurvato. Bractea inferior 1,8-2,2 x 1,6-2,1 mm, triangulari-ovata, acuta, margine latissime membranaceo, parte centrali submembranacea, longe acuminata, acumine margines fere contingente. Bractea media 1,8-2,3 x 1,4-1,9 mm, oblongo-elliptica. Bractea superior 5,0-5,5 x 3,0-3,4 mm, elliptica ad anguste elliptica, obtusa, margine late membranaceo, parte centrali carnosula, 3,6-4,2 x 1,8-2,1 mm, oblonga, acuminata, acumine 0,8-1,1 mm longo margines fere contingente. Calyx 5,4-6,1 mm longus, ex bractea superiore 1,0-



Fig.: 20 *Limonium zeugitanum*

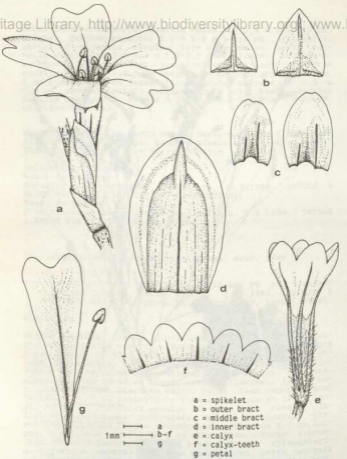


Fig.: 20 *Limonium zeugitarum*

1.5 mm exsertus, unilateraliter tubo sparse ad dense piloso; dentes calycis ca. 0.7x1.0 mm, semi-elliptici; constae calycis supra basin dentium desinentes. Petala 9.0-9.4 x 2.8-3.0 mm, cuneata, rubro-violacea. Corolla 7.8-8.3 mm diametro.

Ecology: saltmarshes on dry sandy soils.

Distribution: NE Tunisia, between Menzel Temine and Hammamet.

Chromosome number: $2n = 18$; collections counted: Li-984, Li-997, Li-1000, Li-1002 and Li-1053.

Collections examined:

Gouv. de Nabeul:

N of Menzel Temine, Rass El Melah, along the shore of a little saltlake: salty and sandy places, 1.9.1984, BRULLO & ERBEN 624 (Li-984), 706 (Li-1035) (CAT, M, herb. ERBEN) -- between Menzel Temine and Korba, c. 5 km W of Korba, along the shore of a little saltlake: salty-sandy places, 1.9.1984, BRULLO & ERBEN 632 (Li-990) (CAT, M, herb. ERBEN) -- c. 5 km W of Hammamet, saltmarshes, 2.9.1984, BRULLO & ERBEN 640 (Li-997) (CAT, M, herb. ERBEN).

Gouv. des Sousse:

c. 10 km SW of Hammamet along the road P1; sandy places, 2.9.1984, BRULLO & ERBEN 643 (Li-1000) (CAT, M, herb. ERBEN) -- between Hammamet and Enfidaville, along the shore of Sebket Sidi Kralifa: salty-sandy places, 2.9.1984, BRULLO & ERBEN 645 (Li-1002) (CAT, M, herb. ERBEN).

21. *Limonium panicum* Brullo & Erben, spec. nova

Typus: Tunisia, Gouv. de Tunis: E of Tunis, Carthage, salty-sandy places inside of the excavations, 26.VIII. 1984, BRULLO & ERBEN 545 (Holotypus: M; Isotypi: CAT, herb. ERBEN).

Fig.: 21

Planta perennis, glabra, paucicaulis. Caudiculi 1.5-4.0 cm longi. Folia basalia florendi tempore persistentia, 35-70 x 8-24 mm, oblanceolata, acuta ad obtusa, in petiolum 1/2-2/3 longitudinis laminae attingentes 1.5-3.0 mm latum longe attenuata, 3-nervia, coriacea, glauca. Caules 15-65 cm longi, erecti, recti ad flexuosi, in partibus 3/4 superioribus laxè ramosi. Rami steriles nonnulli. Rami fertiles curvati, usque ad 8 cm longi, oblique sursum spectantes ad patentes, formantes angulos 35°-45°, in parte superiore laxè ramosi. Inflorescentia laxè paniculata. Spicae densiuscule dispositae, 15-55 mm longae, rectae ad subcurvatae. Spiculae 6.5-7.0 mm longae, 2-5-florae, ad 2-5 pro 1 cm dispositae. Bractea inferior 2.2-2.8 x 2.1-2.4 mm, triangulari-ovata, acuta, margine latissime membranaceo, parte centrali subcarnosula, longe acuminata, acumine marginem fere contingente. Bractea media 2.3-2.8 x 1.7-1.9 mm, oblonga ad ob-

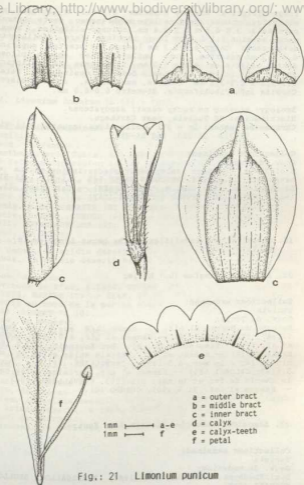


Fig.: 21 *Limonium punicum*

longo-elliptica. Bractea superior 5,4-6,1 x 3,9-4,1 mm, elliptica, obtusa, margine late membranaceo, parte centrali carnosula, 3,8-4,5 x 2,2-2,4 mm, oblongo-elliptica, acuminata, acumine 1,1-1,4 mm longo marginem fere contingente; dorso recto. Calyx 4,8-5,3 mm longus, ex bractea superiore 0,8-1,1 mm exsertus, tubo unilateraliter sparse piloso; dentes calycis ca. 0,5 x 1,0 mm, transverse semi-elliptici; costae tubi calycis ante basin dentium desinentes. Petala 8,9-9,2 x 2,9-3,1 mm, cuneata, emarginata, rubro-violacea. Corolla infundibuliformis, diametro 6,0-6,5 mm.

Ecology: growing on rocky coast; sandstones.

Distribution: NE Tunisia, near Carthage.

Chromosome number: 2n = 27; collections counted: Li-911, Li-912, Li-913, and Li-914.

Collections examined:

Gouv. de Tunis:

E of Tunis, Carthage, salty-sandy places inside of the excavations, 26.8.1984, BRULLO & ERBEN 545 (Li-911, Li-912, Li-913 and Li-914) (CAT, M, herb. ERBEN) -- Cartagine, 21.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

II. Checklist and localities of the genus *Limonium* in Tunisia

22. *Limonium sinustum* (L.) Miller

Collections examined:

Tunisia

Gouv. de Tunis:

Montagne du Hamman el Lif, 1 heure 1/2 au S du Tunis, 5.1887, TCHENATCHEF (P) -- Hamman el Lif, 8.5.1883, COSSON et al. (P) -- Base nord du Dj. Bou-Kournein, 22.4.1888, BARRATTE (P) -- Hamman el Lif, terrain salée entre le chemin de fer e la mer, 6.5.1893, CHEVALLIER (P) -- Tunis, 5.1868, CALDESI (FI) -- Hamman el Lif, terrains salés entre le chemin de fer et la mer, 6.5.1893, CHEVALLIER 3842 (G) -- Hamman el Lif, 21.6.1901, CUENOD (G).

23. *Limonium bonduellei* (Lestib.) O. Kuntze

Collections examined:

Tunisia

Gouv. de Medenine:

Beni Khedache, Medenine, 30.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

Gouv. de Sfax: Kerkennah, 27.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).
Gouv. de Tozeur: El Hanna de Tozeur, in arenosis deserti, 4.1908, PITARD 473 (G).
Gouv. de Gafsa: Gafsa, in aridis deserti, 4.1910, PITARD 2164 (G).

24. *Limonium lobatum* (L.fil.) Chaz.

Collections examined:

Tunisia

Gouv. de Tunis:

Carthage, près Tunis, 4.5.1883, COSSON et al. (P) -- Sabka Es Sedjoun depression au Sud et près de Tunis, 4.1881, ROUX (P) -- Hairouan, 7.4.1904, STERNECK & EGGER (Fi) -- Au milieu des ruines de Carthage, 5.1893, CHEVALLIER 727 (Fi) -- Entre Tunis et le village de Zoghouan, 5.1878, TCHENAT-CHEP (P) -- Ruines de Carthage, 4.5.1893, CHEVALLIER (P) -- Tunis, s.d., PERRIER (G) -- Tunis, 5.1903, CUENOD (G) -- Tunis, 6.1900, CUENOD (G) -- La Goulette, NE Tunisie, 4.4.1971, ROTHLESBERGER (G).

Gouv. de Gabès:

In alluvii exsiccata oued Gabès, 4.5.1854, KRALIK (P, Fi) -- Gabès, in aridis deserti, III.1910, PITARD 1770 (G) -- Gabès, in aridis deserti Raz el Oued, 3.1910, PITARD 1771 (G).

Gouv. de Sfax:

Environs de Sfax, 6.1854, ESPINA (P) -- Isles Kerkenna, 6.1854, ESPINA (P) -- Sfax, 17.IV.1909, CUENOD (G) -- Sfax, sables au bord de la mer en allant a Sidi Mansour, 20.4.1886, ROBERT 74 (G).

Gouv. de Souss:

Souss, 5.6.1883, COSSON et al. (P) -- Souss, 2.5.1887, ROUERE (P).

Gouv. de Medenine:

In arenosis insula Djerba, 10.6.1854, KRALIK (P) -- Tra Ajin e Borj-Jlij, Djerba, 23.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Houmt Souk in insula Djerba, 19.-22.4.1886, LETOURNEUX (P).

Gouv. de Gafsa:

Gafsa, in aridis deserti, 4.1909, PITARD 2104 (G) -- Gafsa, in aridis deserti, 4.1909, PITARD 1798 (G).

Gouv. de Kairouan:

Kairouan, in herbis incultis, 4.1907, PITARD 239 (G).

25. *Limonium avei* (De Not.) Brullo & Erben

Ecology: living in ephemeral meadows, growing in salt-marshes.

Distribution: Mediterranean area.

Chromosome number: $2n = 27$; collections counted: Li-919, Li-924, Li-1016, Li-1017, Li-1101, Li-1102.

Collections examined:

Tunisia

Gouv. de Tunis:

between Granmarth and Souka, c. 1 km W of the village Mil along the shore of a lake of Sebkheth Er Ariana; sandyargillaceous places, 27.8.1984, BRULLO & ERBEN 550 (Li-919) (CAT, M, herb. ERBEN) -- W of the village Granmarth, along the shore of a lake of Sebkheth Er Ariana; salty-sandy places, 27.8.1984, BRULLO & ERBEN 556 (Li-924) (CAT, M, herb. ERBEN).

Gouv. de Sousse:

Erghela, 10.6.1884, sine leg. (P) -- Entre Sousse and Monastir, 8.6.1883, COSSON et al. (P) -- Sebka de Monastir, 9.6.1883, COSSON et al. (P).

Gouv. de Sfax:

Environs de Sfax, ESPINE (P) -- Iles Kerkena, 6.1854, ESPI-NE (P) -- El Attais, Kerkennah, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Isole Kerkennah, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

Gouv. de Nabeul:

Entre Kourba et Menzel Temin, proqu'ile de Cap Bon, 14.5.1883, COSSON et al. (P) -- Insula Djamour, in arenis ad maris littora, 19.6.1887, LETOURNEUX (P) -- Zembre, 5.6.1888, COSSON, BARRATTE & DUVAL (P) -- Nabeul, in salsis maritimis, 5.1910, PITARD (MA) -- Nabeul, in salsis maritimis, 5.1910, PITARD 895 (G) -- Nabeul, in arenis maritimis, 5.1910, PITARD 2384 (G).

Gouv. de Medenine:

Zarzis, 11.-15.5.1884, LETOURNEUX (P) -- In palmeti arenosi humidioribus ad littorem maris prope Houmt-Souk (Djerba), 5.1886, LETOURNEUX (P) -- Insula Djerba, 19.6.1894, KRALIK (FI) -- Djerba, 10.6., KRALIK (FI) -- Mezghaya (Djerba), 22.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Tra Ajim & Bori -- Jlij, Djerba, 23.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Ras Emel, Djerba, 22.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Ile de Jerba: c. 10 km E of the village Houmt-Souk, sandy coast near hotel Ulysses, 6.9.1984, BRULLO & ERBEN 692 (Li-1102) (CAT, M, herb. ERBEN).

Gouv. de Gabès:

Tananou ad Oued Sesak prope Gabès, in salsuginis desertis, 4.1909, PITARD (MA) -- Gabès, el Haïndou, in arenosis, 5.1910, PITARD 730 (MA) -- Gabès, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Gabès, El Haïndou, in arenosis, PITARD 732 (G) -- Gabès, in aridis deserti, 4.1910, PITARD 2213 (G) -- Gabès, lieux arides desertiques, 3.1909, FAU-

RE (G) -- Gabès, in aridis deserti salisuginosis Tamarou, 3.1909, PITARD 1706 (G) -- Gabès, in aridis deserti salisuginosis Oued Serah, 3.1910, PITARD 1707 (G).

Gouv. de Mahdia:

S of Mahdia, c. 2 km N of the village Rejiche; sandy places, 3.9.1984, BRULLO & ERBEN 658 (Li-1101) (CAT, M. herb. ERBEN) -- S of Mahdia, rocky coast of Rass Salakta, 3.9.1984, BRULLO & ERBEN 660 (Li-1016) (CAT, M. herb. ERBEN) -- SE of El Jem, c. 5 km S of the village Mellouleche along the shore of a little saltlake; salty-sandy places, 3.9.1984, BRULLO & ERBEN 661 (Li-1017) (CAT, M. herb. ERBEN).

26. *Limonium echioides* (L.) Miller

Ecology: growing on dry stony places.

Distribution: Mediterranean area.

Collections examined:

Tunisia

Gouv. de Kasserine:

In alveo exsiccato Oued Zitouneus inter Feriana et Sid Ait-hin, 21.6.1884, LETOURNEUX (P) -- Djézret, Djéman, 3.7.1884, DOUMET, ADANSON & BONNET (P).

Gouv. de Gafsa:

Khanger el Teldja, 8.5.1887, LETOURNEUX (P).

27. *Limonium ferulaceum* (L.) Chaz.

Ecology: living in the saltmarshes, on the periodically submerged soils.

Distribution: W Mediterranean area and Atlantic coast of Iberian peninsula and of N Marocco.

Chromosome number: $2n = 16$; collections counted: Li-962, Li-988, Li-992, Li-1060.

Collections examined:

Tunisia

Gouv. de Tunis:

Hamman el Lif, 8.5.1883, COSSON et al. (FI, P) -- Rades littoral, 30.5.1888, COSSON, BARRATTE & DUVAL (P) -- Hamman el Lif, le man el Lif, 20.5.1888, BARRATTE (P) -- Between Grammarth and plage, 6.5.1893, CHEVALLIER (P) -- Between Grammarth and Souka, along the shore of a lake of Sebkheth Er Ariana near Souka, along the shore of a lake of Sebkheth Er Ariana near Souka, the village Mir; sandy-argillaceous places, 27.8.1984, BRULLO & ERBEN 546 (Li-915) (CAT, M. herb. ERBEN) -- Near the airport of Tunis along the shore of Lac de Tunis; salty-sandy places, 9.9.1984, BRULLO & ERBEN 705 (CAT, M. herb. ERBEN) -- Tunis, 1893, GIROD 23 (G).

Gouv. de Nabeul:

Nabeul, presqu'île du Cap Bon, 13.5.1883, COSSON et al. (P)
-- Between Menzel Temime and Korba, c. 5 km N of Korba, along the border of a little saltlake; salty-sandy places, 1.9.1984, BRULLO & ERBEN 630 (Li-988) (CAT, M, herb. ERBEN)
-- Between Korba and Hammamet, S of Korba along the shore of a little saltlake; salty-sandy places, 1.9.1984, BRULLO & ERBEN 635 (Li-992) (CAT, M, herb. ERBEN) -- C. 5 km W of Hammamet, saltmarshes, 2.9.1984, BRULLO & ERBEN 639 (CAT, M, herb. ERBEN) -- Nabeul, in salsis maritimis, 5.1910, PITARD 896 (G).

Gouv. de Bizerte:

Ad rupis lacus Tinejia inter Bizerte et S. de Hausseun, 29.6.1887, LETOURNEUX (P) -- In planitie arenosa ad viam maris prope Menzel Djeneil, 22.6.1887, LETOURNEUX (FI) -- Ad rupis lacus prope viam entre Bizerte et Sidi Hausseun, 21.6.1887, LETOURNEUX (FI) -- Along the shore of Lac de Ghar El Melh, E of the village Acousja; salty-sandy places, 27.8.1984, BRULLO & ERBEN 570 (CAT, M, herb. ERBEN) -- Lac de Bizerte, along the shore of a Lake between the villages of Menzel Jemil and El Azib; sandy-salty places, 28.8.1984, BRULLO & ERBEN 590 (CAT, M, herb. ERBEN) -- N of Lac Ichkeul, c. 16 km W of Bizerte on the road C15, along the shore of a little saltlake; salty-argillaceous substrate, 29.8.1984, BRULLO & ERBEN 591 (Li-1060) (CAT, M, herb. ERBEN) -- SE of Bizerte, saltmarshes near the village of Zarzouna, 31.8.1984, BRULLO & ERBEN 601 (Li-962) (CAT, M, herb. ERBEN).

Gouv. de Tabarka:

Dune de Tarbarque, 12.7.1883, COSSON et al. (P).

28. *Limonium carbonense* Miller

Ecology: growing in saltmarshes, near the coast.

Distribution: Mediterranean area.

Chromosome number: $2n = 36$; specimen counted: Li-994.

Collectitons examined:

Tunisia

Gouv. de Nabeul:

Kebilia, 15.5.1883, COSSON et al. (P) -- Nabeul, N of Menzel Temime, Bass El Melah, along the shore of a little saltlake, salty and sandy places, 1.9.1984, BRULLO & ERBEN 625 (CAT, M, herb. ERBEN) -- Between Korba and Hammamet along the border of a little saltlake, salty-sandy places, 31.8.1984, BRULLO & ERBEN 637 (Li-994) (CAT, M, herb. ERBEN) -- Between Korba and Hammamet, S of Korba along the shore of a little saltlake; salty-sandy places, 31.8.1984, BRULLO & ERBEN 636 (Li-993) (CAT, M, herb. ERBEN).

Gouv. de Bizerte:

Terrain salé près du Hamman el Ickhoul, 15.6.1888, COSSON (P).

29. *Limonium boitardii* Maire

Lectotypus: Tunisia, Bizerte, marais salés à Zarzoune,
X.1936, BOITARD 1573 (P)

Fig: 22

Ecology: Borders of saltlakes on argillaceous soils.

Distribution: Endemic of lakes near Bizerte, N Tunisia.

Chromosome number: $2n = 18$; collections counted: Li-847,
Li-946, Li-953.

Collections examined

Tunisia

Gouv. de Bizerte:

Bizerte, marais salés à Zarzoune, 10.1936, BOITARD 1573 (P)
-- SW of Bizerte along the side of Lac Ichkeul, c. 10 km NW
of village Tinja, sandy-argillaceous places, 28.8.1984,
BRULLO & ERBEN 587 (Li-946) (CAT, M, herb. ERBEN) -- Lac de
Bizerte, along the shore of a lake between the villages of
Menzel Jenil and El azib; sandy-salty places, 28.8.1984,
BRULLO & ERBEN 589 (Li-953) (CAT, M, herb. ERBEN) -- N of
Lac Ichkeul, c. 16 km W of Bizerte on the road C51, along
the shore of a little saltlake; salty-argillaceous sub-
strate, 29.8.1984, BRULLO & ERBEN 592 (Li-847) (CAT, M,
herb. ERBEN) -- Ichkeul, XI.1856, LABBE (G).

30. *Limonium bellidifolium* (Gouan) Dumort.

Ecology: growing in saltmarshes, on damp soils.

Distribution: Mediterranean area and European atlantic
coast.

Collections examined:

Tunisia

Gouv. de Tunis:

Hannan-el-Lif, 20.5.1888, BARRATTE (P) -- Hannan-el-Lif,
8.5.1888, COSSON et al. (P) -- Hannan-el-Lif, terrains sa-
lés, derrière le nouvelle établissement thermal, 6.9.1893,
CHEVALLIER (P) -- Rades littoral, 30.5.1888, COSSON, BAR-
RATTE & DUVAL (P) -- Sebkhah de Radès, 25.6.1913, CUENOD
(G).

31. *Limonium virgatum* (Willd.) Fourr.

Ecology: common on the coast; saltmarshes and rocky coast.

Distribution: Mediterranean area.



Fig.: 22 *Limonium boltardii*

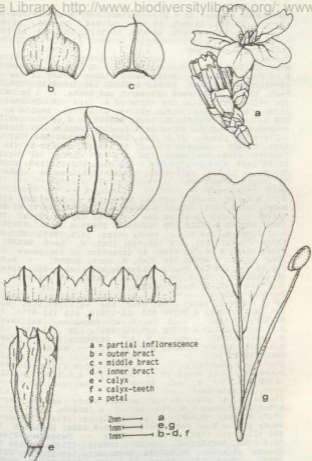


Fig.: 22 *Limonium boitardii*

Chromosome number: $2n = 27$; collections counted: Li-911, Li-916, Li-935, Li-943, Li-944, Li-956, Li-960, Li-977, Li-995, Li-996, Li-1040, Li-1062, Li-1063.

Collections examined:

Tunisia

Gouv. de Tunis:

E of Tunis, Carthage, salty-sandy places inside of the excavations, 26.8.1984, BRULLO & ERBEN 545 (Li-911) (CAT, M, herb. ERBEN) -- Between Grammarth and Souka, c. 1 km N of the village Mil along the shore of a lake of Sebkheth Er Ariana; sandy-argillaceous places, 27.8.1984, BRULLO & ERBEN 547 (Li-916) (CAT, M, herb. ERBEN) -- W of the village Grammarth along the shore of a lake of Sebkheth Er Ariana; salty-sandy places, 27.8.1984, BRULLO & ERBEN 554 (CAT, M, herb. ERBEN) -- Hammam-el-Lif, 20.5.1888, BARRAT-TE (P) -- Terrains salés des bords du Lac de Tunis, a Megrine, 11.10.1949, FAUREL 1717 (P) -- La Marsa, 18.5.1888, BARRAT-TE (P) -- El Lif, 24.7.1909, CUENOD (G) -- La Goulette, VII.1907, CUENOD (G).

Gouv. de Bizerte:

E of Bizerte, rocky coast on the S side of Rass Sidi Ali El Mekki, 27.8.1984, BRULLO & ERBEN 566 (Li-935) (CAT, M, herb. ERBEN) -- Rocky coast on the S side of Cap Bizerte, 28.8.1984, BRULLO & ERBEN 570 (Li-1063) (CAT, M, herb. ERBEN) -- N of Bizerte, Cap Blanc, rocky coast, 28.8.1984, BRULLO & ERBEN 575 (Li-943), 576 (Li-944) (CAT, M, herb. ERBEN) -- Rocky coast W of Cap Blanc in direction of Sémaphore, 28.8.1984, BRULLO & ERBEN 586 (CAT, M, herb. ERBEN) -- Between Cap Serrat and Cap Negro, plage de Didi Mechrig, fissures of sandstones, 29.8.1984, BRULLO & ERBEN 595 (Li-956), 599 (Li-960) (CAT, M, herb. ERBEN).

Gouv. de Nabeul:

SW of Cap Bon, rocky coast near the village Sidi Daoud, 1.9.1984, BRULLO & ERBEN 615 (Li-1061), 616 (Li-977) (CAT, M, herb. ERBEN) -- c. 5 km W of Hammamet, saltmarshes, 2.9.1984, BRULLO & ERBEN 638 (Li-995), 639 (Li-996) (CAT, M, herb. ERBEN) -- Nabel, 9.1907, GANDOGER (P) -- Zembra, 5.6.1888, COSSON, BONNET & DUVAL (P) -- Nabeul, 11.1907, GANDOGER 45 (G).

Gouv. de Monastir:

Monastir, rocky coast SE of the city, 2.9.1984, BRULLO & ERBEN 652 (CAT, M, herb. ERBEN).

Gouv. de Medenine:

Ile de Jerba: plage de Sidi Mahrez, sandy coast near the hotel Dar Jerba, 6.9.1984, BRULLO & ERBEN 687 (Li-1062) (CAT, M, herb. ERBEN) -- Ile de Jerba: Rass Taguerness, sandy places W of the lighthouse, 6.9.1984, BRULLO & ERBEN 691 (Li-1040) (CAT, M, herb. ERBEN) -- Meznaia (Djerba), 22.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Rass Tourguenes (Djerba), 23.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- Borj Ilif, Djerba, 22.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

32. *Limonium pruinosum* (L.) Chaz.

Ecology: living in coastal saltmarshes and in salty desert places.

Distribution: S Mediterranean area.

Chromosome number: $2n = 18$; collections counted: Li-1126.

Collections examined:

Tunisia

Gouv. de Mahdia:

SE of El Jem, c. 5 km S of the village Mellouleche along the shore of a little saltlake; salty-sandy places, 3.9.1984, BRULLO & ERBEN 662 (Li-1126) (CAT, M, herb. ERBEN).

Gouv. de Gabès:

NW of the village Kebili, c. 1 km NW of the village Telmine on the road to Tombar; sandy places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN (CAT, M, herb. ERBEN) -- Gabès, in aridis deserti Grennouch, III.1910, PITARD 1895 (G) -- Gabès, an Gräben südöstl. der Stadt, 18.4.1960, HOPFLINGER (G) -- In pascuis deserti circa Gabès, 21.4.1854, FRALIX (G) -- El Hanna de Gabès, in aridis deserti, 3.1913, PITARD 3077 (G).

Gouv. de Sfax:

Sfax, sables au bord de la route de Sidi Mansour, 20.4.1886, ROBERT 71 (G).

33. *Limonium alleizettei* (Pau) Brullo & Erben, comb. nova

Basionym: *Statice alleizettei* Pau, Cavanillesia 2: 92 (1929).

Syn.: *Limonium pruinosum* (L.) Chaz. subsp. *alleizettei* (Pau) Maire, Bull. Soc. Hist. Nat. Afrique N. 22: 304 (1931).

Ecology: living in saltmarshes and in salty desert places.

Distribution: SW Mediterranean area.

Collections examined:

Tunisia

Gouv. de Mahdia:

SE of El Jem, c. 5 km S of the village Mellouleche along the shore of a little saltlake; salty-sandy places, 3.9.1984, BRULLO & ERBEN 662a (CAT, M, herb. ERBEN).

Gouv. de Gafsa:

6 km W of Gafsa along the road P3; sandy places: 4.9.1984, BRULLO & ERBEN 668 (CAT, M, herb. ERBEN) -- Gafsa, in aridis deserti salsuginosis, 4.1907, PITARD 2157 (G).

Gouv. de Gabès:

Gabès, in pasquis salsuginosis, 2.1907, PITARD 1238 (G) --
Gabès, in aridis deserti Oued Tuin, 3.1910, PITARD 1894 (G)
-- Telboulbon, terrains steriles voisin de l'Oasis, 26.1.
1916, BOUQUET (G).

Gouv. de Tozeur:

Tozeur, 4.1909, FRANK (G) -- El Hanna de Tozeur, in aridis
salsugineis, 4.1908, PITARD 470 (G).

34. *Limonium spathulatum* (Desf.) O. Kuntze

Lectotypus: In rupibus prope La Calle, DESFONTAINE 647 (P)

Ecology: Calcareous rocky coast.

Distribution: Endemic of the area between Tabarka (Tunisia)
and El Kala (Algeria).

Chromosome number: $2n = 34$; collection counted: Li-961.

Collections examined:

Tunisia

Gouv. de Jendouba:

Tabarka, rocky coast W of the lighthouse, 30.8.1984, BRULLO
& ERBEN 600 (Li-961) (CAT, M, herb. ERBEN) -- Rochers de
barca, Ta26.9.1929, CUENOD (G).

Algeria

Wilaya Annaba:

In rupibus prope La Calle, DESFONTAINE 647 (P) -- Barbaria,
La Calle, DESFONTAINE (FI-W).

35. *Limonium tunetanum* (Barratte) Maire

Fig.: 23

Ecology: growing in the saltmarshes of the desert places.

Distribution: Endemic of S Tunisia and W Libya.

Chromosome number: $2n = 16$; collections counted: Li-1029,
Li-1034.

Collections examined:

Tunisia

Gouv. de Gabès:

Kabili, Mafzour, in palmetis, 29.-30.5.1884, LETOURNEUX (P)
-- Gabès, Sables au bord de la mer, 29.5.1884, ROBERT (P)
-- Sidi Salem bou Guerara, 8.5.1884, LETOURNEUX (P) -- Ad
mares littore prope Tecuoqe, Gabès, 12.9.1886, LETOURNEUX
(P) -- Oudref, 2.6.1884, DOUMET, ADANSON & BARRATTE (P) --
W of Gabès, c. 2 km W of the mouth of the road P16 into the



Fig.: 23 *Limonium tunetarium*

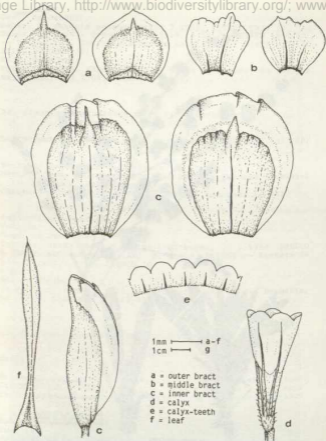


Fig.: 23 *Linonium tunetanum*

P1; sandy-stony places, 5.9.1984, BRULLO & ERBEN 682 (CAT, M, herb. ERBEN) -- Gabès, 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT, herb. ERBEN) -- Oued Akant (Gabès), 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT) -- NW of the village Kebili, c. 4 km SE of the village Menchia on the road P16, sandy-stony places of an oasis of palm-trees, 5.9.1984, BRULLO & ERBEN 676 (Li-1029) (CAT, M, herb. ERBEN) -- N of the village Kebili, c. 3 km N of the village Balazi along the road P16; sandy-stony places, 5.9.1984, BRULLO & ERBEN 680 (Li-1058) (CAT, M, herb. ERBEN) -- S of Gabès, sandy places of an oasis of palm-trees near village Teboulbou, 7.9.1984, BRULLO & ERBEN 698 (Li-2045) (CAT, M, herb. ERBEN) -- Gabès (Tunisie), 1.10.1956, LABBE (G) -- Sour el Bar, 15.V.1946, LABBE (G).
Gouv. de Tozeur:
Tozeur, 9.1887, sine leg. (P).
Gouv. de Gafsa:
Sebka el Guettar, 21.5.1884, DOUMET, ADANSON & BARRATTE (P).
Gouv. de Medenine:
El Marsa, Ben Guerdane, 24.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT, herb. ERBEN) -- Anchoune (Diof), 26.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT, herb. ERBEN) -- Zarzis, 24.6.1984, BARBAGALLO, BRULLO & FURNARI (CAT).

36. *Lissonium zembrae* Fignatti

Typus: Ile de Zembra (Située entre la Sicile et le Cap Bon), I.1954, LABEE (FI).

Fig.: 24

Ecology: rocky coast on calcareous and sandstones.

Distribution: Endemic of NE Tunisia.

Chromosome number: $2n = 36$; collections counted: Li-940, Li-941, Li-946, Li-948, Li-964, Li-973, Li-975, Li-976, Li-978, Li-1054

Collections examined:

Tunisia

Gouv. de Nabeul:

Ile de Zembra (Située entre la Sicile et la Cap Bon), 1.1954, LABEE (FI) -- DJAMOUR, 7.7.1884, DOUMET, ADANSON & BONNETTE (P) -- Cap Bon, sandstone-rocks near the village El Naquaria, 1.9.1984, BRULLO & ERBEN 618 (Li-978) (CAT, M, herb. ERBEN) -- SW of Cap Bon, rocky coast near the village Sidi Daoud, 1.9.1984, BRULLO & ERBEN 614 (Li-976), 613 (Li-975), 611 (Li-973) (CAT, M, herb. ERBEN).

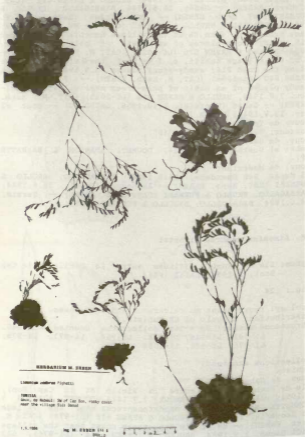


Fig.: 24 *Limonium zembrae*

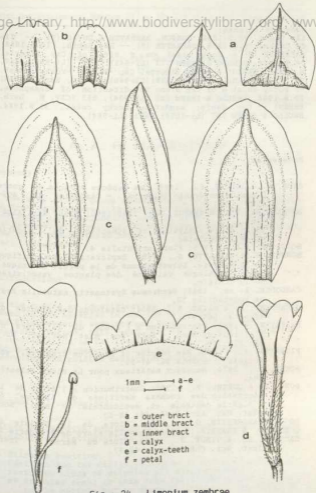


Fig.: 24 *Limonium zembrae*

Gouv. de Bizerte:

Ile Plane, 31.5.1888, COSSON, BARRATTE & DUVAL (P) -- Ile de Chiens, 9.5.1888, BARRATTE (P) -- Ras Zebib, 10.5.1888, BARRATTE (P) -- Rocky coast on S side of Cap Bizerte, 28.8.1984, BRULLO & ERBEN 573 (Li-941), 572 (Li-940) (CAT, M, herb. ERBEN) -- N of Bizerte, Cap Blanc, rocky coast, 28.8.1984, BRULLO & ERBEN 578 (Li-946) (CAT, M, herb. ERBEN) -- rocky coast W of Cap Blanc in direction of Sémaphore, 28.8.1984, BRULLO & ERBEN 581 (Li-984), 583 (CAT, M, herb. ERBEN) -- Cap Zebib, sandstone rocky coast, 31.8.1984, BRULLO & ERBEN 707 (Li-1054), 603 (Li-964).

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