

CHECK LIST OF THE IBERIAN AND BALEARIC ORCHIDS

1. *ACERAS* R. BR. – *NIGRITELLA* RICH.

by

PABLO GALÁN CELA¹ & ROBERTO GAMARRA²

¹ Departamento de Producción Vegetal: Botánica y Protección Vegetal, E.U.I.T. Forestal, Universidad Politécnica. E-28040 Madrid <pgalan@forestales.upm.es>

² Departamento de Biología, Facultad de Ciencias, Universidad Autónoma de Madrid. E-28049 Madrid <roberto.gamarra@uam.es>

Resumen

GALÁN CELA, P. & R. GAMARRA (2002). Catálogo de las orquídeas ibéricas y baleares. 1. *Aceras* R. Br. – *Nigritella* Rich. *Anales Jard. Bot. Madrid* 59(2): 187-208 (en inglés).

Se presenta un catálogo, ordenado alfabéticamente, de los táxones de la familia Orchidaceae incluidos en los géneros *Aceras* a *Nigritella*, presentes en la Península Ibérica e Islas Baleares, excluidos los híbridos. Se recogen todos los nombres, hasta el rango varietal, mencionados de dicho ámbito geográfico, con su correspondiente lugar de publicación; por supuesto, los considerados correctos, sus sinónimos e *indicatio locotypica*. Se incluyen, cuando se estiman oportunas, observaciones de índole nomenclatural y taxonómico.

Palabras clave: Orchidaceae, nomenclatura, taxonomía, Península Ibérica, Islas Baleares.

Abstract

GALÁN CELA, P. & R. GAMARRA (2002). Check list of the iberian and balearic orchids. 1. *Aceras* R. Br. – *Nigritella* Rich. *Anales Jard. Bot. Madrid* 59(2): 187-208.

A check list of the taxa of the family Orchidaceae found in the Iberian Peninsula and the Balearic Islands is presented in alphabetical order. This section includes the genera from *Aceras* to *Nigritella*, down to the rank of variety, but excluding hybrids. We have gathered together the correct names, with their corresponding place of publication, synonyms and *indicatio locotypica*. Also included are some observations in those genera and species that present nomenclatural and taxonomic problems.

Key words: Orchidaceae, nomenclature, taxonomy, Iberian Peninsula, Balearic Islands.

INTRODUCTION

The family Orchidaceae is widely represented throughout the entire world, with maximum diversity in tropical and subtropical zones. In Europe, traditionally 35 genera are recognized –cf. MOORE (1980), BUTTLER (1991), DELFORGE (1994), etc.–, of which, 25 appear in the Iberian Peninsula and the Balearics, where the representation of this

family is one of the broadest, at least by extratropical standards, equivalent or only slightly less than other countries of the Mediterranean region. But, in the last five years, in the cladistic studies published by BATEMAN & *al.* (1997) and BATEMAN (2001), the number has decreased, because some genera are included in others. Therefore, BUTTLER (2001) on the basis of traditional characters, only accepts the inclusion of

Aceras in *Orchis*. DELFORGE (2001) only considers 28 genera. In this paper, we prefer to maintain the current status presented in recent floras, such as STACE (1997).

At present, it is difficult to determine the number of recognized taxa, due to the confusion resulting from the taxonomic treatments in highly difficult groups and the notable grade of variation, such as found in representatives of the genera *Dactylorhiza*, *Epipactis*, *Ophrys* and *Orchis*. Taxonomic studies of this family in the Iberian Peninsula and the Balearic Islands have been slowly increasing, but in a fragmented manner through time. Although a diverse group of Spanish, Portuguese and foreign botanists have described new taxa for the Peninsula and Balearics, we would say that the first author completing the most in-depth study was José d'Ascensão Guimarães, who published a treatment of the Portuguese orchids in 1887. Since the 1960s, numerous French, Belgian, German and English orchidologists have visited our peninsula and have contributed, frequently with the description of new taxa, to the taxonomic and chorologic knowledge of this family. From 1970 onward, botanizing by numerous Spanish and Portuguese scientists has proliferated many studies, resulting in development of abundant local, provincial, and regional catalogues of the Iberian and Balearic territories, which contain new information concerning representatives of this family, e.g. RIVERA & LÓPEZ VÉLEZ (1987), DELFORGE (1989), PÉREZ RAYA & MOLERO MESA (1990), PÉREZ CHISCANO & *al.* (1991), BOUILLIE & *al.* (1992), HERMOSILLA & SABANDO (1993, 1996a, 1996b, 1997, 1998), LOWE (1995), MARÍN & GALÁN CELA (1994), SANZ & NUET (1995), TYTECA (1997), LOWE (1998), BENITO AYUSO & *al.* (1999), CORTIZO & SAHUQUILLO (1999), PALLARÉS (1999), LIZAU (2001). Also in many floras, such as MERINO (1909), CADEVALL (1933), BONAFÉ (1978), VALDÉS & *al.* (1987), MATEO (1991), AIZPURU & *al.* (1999), BOLÒS & VIGO (2001), and many others.

Additional proof of awaking interest in this family is the publication of various guides of European and Mediterranean scopes, such as

those of SUNDERMANN (1980), BAUMANN & KÜNKELE (1988), BUTTLER (1991), DELFORGE (1994, 2001).

All of this investigative labor has generated an extensive proliferation of names given for our country. From this arises the necessity of this present work, which has two goals. First, and of highest priority, it aims to compile of the nomenclatural information within this family for the defined geographic range, without taking into account ranks lower than variety, nor hybrids, although several taxa are present in the list which were originally treated as such. Secondly, the order within this list of names follows the criteria of morphological similarity and taxonomic affinity, a task which was easily accomplished in some cases, but in others, particularly in the aforementioned genera, one that forced us to group names that belonged to related taxa. We do not intend this to constitute a systematic study in any manner; rather, it should be treated as nothing more than a thoughtful opinion derived from a thorough review of the current status of knowledge.

MATERIAL AND METHODS

The search for names of Orchidaceae has entailed the review of numerous bibliographic sources, as much books as periodical publications, principally about the Iberian flora, but also others that cited the occurrence of taxa in the Iberian Peninsula and the Balearic Islands. For this, we utilized resources held in the libraries of the Real Jardín Botánico de Madrid, the Facultad de Farmacia in the Universidad Complutense de Madrid and Kew Gardens of London.

The review of the names using the different volumes of *Index Kewensis* uncovered numerous homonyms of taxa named in the Iberian Peninsula. In relation to this task, we detected and brought to light several citation errors and omission of taxa in this distinguished work. In the same manner, redundant combinations were also discovered.

The catalogue is organized alphabetically

by accepted names of the taxa included into the genera from *Aceras* to *Nigritella*. The valid names are designated in bold type and each one is followed by the accepted authority, the place and date of publication, indicating the exact pages and figures. Below, in italics, are collected all the homotypic synonyms, with the corresponding indicatio locotypica, and occasionally including more details, with a view to facilitating possible typifications. In some cases access to the publication of the original description was not possible, and it was transcribed from other work of the same author, or collected from other authors. Each of these cases is specified as such in the observations.

In addition, the heterotypic synonyms and invalid names are listed in chronological order, with the information indicated previously. The abbreviation "n. v." is used to indicate cases in which it was not possible to review the corresponding publication.

In several taxa we added an observation section, which included explanations about nomenclatural problems that resulted in the adoption of one or the other name.

The taxa which have been described for Iberian Peninsula and Balearic Islands are preceded by an asterisk (*).

CHECK LIST

Aceras R. Br. in W.T. Aiton, Hortus Kew. ed. 2, 5: 191 (1813)

Aceras anthropophorum (L.) W.T. Aiton, Epitome ed. 2 Hortus Kew.: 281 (1814)

≡ **Ophrys anthropophora* L., Sp. Pl. 2: 948 n.º 14 (1753); *Orchis anthropophora* (L.) All., Fl. Pedem. 2: 148 n.º 1835 (1785); *Arachnites anthropophora* (L.) F.W. Schmidt, Fl. Boëm. 1: 77 n.º LXXXIX, tab. 103 (1793); *Loroglossum anthropophorum* (L.) Rich., Orchid. Eur. Annot.: 32 (1817); in Mém. Mus. Hist. Nat. 4: 54 (1818); *Himantoglossum anthropophorum* (L.) Spreng., Syst. Veg. 3: 694 n.º 3 (1826)

Ind. loc.: "Habitat in Italia, Lusitania, Gallia".

Lectotypus: "Vaill., Bot. paris: tab. 31, fig. 19-20. 1727 sub nom. Orchis" –cf. BAUMANN & al. (1989: 437).

Observations.—In Index Kewensis and in numerous works about orchids, the authorship of this taxon is cited in the following form: "*A. anthropophorum* R. Br. in W. T. Aiton, Hortus Kew. ed. 2, 5: 191 (1813)" The aforementioned index describes the genus *Aceras* and makes reference to *Ophrys anthropophora* Willd., Sp. Pl. 4(1): 63 n.º 3 (1805), which actually described *Ophrys anthropomorpha*. To this one adds the fact that in the publication of Aiton of 1813, this author writes in the margin the epithet of the species treated, but in this case it was lacking for the genus *Aceras*, and the name *Aceras anthropophorum* was used for the first time in 1814.

= **Ophrys anthropomorpha* Willd., Sp. Pl. 4(1): 63-64 n.º 4 (1805); *Aceras anthropomorphum* (Willd.) Sm. in Rees, Cycl. 39(1), *Aceras* n.º 2 (1818); *Aceras anthropophora* subsp. *anthropomorpha* (Willd.) Gand., Nov. Consp. Fl. Eur.: 464 (1910)

Ind. loc.: "Habitat in collibus Lusitaniae".

= **Orchis henriquesæa* J.A. Guim. in Bol. Soc. Brot. 5: 71 (1887)

Ind. loc.: "Centro littoral: Appellação (J.P. Gomes!).- Baixo Alemtejo littoral: Arrabida (W.!)."

Observations.—GUIMARÃES (1887: 69-71) adjudged this taxon to have a hybrid origin between *Aceras anthropophorum* and *Orchis longicruris*, and indicated that it more closely approaches the former.

– *Aceras anthropophora* var. *balearica* R. Chodat in Bull. Trav. Soc. Bot. Genève 11: 88 (1905), nom. nud.

Ind. loc.: "colline de San Salvador".

Anacamptis Rich., Orchid. Eur. Annot.: 25 (1817); in Mém. Mus. Hist. Nat. 4: 41, 47 (1818)

In BATEMAN & al. (1997: 120), some species belonging to genus *Orchis* are

combined under *Anacamptis*, but we maintain the traditional systematic treatment for this genus including only the following species.

Anacamptis pyramidalis (L.) Rich., *Orchid.* Eur. Annot.: 33 (1817); in *Mém. Mus. Hist. Nat.* 4: 55 (1818)

≡ *Orchis pyramidalis* L., *Sp. Pl.* 2: 940 n.º 5 (1753); *Aceras pyramidalis* (L.) Rchb. f., *Icon. Fl. Germ. Helv.* 13/14: 6 n.º 6, tab. 9 figs. I (1850)

Ind. loc.: "Habitat in Helvetiae, Belgii, Angliae, Galliae arenosis, cretaceis".

Lectotypus: "Ray, *Syn. meth. stirp. brit. ed.* 3: tab. 18. 1724, ca. 1723, leg. Johann Jacob Dillenius" –cf. BAUMANN & *al.* (1989: 439).

= *Orchis condensata* Desf., *Fl. Atlant.* 2: 316-317 (1799); *Anacamptis condensata* (Desf.) K. Koch in *Linnaea* 22: 285 (1849), in syn. *Anacamptis pyramidalis* var. *asiatica*

Ind. loc.: "Habitat ad flumen Schelif Algeriae".

= *Aceras pyramidalis* var. *brachystachys* Rchb. f., *Icon. Fl. Germ. Helv.* 13/14: 7, tab. 9 figs. II (1850)

Ind. loc.: "Da: Lesina, Botteri! Graec.: Parnassus Sartori! Metana Friedrichsthal! Corinthi herb. Zuccarin! Kythæron v. Spruner! Hymettes Fraas! Ott. as.: Brussa Thirke! (in herb. C. Koch)".

Observations.—GUIMARÃES (1887: 58) indicated this variety for Portugal. Accepting the criteria of DELFORGE (2001: 262), we consider that it forms a part of the wide variability of this species in the Iberian territory.

= *Anacamptis pyramidalis* subsp. *algarbiensis* Gand., *Nov. Consp. Fl. Eur.*: 463 (1910)

Ind. loc.: "Lusit. mer., Algarve Lagos (Bourgeau N.º 2037 ex parte) [sec. Gand., *Fl. Eur.* 23: 110 (1890) sub *Orchis algarbiensis* Gand.]".

Barlia Parl., *Due Nuov. Gen. Monocot.*: 5 (1858); *Fl. Ital.* 3: 445 (1858)

Barlia robertiana (Loisel.) Greuter in Boissiera 13: 192 n.º 553 (1967)

≡ *Orchis robertiana* Loisel., *Fl. Gall.* 2: 606 n.º 4, tab. 21 (1807); *Himantoglossum robertianum* (Loisel.) P. Delforge in *Naturalistes Belges* 80 (*Orchid.* 12): 401 (1999)

Ind. loc.: "In collibus siccis petrosis circa Telonem".

= *Orchis longibracteata* Biv., *Sicul. Pl., Cent.* 1: 57-59 n.º 66 (1806), nom. illeg., non F.W. Schmidt in *Samml. Phys. Aufsätze Böhm. Naturgesch.* 1: 233, tab. 2 (1791); *Aceras longibracteata* Biv. ex Rchb. f., *Icon. Fl. Germ. Helv.* 13/14: 3-4 n.º 3, tab. 27 (1850); *Barlia longibracteata* (Biv. ex Rchb. f.) Parl., *Due Nuov. Gen. Monocot.*: 6 (1858); *Fl. Ital.* 3: 447 n.º 901 (1858); *Loroglossum longibracteatum* (Biv. ex Rchb. f.) Moris ex Ardoino, *Fl. Anal. Alpes-Mar.*: 351 (1867); *Himantoglossum longibracteatum* (Biv. ex Rchb. f.) Schltr., *Orchideen* 1: 52 (1914)

Ind. loc.: "In campestribus succulentis. Panormi dietro S. Francesco di Paola fra li ficu d'Innia di Cannatedda".

– *Ophrys aromatica* Pourr. ex Colmeiro, *Enum. Pl. Penins. Hispano-Lusit.* 5: 22 (1889), nom. inval., pro syn. *Aceras longibracteata*

– *Ophrys lusitanica* Pourr. ex Colmeiro, *Enum. Pl. Penins. Hispano-Lusit.* 5: 22 (1889), nom. inval., pro syn. *Aceras longibracteata*

Cephalanthera Rich., *Orchid. Eur. Annot.*: 29 (1817); in *Mém. Mus. Hist. Nat.* 4: 43, 51 (1818)

Cephalanthera damasonium (Mill.) Druce in *Ann. Scott. Nat. Hist.* 60: 225 (1906)

≡ *Serapias damasonium* Mill., *Gard. Dict. ed.* 8, *Serapias* n.º 2 (1768)

Ind. loc.: "Stoken Church woods in Oxfordshire, and in several parts of Westmoreland and Lancashire".

= *Epipactis alba* Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 460-462 n.º 2 (1769); *Cephalanthera alba* (Crantz) Simonk., Enum. Fl. Transsilv.: 504 n.º 1809 (1886); (Crantz) Fritsch in Österr. Bot. Z. 38: 81 n.º 1 (1888), comb. superfl.

Ind. loc.: "In glareosis sylvae Dornbach, cum *Epipactis purpurea*, abunde in Caltenberg".

= *Serapias lonchophyllum* L.f., Suppl. pl.: 405 (1781); *Cephalanthera lonchophyllum* (L.f.) Rchb. f., Icon. Fl. Germ. Helv. 13-14: 136, tab. 119, in syn. *Cephalanthera grandiflora* Bab.

Ind. loc.: "Habitat in Germania, Helvetia, Ehrhart".

= *Epipactis pallens* Sw. in Neues J. Bot. 1(1): 65 (1806); *Cephalanthera pallens* (Sw.) Rich., Orchid. Eur. Annot.: 38 (1817); in Mém. Mus. Hist. Nat. 4: 60 (1818)

Ind. loc.: not indicated expressly in the protologue [Hall. helv. t. 41. Sowerb. C. Bot. t. 271].

= *Cephalanthera ochroleuca* Rchb., Fl. Germ. Excurs. 1: 140 n. 864 (1830)

Ind. loc.: "In shattigen Bergwälden in Siebenbürgen bei Segesvár mi Reisselt nach B m g."

= *Serapias grandiflora* L., Syst. Nat. ed. 12, 2: 594 n.º 6 (1767), p.p.; *Cephalanthera grandiflora* (L.) Gray, Nat. Arr. Brit. Pl. 2: 210-211 n.º 1 (1821), p.p.

Ind. loc.: "in a Beachwood [sic], just below the duke of Bedford's seat at Cheyneis, Buckinghamshire" [sec. Huds., Fl. Angl.: 342 (1762)].

Observations.—In the description of *Serapias grandiflora* L., Syst. Nat. ed. 12, 2: 594 (1767) some species are included —cf. MANSFELD (1938: 238)—, like *S. longifolia* Huds., Fl. Angl.: 341 (1762), not based on *Serapias helleborine* var. *longifolia* L., Sp. Pl. 2: 950 (1753), which is the basionym of *Cephalanthera longifolia* (L.) Fritsch. Therefore, Gray's combination belongs to a group of taxa.

***Cephalanthera longifolia* (L.) Fritsch** in Österr. Bot. Z. 38: 81 (1888)

= *Serapias helleborine* var. *longifolia* L., Sp. Pl. 2: 950 (1753)

Ind. loc.: "Habitat in Europae asperis" [sec. L., Sp. Pl. 2: 949 n.º 1 (1753) for the species].

Neotypus: "Oeder, Fl. Dan. 3,9: 4. 1770: Danemark: im Walde bey Dronninggaard" —cf. BAUMANN & al. (1989: 443).

= *Serapias ensifolia* Murray, Syst. Veg. ed. 14: 815 n.º 3 (1784); *Cephalanthera ensifolia* (Murray) Rich., Orchid. Eur. Annot.: 38 (1817); in Mém. Mus. Hist. Nat. 4: 60 (1818)

Ind. loc.: "Habitat in Germania, Helvetia" [sec. L.f., Suppl. pl.: 405 (1781)].

= *Serapias xiphophyllum* L.f., Suppl. pl.: 404 (1781); *Cephalanthera xiphophyllum* (L.f.) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 135 n.º 2, tab. 118 (1851)

Ind. loc.: "Habitat in Germania, Helvetia, Ehrhart".

= *Cephalanthera xiphophyllum* var. *latifolia* Maire in Bull. Soc. Hist. Nat. Afrique N. 5(6): 239 (1914); *Cephalanthera longifolia* var. *latifolia* (Maire) D. Rivera & López Vélez, Orquíd. Prov. Albacete: 55 (1987)

Ind. loc.: "Forêts de *Quercus ilex* au-dessous du lac de Mouzaïa; forêts de Cèdres de l'Atlas de Blida; forêts de *Quercus suber* à la Réghaïa; El-Aftoun (Brichi)".

= **Cephalanthera ensifolia* var. *cesari-gonzalezii* ["cesar-gonzalezii"] Rivas Goday & Bellot in Anales Jard. Bot. Madrid 6(2): 191-192 n.º 692, fig. 31 (1948)

Ind. loc.: "Habitat in sylvaticis montanis, solo siliceo prope Santa Elena, Montium Marianorum. 30-III-1940".

***Cephalanthera rubra* (L.) Rich.**, Orchid. Eur. Annot.: 38 (1817); in Mém. Mus. Hist. Nat. 4: 60 (1818)

= *Serapias rubra* L., Syst. Nat. ed. 12, 2: 594 n.º 7 (1767)

Ind. loc.: not indicated expressly in the protologue.

Lectotypus: "LINN 1057.5, ca. 1760, leg. Friedrich Wilhelm von Leysser" –cf. BAUMANN & al. (1989: 444).

Observations.—WILLKOMM (1861: 175) includes the binomial "*Epipactis rubra* Asso" among the synonyms of this species; nevertheless, in reviewing the publications of this author, we have only found the name *Serapias rubra* L. in ASSO (1779: 131).

Coeloglossum Hartm., Handb. Skand. Fl.: 329 (1820)

BATEMAN & al. (1997: 127) subordinates this genus under *Dactylorhiza*, but we maintain the traditional systematic treatment.

Coeloglossum viride (L.) Hartm., Handb. Skand. Fl.: 329 n.º 398 (1820)

≡ *Satyrium viride* L., Sp. Pl. 2: 944 n.º 2 (1753); *Orchis viridis* (L.) Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 491 n.º 10 (1769); *Habenaria viridis* (L.) R. Br. in W.T. Aiton, Hortus Kew. ed. 2, 5: 192 (1813); *Gymnadenia viridis* (L.) Rich., Orchid. Eur. Annot.: 35 (1817); in Mém. Mus. Hist. Nat. 4: 57 (1818); *Platanthera viridis* (L.) Lindl., Syn. Brit. Fl.: 261 (1829); *Himantoglossum viride* (L.) Rchb., Fl. Germ. Excurs. 1: 119 n.º 813 (1830); *Peristylus viridis* (L.) Lindl., Syn. Brit. Fl. ed. 2: 261 (1835); *Dactylorhiza viridis* (L.) R.M. Bateman, Pridgeon & M.W. Chase in Lindleyana 12(3): 129 (1997)

Ind. loc.: "Habitat in Europae frigidioris asperis".

Lectotypus: "Loesel, Fl. pruss.: fig. 59 dextra. 1703, sub nom. *Orchis palmata flore galericulato dilute viridi*, ca. 1650, leg. Johannes Loesel" –cf. BAUMANN & al. (1989: 447).

= **Orchis viridis* var. *labellifida* Costa ex Vayr. in Anales Soc. Esp. Hist. Nat. 9: 97 (1880); *Coeloglossum viride* var. *labellifidum* (Costa ex Vayr.) E.G. Camus, Monogr. Orchid.: 320 (1908); [*Orchis viridis* var. *labellifida* Costa, Suppl. Cat. Pl. Cataluña: 78 n.º 2077 (1877), nom. nud. –*Ind. loc.*: "Monseny c. de Viladrau, Trem!"]

Ind. loc.: "Bosch de las Féxas, Prat de Campdedeu, c. Olot. Junio, 1801 (Bolós hb.), Viladrau (Trem.)".

Corallorhiza Châtel., Sp. Inaug. Corall.: 5 (1760), n. v.

Corallorhiza trifida Châtel., Sp. Inaug. Corall.: 8 (1760), n. v.

≡ *Ophrys corallorhiza* L., Sp. Pl. 2: 945 n.º 2 (1753), syn. subst.

Ind. loc.: "Habitat in Europae borealis desertis".

Lectotypus: "LINN 1056.5, pl. media 06/07. 1732, leg. Carl Linnaeus" –cf. BAUMANN & al. (1989: 449).

= *Corallorhiza innata* R. Br. in W.T. Aiton, Hortus Kew. ed. 2, 5: 209 (1813)

Ind. loc.: "Nat. of Scotland".

Cypripedium L., Sp. Pl. 2: 951 (1753)

Cypripedium calceolus L., Sp. Pl. 2: 951 n.º 1 (1753)

Ind. loc.: "Habitat in Europae, Asiae, Americae septentrionalibus".

Lectotypus: "Dodoens, Fl. coronar. hist.: 77. 1568 sub nom. *Damasonium nothum*, ca. 1564, leg. Adolph Occo III & Hieronymus Harder" –cf. BAUMANN & al. (1989: 452).

Dactylorhiza Neck. ex Nevski in Trudy Bot. Inst. Akad. Nauk S.S.S.R., ser. 1, Fl. Sist. Vyssh. Rast. 4: 332 (1937)

For the systematic treatment of this genus, we accept the subdivision in groups assigned in TYTECA (2001).

Dactylorhiza gr. *incarnata*

Dactylorhiza incarnata (L.) Soó, Nom. Nov. Gen. Dactylorhiza: 3 (1962)

≡ *Orchis incarnata* L., Fl. Suec. ed. 2: 312 n.º 802 (1755); *Orchis latifolia* subsp. *incarnata* (L.) Hook. f., Student Fl. Brit. Isl.: 353 (1870); *Dactylorchis incarnatus* (L.) Verm., Stud. Dactylorch.: 65, 101 (1947)

Ind. loc.: "Habitat in pratis rarius" [Sweden].

Lectotypus: "Linnaeus's herbal in the herbal of the Linnean Society in London sub "incarnata" in Linnaeus's own handwriting", VERMEULEN (1947: 89, 101); "LINN 1054.33, ca. 1754, leg. Carl Linnaeus", cf. BAUMANN & al. (1989: 458).

= **Orchis orientalis* subsp. *africana* Klinge in Trudy Imp. S.-Peterburgsk. Bot. Sada 17: 186-187 n.º 3 (1898); *Dactylorhiza incarnata* subsp. *africana* (Klinge) H. Sund., Europ. Medit. Orchid. ed. 3: 40 (1980)

Ind. loc.: "Africa borealis: Tunesia, Algeria, Marocco; Europa: Hispania, Lusitania (et Gallia australis?) -crescit in pratis et paludosis litoralibus et montanis et ad montium aquas".

= **Orchis incarnata* var. *maxima* Cuatrec. in Treb. Inst. Catalana Hist. Nat. 12: 253-254 (1929)

Ind. loc.: "Acequias del Gargantón, bajo el Boquetón a unos 1000 m, 24-VI-25; Barranco de la Tejada, 1200 m, 19-VI-26; Cambil, 800 m, 13-VI-26; Fuenmayor, 27-VI-26".

= **Dactylorhiza incarnata* var. *brevibracteata* Landwehr in Orchideen 37(3): 78 (1975); Wilde Orchid. Eur. 2: 556, 55, fig. 1 (1977)

Ind. loc.: "Teruel, Spanje. Typus: in colle. J. Landwehr, plaat nr. 53-1, 27 mei 1963".

= *Dactylorhiza incarnata* subsp. *pyrenaica* Balayer in Bull. Soc. Bot. France, Lett. Bot. 133(3): 280 (1986)

Ind. loc.: "Col de Jau. Typus: Balayer, juillet 1981 (Herbier du Laboratoire de Biologie, Université de Perpignan)".

- *Orchis latifolia* L., Sp. Pl. 2: 941-942 n.º 11 (1753), p.p.; *Orchis fistulosa* Moench, Meth.: 713 (1794), nom. illeg., p.p.

Ind. loc.: "Habitat in Europae pratis".

Observations.—For comments on this last name, see the observations in *D. majalis*.

Dactylorhiza incarnata shows a great variability through the range of its distribution, and many infraspecific taxa have

been described. We consider them as synonyms of the species.

Dactylorhiza gr. maculata

The different taxa integrated in this group have been considered indistinct at the specific level or as subspecies of *D. maculata*. In this paper, we accept the first proposal but they need more detailed taxonomic studies.

Dactylorhiza caramulensis (Verm.) D. Tyteca in Orchidophile (Asnières) 88: 155, figs. 1-2 (1989)

= **Dactylorhiza maculata* subsp. *caramulensis* Verm. in Bol. Soc. Brot. ser. 2, 44: 94-95, figs. 6-8 (1970)

Ind. loc.: "Serra do Caramulo, S. João do Monte. Typus: in Herb. Vermeulen n.º 6089".

Dactylorhiza ericetorum (E.F. Linton) Aver. in Bot. Zhurn. (Moscow & St. Petersburg) 67(3): 309 n.º 7 (1982)

= *Orchis maculata* subsp. *ericetorum* E.F. Linton, Fl. Bournemouth: 209 n.º 7 (1900); *Dactylorhiza maculata* subsp. *ericetorum* (E.F. Linton) Verm., Stud. Dactylorch.: 69 (1947); *Dactylorhiza maculata* subsp. *ericetorum* (E.F. Linton) P.F. Hunt & Summerh. in Watsonia 6(2): 132 (1965); (E.F. Linton) P.F. Hunt & Summerh. ex E.C. Nelson, Monogr. Ikonogr. Orchid. Gattung Dactylorhiza: 101 n.º 35, Taf. 71a-c, 84e (1976), comb. superfl.

Ind. loc.: "from Caithness and Sutherland to the S. Coast and Guernsey, and also from Co. Wicklow".

Dactylorhiza fuchsii (Druce) Soó, Nom. Nov. Gen. Dactylorhiza: 8 (1962)

= *Orchis fuchsii* Druce in Bot. Exch. Club Brit. Isles Rep. 4(1): 105-106 (1915); *Dactylorhiza fuchsii* (Druce) Verm., Stud. Dactylorch.: 69, 142, 147 (1947)

Ind. loc.: "From Kent to Cornwall northwards to Caithness, and in Ireland from Cork to Antrim".

Lectotypus: "Dr. Druce's herbal in Oxford.

Sheet with 5 specimens, no. 3." –sec. VERMEULEN (1947: 144, 146, 147).

= *Orchis maculata* var. *meyeri* Rchb. f., Icon. Fl. Germ. Helv. 13/14: 67, tab. 164 (1851); *Dactylorhiza meyeri* (Rchb. f.) Aver. in Bot. Zhurn. (Moscow & St. Petersburg) 67(3): 307 (1982); *Orchis maculata* subsp. *meyeri* (Rchb. f.) O. Bolòs & Vigo, Fl. Països Catalans 4: 629 (2001)

Ind. loc.: "Ga: Colombelles, près de Caen Vict. de Villaine! Carabillon près Falaise De Brébisson! Bat. Zuid Beveland et Hulst Van den Bosch!, Ross. Petersburg Weinmann! Moskau W. Stolle!".

***Dactylorhiza maculata* (L.) Soó, Nom. Nov.**
Gen. *Dactylorhiza*: 7 (1962)

≡ *Orchis maculata* L., Sp. Pl. 2: 942 n.º 12 (1753); *Dactylorchis maculata* (L.) Verm., Stud. Dactylorch.: 68, 130 (1947)

Ind. loc.: "Habitat in Europae pratis succulentis".

Lectotypus: "Linnaeus's herbarium at London or elsewhere; «12» and «maculata» in Linnaeus's own handwriting on the sheet", –sec. VERMEULEN (1947: 128-130); "LINN 1054.36, ca. 1750, leg. Carl Linnaeus", cf. BAUMANN & al. (1989: 467).

= **Orchis maculata* var. *lusitanica* J.A. Guim. in Bol. Soc. Brot. 5: 79 (1887)

Ind. loc.: "Alemdouro littoral: Serra do Gerez (Brot., Link, Hoffmannsegg, W. fide Reich., M. Ferreira!), Borrageiro, Ponte Feia, Manga de Maceira, Agua da Adega, Rol da Fonte (Moller!); Caldas do Gerez (D. Maria L. Henriques!), Sabugueira pr. ao Covão do Urso (Dr. J. Henriques!); Miranda (Brot.). Beira transmontana: Alcaide (R. da Cunha!)"

= *Orchis maculata* var. *palustris* E.G. Camus, Monogr. Orchid.: 50 (1892)

Ind. loc.: "Frome des marais tourbeux" [France].

– *Orchis maculata* var. *angustifolia* Lázaro Ibiza ex Rivas Goday, Rev. Orquíde. Española: 18 (1930), nom. nud.

Dactylorhiza* gr. *majalis

***Dactylorhiza alpestris* (Pugsley) Aver.** in Bot. Zhurn. (Moscow & St. Petersburg) 68(9): 1164 (1983)

≡ *Orchis alpestris* Pugsley in J. Linn. Soc., Bot. 49: 587-588 n.º 7 (1935); *Dactylorchis alpestris* (Pugsley) Verm., Stud. Dactylorch.: 67 (1947); *Dactylorhiza latifolia* subsp. *alpestris* (Pugsley) Soó, Nom. Nov. Gen. *Dactylorhiza*: 4 (1962); *Dactylorhiza fistulosa* subsp. *alpestris* (Pugsley) H. Baumann & Künkele in Mitt. Arbeitskr. Beob. Heimischer Orchideen 20(3): 628 (1988); *Dactylorhiza majalis* subsp. *alpestris* (Pugsley) Senghas in Jahresb. Naturw. Ver. Wuppertal 21-22: 126 (1968)

Ind. loc.: "Exsicc. Pugsley no. 517 (Zurs, Vorarlberg) (type); Reverchon, Lautaret, 1869, in Hb. Manchester, and Gap, 1871, in Hb. Kew., as *Orchis latifolia*; Krättili, Bevers, 1868, in Herb. Mus. Brit., as *Orchis latifolia*".

***Dactylorhiza elata* (Poir.) Soó, Nom. Nov.**
Gen. *Dactylorhiza*: 7 (1962)

≡ *Orchis elata* Poir., Voy. Barbarie 2: 248 (1789); *Dactylorchis elata* (Poir.) Verm., Stud. Dactylorch.: 68 (1947); *Dactylorhiza incarnata* subsp. *elata* (Poir.) H. Sund., Europ. Medit. Orchid.: 45 (1975)

Ind. loc.: "Cette plante est abondante dans les plaines de la Mazoule".

= *Orchis vestita* Lag. & Rodr. in Anales Ci. Nat. 6(16): 142-143 n.º 170 (1803); *Orchis elata* var. *vestita* (Lag. & Rodr.) Losa & Rivas Goday in Arch. Inst. Aclim. Almería 13(1): 79 n.º 318 (1968); *Dactylorhiza vestita* (Lag. & Rodr.) Aver. in Bot. Zhurn. (Moscow & St. Petersburg) 71(1): 92 (1986)

Ind. loc.: "Se cría en Tángier".

Observations.–Index Kewensis attributes the authority of *Orchis vestita* to Cavanilles.

= **Orchis sesquipedalis* Willd., Sp. Pl. 4(1): 30 n.º 48 (1805); *Orchis incarnata* var. *sesquipedalis* (Willd.) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 53, tab. 48 (1851); *Orchis incarnata* subsp. *sesquipedalis* (Willd.) Gand., Nov. Consp. Fl. Eur.: 461

(1910); *Orchis elata* subsp. *sesquipedalis* (Willd.) Soó in Repert. Spec. Nov. Regni Veg. 24: 31 n.º 28(2) (1928); *Dactylorchis sesquipedalis* (Willd.) Verm., Stud. Dactylorch.: 68 (1947); *Dactylorhiza elata* subsp. *sesquipedalis* (Willd.) Soó, Nom. Nov. Gen. Dactylorhiza: 7 (1962); *Dactylorhiza sesquipedalis* (Willd.) Verm. in Bol. Soc. Brot. sér. 2, 44: 89 (1970), comb. inval.; (Willd.) Laínz, Aport. Fl. Gallega VII: 31 (1971); (Willd.) Aver. in Bot. Zhurn. (Moscow & St. Petersburg) 68(7): 895 (1983), comb. superfl.; *Dactylorhiza elata* var. *sesquipedalis* (Willd.) Landwehr, Wilde Orchid. Eur. 1: 204 (1977)

Ind. loc.: "Habitat in Lusitania".

Observations.—The combination of *Dactylorhiza sesquipedalis* (Willd.) Vermeulen is not found in Index Kewensis.

= **Orchis latifolia* var. *labrovaria* Brot., Phytogr. Lusit. Select. 2: 25-26, tab. 92 (1827); *Orchis lusitanica* Steud., Nom. ed. 2, 2: 224 (1841); *Orchis latifolia* subsp. *lusitanica* (Steud.) Gand., Nov. Consp. Fl. Eur.: 461 (1910)

Ind. loc.: "Habitat in uliginosis, et pratis humidis prope Conimbricam, circa Setubal, et alibi in Beira et trans Tagum".

= **Orchis durandii* Boiss. & Reut., Pugill. Pl. Afr. Bot. Hispan.: 111-112 (1852); *Orchis incarnata* var. *durandii* (Boiss. & Reut.) Willk. in Willk. & Lange, Prodr. Fl. Hispan. 1(1): 170 n.º 744 (1861); *Orchis latifolia* var. *durandii* (Boiss. & Reut.) Ball in J. Linn. Soc., Bot. 16: 672 (1878); *Orchis latifolia* subsp. *durandii* (Boiss. & Reut.) Trab. in Batt. & Trab., Fl. Algérie (Monocot.): 30 (1895); Malag. in Acta Phytotax. Barcinon. 1: 64 (1968), comb. superfl.; *Orchis incarnata* subsp. *durandii* (Boiss. & Reut.) Gand., Nov. Consp. Fl. Eur.: 461 (1910); *Orchis elata* subsp. *durandii* (Boiss. & Reut.) Soó in Repert. Spec. Nov. Regni Veg. 24: 32 n.º 3 (1928); *Dactylorchis durandii* (Boiss. & Reut.) Verm., Stud. Dactylorch.: 68 (1947); *Dactylorhiza elata* subsp. *durandii* (Boiss.

& Reut.) Soó, Nom. Nov. Gen. Dactylorhiza: 7 (1962); (Boiss. & Reut.) Molero Mesa & Pérez Raya, Fl. Sierra Nevada: 365 (1987), comb. superfl.; *Dactylorhiza durandii* (Boiss. & Reut.) Verm. in Bol. Soc. Brot. ser. 2, 44: 89 (1970), comb. inval.; (Boiss. & Reut.) Laínz, Aport. Fl. Gallega VII: 31 (1971); *Dactylorhiza elata* var. *durandii* (Boiss. & Reut.) Landwehr, Wilde Orchid. Eur. 1: 557 (1977)

Ind. loc.: "Hab. in humidis propè Tingidem (Durand in herb. Pavon), ad aquas Sierra Nevada in valle Dylar (Reuter) Sierra de Alcaraz (Bourg.!)".

= *Orchis munbyana* Boiss. & Reut., Pugill. Pl. Afr. Bot. Hispan.: 112 (1852); *Orchis elata* subsp. *munbyana* (Boiss. & Reut.) E.G. Camus in E.G. Camus & A. Camus, Iconogr. Orchid. Europe 1: 221 (1928); *Dactylorhiza munbyana* (Boiss. & Reut.) Holub in Folia Geobot. Phytotax. 19(2): 214 (V-1984); (Boiss. & Reut.) Aver., Bot. Zhurn. (Moscow & St. Petersburg) 69(6): 875 n.º 17 (VI-1984), comb. superfl.

Ind. loc.: "Hab. in paludosis Algeriae prope La Maison Carrée (Reut.)".

= **Orchis incarnata* var. *ambigua* J.A. Guim. in Bol. Soc. Brot. 5: 77 (1887); *Orchis sesquipedalis* var. *iberica* T. Stephenson in Bull. Soc. Bot. France 75: 492 (1928), non *Orchis sesquipedalis* var. *ambigua* Rouy, Fl. Fr. 13: 152 (1912) ["ambiguus"]; *Dactylorhiza elata* var. *iberica* (T. Stephenson) Soó in Ann. Univ. Sci. Budapest. Rolando Eötvös, Sect. Biol., 3: 347 (1960), comb. inval.

Ind. loc.: "Beira littoral: Valladares (E. Johnston! Felgueiras!), Granja (E. Johnston! C. Barbosa), entre a Granja e Gulpilhares (E. Johnston!)".

***Dactylorhiza majalis* (Rchb.) P.F. Hunt & Summerh.** in Watsonia 6(2): 130 n.º 16 (1965); (Rchb.) Rauschert apud Hudziok in Wiss. Z. Martin-Luther-Univ. Halle-Wittenberg, Math.-Naturwiss. Reihe 14: 492 (1965), n. v.

= *Orchis majalis* Rchb., Iconogr. Bot. Pl.

Crit. 6, Decas Tab. 57: 7 n.º 770, tab. DLXV (1828); *Orchis latifolia* subsp. *majalis* (Rchb.) Gand., Nov. Consp. Fl. Eur.: 461 (1910); *Dactylorchis majalis* (Rchb.) Verm., Stud. Dactylorch.: 67 (1947)

Ind. loc.: “nach dem Leben, aus der Flora von Dresden”.

= *Orchis latifolia* L., Sp. Pl. 2: 941-942 n.º 11 (1753), p.p.; *Orchis fistulosa* Moench, Meth.: 713 (1794), nom. illeg., p.p.; *Orchis maculata* subsp. *latifolia* (L.) Bonnier & Layens, Tabl. Syn. Pl. Vasc. France: 311 (1894); *Dactylorhiza latifolia* (L.) Soó, Nom. Nov. Gen. Dactylorhiza: 4 (1962); *Dactylorhiza fistulosa* Moench ex H. Baumann & Künkele in Mitt. Arbeitskr. Beob. Heimischer Orchideen 15: 419 (1983), nom. illeg., p.p.

Ind. loc.: “Habitat in Europae pratis”.

Observations.—In the description of *Orchis latifolia* L., Sp. Pl. 2: 941-942 (1753), three species are included. Two of them are described subsequently in L., Fl. Suec. ed. 2: 312 (1755) with the names *Orchis sambucina* and *Orchis incarnata*, and the third one is the same as Reichenbach describes as *O. majalis*. Recently, PEDERSEN (2000a: 299) has proposed the reject of the first linnaean taxa, and later, the same author has published the synonymy of these taxa, cf. PEDERSEN (2000b: 540).

– *Orchis fistulosa* sensu Moench, Meth.: 713 (1794); *Dactylorhiza fistulosa* sensu H. Baumann & Künkele in Mitt. Arbeitskr. Beob. Heimischer Orchideen 15: 419 (1983)

Dactylorhiza gr. sambucina

A very complex group, requiring a detailed taxonomic and biogeographic study. Assorted names are given for the Peninsula and Balearics, but we maintain the latest tendency to accept the following species.

Dactylorhiza insularis (Sommier) Landwehr in Orchidee (Hamburg) 20(3): 128 (1969); (Sommier) E.C. Nelson, Monogr. Ikongr. Orchid. Gattung Dactylorhiza: 104 n.º 39 (1976), comb. superfl.

≡ *Orchis insularis* Sommier in Boll. Soc. Bot. Ital., ser. 2, 1895: 247 (1895); *Orchis sambucina* subsp. *insularis* (Sommier) Gand., Nov. Consp. Fl. Eur.: 462 (1910); *Dactylorhiza iberica* subsp. *insularis* (Sommier) Soó, Nom. Nov. Gen. Dactylorhiza: 3 (1962); *Dactylorhiza sambucina* subsp. *insularis* (Sommier) Soó, Nom. Nov. Gen. Dactylorhiza: 3 (1962)

Ind. loc.: “Isola di Giglio”.

Observations.—Index Kewensis adjudges the authority to Sommier ex Martelli, Monocot. Sardoae fasc. 1: 58 (1896).

= **Orchis pseudosambucina* subsp. *castellana* Rivas Goday in Farmacognosia 6: 193, 196, 197 (1945); *Orchis romana* var. *castellana* Rivas Goday in Farmacognosia 6: 193, 197 (1945), nom. altern.; *Orchis sambucina* var. *castellana* Rivas Goday in Farmacognosia 6: 193, 197 (1945), nom. altern.; *Orchis sulphurea* subsp. *castellana* (Rivas Goday) Rivas Goday in Anales Jard. Bot. Madrid 21(2): 306 (1963); *Dactylorhiza insularis* subsp. *castellana* (Rivas Goday) D. Rivera & López Vélez, Orquíde. Prov. Albacete: 82 (1987)

Ind. loc.: “In monte S. de Alfacer regni Granat. (Lge.)” [sec. Willk. in Willk. & Lange, Prodr. Fl. Hispan. 1(1): 169 n.º 742 (1861), sub *Orchis pseudosambucina* Ten.].

= **Dactylorhiza romana* subsp. *bartonii* Huxley & P.F. Hunt in J. Roy. Hort. Soc. 92: 309, figs. 165-166 (1967); *Dactylorhiza insularis* var. *bartonii* (Huxley & P.F. Hunt) Landwehr in Orchidee (Hamburg) 20(3): 128 (1969); *Dactylorhiza bartonii* (Huxley & P.F. Hunt) Aver. in Bot. Zhurn. (Moscow & St. Petersburg) 69(6): 876 n.º 20 (1984); *Dactylorhiza insularis* var. *bartonii* (Huxley & P.F. Hunt) D. Rivera & López Vélez, Orquíde. Prov. Albacete: 82 (1987)

Ind. loc.: “Hispania, Serranía de Cuenca, Montes Universales, prope Tragacete. Habitat in pinetis humidis umbrosis, solo humoso. Coll. A. J. Huxley, R. Gorer, I. Barton, A.H. Venison, 3.VI.1966, no. 115. Holotypus: K, s/n”.

- *Orchis pseudosambucina* sensu Willk. in Willk. & Lange, Prodr. Fl. Hispan. 1(1): 169 n.º 742 (1861), non Ten., Cat. Hort. Neapol. 1815: 72-73 (1815)

Dactylorhiza markusii (Tineo) H. Baumann & Künkele in Mitt. Arbeitskr. Beob. Heimischer Orchideen 13(4): 461 (1981)

- ≡ *Orchis markusii* Tineo, Pl. Rar. Sicil. 1: 9 n.º 5 (1846); *Orchis pseudosambucina* subsp. *markusii* (Tineo) Gand., Nov. Consp. Fl. Eur.: 462 (1910); *Orchis sulphurea* var. *markusii* (Tineo) Maire in Jahand. & Maire, Cat. Pl. Maroc 1: 151 (1931); *Orchis romana* var. *markusii* (Tineo) Rivas Goday in Farmacognosia 4(6): 194-195 (1945); *Dactylorhiza romana* subsp. *markusii* (Tineo) Holub in Folia Geobot. Phytotax. 19(2): 214 (1984)

Ind. loc.: “Palermo a Gibilrossa, nel boschetto de’sugheri presso il Convento”.

- = **Orchis mediterranea* subsp. *siciliensis* Klinge in Trudy Imp. S.-Peterburgsk. Bot. Sada 17: 165-166 (1898); *Dactylorhiza sulphurea* subsp. *siciliensis* (Klinge) Franco in Bot. J. Linn. Soc. 76(4): 367 (1978); *Dactylorhiza sambucina* subsp. *siciliensis* (Klinge) H. Sund., Europ. Medit. Orchid. ed. 3: 40 (1980)

Ind. loc.: “Sicilia, Sardinia (Corsica?), Algeria: an in Hispania et Lusitania?”.

- = **Orchis romana* var. *guimaraesii* E.G. Camus in E.G. Camus & A. Camus, Iconogr. Orchid. Europe 1: 216, pl. 33 figs. 14-15 (1928); *Orchis guimaraesii* (E.G. Camus) Rivas Goday in Farmacognosia 4(6): 193, 197 (1945)

Ind. loc.: “Portugal, montagnes arides”.

- *Orchis sambucina* sensu Brot., Fl. Lusit. 1: 21 n.º 9 (1804), non L., Fl. Suec. ed. 2, 2: 312-313 (1755)
- *Orchis sulphurea* Link in Neues J. Bot. 1(3): 132 (1806), nom. inval.; *Orchis sulphurea* Link in Steud., Nomencl. Bot. 1: 225 (1821), nom. inval.; *Orchis pseudosambucina* subsp. *sulphurea* Link in Gand., Nov. Consp. Fl. Eur.: 462 (1910), nom. inval.

- *Orchis sulphurea* sensu Samp., Lista Esp. Herb. Portug.: 35 (1913), non Link ex Samp., Lista Esp. Herb. Portug.: 35 (1913), nom. illeg., = *O. pseudosambucina* Ten.
- *Dactylorhiza sulphurea* sensu Franco in Bot. J. Linn. Soc. 76(4): 366 (1978), non Link ex Franco in Bot. J. Linn. Soc. 76(4): 366 (1978), nom. illeg., = *Orchis romana* Sebast.

Observations.—Link published a new name, *Orchis sulphurea*, without description, for *O. sambucina* sensu Brotero, non L., Fl. Suec. ed. 2, 2: 312-313 (1755). Brotero, Fl. Lusit. 1: 21 n.º 9 (1804), did not publish a new description for the portuguese plants — “Hab. in montosis humidis circa Torre de Moncorvo et alibi in Transmontana” —, he just transcribed the linnaean description with a small change: “labio ovato, trilobo” instead of “labio ovato, subtrilobo”. Therefore, the name from Link is *nomen nudum*. Later, other authors (Steudel, Gandoger) cited *O. sulphurea* Link without description. As far as we know, the first valid publication for this name appears in Sampaio, who mentioned *O. pseudosambucina* Ten. as synonym. Finally, in FRANCO (1978: 366) the earliest legitimate name included in *Dactylorhiza sulphurea* is *Orchis romana* Sebast.

Dactylorhiza sambucina (L.) Soó, Nom. Nov. Gen. Dactylorhiza: 3 (1962)

- ≡ *Orchis sambucina* L., Fl. Suec. ed. 2: 312-313 n.º 803 (1755); *Orchis maculata* subsp. *sambucina* (L.) Bonnier & Layens, Tabl. Syn. Pl. Vasc. France: 311 (1894); *Dactylorhiza sambucina* (L.) Verm., Stud. Dactylorch.: 65 (1947)

Ind. loc.: “Holmiae ad praedium Mart. Triewald Mariaeberg, in planitie montium humentium; eandem aliis in locis juxta Holmian letam misit Eric. Tuwen”.

Lectotypus: “LINN 1054.34, 1755, vermutlich leg. Eric Tuwén” —cf. BAUMANN & al. (1989: 468).

- = **Orchis laurentina* R. Bolós ex Vayr., Pl. Not.: 160-161, lám. V (1879); Anales Soc. Esp. Hist. Nat. 9: 95-96, lám. I (1880); *Orchis sambucina* var. *laurentina* (R. Bolós ex Vayr.) Willk., Suppl. Prodr.

Fl. Hispan.: 42, 356 (1893); *Orchis sambucina* subsp. *laurentina* (R. Bolós ex Vayr.) Malag. in Acta Phytotax. Barcinon. 1: 64 (1968)

Ind. loc.: "Inmediaciones del lago de Laurenti, Julio, 1801; Platraver (Bolós hb.)."

= **Orchis sambucina* subsp. *asturica* Gand., Nov. Consp. Fl. Eur.: 462 (1910)

Ind. loc.: "Hisp. bor., Burgos Soncillo (Estebanez)" [sec. Gand., Fl. Eur. 23: 95 (1890) sub *Orchis asturica* Gand.].

= *Orchis latifolia* L., Sp. Pl. 2: 941-942 n.º 11 (1753), p.p.; *Orchis fistulosa* Moench, Meth.: 713 (1794), nom. illeg., p.p.

Ind. loc.: "Habitat in Europae pratis".

Observations.—About this last name, see the observations in *D. majalis*.

= *Orchis incarnata* Willd., Sp. Pl. 4(1): 30 (1805), nom. illeg., non L., Fl. Suec. ed. 2: 312 n.º 802 (1755); *Orchis sambucina* var. *incarnata* (Willd.) Amo, Fl. Faner. Penins. Iberica 1: 455 (1871), comb. illeg.

Taxa whose presence requires confirmation:

Dactylorhiza elodes (Griseb.) Aver. in Bot. Zhurn. (Moscow & St. Petersburg) 67(3): 309 n.º 6 (1982)

≡ *Orchis elodes* Griseb., Über Bild. Torfs: 25 (1845), n. v.; Gesam. Abh.: 67 (1880); *Orchis maculata* subsp. *elodes* (Griseb.) Gand., Nov. Consp. Fl. Eur.: 462 (1910); *Dactylorhiza maculata* subsp. *elodes* (Griseb.) Verm., Stud. Dactylorch.: 68 (1947); *Dactylorhiza elodes* (Griseb.) Verm., Stud. Dactylorch.: 137 (1947); *Dactylorhiza maculata* subsp. *elodes* (Griseb.) Soó, Nom. Nov. Gen. Dactylorhiza: 7 (1962)

Ind. loc.: "in ericetis turfosis totius paludis Bourtangensis sparsim" [sec. Griseb., Gesam. Abh.: 67 (1880)].

Lectotypus: "Herb. Vermeulen Rev. Dact. 0480, 2, from the locus classicus Bourtang Moor", VERMEULEN (1947: 137).

Observations.—Under the name of *D. ma-*

culata subsp. *elodes*, this plant is cited for Portugal and central and northern Spain in Soó (1960: 349). We have more indications of this species in the Peninsula and Balearics, and all of them probably correspond to *D. ericetorum* or other species of *Dactylorhiza* gr. *maculata*.

Dactylorhiza romana (Sebast.) Soó, Nom. Nov. Gen. Dactylorhiza: 3 (1962)

≡ *O. romana* Sebast., Roman. Pl. Fasc. Prim.: 12, tab. III (1813); *Dactylorhiza romanus* (Sebast.) Verm., Stud. Dactylorch.: 65 (1947), n. v.; *Dactylorhiza sulphurea* Link ex Franco in Bot. J. Linn. Soc. 76(4): 366 (1978), nom. illeg.

Ind. loc.: "in Ericeto vulgo dicto Pigneto di Sacchetti".

= *Orchis bracteata* Ten., Prodr. Fl. Neapol.: LII (1812), nom. illeg., non Muhl. ex Willd., Sp. Pl. 4(1): 34 n.º 56 (1805); *Orchis pseudosambucina* Ten., Cat. Hort. Neapol. 1815: 72-73 (1815); *Orchis mediterranea* subsp. *pseudosambucina* (Ten.) Klinge in Trudy Imp. S.-Peterburgsk. Bot. Sada 17: 164 (1898); *Orchis pseudosambucina* subsp. *romana* (Sebast.) Gand., Nov. Consp. Fl. Eur.: 462 (1910), nom. illeg.; *Orchis sulphurea* Link ex Samp., Lista Esp. Herb. Portug.: 35 (1913), nom. illeg.; *Dactylorhiza sulphurea* subsp. *pseudosambucina* (Ten.) Franco in Bot. J. Linn. Soc. 76(4): 366 (1978); *Dactylorhiza sambucina* subsp. *pseudosambucina* (Ten.) H. Sund., Europ. Medit. Orchid. ed. 3: 40 (1980)

Ind. loc.: "Nasce in gran copia al Monte Nuovo presso Pozzuoli".

Observations.—E.G. CAMUS & A. CAMUS (1928: 126) indicates the presence of *Orchis romana* in the Iberian territory. Soó (1960: 337) admits the occurrence of *D. romana* subsp. *romana* in Spain and Portugal. In later publications he did not cite this taxon in the geographic area of our study. These citations probably correspond to *D. insularis* or *D. markusii*.

Dactylorhiza saccifera (Brongn.) Soó, Nom. Nov. Gen. Dactylorhiza: 8 (1962)

≡ *Orchis saccifera* Brongn. in Bory, Exp.

Sci. Morée, Bot.: 259, tab. 30 fig. 1 (1832); *Orchis maculata* var. *saccifera* (Brongn.) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 67 n.º 5, tab. 57 (1851); *Orchis maculata* subsp. *saccifera* (Brongn.) E.G. Camus in E.G. Camus & A. Camus, Iconogr. Orchid. Europe 1: 242 (1928); *Dactylorchis maculata* subsp. *saccifera* (Brongn.) Verm., Stud. Dactylorch.: 68 (1947); *Dactylorchiza maculata* subsp. *saccifera* (Brongn.) Diklić, Fl. SR Srbije 8: 77 (1976); (Brongn.) H. Sund., Europ. Medit. Orchid. ed. 3: 40 (1980), comb. superfl.

Ind. loc.: "Lieux montueux, particulièrement dans le vallon de Messène et en montant au Taygète".

Observations.—Soó (1960: 350) cited the type subspecies from Spain and Portugal, but DELFORGE (2001: 211) indicated that the species is typical of the central and eastern Mediterranean. Because testimonies referring to this taxon in our geographical region are few and quite uncertain, we doubt its presence in the Iberian Peninsula.

Dactylorchiza traunsteineri (Saut. ex Rchb.) Soó, Nom. Nov. Gen. Dactylorchiza: 5 (1962)

= *Orchis traunsteineri* Saut. ex Rchb., Fl. Germ. Excurs. 1: 140¹⁸ n.º 853 (1830); *Dactylorchis traunsteineri* (Saut. ex Rchb.) Verm., Stud. Dactylorch.: 66 (1947)

Ind. loc.: "Gegend von Kitzbühl in Tyrol: Traunsteiner".

Observations.—LÖVE & KJELLQVIST (1973: 176s) published a chromosome count of material from Sierra de Cazorla (Jaen) that they attributed to this taxon, admitting that it is also found in other Mediterranean countries, although they recognized the possibility that it could have been *D. incarnata*. Soó (1960: 345) and DELFORGE (2001: 186) considered it to be a plant of central Europe.

***Epipactis* Zinn, Cat. Pl. Gott.: 85 (1757)**

In the last ten years, the number of taxa has increased in the Iberian Peninsula and Balearic Islands with the description of new species and new mentions, and we agree with

BENITO AYUSO & C. HERMOSILLA (1998: 104) when they indicate that this genus is specially complex. The most recent studies defend the existence of phenomena such as autogamy which lead to considering it as a composite of a high number of microspecies, whose taxonomic relationships and relative ranks require detailed analysis, including karyologic and molecular investigations.

Epipactis* gr. *atrorubens

Epipactis atrorubens Hoffm. ex Besser, Prim. Fl. Galiciae Austriac. 2: 220 n.º 1091 (1809)

= *Epipactis latifolia* subsp. *atrorubens* (Hoffm. ex Besser) Bonnier & Layens, Tabl. Syn. Pl. Vasc. France: 309 (1894)

Ind. loc.: "In collibus pagi Kleparow prope Leopolum. In sylva prope Stracz".

Observations.—In many publications, this taxa is mentioned as *E. atrorubens* (Hoffm.) Besser, based in *Serapias atrorubens* Hoffm., Deutschl. Fl. ed. 2, 2: 182 (1804), but this author doesn't want to publish this taxon, and he include it into the variability of *S. latifolia*, cf. BAUMANN & KÜNKELE (1999: 625).

= *Epipactis helleborine* var. *rubiginosa* Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 467-468 (1769); *Epipactis latifolia* var. *rubiginosa* (Crantz) Gaudin, Fl. Helv. 5: 465 n.º 2082 (1829); *Epipactis rubiginosa* (Crantz) W.D.J. Koch, Syn. Fl. Germ. Helv. ed. 2, 2: 801 n.º 2 (1844); *Epipactis latifolia* subsp. *rubiginosa* (Crantz) Hook. f., Student Fl. Brit. Isl.: 358 (1870); *Epipactis latifolia* raça *rubiginosa* (Crantz) Samp., Man. Fl. Port.: 116 (1910); *Helleborine rubiginosa* (Crantz) Samp., Lista Esp. Herb. Portug.: 36 (1913); *Helleborine viridans* raça *rubiginosa* (Crantz) Samp., Fl. Port. ed. 2: 139 (1947)

Ind. loc.: "in Baden".

Observations.—According to Index Kewensis, *Epipactis rubiginosa* was described by Crantz, but in the work of this author we only found the variety that W.D.J. Koch later combined.

= *Epipactis helleborine* var. *viridans* Crantz,

Stirp. Austr. Fasc. ed. 2, 2(6): 467-468 (1769); *Helleborine viridans* (Crantz) Samp., Lista Esp. Herb. Portug.: 36 (1913)

Ind. loc.: "in Baden, locis apricis".

= *Epipactis atropurpurea* Raf., Caratt. Nuov. Gen.: 87 n.º 208 (1810); *Helleborine atropurpurea* (Raf.) Schinz & Thell. in Vierteljahrsschr. Naturf. Ges. Zürich 53(4): 588 (1909); (Raf.) Druce in Bull. Torrey Bot. Club 36: 547 (1909)

Ind. loc.: "L'ho osservata nei boschi dell'Etna sopra Nicolasi e Linguagrossa".

****Epipactis cardina*** Benito Ayuso & C. Hermosilla in Estud. Mus. Ci. Nat. Álava 13: 108-109, figs. 3-4, 6 (1998)

Ind. loc.: "Cantavieja (Teruel), puerto de Cuarto Pelado, YK1489, 1640 m. Holotypus: leg. J. Benito Ayuso & C. E. Hermosilla, SALA n.º 95211".

Observations.—Species recently described from the southern part of the Sistema Ibérico mountain range. The authors defend the specific rank of the taxon, in spite of presenting features that could indicate a hybrid between *E. kleinii* and *E. tremolsii*.

Epipactis kleinii M.B. Crespo, M.R. Lowe & Piera in Taxon 50(3): 854 (2001)

= **Epipactis atrorubens* subsp. *parviflora* A. Niesch. & C. Niesch. in Philippia 1(2): 59-60, abb. 1-2 (1971); *Epipactis parviflora* (A. Niesch. & C. Niesch.) E. Klein in Orchidee (Hamburg) 30(2): 46 (1979), comb. illeg., non (Blume) A.A. Eaton in Proc. Biol. Soc. Wash. 21: 65 (1908)

Ind. loc.: "Sierra de Alcaraz, südlich von Vianos bei Alcaraz, Provinz Albacete, Spanien".

Epipactis microphylla (Ehrh.) Sw. in Kongl. Vetensk. Acad. Nya Handl. ser. 2, 21: 232 (1800)

= *Serapias microphylla* Ehrh., Beitr. Naturk. 4: 42 (1789); *Epipactis latifolia* var. *microphylla* (Ehrh.) DC. in Lam. & DC., Fl. Franç. ed. 3, 6: 334 n.º 2039 (1815); *Epipactis helleborine* var. *microphylla*

(Ehrh.) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 141 n.º 1, tab. 132 figs. I-II (1851); *Epipactis latifolia* subsp. *microphylla* (Ehrh.) Bonnier & Layens, Tabl. Syn. Pl. Vasc. France: 309 (1894); (Ehrh.) Rivas Goday & Borja in Anales Inst. Bot. Cavanilles 19: 537 (1961), comb. inval.; *Helleborine microphylla* (Ehrh.) Schinz & Thell. in Vierteljahrsschr. Naturf. Ges. Zürich 53(4): 589 (1909); *Epipactis helleborine* subsp. *microphylla* (Ehrh.) Rivas Goday & Borja in Anales Inst. Bot. Cavanilles 19: 537 (1961), comb. inval.

Ind. loc.: "Habitat in sylvis montanis Electoratus Brunsvico-Luneburgici".

– *Epipactis confusa* auct., non D.P. Young in Bot. Not. 1953: 263 (1953)

Epipactis* gr. *helleborine

We maintain the criteria of other authors who have conducted diverse investigations in this genus (BENITO AYUSO & HERMOSILLA, 1998: 104) considering the components of this group at the rank of species.

****Epipactis campeadorii*** P. Delforge in Naturalistes Belges 76 (Orchid. 8): 90 (1995)

Ind. loc.: "Hispania, regio Castilla-León, provincia Bravum Burgi (Burgos), prope Manzanedo (UTM: 30TVN4549), alt. s. m. 600 m, in populeto juxta flumen Hibericum. Holotypus: In herb. Pierre Delforge sub n.º 9221".

= **Epipactis hispanica* Benito Ayuso & C. Hermosilla in Estud. Mus. Ci. Nat. Álava 13: 106, figs. 1-2, 5 (1998)

Ind. loc.: "Munilla (la Rioja), 30TWM5571, 820 m, en chopera. Holotypus: leg. J. Benito Ayuso, SALA n.º 95208".

= **Epipactis hispanica* var. *viridis* Benito Ayuso & C. Hermosilla in Estud. Mus. Ci. Nat. Álava 13: 107, fig. 5d (1998).

Ind. loc.: "(la Rioja), Daroca, 30T WM3491, 720 m, en chopera. Holotypus: leg. J. Benito Ayuso, SALA n.º 95209".

Epipactis helleborine (L.) Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 467 n.º 5 (1769)

= *Serapias helleborine* L., Sp. Pl. 2: 949 n.º 1 (1753)

Ind. loc.: "Habitat in Europae asperis".

Lectotypus: "J. Bauhin, Hesp. Pl. 3,2: 516. 1651, fig. excl. descr. sub nom. Elleborine Dodaenae (= *E. helleborine*), ca. 1550, leg. Leonhart Fuchs" –cf. BAUMANN & al. (1989: 470).

***Epipactis lusitanica** D. Tyteca in Orchidophile (Asnières) 84: 218-219, figs. 2-6 (1988)

Ind. loc.: "Lusitania, Algarve, ad Monchique, alt. 550 m. Holotypus: Leg. D. Tyteca (BR) sub n.º 1 1988/4".

Epipactis muelleri Godfery in J. Bot. 59: 106 (1921)

= *Epipactis helleborine* subsp. *muelleri* (Godfery) O. Bolòs, Masalles & Vigo in Collect. Bot. (Barcelona) 17(1): 96 (1988)

Ind. loc.: "Thorenc, above Grasse".

***Epipactis tremolsii** Pau in Bol. Soc. Aragonesa Ci. Nat. 13(2): 43 (1914)

= *Epipactis helleborine* subsp. *tremolsii* (Pau) E. Klein in Orchidee (Hamburg) 30(2): 49 (1979)

Ind. loc.: "Moncada versus Cerdanola (Tremols: V. 1875 – Pau: V. 1882)".

= **Epipactis tremolsii* var. *viridiflora* Benito Ayuso in Estud. Mus. Ci. Nat. Álava 14: 30, fig. 1.6 (1999)

Ind. loc.: "La Rioja: WM6165, Enciso. Holotypus: Herb. J. Benito 593/98".

Epipactis viridiflora Hoffm. ex Krock., Fl. Siles. 3: 41 n.º 1536 (1814)

Ind. loc.: "cum *Epipactis atrorubens* in pratis, ac sylvis locis humidis, turfosis, inveni ben Starsine, item auf dem Zobtenberge".

Neotypus: "Rchb. f., Icon. Fl. Germ. Helv. 13/14, tab. 134 figs. II (1851), sub 'Epipactis latifolia brevifolia IRM' " –cf. BAUMANN & KÜNKELE (1999: 628).

Observations.—In some publications, this taxon is mentioned as *E. viridiflora* (Hoffm.) Rchb., Fl. Germ. Excurs. 1: 134 (1830), based

on *Serapias viridiflora* Hoffm., Deutschl. Fl. ed. 2, 2: 182 (1804), but this author did not want to publish this taxon, and he included it under the variability of *S. latifolia*, cf. BAUMANN & KÜNKELE (1999: 625s).

= *Epipactis helleborine* var. *varians* Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 478 (1769); *Epipactis helleborine* subsp. *varians* (Crantz) H. Sund., Europ. Medit. Orchid. ed. 3: 41 (1980)

Ind. loc.: "Vero in sylvis umbrosis. Dornbach".

= *Epipactis purpurata* Sm., Engl. Fl. 4: 41-42 n.º 2 (1828); *Epipactis latifolia* subsp. *purpurata* (Sm.) Gand., Nov. Consp. Fl. Eur.: 459 (1910)

Ind. loc.: "In shady woods. Parasitical on the stump of a maple or hazle [sic], in a wood near the Noris farm, at Leigh, Worcestershire, in 1807. Rev. Dr. Abbot".

Epipactis gr. palustris

Epipactis palustris (L.) Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 462 (1769)

= *Serapias helleborine* var. *palustris* L., Sp. Pl. 2: 950 (1753); *Helleborine palustris* (L.) Schrank, Fl. Monac. 2: 190 (1814), n. v., non Hill, Brit. Herb., fasc. 47: 478 n.º 5 (1756), nom. inval.

Ind. loc.: "Habitat in Europae asperis" [sec. L., Sp. Pl. 2: 949 n.º 1 (1753) for the species].

Lectotypus: "Dodoens, Purgant. Hist.: 186. 1574 sub nom. Helleborine, ca. 1570, leg. Rembert Dodoens" –cf. BAUMANN & al. (1989: 474).

= **Serapias longiflora* Asso, Syn. Stirp. Aragon.: 131 n.º 899 (1779)

Ind. loc.: "Oritur in udis en la Palomita".

Epipactis gr. phyllanthos

Epipactis phyllanthos G.E. Sm. in Gard. Chron. 1852: 660 (1852)

= *Epipactis helleborine* subsp. *phyllanthos* (G.E. Sm.) H. Sund., Europ. Medit. Orchid. ed. 3: 41 (1980)

Ind. loc.: "This pretty plant was gathered from a single locality, upon the elevated part of Phillis Wood, near Westdean, Sussex, on a gravelly soil, where it occurred with *Galium verum*, *Fragaria vesca*, &c., under the shade of dwarf Sallows and Birches, first in seed in Sept. 1838, and the second time in blossom July, 1839, ...".

= **Epipactis phyllanthes* var. *fageticola* C. Hermosilla in *Estud. Mus. Ci. Nat. Álava* 13: 136-138, fig. 9 (1998)

Ind. loc.: "Ezcaray (Bonicaparra), provincia de la Rioja, 30TWM0184, 1000 m / Holotypus: Herbario VIT n.º 56.348".

– *Epipactis leptochila* auct., non (Godfery) Godfery in *J. Bot.* 59: 146-147 (1921)

Taxa whose presence requires confirmation:

Epipactis distans Arv.-Touv., *Essai sur l'espèce et les variétés*: 11 (1872)

Ind. loc.: "Cette plante croît sous les bois, entre Briançon et le col du Mont-Genèvre, souvent en compagnie de l'*atrorubens*; ...".

Observations.—This species is not found in *Index Kewensis*.

BENITO AYUSO & *al.* (1998: 55s) cite this species, described from the Alps, for the Sistema Ibérico mountain range, that traditionally has been reported under the name of *E. helleborine*. According to DELFORGE (2001: 72), it only lives in France and Italy, and the Iberian individuals belong to atypical forms of *E. tremolsii* and *E. cardina*.

Epipogium S.G. Gmel. ex Borkh., *Tent. Displ. Pl. German.*: 139 (1792)

Epipogium aphyllum Sw., *Summa Veg. Scand.*: 32 (1814), syn. subst.

= *Satyrium epipogium* L., *Sp. Pl.* 2: 945 n.º 5 (1753)

Ind. loc.: "Habitat in Sibiriae montibus arenosis".

Lectotypus: "J.G. Gmelin, *Fl. Sibir.* 1: tab. 2, fig. II (1747)" –cf. RENZ & TAUBENHEIM (1984: 470).

Gennaria Parl., *Fl. Ital.* 3: 404 (1858)

Gennaria diphylla (Link) Parl., *Fl. Ital.* 3: 405 n.º 888 (1858)

= **Satyrium diphyllum* Link in *J. Bot.* (Schrader) 1799(2): 323 (1800); *Orchis cordata* Willd., *Sp. Pl.* 4(1): 27-28 n.º 44 (1805), nom. illeg.; *Habenaria cordata* Willd. ex R. Br., *Prodr.* 1: 312 (1810), nom. illeg.; *Gymnadenia diphylla* (Link) Link, *Handbuch* I: 243 n.º 7 (1829); *Herminium cordatum* Willd. ex Lindl., *Edward's Bot. Reg.* 18, tab. 1499 (1832), nom. illeg.; *Peristylus cordatus* Willd. ex Lindl., *Gen. Sp. Orchid. Pl.*: 298 n.º 8 (1835), nom. illeg.; *Platanthera diphylla* (Link) Rchb. f., *Icon. Fl. Germ. Helv.* 13/14: 128 n.º 11, tab. 84 (1851); *Orchis diphylla* (Link) Willk., *Suppl. Prodr. Fl. Hispan.*: 43 (1893); (Link) Samp., *Lista Esp. Herb. Portug.*: 34 (1913), comb. superfl.; *Habenaria diphylla* (Link) T. Durand & Schinz, *Consp. Fl. Afr.* 5: 76-77 n.º 40 (1894); *Coeloglossum diphyllum* (Link) Fiori in Fiori & Paol., *Fl. Italia* 1(1): 248 (1896)

Ind. loc.: "in den Hainen an der Serra da Arrabida, und den Fichtenwäldern um Setuval".

Goodyera R. Br. in W.T. Aiton, *Hortus Kew.* ed. 2, 5: 197 (1813)

Goodyera repens (L.) R. Br. in W.T. Aiton, *Hortus Kew.* ed. 2, 5: 198 n.º 1 (1813)

= *Satyrium repens* L., *Sp. Pl.* 2: 945 n.º 6 (1753); *Neottia repens* (L.) Sw. in *Kongl. Vetensk. Acad. Nya Handl.* 21: 226 (1800), n. v.; *Gonogona repens* (L.) Link, *Enum. Hort. Berol. Alt.* 2: 369 n.º 4612 (1822)

Ind. loc.: "Habitat in Sueciae, Angliae, Sibiriae, Helvetiae sylvis".

Lectotypus: "J. Camerarius fil., *Hort. Med.*: tab. 35. 1588 sub nom. *Orchis radice repente*, ca. 1584, leg. Joachim Camerarius fil." –cf. BAUMANN & *al.* (1989: 479).

Gymnadenia R. Br. in W.T. Aiton, *Hortus Kew.* ed. 2, 5: 191 (1813)

Gymnadenia conopsea (L.) R. Br. in W.T. Aiton, Hortus Kew. ed. 2, 5: 191 n.º 1 (1813)

≡ *Orchis conopsea* L., Sp. Pl. 2: 942 n.º 13 (1753)

Ind. loc.: "Habitat in Europae pratis montosis".

Lectotypus: "L. Fuchs, Hist. Stirp.: 712. 1542 sub nom. *Satyrion basilicum* mas, ca. 1535-1538, leg. Leonhart Fuchs" –cf. BAUMANN & al. (1989: 449).

= *Orchis conopsea* var. *densiflora* Wahlenb. in Kongl. Vetensk. Acad. Nya Handl. 27: 68 n.º 34 (1806); *Gymnadenia densiflora* (Wahlenb.) A. Dietr. in Allg. Gartenzeitung 7(22): 170 (1839); *Gymnadenia conopsea* subsp. *densiflora* (Wahlenb.) Gand., Nov. Consp. Fl. Eur.: 463 (1910)

Ind. loc.: "Den ar ej funnen forr i Sverige".

= *Gymnadenia comigera* Rchb., Fl. Germ. Excurs. 1: 121 n.º 823 (1830); *Gymnadenia conopsea* var. *comigera* (Rchb.) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 115, tab. 71 figs. II (1851); *Gymnadenia conopsea* subsp. *comigera* (Rchb.) Gand., Nov. Consp. Fl. Eur.: 463 (1910)

Ind. loc.: "Auf feuchten sonnigen Wiesen bei Suchl im Thüringer Walde, neben F. Kletts Rohrhammer: D. Hofmann".

= *Orchis pyrenaica* Philippe, Fl. Pyrénées 2: 354 (1859); *Gymnadenia conopsea* var. *pyrenaica* (Philippe) Nym., Consp. Fl. Eur. 4: 695 (1882); *Gymnadenia conopsea* subsp. *pyrenaica* (Philippe) Gand., Nov. Consp. Fl. Eur.: 463 (1910); *Gymnadenia odoratissima* var. *pyrenaica* (Philippe) P. Delforge in Naturalistes Belges 81 (Orchid. 13): 397 (2000)

Ind. loc.: "Pyrénées centrales, pâturages et bois subalpins; Lhéris; Pla des Pouts; Barèges (Lap.)".

= *Gymnadenia conopsea* var. *intermedia* Gren., Fl. Jurass. 2: 751 (1869)

Ind. loc.: "habite les mêmes lieux ["Toute la chaîne jurassique depuis la plaine jusque sur les sommités"], et surtout la région montagneuse".

Gymnadenia odoratissima (L.) Rich., Orchid. Eur. Annot.: 35 (1817); in Mém. Mus. Hist. Nat. 4: 57 (1818)

≡ *Orchis odoratissima* L., Syst. Nat. ed. 10, 2: 1243 (1759); *Orchis conopsea* subsp. *odoratissima* (L.) Bonnier & Layens, Tabl. Syn. Pl. Vasc. France: 311 (1894)

Ind. loc.: "Habitat in Italia, Gallia, Germania, rarissima in Svecia" [sec. L., Sp. Pl. ed. 2, 2: 1335 n.º 25 (1763)].

Lectotypus: "C. Bauhin, Prodr. ed. 1: 30, fig. dextra. 1620 sub nom. *Orchis palmata angustifolia minor*, flore odoratissima, ca. 1595, leg. Caspar Bauhin" –cf. BAUMANN & al. (1989: 485).

= *Orchis suaveolens* Vill., Hist. Pl. Dauph. 2: 38-39 n.º 18, tab. 1 (1787); *Gymnadenia suaveolens* (Vill.) Rchb. f. in Bonplandia 4: 321 (1856); *Gymnadenia odoratissima* subsp. *suaveolens* (Vill.) Gand., Nov. Consp. Fl. Eur.: 463 (1910)

Ind. loc.: "Il vient sur les Alpes, dans les prairies herbeuses, à Palanfré, sous la Moucherolle, près de Grenoble".

– *Orchis conopsea* sensu Asso, Syn. Stirp. Aragon.: 130 n.º 893 (1779)

***Gymnadenia odoratissima** subsp. **longicalcarata** C. Hermosilla & Sabando in Estud. Mus. Ci. Nat. Álava 10-11: 123-128, figs. 4c, 5, 7 (1996)

Ind. loc.: "Burgos, Valpuesta, VN8947. Holotypus: C. E. Hermosilla & J. Sabando. In herb. VIT 25920".

Himantoglossum Spreng., Syst. Veg. 3: 675, 694 (1826)

Himantoglossum hircinum (L.) Spreng., Syst. Veg. 3: 694 (1826)

≡ *Satyrion hircinum* L., Sp. Pl. 2: 944 n.º 1 (1753); *Orchis hircina* (L.) Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 484 n.º 5 (1769); *Loroglossum hircinum* (L.) Rich., Orchid. Eur. Annot.: 32 (1817); in Mém. Mus. Hist. Nat. 4: 54 n.º 2(I) (1818); *Aceras hircina* (L.) Lindl., Gen. Sp. Orchid. Pl.: 282 n.º 1 (1835)

Ind. loc.: "Habitat in Galliae, Cantii campestribus".

Lectotypus: "Vaill., Bot. Paris.: tab. 30, fig. 6. 1727 sub nom. *Orchis barbata foetida* J.B., ca. 1720, leg. Sebastian Vaillant" –cf. BAUMANN & al. (1989: 491).

***Limodorum* Boehm.** in Ludw., Defin. Gen. Pl.: 358 (1760)

***Limodorum abortivum* (L.) Sw.** in Nova Acta Regiae Soc. Sci. Upsal. 6: 80 (1799)

≡ *Orchis abortiva* L., Sp. Pl. 2: 943 n.º 17 (1753); *Centrosis abortiva* (L.) Sw., Summa Veg. Scand.: 32 (1814); *Ionorchis abortiva* (L.) Beck, Fl. Nieder-Österreich 1: 215 n.º 1 (1890)

Ind. loc.: "Habitat in Gallia, Helvetia, Anglia, Italia".

Lectotypus: "LINN 1054.43, pl. media, vermutlich 1738, leg. Carl Linnaeus" –cf. BAUMANN & al. (1989: 493).

***Limodorum trabutianum* Batt.** in Bull. Soc. Bot. France 33: 297-298 (1886); Batt. & Trabut, Atlas Fl. Alger. 1: 15, pl. 10 figs. 1-5 (1886)

≡ *Limodorum abortivum* subsp. *trabutianum* (Batt.) Rouy, Fl. France 13: 208 (1912); *Centrosis trabutiana* (Batt.) Samp., Lista Esp. Herb. Portug.: 36 (1913); *Limodorum abortivum* var. *trabutianum* (Batt.) Schlecht., Monogr. Icon. Orchid. Eur. 1: 285 (1928); (Batt.) Raynaud, Orchid. Maroc: 105 (1985), comb. superfl.

Ind. loc.: "Floret junio in fruticetis Quercus Ballotae Desf. montis Zaccar prope Milianah".

Syntypus: "leg. J.A. Battandier, 07-06-1886 (P!, herbar Cosson)" –cf. BAUMANN & HOFFMANN (1985: 166)

= **Limodorum lusitanicum* J.A. Guim. in Polytechnia 3(6): 13-14[in separatum] (1907)

Ind. loc.: "na azinhaga da Quinta do Bispo, nos arredores de Alemquer".

Observations.—This binomial is not reported in Index Kewensis.

= *Limodorum abortivum* subsp. *occidentale*

Rouy, Fl. France 13: 208 (1912); *Limodorum abortivum* var. *occidentale* (Rouy) G. Keller & Soó, Monogr. Icon. Orchid. Eur. 2(10): 361 (1938)

Ind. loc.: "Hab. — Charente-Inférieure: bois secs à Doeuil et environs".

***Listera* R. Br.** in W.T. Aiton, Hortus Kew. ed. 2, 5: 201 (1813)

***Listera cordata* (L.) R. Br.** in W.T. Aiton, Hortus Kew. ed. 2, 5: 201 n.º 2 (1813)

≡ *Ophrys cordata* L., Sp. Pl. 2: 946 n.º 6 (1753); *Neottia cordata* (L.) Rich., Orchid. Eur. Annot.: 37 (1817); in Mém. Mus. Hist. Nat. 4: 59 (1818)

Ind. loc.: "Habitat in Europae frigidae sylvis humentibus".

Lectotypus: "LINN 1056.11, vermutlich 30.08.1741, leg. Carl Linnaeus" –cf. BAUMANN & al. (1989: 497).

***Listera ovata* (L.) R. Br.** in W.T. Aiton, Hortus Kew. ed. 2, 5: 201 n.º 1 (1813)

≡ *Ophrys ovata* L., Sp. Pl. 2: 946 n.º 5 (1753); *Epipactis ovata* (L.) Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 473 (1769)

Ind. loc.: "Habitat in Europa subhumidis pratis".

Lectotypus: "Fuchs, Hist. Stirp.: 566. 1542 sub nom. *Ophris*, ca. 1540, leg. Leonhart Fuchs" –cf. BAUMANN & al. (1989: 499).

***Neotinea* Rchb. f., Pollin. Orchid.**: 18, 29 (1852)

***Neotinea maculata* (Desf.) Stearn** in Ann. Mus. Goulandris 2: 79 (1975) ["1974"]

≡ *Satyrium maculatum* Desf., Fl. Atlant. 2: 319-320 (1799); *Peristylus maculatus* (Desf.) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 2 (1850), comb. inval., pro syn. *Aceras intacta* (Link) Rchb. f.; *Aceras maculata* (Desf.) Gren. in Gren. & Godr., Fl. France 3(1): 282 (1855), comb. inval., in observ. *Aceras densiflora* (Brot.) Boiss.

Ind. loc.: "Habitat in Atlante prope Belide".

Observations.—REICHENBACH (1850: 2) attributes the binomial *Peristylus maculatus* to

Lindley, Gen. Sp. Orchid. Pl.: 300 (1838). This name does not appear either on this page nor on others, but *Peristylus atlanticus* (Willd.) Lindl. does, based on *Orchis atlantica* Willd. Willdenow (1805: 42) wanted to combine *Satyrium maculatum* Desf. under the genus *Orchis*, but with the previously existing *Orchis maculata* L. (1753), he gave it the name of *Orchis atlantica*.

= **Orchis intacta* Link in J. Bot. (Schrader) 1799(2): 322 (1800); *Aceras intacta* (Link) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 2 n.º 2, tab. 148 (1850); *Neotinea intacta* (Link) Rchb. f., Pollin. Orchid.: 29 (1852); *Tinea intacta* (Link) Boiss., Fl. Orient. 5(1): 58 (1882)

Ind. loc.: “an der Serra da Arrabida in der dortigen achattigen Lorbeerhainen”.

= **Satyrium densiflorum* Brot., Fl. Lusit. 1: 22 n.º 2 (1804); *Peristylus densiflorus* (Brot.) Lindl., Gen. Sp. Orchid. Pl.: 298 n.º 7 (1835); *Aceras densiflorum* (Brot.) Boiss., Voy. Bot. Espagne 2(19): 595 n.º 1597 (1842); *Coeloglossum densiflorum* (Brot.) Hartm. ex Willk. & Lange, Prodr. Fl. Hispan. 1(1): 164 n.º 719 (1861), comb. inval., pro syn. *Aceras densiflora* (Brot.) Boiss.

Ind. loc.: “Hab. in Arrabida (...) Commun. a Cl P. Link”.

= *Orchis secundiflora* Bertol., Rar. Ital. Pl. 2: 42 n.º 8 (1806); *Himantoglossum secundiflorum* (Bertol.) Rchb., Fl. Germ. Excurs. 1: 120 n.º 815 (1830); *Aceras secundiflora* (Bertol.) Lindl. in Edward's Bot. Reg. 18, n.º & tab. 1525 (1833)

Ind. loc.: “Reperitur in editiori collium parte circum Sarzanam”.

= **Orchis ecalcarata* Costa & Vayr. in Costa, Suppl. Cat. Pl. Cataluña: 92-93 n.º 2074bis (1877); in Anales Soc. Esp. Hist. Nat. 9: 97 (1880).

Ind. loc.: “Crescir raro c. Olot, Fontfreda!, Bolós; Roca de Brugués supra Gabá Vayr!; versus Reixach propè Moncada, Csta.”.

= **Aceras* × *vayredae* K. Richt., Pl. Eur. 1: 276 n.º 3 (1890) [“Vayrae”]

Ind. loc.: “cerca de Olot, Bolós” [sec. Vayr. in Anales Soc. Esp. Hist. Nat. 11: 137-138 (1882) sub *Aceras anthropophora-simia* Vayr.].

Observations.—This name was published at first as *Aceras anthropophora-simia* Vayr. in Anales Soc. Esp. Hist. Nat. 11: 137-138 (1882), and later, K. Richter proposed a new hybrid based in the plant described previously.

ROUY (1891: 141) ran the specific epithet as “Vayredae”, already that hybrid was dedicated to the Catalan botanist Estanislao Vayreda y Vila (1848-1901).

= **Neotinea maculata* var. *stricta* Landwehr, Wilde Orchid. Eur. 2: 556, figs. 1-4 (1977)

Ind. loc.: “Villaviciosa, Spanje. Typus: in collectie Landwehr, plaat 11, april 1963”.

Neottia Guett. in Hist. Acad. Roy. Sci. (Paris) 1750, Mém.: 374 (1754)

Neottia nidus-avis (L.) Rich., Orchid. Eur. Annot.: 37 n.º 1 (1817); in Mém. Mus. Hist. Nat. 4: 59 (1818)

= *Ophrys nidus-avis* L., Sp. Pl. 2: 945 n.º 1 (1753); *Epipactis nidus-avis* (L.) Crantz, Stirp. Austr. Fasc. ed. 2, 2(6): 475 (1769); *Listera nidus-avis* (L.) W. Hook., Fl. Lond., tab. 58 (1819); *Neottidium nidus-avis* (L.) Schldtl., Fl. Berol. 1: 454 n.º 904 (1823)

Ind. loc.: “Habitat in Sueciae, Germaniae, Galliae nemoribus”.

Lectotypus: “Lobel, Pl. Icon.: 195, fig. sin. 1581 sub nom. Nidus avis, ca. 1576-1580, leg. Matthias de Lobel” —cf. BAUMANN & al. (1989: 504).

Nigritella Rich., Orchid. Eur. Annot.: 26 (1817); in Mém. Mus. Hist. Nat. 4: 41, 48 (1818)

In their taxonomic and karyological study, TEPPER & KLEIN (1998) included the species of *Nigritella* in the genus *Gymnadenia*, basing that on the phylogenetic works of BATEMAN & al. (1997) and PRIDGEON & al. (1997). In this check list, we maintain the traditional separation of the two genera, although large differences do not exist between the two.

Traditionally, it was thought that all material from Spain belonged to *N. nigra* s.l. and frequently, *N. nigra* subsp. *nigra*, in the manner that the diverse synonyms utilized by authors in the distant past can not be ascribed with certainty to either of the two taxa now under consideration. Actually, two taxa are accepted for our flora, *N. gabasiana* among the diploid taxa, and *N. nigra* subsp. *gallica* among the polyploid and apomictic taxa.

****Nigritella gabasiana*** Teppner & E. Klein in *Phyton* (Horn) 33(2): 182-192 n.º 3 (1994)

≡ *Gymnadenia gabasiana* (Teppner & E. Klein) Teppner & E. Klein in *Phyton* (Horn) 38(1): 221 (1998)

Ind. loc.: "Zentral-Pyrenäen, Prov. Huesca, oberstes Rio Gallego-Tal, S-Hänge der Peña Foradada oberhalb El Formigal, ca. 1740 m, Kalk, Rasen. Holotypus: leg. *H. Teppner & E. Klein* (P).-Isotypen: GZU, MA".

Observations.—DELFORGE (1994: 123) cites *N. rhellicani* Teppner & E. Klein for the Spanish Pyrenees and, with a question mark, includes *N. gabasiana* as a possible synonym of this species. TEPPNER & KLEIN (1998: 221) accepted the treatment of different taxa that are subordinate within the genus *Gymnadenia*, both diploids but with separate distributions; *G. rhellicani* grows from the Alps to northern Greece, while *G. gabasiana* is distributed between the Pyrenees and the Cantabrian mountains.

Nigritella nigra (L.) Kirschl., Prodr. Fl. Alsace: 159 (1836); (L.) Rchb. f., Icon. Fl. Germ. Helv. 13/14: 102 n.º 1, tab. 115 (1851), comb. superfl.

≡ *Satyrion nigrum* L., Sp. Pl. 2: 944 n.º 3 (1753); *Orchis nigra* (L.) Scop., Fl. Carniol. ed. 2, 2: 200 n.º 1123 (1771); *Habenaria nigra* (L.) R. Br. in W.T. Aiton, Hortus Kew. ed. 2, 5: 192 n.º 1 (1813); *Gymnadenia nigra* (L.) Rchb. f. in Bonplandia 4: 321 (1856); (L.) Wettst. in Ber. Deutsch. Bot. Ges. 7: 308 (1889), comb. superfl.

Ind. loc.: "Habitat in Alpibus Helveticis, Lapponicis".

Lectotypus: "LINN 1055.4, planta dextra,

ca. 1745, leg. Johan Otto Hagström" —cf. BAUMANN & al. (1989: 507).

= *Nigritella angustifolia* Rich., Orchid. Eur. Annot.: 34 (1817); in Mém. Mus. Hist. Nat. 4: 56 (1818)

Ind. loc.: "Habitat in alpinis summis Europae borealis et australis".

Nigritella nigra subsp. *gallica* E. Breiner & R. Breiner in Mitt. Arbeitskr. Beob. Heimischer Orchideen 25(4): 471 (1993); *Gymnadenia austriaca* var. *gallica* (E. Breiner & R. Breiner) P. Delforge in Naturalistes Belges 79 (Orchid. 11): 255 (1998)

Ind. loc.: "l'Alpe d'Huez, 1880 m, Gallia. Holotypus: 26.06.1993, leg. E. u. R. Breiner, Naturmuseum Augsburg, 93-351/1075".

= *Nigritella nigra* var. *pyrenaica* Schltr. in Repert. Spec. Nov. Regni Veg. 16: 271 (1919)

Ind. loc.: "Pyrenäen".

Observations.—SCHLECHTER (1919: 271) doesn't specify if this variety is found on both sides of the Pyrenees or not.

= **Nigritella nigra* subsp. *iberica* Teppner & E. Klein in *Phyton* (Horn) 33(2): 192-204 n.º 4 (1994); *Gymnadenia nigra* subsp. *iberica* (Teppner & E. Klein) Teppner & E. Klein in *Phyton* (Horn) 38(1): 222 (1998); *Gymnadenia austriaca* var. *iberica* (Teppner & Klein) G. Foelsche & W. Foelsche in J. Eur. Orch. 31(4): 803 (1999)

Ind. loc.: "Zentral-Pyrenäen, Prov. Huesca, Esera-Tal, Massiv von Castanesa, Umgebung von Cerler, Llanos del Ampriu, ca. 1900 m, flach gereigter, NNW exponierter Hang. Holotypus: leg. *H. Teppner & E. Klein* (MA).-Isotypen: GZU, P".

Observations.—SANZ & NUET (1995: 112) cite a sample for the Vall de Ribes (Gerona) under the name of *Nigritella nigra* subsp. *corneliana* Beauverd. However, TEPPNER & KLEIN (1998: 221) consider this taxon as a synonym of *Gymnadenia corneliana* (Beauverd) Teppner & E. Klein, that is distributed exclusively in the western Alps.

ACKNOWLEDGEMENTS

The authors wish to express their gratitude to the personnel of the libraries of the Real Jardín Botánico de Madrid, the Facultad de Farmacia of the Universidad Complutense de Madrid, the Conservatoire et Jardin Botaniques de la Ville de Genève and of the Kew Gardens. To Drs. Félix Muñoz Garmendia and Gonzalo Nieto Feliner, of the Real Jardín Botánico de Madrid, for their nomenclatural commentaries and diverse appraisals of the work. To Dr. Daniel Sánchez Mata, who gave us very valuable bibliographic material. To the orchidologist Carlos Hermosilla who contributed bibliographic documentation and important information. And, with special affection, to Dr. Lulú Rico, of Kew Gardens, for her imponderable help and collaboration during our stay in London, and Dr. Cindy Roché, for the translation to english.

REFERENCES

- AIZPURU, I., C. ASEGINOLAZA, P.M. URIBE-ECHEBARRÍA, P. URRUTIA & I. ZORRAKIN (1999). *Claves ilustradas de la Flora del País Vasco y territorios limítrofes*. Departamento de Agricultura y Pesca, Servicio Central de Publicaciones del Gobierno Vasco. Vitoria-Gasteiz.
- ASSO, I. (1779). *Synopsis Stirpium Indigenarum Aragoniae*. Massiliae.
- BATEMAN, R.M. (2001). Evolution and classification of European orchids: insights from molecular and morphological characters. *J. Eur. Orch.* 33(1): 33-119.
- BATEMAN, R.M., A.M. PRIDGEON & M.W. CHASE (1997). Phylogenetics of subtribe Orchidinae (Orchidoideae, Orchidaceae) based on nuclear ITS sequences. 2. Infrageneric relationships and reclassification to achieve monophyly of *Orchis* sensu stricto. *Lindleyana* 12(3): 113-141.
- BAUMANN, H. & V. HOFFMANN (1985). Zur Systematik und Verbreitung von *Limodorum trabutianum* Battand. *Mitt. Arbeitskr. Beob. Heimischer Orchideen* 17(2): 161-185.
- BAUMANN, H. & S. KÜNKELE (1988). *Die Orchideen Europas*. Kosmos Naturführer, W. Keller & Co., Stuttgart.
- BAUMANN, H. & S. KÜNKELE (1999). *Epipactis viridiflora* Hoffm. ex Krock. 1814 besitzt die Priorität gegenüber *Epipactis purpurata* Sm. 1828. *J. Eur. Orchid.* 31(3): 624-633.
- BAUMANN, H., S. KÜNKELE & R. LORENZ (1989). Die nomenklatorischen Typen der von Linnaeus veröffentlichten Namen europäischer Orchideen. *Mitt. Arbeitskr. Beob. Heimischer Orchideen* 21(3): 355-700.
- BENITO AYUSO, J., J.A. ALEJANDRE & J.A. ARIZALETA (1999). Aproximación al catálogo de las orquídeas de la Rioja (España). *Estud. Mus. Ci. Nat. Álava* 14: 19-64.
- BENITO AYUSO, J. & C.E. HERMOSILLA (1998). Dos nuevas especies ibéricas, *Epipactis cardina* y *Epipactis hispanica*, más alguno de sus híbridos: *Epipactis* × *conquensis* (*E. cardina* × *E. parviflora*), y *Epipactis* × *populetorum* (*E. helleborine* × *E. hispanica*). *Estud. Mus. Ci. Nat. Álava* 13: 103-115.
- BENITO AYUSO, J., J.A. ALEJANDRE, J.A. ARIZALETA & L.M. MEDRANO (1998). *Epipactis distans* Arvet-Touvet en el Sistema Ibérico. *Fl. Montiberica* 8: 55-60.
- BOLÒS, O. DE & J. VIGO (2001). *Flora dels Països Catalans*, vol. 4. Editorial Pòrtic, Barcelona.
- BONAFÉ, F. (1978). *Flora de Mallorca*, vol. 2. Editorial Moll, Palma de Mallorca.
- BOUILLIE, P., J. BONILLA & C. FERNÁNDEZ LÓPEZ (1992). Orquídeas de la provincia de Jaén. *Blancoana* 9: 102-111.
- BUTTLER, K.P. (1991). *Field guide to Orchids of Britain and Europe*. The Crowood Press, Wiltshire.
- BUTTLER, K.P. (2001). Taxonomy of Orchidaceae tribus Orchideae, a traditional approach. *J. Eur. Orch.* 33(1): 7-32.
- CADEVALL, J. (1933). *Flora de Catalunya*, vol. 5. Palau de la Generalitat, Barcelona.
- CAMUS, E.G. & A. CAMUS (1921-1929). *Iconographie des Orchidées d'Europe et du Bassin méditerranéen*. 2 vols. Paul Lechevalier, Paris.
- CORTIZO, C. & E. SAHUQUILLO (1999). La familia Orchidaceae en Galicia (N.O. Península Ibérica). *Nova Acta Cient. Compostelana (Biol.)* 9: 125-158.
- DELFORGE, P. (1989). Les orchidées de la Serranía de Cuenca (Nouvelle-Castille, Espagne). Observations et esquisse d'une cartographie. *Naturalistes Belges* 70 (*Orchid.* 3): 99-128.
- DELFORGE, P. (1994). *Guide des Orchidées d'Europe, d'Afrique du Nord et du Proche-Orient*. Delachaux et Niestlé, Lausanne, Paris.
- DELFORGE, P. (1995). Contribution à la connaissance des orchidées de la province de Burgos (Vieille Castille, Espagne). *Naturalistes Belges* 76 (*Orchid.* 8): 232-276.
- DELFORGE, P. (2001). *Guide des Orchidées d'Europe, d'Afrique du Nord et du Proche-Orient*. 2ème éd. Delachaux et Niestlé, Lausanne, Paris.
- FRANCO, J.A. (1978). Orchidaceae. (293) *Dactylorhiza* Necker ex Nevski. In: V.H. HEYWOOD (ed.), *Flora Europaea Notulae Systematicae ad Floram Europaeam spectantes*. *Bot. J. Linn. Soc.* 76(4): 366-367.
- GUIMARÃES, J.A. (1887). *Orchideographia portugueza*. *Bol. Soc. Brot.* 5: 17-82.
- HERMOSILLA, C. & J. SABANDO (1993). Notas sobre orquídeas. *Estud. Mus. Ci. Nat. Álava* 8: 73-84.
- HERMOSILLA, C. & J. SABANDO (1996a). Notas sobre orquídeas (II). *Estud. Mus. Ci. Nat. Álava* 10-11: 119-140.
- HERMOSILLA, C. & J. SABANDO (1996b). Notas sobre orquídeas (III). *Estud. Mus. Ci. Nat. Álava* 10-11: 141-194.
- HERMOSILLA, C. & J. SABANDO (1997). Notas sobre orquídeas (IV). *Estud. Mus. Ci. Nat. Álava* 12: 57-68.
- HERMOSILLA, C. & J. SABANDO (1998). Notas sobre orquídeas (V). *Estud. Mus. Ci. Nat. Álava* 13: 123-156.
- LANDWEHR, J. (1977). *Wilde orchideeën van Europa*. 2 vols. 's-Graveland, Nederland.
- LIZAUR, X. (2001). *Orquídeas de Euskal Herria*. Servicio Central de Publicaciones del Gobierno Vasco, Vitoria.

- LÖVE, A. & KJELLQVIST, E. (1973). Cytotaxonomy of Spanish plants. II. Monocotyledons. *Lagascalia* 3(2): 147-182.
- LOWE, M.R. (1995). Les Orchidées de la province d'Alicante. *Naturalistes Belges* 76 (*Orchid.* 8): 78-83.
- LOWE, M.R. (1998). The orchids of the province of Málaga, Spain. *J. Eur. Orch.* 30(3): 501-570.
- MANSFELD, R. (1938). Zur Nomenklatur der Farn- und Blütenpflanzen Deutschlands, II. *Feddes Repert.* 45: 193-244.
- MARÍN PADELLANO, L. & P. GALÁN CELA (1994). *Catálogo de las orquídeas silvestres de la provincia de Burgos*. Madrid.
- MATEO SANZ, G. (1991). *Catálogo florístico de la provincia de Teruel*. Instituto de Estudios Turolenses, Excma. Diputación Provincial de Teruel, Zaragoza.
- MERINO, B. (1909). *Flora descriptiva é ilustrada de Galicia*, vol. 3. Tipografía Galaica, Santiago.
- MOORE, D.M. (1980). Orchidaceae. In: T.G. TUTIN & al. (eds.), *Flora Europaea*, vol. 5: 325-350. Cambridge University Press, Cambridge.
- PALLARÉS, A. (1999). *Orquídeas de Almería*. Almería.
- PEDERSEN, H.A. (2000a). Proposal to reject the name *Orchis latifolia* L. (Orchidaceae). *Taxon* 49(2): 299-301.
- PEDERSEN, H.A. (2000b). On the status and synonymy of the names *Dactylorhiza majalis* and *D. incarnata* (Orchidaceae) and their typification. *Taxon* 49(3): 539-544.
- PÉREZ CHISCANO, J.L., J.R. GIL LLANO & F. DURÁN OLIVA (1991). *Orquídeas de Extremadura*. Fondo Natural, S.L., Ávila.
- PÉREZ RAYA, F. & J. MOLERO MESA (1990). *Orquídeas silvestres de la provincia de Granada*. Universidad de Granada, Granada.
- PRIDGEON, A.M., R.M. BATEMAN, A.V. COX, J.R. HAPPEMAN & M.W. CHASE (1997). Phylogenetics of subtribe Orchidinae (Orchidoideae, Orchidaceae) based on nuclear ITS sequences. 1. Intergeneric relationships and polyphyly of *Orchis* sensu lato. *Lindleyana* 12(2): 89-109.
- REICHENBACH, H.G. (1850-1851). *Icones Florae Germanicae et Helveticae*, vol 13/14. Sumptibus Friderici Hofmeister, Lipsia.
- RENZ, J. & G. TAUBENHEIM (1984). *Epipogium* Gmelin ex Borkh. In: P.H. DAVIS (ed.), *Flora of Turkey*, vol. 8: 470-471. Edinburgh University Press, Edinburgh.
- RIVERA NÚÑEZ, D. & G. LÓPEZ VÉLEZ (1987). *Orquídeas de la provincia de Albacete*. Instituto de Estudios Albacetenses, Serie I. Ensayos Históricos y Científicos 31. Excma. Diputación de Albacete, Albacete.
- ROUY, G. (1891). Annotations aux Plantae Europaeae de M. Karl Richter. *Bull. Soc. Bot. France* 38: 130-142.
- SAMPAIO, G. (1913). *Lista das espécies representadas no Herbário português*. Tipografia Costa Carregal, Porto.
- SANZ GONEL, H. & J. NUET BADIA (1995). *Guia de camp de les orquídies de Catalunya*. Editorial Montblanc-Martin, Barcelona.
- SCHLECHTER, R. (1919). Mitteilungen über europäische und mediterrane Orchideen. II. *Repert. Spec. Nov. Regni Veg.* 16: 257-292.
- SOÓ, R. (1960). Synopsis generis *Dactylorhiza* (*Dactylorchis*). Pars II. Conspecti Orchidearum Europaeae et Mediterraneae. *Ann. Univ. Sci. Budapest. Rolando Eötvös, Sect. Biol.*, 3: 335-357.
- STACE, C. (1997). *New Flora of the British Isles*. 2nd ed. Cambridge University Press, Cambridge.
- SUNDERMANN, H. (1980). *Europäische und mediterrane Orchideen*, 3. erweiterte und verbesserte Auflage. Brücke-Verlag Kurt Schmiersow, Hildesheim.
- TEPPNER, H. & E. KLEIN (1998). Etiam atque etiam – *Nigritella* versus *Gymnadenia*: Neukombinationen und *Gymnadenia dolomitensis* spec. nova (Orchidaceae-Orchideae). *Phyton (Horn)* 38(1): 220-225.
- TYTECA, D. (1997). The orchid flora of Portugal. *Mitt. Arbeitskr. Beob. Heimischer Orchideen* 29(2/3): 185-581.
- TYTECA, D. (2001). Systematics and biostatistics of *Dactylorhiza* in western Europe: some recent contributions. *J. Eur. Orch.* 33(1): 179-199.
- VALDÉS, B., S. TALAVERA & E. FERNÁNDEZ-GALIANO (eds.) (1987). *Flora vascular de Andalucía occidental*, vol. 3. Editorial Ketres, Barcelona.
- VERMEULEN, P. (1947). *Studies on Dactylorchids*. Utrecht. [n. v.]
- VERMEULEN, P. (1970). Some critical remarks on the *Dactylorchids* of Portugal. *Bol. Soc. Brot. ser. 2*, 44: 85-98.
- WILLDENOW, C.L. (1805). *Species Plantarum*, vol. 4(1). Berolini.
- WILLKOMM, M. (1861). Fam. 27. Orchideae Juss. In: M. Willkomm & J. Lange (eds.), *Prodromus Florae Hispanicae*, vol. 1(1): 161-177. Stuttgartia.

Editado por Félix Muñoz Garmendia
Aceptado para publicación: 20-XI-2001