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Typification of the name *Scabiosa limonifolia* Vahl (Dipsacaceae)

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ABSTRACT
In the framework of the ongoing typification of plant taxa endemic to Sicily, this study focuses on *Scabiosa limonifolia* Vahl, described by the Danish botanist Martin Vahl. The research led to the identification of two specimens suitable for typification, both likely collected and sent by the Sicilian botanist Francesco Cupani. The first specimen, housed in Tournefort's Herbarium at the Muséum national d'Histoire naturelle in Paris, was designated as the lectotype, while the second, preserved in Sherard's Herbarium in Oxford, was selected as the isolectotype. The type designation is supported by nomenclatural, taxonomic, ecological, and phytogeographical notes concerning this rare, cliff-dwelling, woody species endemic to northwestern Sicily.

KEY WORDS
Sicily,
history of botany,
pre-Linnaean herbaria
lectotypification.

RÉSUMÉ
Typification de Scabiosa limonifolia *Vahl (Dipsacaceae).*
Dans le cadre de la typification en cours des taxons végétaux endémiques de la Sicile, cette étude porte sur *Scabiosa limonifolia* Vahl, décrite par le botaniste danois Martin Vahl. La recherche a conduit à l'identification de deux spécimens adaptés à la typification, probablement récoltés et envoyés par le botaniste sicilien Francesco Cupani. Le premier spécimen, conservé dans l'Herbier de Tournefort au Muséum national d'Histoire naturelle de Paris, a été désigné comme lectotype, tandis que le deuxième, conservé dans l'Herbier de Sherard à Oxford, a été choisi comme isolectotype. La typification est accompagnée de remarques nomenclaturales, taxonomiques, écologiques et phytogéographiques concernant cette espèce ligneuse rare, rupicole et endémique du nord-ouest de la Sicile.

MOTS CLÉS
Sicile,
histoire de la botanique,
herbiers pré-linnéens,
lectotypification.

INTRODUCTION

The genus *Pseudoscabiosa* Devesa (Dipsacaceae Juss.) is endemic to the central-western Mediterranean (Devesa 1984). The taxa belonging to this genus have been previously referred to the section and to the genus *Asterocephalus* Zinn by Coulter (1823) and Sprengel (1825), respectively, to the genus *Trochocephalus* (F.C.Mertens & W.D.J.Koch) P.M.Opiz by Holub (1977), and to *Scabiosa* sect. *Asterothrix* Font Quer (1944) by Verlaque (1986). More recently, based on both morphological and palynological traits, Mayer & Ehrendorfer (1999) pointed out that this small genus does not belong to the tribe Scabioseae *sensu stricto*. Further genetic and phylogenetic investigations (Caputo & Cozzolino 1994; De Castro & Caputo 2000; Caputo *et al.* 2004; Avino *et al.* 2009; Carlson *et al.* 2009) confirmed that it represents a well-supported clade. It counts only three species, all chamaephytes sharing the same ($x = 10$) chromosome base number (Mayer & Ehrendorfer 1999), i.e. *P. limonifolia* (Vahl) Devesa, endemic to Northwestern Sicily (Figs. 1; 2), *P. saxatilis* (Cav.) Devesa occurring in the Eastern Iberian Peninsula, and *P. grosii* (Vahl) Devesa, growing in Southern Spain and Northwestern Morocco (Devesa 2007).

We provide a brief description of the main morphological traits of *P. limonifolia* (translated from Pignatti 2018): Woody stem 30 to 60 cm high, with a tuft of thickened leaves at the apex; flower scapes leafless or with 1-2 pairs of leaves, erect, sparsely pubescent and greyish-green above. Basal leaves bearing a 1-2 cm long petiole, lamina oblanceolate-spatulate (1.7-2.2 × 4.5-8.5 cm), coriaceous, glabrous above, grey-tomentose below, obtuse or rounded at the apex. Flower scape hemispherical (2-3 cm), scales ovate-lanceolate; corolla purplish, pubescent, 1-1.2 cm also in the peripheral florets; involucre terminating in very acute teeth; calyx awns longer than teeth. The plant also shows several anatomical adaptations to life on the coastal cliffs, suggesting a marked ability to absorb atmospheric moisture through its leaves (Colombo *et al.* 1980).

P. limonifolia grows on North-facing limestone cliffs from 40 to 400 m a.s.l., in a chasmophytic community referred to the alliance *Dianthion rupicolae* (Brullo & Marcenò 1979; Brullo *et al.* 2004; Gianguzzi & La Mantia 2008; de Simone 2020), together with many other narrow-ranged Sicilian endemics (Pasta *et al.* 2024). This species is known to occur in very few localities: Mt. Cofano in the District of Trapani (Cupani 1696; Gianguzzi *et al.* 2005), in the mounts North and West of the city of Palermo, namely at Mt. Gallo (Gussone 1827), Mt. Pecoraro (Romano *et al.* 1994; Cusimano *et al.* 2017) and in the Aegadian Archipelago (western Sicily) on Marettimo Island (Gussone 1843; Francini & Messeri 1956; Gianguzzi *et al.* 2006, 2011) (Fig. 2). Adopting the IUCN (2021) risk assessment criteria, *P. limonifolia* is reported as "EN" (Endangered) according to the most updated red list of Sicilian vascular plants (Raimondo *et al.* 2011).

This species was first described as *Scabiosa limonifolia* by Martin Vahl (1749-1804), a Danish botanist who was a disciple of Linnaeus (Christensen 1923; Jørgensen 1999).

In this paper we discuss the typification of the name *Scabiosa limonifolia* Vahl, basionym of *Pseudoscabiosa limonifolia* (Vahl) Devesa. This work aligns with a national initiative aimed at studying the names of the Italian vascular plants whose types are currently not designated, started about ten years ago (Peruzzi *et al.* 2015) and still ongoing (e.g., Pasta *et al.* 2025, and references therein) and complements the typification of names of *Scabiosa* and allied genera carried out by Del Guacchio *et al.* (2018).

MATERIAL AND METHODS

This work is based on the analysis of Vahl's protologue, the examination of relevant literature and required the search and the study of the available specimens conserved in European herbaria. The codes featured in the text and referring to herbarium collections follow Thiers (2026), whilst the typification procedure follows the Madrid Code (Turland *et al.* 2025).

We also contacted the staff of the Herbarium of the Natural History Museum of Denmark (C) to verify the possible presence of *Scabiosa limonifolia* among Vahl's exsiccata, to obtain useful information on his modus operandi and to check for any forgotten unpublished data (e.g. archives) written and left by the Danish botanist.

The study of Vahl's description required a better understanding of the scientific scenario that gave rise to the oldest polynomial descriptions of *Scabiosa limonifolia*. With this aim, a careful reconstruction has been made of the complex network that linked many top botanists (Francesco Cupani, John Ray, Joseph Pitton de Tournefort, William Sherard) in Europe in the mid-17th to mid-18th centuries (see the following paragraphs). A virtual search of *Scabiosa limonifolia* in the European herbaria reported to host Cupani's plant specimens (Pulvirenti *et al.* 2015a, b) was performed. Additionally, to better reconstruct the history and origin of the herbarium specimens suitable for typification purposes, a comparative study of the handwritings of the various botanists explicitly mentioned or involved in the writing of the labels was carried out. More in detail, for Cupani we used the names or phrases accompanying the drawings of his Panphyton Siculum (Cupani 1713; Pastena *et al.* 2003); as for Sherard, we could access a handwritten manuscript of him (*c.* 1720), while for the handwriting of Desfontaines reference was made to the cards compiled by Burdet (1974). The presence of handwritings from Sherard, Ray, Vaillant or Tournefort was verified with the help of the staff of OXF and P, too. The square brackets added by the authors of this paper contain notes or additions to the abbreviations used in the texts of the labels of the herbarium specimens consulted during the research.

HERBARIUM ABBREVATIONS (Thiers 2026)

BCN University of Barcelona, Barcelona;
BM The Natural History Museum, London;

FIG. 1. – *Pseudoscabiosa limonifolia* (Vahl) Devesa on the North-facing cliffs of Monte Gallo. Credit: A. La Rosa..

C	University of Copenhagen, Copenhagen;
CAT	University of Catania, Catania;
OXF	University of Oxford, Oxford;
P	Muséum national d'Histoire naturelle, Paris;
S	Swedish Museum of Natural History of Stockholm, Stockholm;
WA	University of Warsaw, Warsaw.

SYSTEMATICS

Family DIPSACAEAE Juss.
Genus *Pseudoscabiosa* L.

Pseudoscabiosa limonifolia (Vahl) Devesa
(Figs 1-7)

Lagascalia 12: 220 (Devesa 1984). — *Scabiosa limonifolia* Vahl, *Symbolae Botanicae* 2: 27 (Vahl 1791). — *Asterocephalus limonifolius* (Vahl) Sprengel, *Systema Vegetabilium*, ed. 16, 1: 380 (Sprengel 1825). — *Trochocephalus limonifolius* (Vahl) Holub, *Folia Geobotanica et Phytotaxonomica Bohemoslovacica* 12: 307 (Holub 1977).

TYPE SPECIMENS. — **Italy** • Sicily; *Scabiosa cophanensis* fruticans, cœrulea, Laureolæ fol. crasso, rotundo, lucido, molli, subtùs incano H. Cathol. 196 / R. Hist. 3. 238 n° 53" / Herbier de Vaillant; s.d., *F. Cupani*, *s.n*; lectotype: P[P02714969]!, **here designated** (Fig. 6); isolectotype: OXF[Herb. Sher-0558!] (Fig. 7).

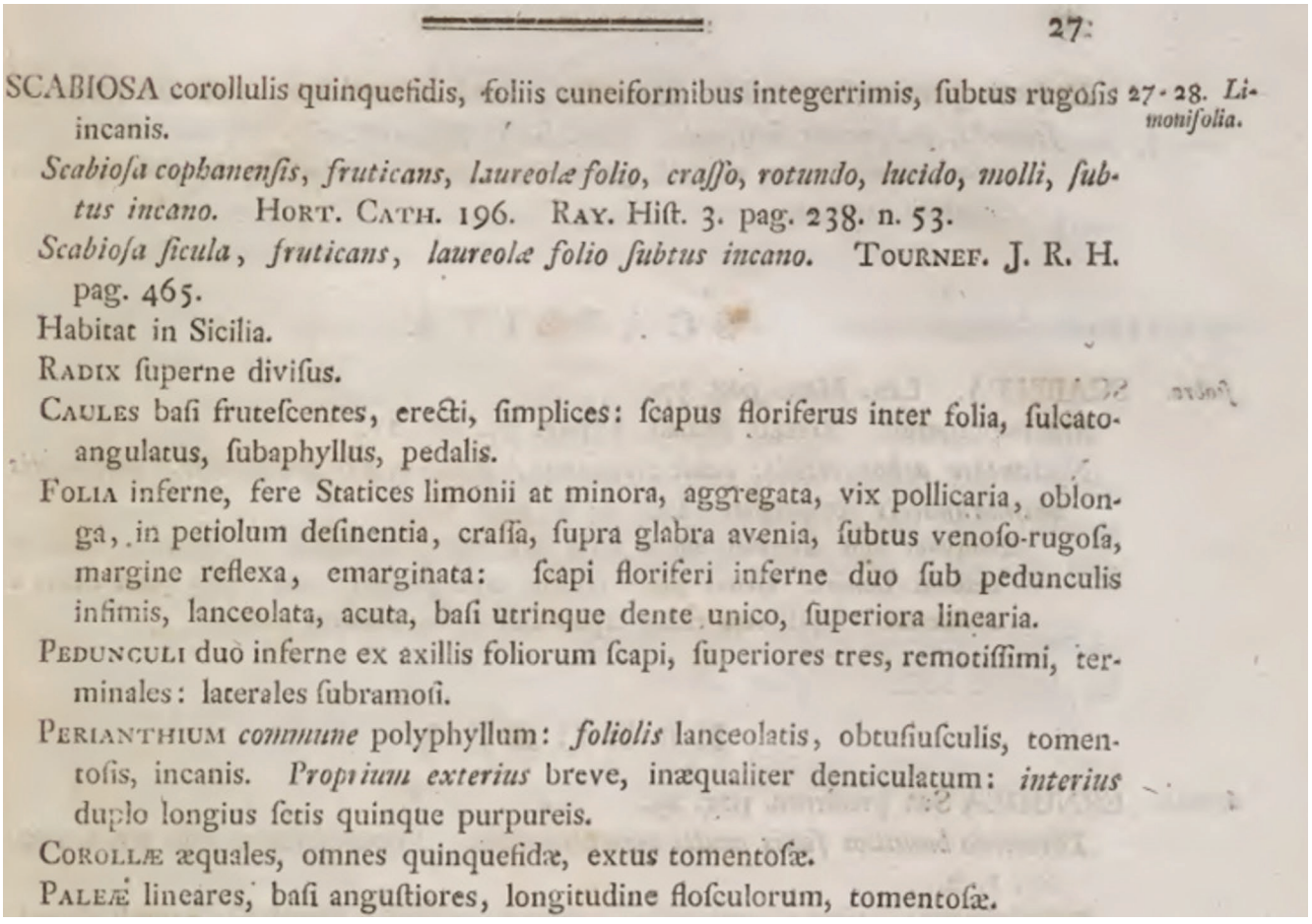
RESULTS

VAHL'S PROTOLOGUE AND THE EARLIER SYNONYMS

Around 1783, Vahl began compiling an archive and he continued until his death in 1804 (J. Soelberg, Herbarium of the Natural History Museum of Denmark, Copenhagen, *pers. comm.*). All of the *c.* 26 000 handwritten and unpublished cards of this archive, kept in C, have been digitised. Thanks to the support of the herbarium staff, we could access pages 30-31 of this archive (see Appendix 1), where the epithet *Scabiosa limonifolia* appears for the first time. These pages contain exactly the same information reported in the printed protologue (Vahl 1791), i.e. a short diagnosis "*SCABIOSA corollulis quinquefidis, foliis cuneiformibus integerrimis, subtus rugosis incanis*", with a complete and extensive morphological description of the plant in Latin (Fig. 4). As for the locality, Vahl (1791) reports "*Habitat in Sicilia*".

Fig. 2. — Inflorescences of a plant growing at Marettimo Island. Credit: A. La Rosa.

Fig. 3. — Distribution map of *Pseudoscabiosa limonifolia* (Vahl) Devesa. From West to East, the four dots correspond to the populations of Marettimo Island and Mt. Cofano (district of Trapani) and those of Mt. Pecoraro and Mt. Gallo (district of Palermo).



27.

SCABIOSA corollulis quinquefidis, foliis cuneiformibus integerrimis, ſubtus rugoſis incanis. 27. 28. *Limonifolia.*

Scabioſa cophanenſis, fruticans, laureolæ folio, craſſo, rotundo, lucido, molli, ſubtus incano. Hort. Cath. 196. Ray. Hiſt. 3. pag. 238. n. 53.

Scabioſa ſicula, fruticans, laureolæ folio ſubtus incano. Tournef. J. R. H. pag. 465.

Habitat in Sicilia.

Radix ſuperne diviſus.

Caules baſi fruteſcentes, erecti, ſimplices: ſcapus floriferus inter folia, ſulcato-angulatus, ſubaphyllus, pedalis.

Folia inferne, fere Statices limonii at minora, aggregata, vix pollicaria, oblonga, in petiolum deſinentia, craſſa, ſupra glabra avenia, ſubtus venoſo-rugoſa, margine reflexa, emarginata: ſcapi floriferi inferne duo ſub pedunculis infimis, lanceolata, acuta, baſi utrinque dente unico, ſuperiora linearia.

Pedunculi duo inferne ex axillis foliorum ſcapi, ſuperiores tres, remotiſſimi, terminales: laterales ſubramoſi.

Perianthium *commune* polyphyllum: *foliolis* lanceolatis, obtuſiuſculis, tomentoſis, incanis. *Proprium exterius* breve, inæqualiter denticulatum: *interius* duplo longius ſetis quinque purpureis.

Corollæ æquales, omnes quinquefidæ, extus tomentoſæ.

Paleæ lineares, baſi anguſtiores, longitudine floſculorum, tomentoſæ.

Fig. 4. — Protologue of *Scabiosa limonifolia* from Vahl (1791: 27).

Fig. 5. — Drawing of "Scabiosa fruticans, cærulea, Laureolæ fol.[i]o crasso molli, subtús incano rotundo" (= *Pseudoscabiosa limonifolia*) from a copy of Cupani's Panphyton (from Pastena *et al.* 2003: vol. 2, right side of plate 456).

Fig. 6. — Scanned image of the lectotype of the name *Scabiosa limonifolia* Vahl [P02714969], published with permission.

Fig. 7. — Scanned image of the isolectotype of the name *Scabiosa limonifolia* Vahl [OXF Sher-0558], published with permission.

The protologue also contains a mention of two polynomials that should be considered as earlier synonyms, i.e. "*Scabiosa cophanensis, fruticans, Laureolae folio, crasso, rotundo, lucido, molli, subtus incano*", cited from Hortus Catholicus (Cupani 1696: 196) and Historia Plantarum (Ray 1704: 238 n° 53), and "*Scabiosa sicula, fruticans, laureolae folio subtus incano*", cited from Institutiones Rei Herbariae (Tournefort 1700: 465). A more accurate check on the original sources mentioned by Vahl pointed out some slight differences both in the text of the first description by Cupani (1696), who wrote: "*Scabiosa Cophanensis fruticans, cœrulea, Laureolæ folio crasso rotu(n)do, lucido, molli, subtùs incano*", and in the one by Ray (1704), who added the following description: "*Radice* nititur crassa, in plura capita divisa, è quorum unoquoque exeunt *folia* plurima, in orbem sparsa, ut in Bellide minori vulg.[are] ad Laureolæ accedentia, sed pro magnitudine breviora, extremitate subrotunda, spissa, subtus incana. Ex horum centro exsurgit *caulis* pedalis, striatus, ad longa intervalla foliis binis adversis, è quorum sinubus ramuli oriuntur, vestitus. In summo caule & ramulis *flores* sedent nudi & ferè globosi, ut in Succisa. Hæc ex sicca *Sherardina.*" Based on what is noted in the unpublished manuscript archive kept in Copenhagen and in the printed protologue of Vahl, we can state that he never gave reference to a specific specimen, instead he reported information taken from three literature references, i.e. Cupani (1696), Tournefort (1700) and Ray (1704).

The Cupani's drawing

Both the most influential botanists who studied the Sicilian vascular flora in the 19th century, i.e. Gussone (1827; 1843) and Lojacono-Pojero (1903) mention a drawing referring to *Scabiosa limonifolia* published on plate 247 of the second volume of Cupani's Panphyton Siculum. The tormented publishing history of this work, usually cited as Cupani (1713), has been the focus of scientific interest in the European botanical community for centuries. In fact, today only four copies of this book are known to occur in Sicily, and they differ one from another for the number and the numbering of the illustrated plates they contain. Fig. 5 reproduces a detail of the table 456 of the second volume from Pastena *et al.* (2003), corresponding to the plate 247 of the second volume of the copy "A" kept in the Central Library of the Sicilian Region in Palermo, once kept in the Jesuit Library of Palermo and with no doubt the same one consulted by Gussone and Lojacono-Pojero. When describing *Scabiosa limonifolia* Vahl (1791) probably did not mention the Cupani's drawing because he was unaware of the existence of the Panphyton or he could not consult it. As a consequence, this drawing could not be used for typification purposes.

The herbarium specimens

A virtual search enabled us to find two specimens sent by Cupani to two different European herbaria, both suitable for typification purposes. The first one was kept in Herbarium of Muséum national d'Histoire naturelle in Paris (P), the second is stored in William Sherard's Herbarium, kept in Oxford (OXF).

The specimen [P02714969] from Paris (Fig. 6) has three labels. On the lower label on the left-hand side, written by Sherard (as suggested by S. Harris and confirmed by B. Offroy, who kindly checked the handwritten catalogue of the Herbier Vaillant), we read: "Scabiosa cophanensis fruticans, cœrulea, Laureolæ fol. crasso, rotundo, lucido, molli, subtùs incano H. Cathol. 196 / R.[ay] Hist. [vol.] 3 [p]. 238 n° 53" / Herbier de Vaillant [note added later, possibly by Desfontaines, C. Aupic, pers. comm.]. On the upper label on the left-hand side, written by someone who we were not able to identify, we read: "Scabiosa Cophanensis fruticans, cœrulea, Laureolæ, meliùs Globulariæ, fol:[io] crasso / Hor:[tus] Cat:[holicus] 196 / entr. [written by John Ray, this annotation is rather common on the specimens of the Sherard's herbarium that were personally seen by Ray when he was writing the third volume of his Historia; S. Harris, pers. comm.] / herbier de Vaillant" [note added later, possibly by Desfontaines, C. Aupic, pers. comm.]. On the third label we read: "Scabiosa limonifolia Vahl Symb. – Willd. / Desfontaines scripsit [note added later by Édouard Spach, C. Aupic, pers. comm.]". On the label of the specimen of OXF [Sher-0558] (Fig. 7), written by Sherard [as confirmed by S. Harris, pers. comm.], we read: "Scabiosa Cophanensis fruticans, cœrulea, Laureolæ fol. crasso, rotundo, lucido, molli, subtùs incano H. Cathol. 196 / R.[ay] Hist. [vol.] 3 [p]. 238 n° 53 / Scabiosa sicula, fruticans laureolæ folio subtùs incano I. R. H. 465 [= Tournefort's Institutiones Rei Herbariae p. 465] / ~~Scabiosa~~ Succisa globulariæ folio, subtùs incano / Comm. Ac. R. Sc. [= Communicavit Academia Regia Scientiarum? = communicated by the Royal Academy of Sciences?] ann. 1722 p. 175 N° 5 / 556 [number written with red ink, added in the lower right corner of the sheet by William Baxter, S. Harris, pers. comm.]". No other suitable specimens of *Scabiosa limonifolia* were found in any of the other European herbaria that Pulvirenti *et al.* (2015b) claim contain specimens from Cupani, i.e. his Hortus Siccus kept in Catania (CAT; https://www.ortobotanicocatania.it/wp-content/uploads/2022/erbari/erbario_it/cupani/index.html), the herbaria of John Ray, George Clifford, Hans Sloane and Paul Hermann in the Natural History Museum of London (BM), those of Georg Andreas Helwing at the University of Warsaw (WA) (K. Spalik and M. Graniszewska, pers. comm.), of Antonius Münchenberg at the Swedish Museum of Natural History of Stockholm (S) (J. Lundberg, pers. comm.), of Jacob Bobart the Younger (Oxford University Library, OXF) (S. Harris, pers. comm.), of the members of the Salvador family (University of Barcelona, BCN) (J.M. Camarasa and N. Ibáñez, pers. comm.).

DISCUSSION

Cupani was able to build up a complex network of scientific relationships not only with the curators (the so-called "praefecti") of various European botanical gardens, but also with collectors and passionates (Pulvirenti *et al.* 2015a), and this explains why his dry specimens may be currently found in numerous European herbaria (Pulvirenti *et al.* 2015b). Cupani

exchanged letters and dry specimens with Tournefort (Chiarelli 1979), and his correspondence with the Englishman William Sherard (1659-1728) was even more intense. In fact, the two communicated not only seeds and exsiccata, but also shared a great deal of opinions, information and publications (Arber 1912; Chiarelli 1979). Sherard was acquainted with the most influential botanists of his time, such as John Ray (1627-1705), Joseph Pitton de Tournefort (1656-1708), director of the Académie Royale des Sciences in Paris until 1708, and his successor, Sébastien Vaillant (1669-1722), and he often encouraged their research and scientific production. During his frequent travels across England and Europe, Sherard met Ray and Tournefort many times. Moreover, the second part of the text reported on the label of the specimen kept in OXF perfectly matches with the mention of it given by Ray (1704). In 1718, Sherard became a fellow of the Royal Society, and, in 1721, Johann Jacob Dillenius started to rearrange his herbarium (Clokie 1964). The reference to the provenance from the Royal Academy of Science in 1722, hinted at by one of the labels on the OXF specimen, could be connected with this rearrangement and derive from the displacement of part of Sherard's herbarium.

As for the specimen kept in OXF, a careful check of the mounting paper for Sher-0558 made it possible to ascertain that both the paper and the watermarks are typical of those used in Sherard's personal herbarium (S. Harris, *pers. comm*.). The original label of Cupani does not exist anymore because Sherard used to re-write labels and discard the original ones for most of his specimens (S. Harris, pers. comm.). As for the specimen stored in P, it certainly belonged to the herbarium of Tournefort, of which Desfontaines, mentioned on the label, personally coordinated the archiving (Lamy & Pelletier 2010). Although they lack a date, both specimens preserved at P and OXF are with no doubt part of Cupani's original material because their labels perfectly match with the text published by Cupani (1696) himself. Considering that both specimens bear a "main" label written by Sherard and containing the very same information, they might have been sent to Sherard by Vaillant. After being seen by Ray at Oxford, one of these specimens (together with Vaillant's original label, annotated by Ray himself) was returned to Paris. Our hypothesis matches very well with the reference made by Ray (1704) in his description, where he uses the plural ("Hæc ex sicca Sherardina"), probably because he saw these two specimens; as a consequence, they should be considered as syntypes. Both specimens derive from a flowering adult plant mounted on a sheet; the one from P consists of three fragments (basal branch with leaves arranged in rosettes, a small rosette of leaves and a stem with two inflorescences), while that from OXF is a single, intact specimen (basal branch with leaves arranged in rosettes, stem and single inflorescence).

Both specimens are complete in all their parts, and their anatomical traits match very well with the protologue and the current application of the name. Even if both the French and the English specimen bear the same information and have the same historical value, for lectotypification purposes we chose the one kept in P because it is the only one that might have been personally observed by Vahl. The specimen from OXF should be treated as an isolectotype.

CONCLUSIONS

The paradoxical case of *Scabiosa limonifolia*, a species endemic to Northwestern Sicily described by a Danish botanist on the basis of herbarium samples preserved in Oxford and Paris, highlights once more the importance for typification purposes of the pre-Linnaean herbaria scattered throughout Europe. The herbarium search and the check of written sources during the typification process shed light on the complex network involving some of the most prominent botanists of the late 17th century. In fact, contacts between Cupani, Tournefort and Ray were confirmed, and the leading role played by the Englishman William Sherard in promoting research and the exchange of information and plant material between numerous European institutions was highlighted. A rigorous reconstruction of the botanists' scientific activities and the collection and archiving of all suitable information (e.g., signatures, handwritten notes) useful for the correct identification of plant collectors appear to be the *conditio sine qua non* to minimise ambiguities during the typification process.

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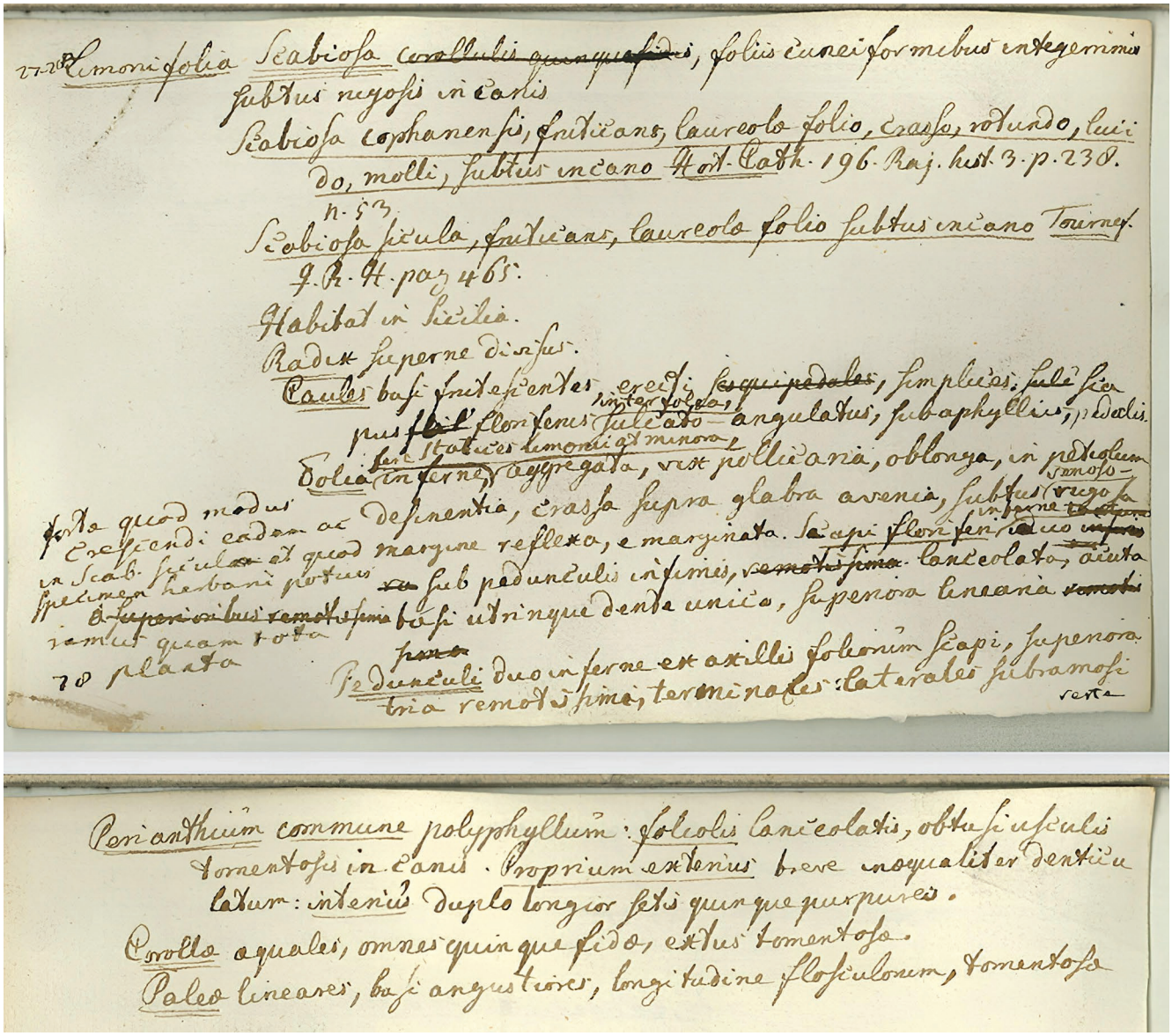
Appendix 1. — Original text and full transcription of pages 30-31 of the unpublished handwritten archive of Martin Vahl stored at the Herbarium of Copenhagen (https://digit.snm.ku.dk/bm/vahl/S/Scabiosa1.pdf)



"27-28 Limonifolia. Scabiosa (~~corollulis quinquefidis~~), foliis cuneiformibus integerrimus subtus rugosis incanis.

Scabiosa cophanensis, fruticans, laureolo folio, crasso, rotundo, lucido, molli, subtus incano Hort. Cath. 196. Raj. Hist. 3. p. 238. n. 53

Scabiosa sicula, fruticans, laureolo folio, subtus incano Tournef. I.R.H. pag. 465.

Habitat in Sicilia.

Radix superne divisus.

Caules basi frutescentes, erecti (~~sesquipedales~~), simplices, scapus floriferus inter folias sulcato-angulatus, subaphyllus, pedalis.

Folia inferne, fere Statices limonii at minora, aggregata, vix pollicaria, oblonga, in petiolum desinentia, crassa supra glabra avenia, subtus venoso-rugosa margine reflexa, emarginata. Scapi floriferi inferne duo sub pedunculis infimis, (~~remotissima~~), lanceolata, acuta, basi utrinque dente unico, superiora linearia (~~remotissima~~).

Pedunculi duo inferne ex axillis foliorum scapi, superiora tria remotissimi, terminales: laterales subramosi."

[note in the lower left margin = note dans la marge inférieure gauche: "forte quod modus/ crescendi eadem ac / in Scab. sicula et quod / specimen herbari potius / ~~a superioribus remotissima~~ iam ut (?) quam tota planta / 78"] [note in the lower right corner = note dans le coin inférieur droit;"verte" = turn the page = tourner la page]

"Perianthium commune polyphyllum: foliolis lanceolatis, obtusiusculis tomentosis incanis. Proprium exterius breve inæqualiter denticulatum: interius duplo longior setis quinque purpureis.

Corollæ æquales, omnes quinquefidæ, extus tomentosæ.

Paleæ lineares, basi angustiores, longitudine flosculorum, tomentosæ".