



Typification of the name *Salicornia deserticola* (Amaranthaceae/Chenopodiaceae)

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In connection with my account of *Salicornioideae* Ulbrich (1934: 449, 543) for the Euro+Med Plantbase (Piirainen 2009), I had to make a decision on the identity of *Salicornia deserticola* Chevalier (1934: 804), a species described from inland north Algeria near Touggourt. According to Chevalier (1934), it differs from the woody perennial “*S. arabica* L.” [a misapplied name for *S. fruticosa* (Linnaeus 1753: 3) Linnaeus (1762: 5)] mainly by its biennial life form and more slender stems, while it comes closer to the annual species of *Salicornia* Linnaeus (1753: 3).

Greuter *et al.* (1984) recognized *Salicornia deserticola* at species rank including it in the diploid *S. europaea* aggregate. However, the original description by Chevalier (1934) does not support this view, since it does not match the current concept in *Salicornia* (see discussion below). The examination of the Chevalier’s original material (loans from the Herbarium P in 2009, and 2014) allowed me to show that the plants are identifiable as species belonging to the perennial genera *Arthrocnemum* Moquin-Tandon (1840: 111), and *Sarcocornia* Scott (1978: 366). The synonymization of the name *S. deserticola* in *Sarcocornia fruticosa* (L.) Scott (1978: 367) was proposed as part of the treatment of *Salicornia* in the Euro+Med PlantBase (Piirainen 2009), but the typification was avoided since I considered it premature without seeing all the relevant specimens. The aim of the present paper is to formally typify the name *Salicornia deserticola*.

Chevalier (1934) cited two specimens, “*Chev. 42063*”, and “*Chev. 42071*” without designating either of them as a type. According to the art. 9.5 of ICN (McNeill *et al.* 2012) these collections are syntypes. The two collections are deposited at P (images available at <http://coldb.mnhn.fr/Consultation?catalogue=1>).

The specimen no. 42063 (label: “Sud algérien: Temacine près Touggourt, terrains salés, 15.XII.1931”) consists of six herbarium sheets, of which four (P00713535, P00713536, P01817707, P01817708) were later annotated as “types”, one as “isotype” (P01817709) and one as “cotype” (P00713537). The collection no. 42071 (label: “Touggourt, sur la route de Temacine, 17.XII.1931”) consists of only one herbarium sheet (P04942122).

Chevalier’s collection no. 42063 is mixed. The sheet P00713537 bears a plant identifiable as *Arthrocnemum macrostachyum* (Moriciand 1820: 2) K.Koch (1853: 96) since the flowers of each 3-flowered cyme are separate, and the cavity of each cyme is undivided, while the seeds are black and the testa is hard and tuberculate. All these characters are typical to *A. macrostachyum* (Castroviejo *et al.* 1990, Ball 1993), and they are in contrast with the original description of *S. deserticola*. As a consequence, the sheet P00713537 is not part of original material (art. 8.2 of ICN), and it is not useful for the typification purposes. The genera *Salicornia*, and *Sarcocornia* are characterized in having the perianths of the flowers fused, the cavity of each cyme tripartite, the seeds grayish brown and the testa membranous and either covered with very short, papilla-like hairs (*Sarcocornia*) or longer hooked hairs (*Salicornia*, part of *Sarcocornia*) (Scott 1978, Shepherd *et al.* 2005, Steffen *et al.* 2010). The plant on the sheet is clearly a woody perennial, with both sterile and fertile branches.

The other sheets of both collections bear plants certainly belonging to the genus *Salicornia*, as it was understood by Chevalier (1922), i.e. including also the perennial species today placed in the genus *Sarcocornia* (Scott 1978). Chevalier’s collection no. 42071 consists of only one herbarium sheet (P04942122) with one woody, much branching decumbent-ascending plant. All the specimens are already fruiting, with part of the seeds fallen off, but the diagnostic characters of the cyme and the perianth are still visible. The specimens show characters of *Sarcocornia*: they are woody except for the young parts, the flowers are in transverse rows of 3, and the perianth of the central flower is more or less equal in size with the lateral ones separating them completely. In *Salicornia* plants are herbaceous, and flowers form a triangle where the smaller lateral flowers are not separated by the larger central one.

Chevalier’s Latin description (which otherwise is insufficient for taxonomic conclusions) clearly stated that *S. deserticola* is annual or biennial, but in French he wrote: “annuelle (parfois bisannuelle, rarement vivace)” [= “annual (sometimes biennial, rarely perennial)”. Furthermore, he described how the plants become woody after the juvenile

phase, forming a shrub with several basal branches: “A l'état adulte, sur le sable humide, au bord des sebkas, le plus souvent la touffe est composée d'une dizaine de tiges dressées ligneuses grêles, de 20 à 30 cm de haut...” (= “In the adult state, on wet sand at the edge of sabkhas, the clump is most commonly composed of about ten erect woody slender stems, 20 to 30 cm high...”). In this respect, I can see no difference among the protologue, Chevalier's specimens, and related perennial species of *Sarcocornia*. Another character given in the protologue (also visible in the specimens) is the subquadrangular form of the central flower of the cyme that points rather towards *Sarcocornia* than *Salicornia* (in *Salicornia* the flower is triangular).

Dobignard & Chatelain (2011) accept two *Sarcocornia* species from N-Africa: *S. fruticosa*, and *S. perennis* (Miller 1768: without pagination) Scott (1978: 367). Most of Chevalier's plants are erect, while two plants (P04942122, P01817708) are decumbent or ascending but not rooting at the nodes as indicated in the protologue (“certains individus vivent au bord de l'eau, émettent des tiges couchées appuyées sur le sol, mais non radicales” = “some specimens growing at the water edge send out procumbent but not rooting stems”). The non-rooting and (usually) erect growth habit is typical of *S. fruticosa*, while *S. perennis* is usually creeping, with rooting subterranean stems. The seeds of Chevalier's specimens are papillose, which is also typical of *S. fruticosa* while in *S. perennis* seeds have rather similar (though shorter) hooked hairs as in *Salicornia*.

All things stated, my opinion is that the original material of Chevalier's *S. deserticola* belongs to *Sarcocornia fruticosa*.

Salicornia deserticola A.Chev. (1934: 804)

= *Sarcocornia fruticosa* (L.) A.J.Scott (1978: 367)

Lectotype (designated here):—ALGERIA. Sud Algérien, Témacine près Touggourt, terrains salés, 15 December 1931, Chevalier 42063 (P00713535!, image available from <http://science.mnhn.fr/institution/mnhn/collection/p/item/p00713535>).

Isolectotypes (designated here): *Ibidem* (P00713536!, P01817707!, P01817708!, P01817709!; syntype P04942122!).

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