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TAXONOMIC CONSIDERATIONS ON THE NOMENCLATORIAL TYPES OF *GAGEA RHODIACA* A. TERRACC. AND *G. RETICULATA* (PALL.) SCHULT. & SCHULT. F. SUBSP. *AFRICANA* A. TERRACC. (LILIACEAE), KEPT AT PISA (PI)

Abstract - *Gagea rhodiaca* A. Terracc. is typified on one herbarium specimen kept at PI (isolectotypes occur in FI and G). Cross sections of basal leaves, peduncles and pedicels on one individual of that typical collection shows that it belongs to *Gagea* sect. *Graminifoliae* Levichev and is very likely a synonym of the NE Mediterranean species *Gagea rigida* Boiss. & Spruner. *G. reticulata* subsp. *africana* A. Terracc. is typified on one herbarium specimen in PI too. The latter unit is shown to belong to *Gagea* sect. *Platyspermum* Boiss. and to be synonymic with the N African endemic *G. fibrosa* (Desf.) Schult. & Schult. f.

Key words - *Gagea*, Liliaceae, typification.

Riassunto - *Considerazioni tassonomiche sui tipi nomenclaturali di Gagea rhodiaca* A. Terracc. e *G. reticulata* (Pall.) Schult. & Schult. f. subsp. *africana* A. Terracc. (Liliaceae), conservati in PI. *Gagea rhodiaca* A. Terracc. è tipificata su un campione d'erbario conservato in PI (isolectotipi sono presenti in FI e G). Sezioni trasversali effettuate su foglie basali, peduncoli e pedicelli fiorali di un individuo della collezione tipica mostra come questo taxon appartenga a *Gagea* sect. *Graminifoliae* Levichev e sia molto probabilmente un sinonimo della specie NE Mediterranea *Gagea rigida* Boiss. & Spruner. *G. reticulata* subsp. *africana* A. Terracc. è anch'essa tipificata su un campione d'erbario in PI. Quest'ultima entità appartiene a *Gagea* sect. *Platyspermum* Boiss. ed è da considerarsi sinonimo dell'endemita N Africano *G. fibrosa* (Desf.) Schult. & Schult. f.

Parole chiave - *Gagea*, Liliaceae, tipificazione.

INTRODUCTION

The genus *Gagea* Salisb., comprising about 250 accepted species (Levichev, 1999a), is one of the largest among Liliaceae. However, at least 419 infrageneric names are indexed for that genus (IPNI, 2006), without considering the taxa originally described under other genera (i.e. *Ornithogalum* L.). Many of those names still lack of typification.

This work is part of a several-years continuing project devoted to the typification of *Gagea* names and to the clarification of their taxonomic value. Previous contributions dealing on the names which types are kept in NAP (Peruzzi & Tison, 2004), PAL (Peruzzi & Tison, 2005) and FI (Peruzzi & Tison, 2006) were published.

Herbarium investigations in Pisa resulted in the following designation of two lectotypes, for the names *Gagea rhodiaca* A. Terracc. and *G. reticulata* subsp. *africana* A. Terracc.

TYPIFICATION OF THE TWO NAMES

***Gagea rhodiaca* A. Terracc., Boll. Soc.ortic. Palermo II(4): 7 (31 dec 1904)**

Lectotypus (here designated): GREECE, RHODES: Rhodos, 15/IV/1886, *Forsyth-Major 661* (PI!; Fig. 1) plant labelled «d» on the right top, isolectotypes in FI! and G!

Terracciano (1904) quotes for this taxon a single collection *Raccolta e distribuita dal Dott. Forsyth-Mayor [sic] il 15 aprile 1886 nell'Isola di Rodi* without any indication of the herbaria in which he studied it. PI, FI and G duplicates of that collection are labelled as *Gagea rhodiaca* A. Terracc. manu Achille Terracciano and can therefore be considered as original material. In particular, on the PI herbarium sheet, Terracciano labelled one incomplete individual on the left («a») as *G. billardieri*, and all other ones («b, c, d, e, f, g») as the new species. Individual «b» was used for anatomical analysis, while a well developed individual («d») is here selected as the lectotype of this species. According to Stroh (1937), a further isolectotype must have occurred in B before its destruction during the Second World War.

Taxonomic discussion

G. rhodiaca was originally conceived by Terracciano (1904) as belonging to the «*G. fibrosa*» group. Recently, Levichev & Tison (2004) showed that, in the Mediterranean area that «group» is actually formed by at least three species belonging to two distinct sections. Both the N African endemic *G. fibrosa* (Desf.) Schult. & Schult. f. and *G. reticulata* (Pall.) Schult. & Schult. f. – widespread in central and western Asia (up to E Mediterranean shores) – belong to *G. sect. Platyspermum* Boiss., characterized by pentaedric basal leaves with ring-arranged vascular bundles and polyedric peduncles. *G. rigida* Boiss. & Spruner occurs on the contrary in NE Mediterranean area and belongs to *G.*

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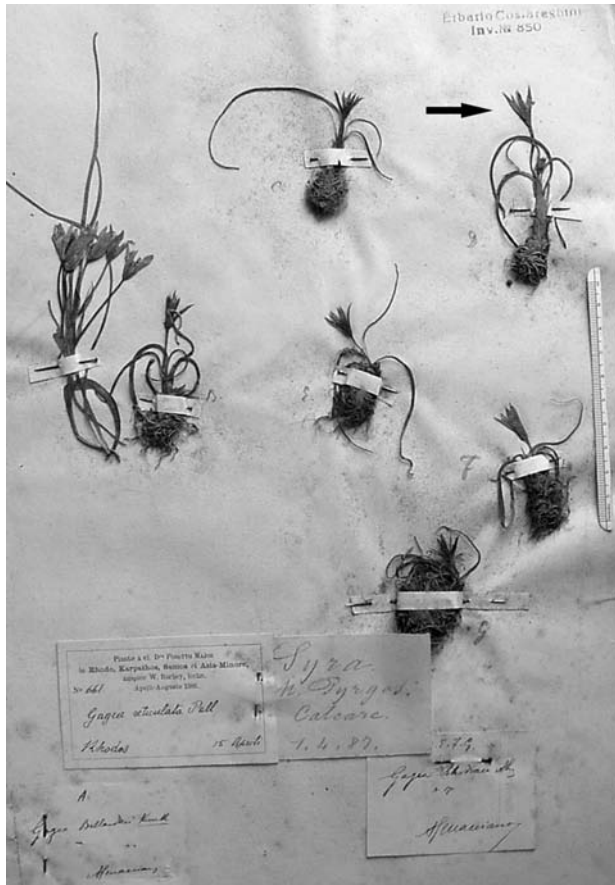


Fig. 1 - Lectotypical collection of *G. rhodiaca* A. Terracc., kept at PI. Arrow indicates the lectotype.

sect. *Graminifoliae* Levichev, characterized by more or less flat basal leaves with linear-arranged vascular bundles and subcylindrical peduncles.

Cross sections of basal leaves, peduncles and pedicels on original material of *G. rhodiaca* (Fig. 2) definitely show that this taxon has flat basal leaves and subcylindrical peduncles, belonging so to *G. sect Graminifoliae*. Moreover, there is no evident feature on the type material which permit us to distinguish *G. rhodiaca* from *G. rigida* (the type of the latter name at G-BOISS!; designated by Levichev & Tison, 2004: 315). Further ontogenetic and anatomical studies on living plants from Rhodes would be desirable to formally establish the taxonomical synonymy between these two species, which however on the basis of our data is very likely.

Gagea reticulata subsp. *africana* A. Terracc., *Bull. Soc. Bot. Fr.* 52, Mém. 2: 22 (1905)

≡ *G. africana* (A. Terracc.) Levichev, *Komarovia* 1: 49 (1999)

Lectotypus (here designated): ALGERIA: Unione Agricole du Sig, Province d'Oran, collines argillo-cal-

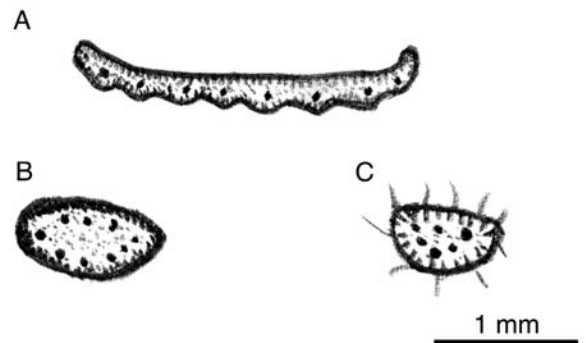


Fig. 2 - Cross sections of first basal leaf (A), peduncle (B) and pedicel (C) of *G. rhodiaca* A. Terracc. original material (see text). Scale bar: 1 mm.

caires II-III/1851, Durando (PI!; Fig. 3) well developed plants at the centre.

Terracciano (1905) quotes for this taxon several collections in many herbaria and they can be all considered as syntypes. Among them, he cites a collection in PI: Oran, dans les collines argilo-calcaires du Sig legit Durando! from *Flora Atlantica Exsiccata anno 1851*, which is therefore eligible as lectotype. In particular, on that PI herbarium sheet, Terracciano labelled two individuals («3, 4») as *G. durieui*, and the other ones («1, 2») as *G. reticulata* – evidently, he studied these specimens before to decide to consider them as a new subspecific unit. Individual(s) «2» was used for anatomical analysis of a basal leaf fragment, and is also here selected as the lectotype of this taxon.

Taxonomic discussion

According to the same considerations made above for *G. rhodiaca*, *G. reticulata* should be regarded as belonging to *G. sect. Platyspermum* and as a likely taxonomical synonym (representing well developed adult plants; cfr. also Tison, 2004: 68) of *Gagea fibrosa* (Desf.) Schult. & Schult. f.

Indeed, a cross section effected on basal leaf revealed a nearly-pentaedric shape with ring-arranged vascular bundles, which is still arguable despite of the evident deformation of the herbarium specimen (Fig. 4). On the other hand, Tison (2004) already placed this taxon (as «*G. reticulata* var. *africana* A. Terracc.» *comb. inval.*) as a synonym of *G. fibrosa*. We fully agree with this view. The combination at specific level made by Levichev (1999b) was instead evidently proposed before of the clarification about the real identity of *G. fibrosa* (Desf.) Schult. & Schult. f., a long-time misapplied name (Levichev & Tison, 2004) because of the widespread confusion (i.e. by Richardson, 1980; Rix, 1984) with the homonym *G. reticulata* var. *fibrosa* Boiss.; the latter name being homotypic with *G. rigida* Boiss. & Spruner.

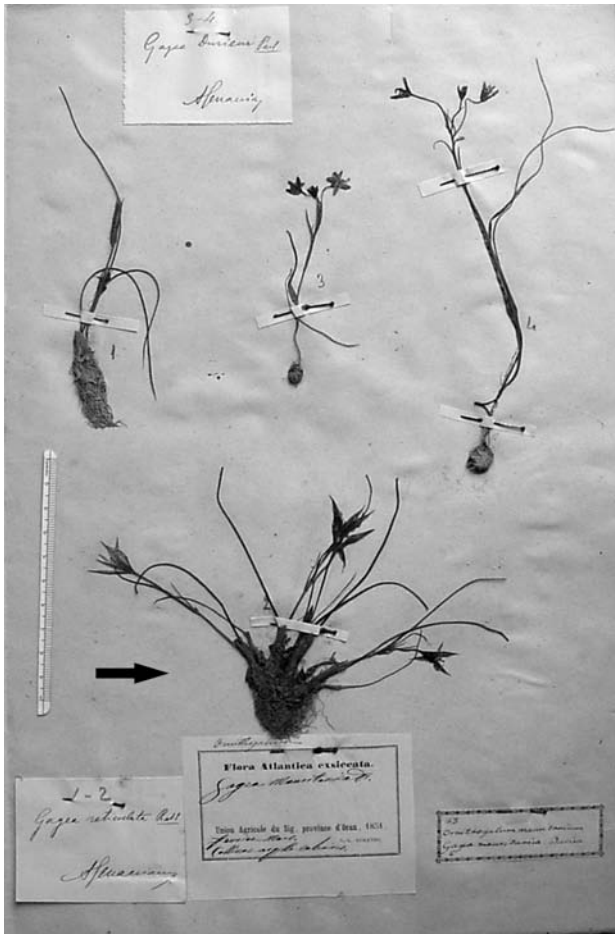


Fig. 3 - Lectotypical collection of *G. reticulata* subsp. *africana* A. Terracc., kept at PI. Arrow indicates the lectotype.

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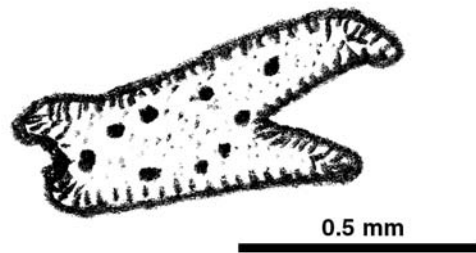


Fig. 4 - Cross section of first basal leaf of *G. reticulata* subsp. *africana* A. Terracc. original material (see text). Scale bar: 0.5 mm.

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