

Marija BEDALOV\* and Andrija Zelimir LOVRIC\*\*

\* Department of Biology (Botany), Faculty of Science, 41000 Zagreb (Yugoslavia)

\*\* Rudjer Boskovic Institute, 41000 Zagreb (Yugoslavia)

**RESUME:** Phytogéographie des Liliacées lignescentes spontanées des îles adriatiques. L'Archipel adriatique présente 7 taxons spontanés des Liliacées lignescentes: *Asparagus acutifolius*, *Ruscus sculeatus*, *Smilax aspera*, *Sm. nigra* et récemment on y a enregistré aussi *Smilax mauritanica*, *Sm. willkommii* et la grande liane *Ruscus lexus* (*R. berrelieri*) dont la synécologie est étudiée.

**INTRODUCTION.** The woody monocots are a remarkable feature of the tropical floras, and in the Mediterranean coasts this life form reaches its northernmost limits. Thus the Mediterranean palms in the native flora of Adriatic are lacking, and *Chamaerops humilis* L. there occurs only naturalized from cultivation in SE Adriatic, especially in Lokrum islet by Dubrovnik. Concerning the exotic woody Liliaceae, within the ruderal rockbush *Opuntia-Agaveion* (Adem) Lov in this archipelago the next related taxa occur as naturalized from the cultivation (cf. details in LOVRIC 1984, 1985): *Agave americana* L. (*A. altissima* Zucc.) across this archipelago, and *A. ingens* Bgr. is naturalized only in the warmest southern islands of Dalmatia. *Yucca* includes there 3 naturalized species: *Y. recurvifolia* Salis. (*Y. "gloriosa"* auct. adr.) is widespread in Adriatic insular wells and ruins, but *Y. smalliana* Fern. (*Y. "filamentosa"* auct. adr.) is naturalized only in cooler northern islands of Kvarner Gulf, and *Y. sloifolia* L. grows chiefly in the warmest SE islands. The very native lignescent Liliaceae (*Asperageae* and *Smilacaceae*) there include 7 taxa, but in the classical floras concerning this archipelago only 4 ones have been reported (*Asparagus acutifolius*, *Ruscus sculeatus*, *Smilax aspera* and *Sm. nigra*), and the recent detailed field prospectations there added *Smilax mauritanica*, *Sm. willkommii* and the big liane *Ruscus lexus* (*R. berrelieri*) whose vouchers are in Herbarium ADZ.

**RESULTS.** The genus *Asparagus* within this archipelago is presented by 4 species, but 3 of them are herbeaceous. So *A. officinalis* L. s.str. grows there as sporadically naturalized from the cultivation in northern islands of Kvarner Gulf. *A. tenuifolius* Lam. occurs chiefly in the major insular mounts of this archipelago, within the deciduous spical woods *Seslerio-Ostryetum carpinifoliae* Horv. *A. maritimus* (L.) Mill. (*A. scaber* Brig.) grows mostly along the stony shores within the xerohalophytic vegetation of *Crithmo-Limonietalia*, and especially in the *Atriplici-Aspergetum maritimi* Lov. of the minor rocky islets.

1. *Asparagus acutifolius* L. is the unique lignescent species of this genus within the Adriatic. It is widespread across this archipelago growing in different sempervirent woods and maquis of *Quercetalia ilicis* Br.-Bl. in nearly all islands.

The *Smilax* presents there a richest assemblage of this genus within the Mediterranean, including 4 different insular taxa:

2. *Sm. aspera* L. s.str. is widespread across this archipelago within the evergreen woodlands of *Quercetalia ilicis*.

3. *Sm. nigra* Willd. occur only in SE Adriatic where it is rare on the islands Korčula and Mljet, growing in the insular ravines and karst sinkholes within the humid laurisilvae of *Arbuto-andrachnes-Quercetum bellotaee* Lov.

4. *Sm. mauritanica* Desf. (*Sm. nigra* I *Sm. aspera* ?) is an intermediate taxon between the both precedent ones and it is perhaps of a hybrid origin. In this archipelago it is more frequent than the typical *Sm. nigra*, and it grows in SE islands within the *Arbuto-Quercetum*, but also sporadically in some NE isles especially in Grgur and SE Krk (by ports Baške and Vrbnik) within the semievergreen woods of *Pico-Quercetum dalmaticae* Lov.

5. *Sm. willkommii* M.G. (*S. aspera* ssp. *balearica* Bon., *Sm. tregeantiae* Lov.) so far has been usually quoted to be an endemic of the Balearic islands but recently one registered its new disjunctive outposts in NE Adriatic islands of Kvarner Gulf: SE Krk (by Baške), Prvic, Grgur and Goli. It grows there within the stormy coastal rockwoods of *Alaterno-Fraxinetum argenteae* Lov. overexposed to the strongest Bora winds. This is a quite distinct taxon very divergent from all other *Smilax* species, for being any liane but a true condensed shrub to 70 cm, with the numerous short rigid stems and densely reticulate-intricate lateral branches forming a pungent echinate cushion of tregeantian type, with the minute and narrow sagittate leaves (to 1 x 2-3 cm) whose upper half is transformed into a rigid thorn, and these leaves are subequal or shorter than the alternating stem thorns. Its numerous axillar branches are almost completely transformed into the long ramified thorns without leaves.

The genus *Ruscus* there includes 3 taxa. Among them, *R. hypoglossum* L. is only naturalized from cultivation in the northern islands Krk and Rab, and it is native in adjacent mainland.

6. *R. sculeatus* L. s.str. is widespread across this archipelago within the evergreen woods of *Quercetalia ilicis*.

7. *R. lexus* Sm. (non Asch. & Gröb., *R. berrelieri* M.G., *R. "ponticus"* auct. adr.) is the most robust woody monocot of Adriatic and also the very biggest member of its genus. Thus it has a quite distinct habit for being the true lignescent liane up to 230 cm tall, with the medium sized phyllocladia (1.5-2.5 x 3-4 cm) that are herbeaceous with a few pungent apex (being intermediate between these ones of *R. sculeatus* and *R. hypoglossum*), and with the big fruits 1.1-1.7 mm. Its general habit is comparable to the Canarian *Semele*, but its phyllocladia and flowers belong indisputably to a *Ruscus*. It grows in the ravines and sinkholes of SE islands, especially in Korčula and Mljet, winding on the scrub understorey of the laurisilvae of *Arbuto-Quercetum bellotaee*. It is probably a relict survival from the subtropical Tertiary laurisilvae.

## References

- Lovric A.Z. 1984: Native succulents of Dinaric Kerst I - II. *Vjesnik Kektusara* (Zagreb), 2 (1): 3-7, 2 (2): 4-9.  
 Lovric A.Z. 1985: Ruderal rockbush in coastal ruins of SE Europe and Asia Minor. *Rapp. Comm. int. Mer Médit.* 29 (6): 151-152.

*Rapp. Comm. int. Mer Médit.*, 31, 2 (1988).

† Mihovii LOVRIC\* and Andrija Zelimir LOVRIC\*\*

\* Zagreb (Yugoslavia)

\*\* Rudjer Boskovic Institute, 41000 Zagreb (Yugoslavia)

**RÉSUMÉ:** Géobotanique du *Sedum* (Crassulacées) de l'Archipel adriatique. Le karst insulaire adriatique présente une flore intéressante des crassulacées. Le genre *Sedum* y est représenté par 15 taxons et *Umbilicus* par 4 espèces dont les nouveautés enregistrées tout récemment dans la flore insulaire adriatique sont *Sedum telephium*, *S. litoreum*, *S. brevifolium*, *S. clusianum*, *S. rohlense*, *S. dinaricum* et *Umbilicus chloranthus*.

**INTRODUCTION.** The widespread dissected rockeries predominating across the calcareous Karst of Adriatic islands are the distinctive habitats of the native *Crassulaceae* and of other resisting succulents. The classical insular floras indicated there the next 9 species of the genus *Sedum* (LOVRIC 1984).

*S. maximum* (L.) Hoff.: widespread in woods (Orno-Ostryetalia Jek).  
*S. sediforme* (Jacq.) Pau: S islands, garrigues Cisto-Ericion Hic.  
*S. acre* L.s.s.: widespread in grasslands Scorzonion villosae Hic.  
*S. boloniense* Lois.: flysch grasslands, Scorzonion villosae Hic.  
*S. neglectum* Ten.: frequent on hills, Festucion illyricae Ritter.  
*S. hispanicum* L.: hill grasslands, Chrysopogoni-Setureion Hic.  
*S. ochroleucum* Cheix: frequent in Chrysopogoni-Setureion Hic.  
*S. album* L.s.s.: old walls and ruins, Kentrantho-Perieterion Mart.  
*S. rubens* L.: rare, wet grasslands Trifolio-Hordeion Hic.

The *Umbilicus* there was indicated by 3 species in wells:  
*U. horizontalis* (Guss.) DC.: frequent in Asplenio-Umbilicetum Hic.  
*U. rupestris* (Sal.) Dandy: SE isles, Kentrantho-Perieterion Mart.  
*U. parviflorus* DC.: rare in SE isles, Kentrantho-Perieterion.

Among the cultivated *Crassulaceae*, the sporadically naturalised ones within the Perieterialia Br.-Bl. there are e.g. *Sempervivum tectorum* L. and *Cotyledon orbiculata* L.

**RESULTS.** The more detailed field prospectations of these islands recently registered another *Umbilicus* species and also 6 additional rare taxa of *Sedum* in insular cliffs, including 2 endemics. The related vouchers are in Herbarium ADZ.

1. *Umbilicus chloranthus* Held. & Sart. occurs only in SE Adriatic isles (Hvar, Elefiti, Pelješac), in the stormy seacliffs *Ephedro-Cyathoselinetum pelmoidis* Lov.

2. *Sedum litoreum* Guss. is a Mediterranean taxon with its northernmost outposts in the remote Mid-Adriatic isles (Vis archipelago), mostly in the dry scrub of *Thymelseion hirsutae* Tadr.

3. *S. telephium* L. ssp. *purpureum* (L.) Sch. & Kell., is a temperate taxon, rare in the peaks of northernmost isles (Krk and Prvic), cool-shady cliffs of *Ceteracho-Cymbalrietum pellidae* Lov.

4. *S. brevifolium* DC. (*S. globiferum* Pour.) is a rare West Mediterranean taxon with its isolated easternmost outposts in northern Adriatic isles Krk, Prvic, Goli and Grgur, in stormy sea-saline seacliffs of *Aurinio-Astragaletum dalmatici* Lov., overexposed to the strongest Bora winds.

5. *S. clusianum* Guss. (*S. gypsicolum* Boiss. & Reut.) is also a W Mediterranean taxon with its easternmost outposts in NE Adriatic isles as above (Krk, Prvic, Goli, Grgur), but it grows there chiefly on the dry and stormy spical cliffs of insular mounts, within *Micromerio-Onosmetum crosticace* Lov., very exposed to the hurricane winds of Bora type.

6. *S. rohlense* Dom. (*S. montenegrinum* Horak) is an Eastern Adriatic endemic of the Dalmatian coastal mountains that is recently registered also on some major insular mounts of Krk, Prvic, Brač, Pelješac, etc. It is there abundant in the dry spical cliffs within the alliance *Edreianthion* Lek.

7. *S. dinaricum* M.G. (*S. orientale* auct. adr. non Boiss.) is an interesting NE Adriatic endemic of the Crostian coastal mountains, and it is recently registered also on the major insular mounts of Krk, Prvic, Brač and Pelješac, growing in the dry spical cliffs within the *Micromerio-Onosmetum crosticace*. It is a distinct and very decorative under-shrub, with the brown-reddish stem, contrasting blue-violet leaves and conspicuous golden-yellow flowers.

Thus by these studies, Adriatic Archipelago includes all together 15 taxa of *Sedum*, and 4 ones of the genus *Umbilicus*.

## Reference

- Lovric, A.Z. 1984: Native succulents of the Dinaric Kerst I - II. *Vjesnik Kektusara* (Zagreb), 2 (1): 3-7, 2 (2): 4-9.

*Rapp. Comm. int. Mer Médit.*, 31, 2 (1988).