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Recent Observations on the *Ophrys* of Malta and Gozo: Addendum

Keywords

Orchidaceae, *Ophrys africana*, *Ophrys caesiella*, *Ophrys gazella*, *Ophrys hospitalis*, *Ophrys iricolor* subsp. *hospitalis*, *Ophrys lutea* var. *subfusca*, *Ophrys subfusca*; legal protection of wild orchids; Malta, Gozo.

Summary

Mifsud, S. & L. Lewis (2013): Recent Observations on the *Ophrys* of Malta and Gozo: Addendum.- J. Eur. Orch. 45 (1): 105-120.

As previously reported by the present authors (MIFSUD & LEWIS 2011), field studies at various locations on Malta indicate that *Ophrys caesiella* and *O. gazella*, and *O. africana* are the same species. The name *O. caesiella* is now chosen for this combined species. LOWE (2011) similarly concluded that *O. caesiella*, *O. gazella* and *O. africana* were synonyms but also further concluded that *O. subfusca* (Rechb. f.) Hausskn. is an earlier synonym for these taxa. However, in the opinion of the present authors, the assumptions on which Lowe's further conclusion is based cannot be validated and (if legitimate) *O. subfusca* should therefore continue to be considered a member of the *O. lutea* complex. New sites for *O. caesiella* on Malta and Gozo are also reported. DELFORGE (2012) concluded that the early-flowering form of *O. iricolor* s.l. on Malta was morphologically different from *O. mesaritica* on Crete and described it as the new species *O. hospitalis*. This species is now reclassified as a subspecies of *O. iricolor* under the new combination *Ophrys iricolor* subsp. *hospitalis*. Reference is also made to the legal protection of wild orchids on Malta.

Zusammenfassung

Mifsud, S. & L. Lewis (2013): Aktuelle Beobachtungen über die *Ophrys* von Malta und Gozo: Nachtrag.- J. Eur. Orch. 45 (1): 105-120.

Wie von den Autoren früher berichtet (MIFSUD & LEWIS 2011), zeigen Feldstudien an verschiedenen Orten auf Malta, dass *Ophrys caesiella*, *O. gazella* und *O. africana* ein und dieselbe Art sind, sie werden unter dem Namen *O. caesiella* zusammengefasst. LOWE (2011) kommt zu einem ähnlichen Schluss und stellt alle drei Taxa als Synonym zu *O. subfusca* (Rchb. f.) Hausskn. Entgegen LOWE stellen die Autoren *O. subfusca* zum Komplex von *O. lutea*. Neue Fundorte für *O. caesiella* auf Malta und Gozo werden ebenfalls mitgeteilt. DELFORGE (2012) berichtete, dass die früh blühende Form von *O. iricolor* s.l. auf Malta morphologisch von *O. mesaritica* auf Kreta verschieden ist und beschrieb sie unter dem Namen *O. hospitalis* als neue Art. Diese wird nun als Unterart *Ophrys iricolor* subsp. *hospitalis* eingestuft und neu kombiniert. Abschließend wird auch auf den rechtlichen Schutz von wilden Orchideen auf Malta eingegangen.

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1. Background

In our paper, “*Recent Observations on the Ophrys of Malta and Gozo*” (MIFSUD & LEWIS 2011: 621-623), we reported that the results of field studies at various locations on Malta strongly supported the opinion of CAMPO (2005) and others that *O. caesiella* P. Delforge, *O. gazella* J. Devillers-Terschuren & P. Devillers and *O. africana* G. Foelsche & W. Foelsche are all the same species. As we also reported, the two earlier names *O. caesiella* and *O. gazella* were simultaneously published in the same journal (DELFORGE 2000; 233: DEVILLERS & DEVILLERS-TERSCHUREN 2000b: 322, respectively). In the same issue as our paper, LOWE (2011) similarly concluded that *O. caesiella*, *O. gazella* and *O. africana* were synonyms. He further concluded that *O. subfusca* (Rchb. f.) Hausskn. is an earlier synonym for *O. caesiella*, *O. gazella* and *O. africana*.

The present authors also reported that *O. iricolor* Desfontaines s.l. on Malta comprises two morphologically distinct forms flowering at different times, although intermediates also occur (MIFSUD & LEWIS 2011: 619-620). In particular, the early-flowering form appeared attributable to *O. mesaritica* H.F. Paulus, C. Alibertis & A. Alibertis, consistent with the description of this species and the existing records of this species on the Maltese archipelago,

while the later-flowering form appeared attributable to *O. vallesiana* J. Devillers-Terschuren & P. Devillers. However, in the light of our analysis, DELFORGE (2012) concluded that this early-flowering form of *O. iricolor* s.l. on Malta was morphologically different from *O. mesariitica* on Crete and described it under the new name *O. hospitalis* P. Delforge.

2. *Ophrys caesiella*

2.1 Is *Ophrys subfusca* a member of the *O. lutea* Cavanilles s.l. complex or an earlier synonym of *O. caesiella*?

Ophrys subfusca (Rchb. f.) Hausskn. was initially described under the name *O. lutea* Cava. var. *subfusca* Rchb. f. in Latin and German versions of a book (REICHENBACH 1851a: 76; REICHENBACH 1851b: 95) based on material collected by Durieu from Oran, Algeria. This variety was described as follows: ... fascia velutina prope marginem attingente. Haec varietas forsán nos coget, ut utramque conjungamus. An hybrida existimanda? Reperi inter flores Ophrydis luteae a cl. Durieu explantos. (Translation: "... with a velvety band extending to near the margin. This variety will perhaps compel us to unite the two. Is it to be considered a hybrid? I have found [it] among the flowers of *Ophrys lutea* expounded by the most illustrious Durieu.") Although it might be assumed that the "velvety band which extends almost to near the margin" is dark, since Reichenbach considered his new taxon to be a variety of *O. lutea*, it is much more likely to have been yellow (see also below).

The labellum of *O. lutea* var. *subfusca* was illustrated in two small monochrome drawings labelled [figs.] 1 and 2 (REICHENBACH 1851a: Tab. 165). Tab. 165 is reproduced below in monochrome as Fig. 1. (To show the actual size of these illustrations, this Table was photographed with a scale at the side. It is to be noted that the adjacent plant II is labelled "*Scolopax*", not var. *subfusca*.)

As explained by both GÖLZ & REINHARD (2000: 17-29) and LE FLOC'H et al (2010: 370-372), the precise nomenclature of members of the *O. lutea* complex in North Africa is problematic. Nevertheless, all members of this complex are characterised by a conspicuously wide yellow margin relative to the size of the labellum, as shown in Fig. 2 and 3. In contrast, in the case of *O. caesiella* (syn. *O. fusca* subsp. *caesiella* (P. Delforge) Kreutz; *O. marmorata* subsp. *caesiella* (P. Delforge) Vela & R. Martin), the yellow border is noticeably narrower relative to the size of the labellum: on Malta it is rarely more than 0.5 mm wide, as seen in Fig. 4 and 5.

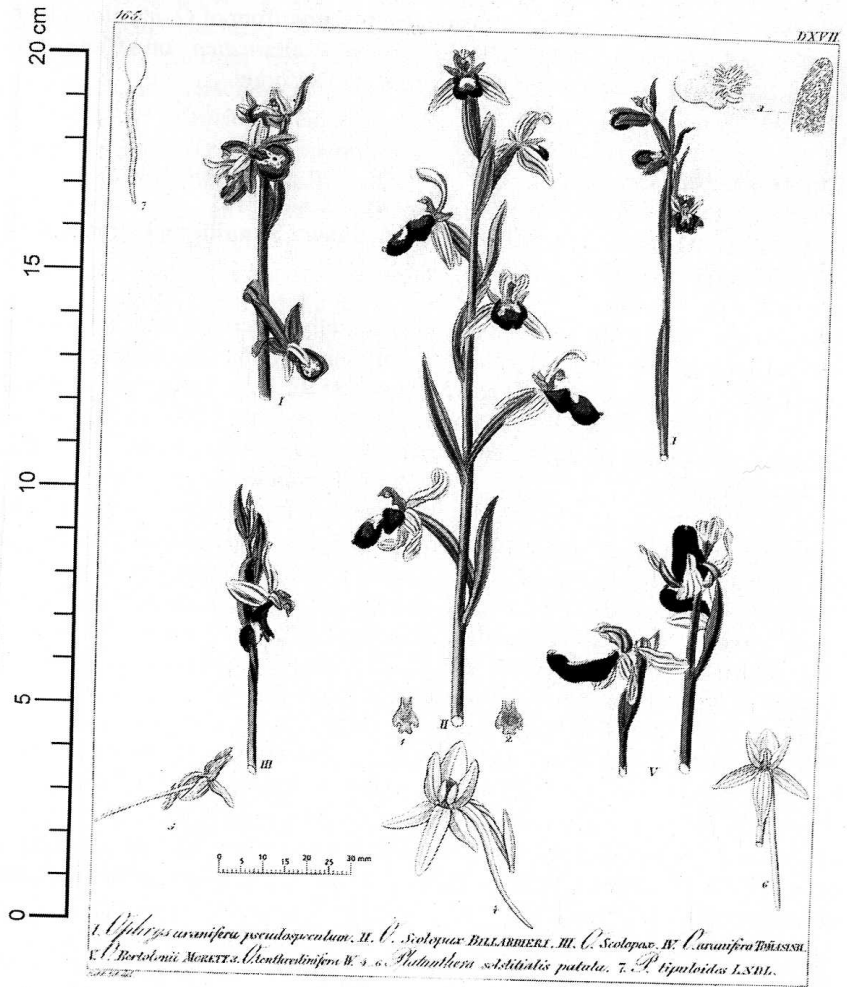


Fig. 1: REICHENBACH, H. G. fil., Tentamen Orchidiographiae Europaeae: Tab. 165. 1851a. figs. 1-2: *Ophrys lutea* var. *subfusca*, labella (REICHENBACH 1851a: 77).



Fig. 2: *Ophrys subfusca* s.str. (subsp. *subfusca* sensu LE FLOC'H et al 2010). Near Nefza, Tunisia, 10 April 2012. Photo: E. Vela.



Fig. 3: *Ophrys subfusca* s.l. (subsp. *battandieri* sensu LE FLOC'H et al 2010). Béja, Tunisia, 5 March 2007. Photo: J-M Moingeon.



Fig. 4: *Ophrys caesiella*. Red Tower, Mellicha, Malta, 29 March 2011. Photo: S. Mifsud.



Fig. 5: *Ophrys caesiella*. Qortin ta'Issopu (l/o Nadur), Gozo, 23 March 2012. Photo: S. Mifsud.

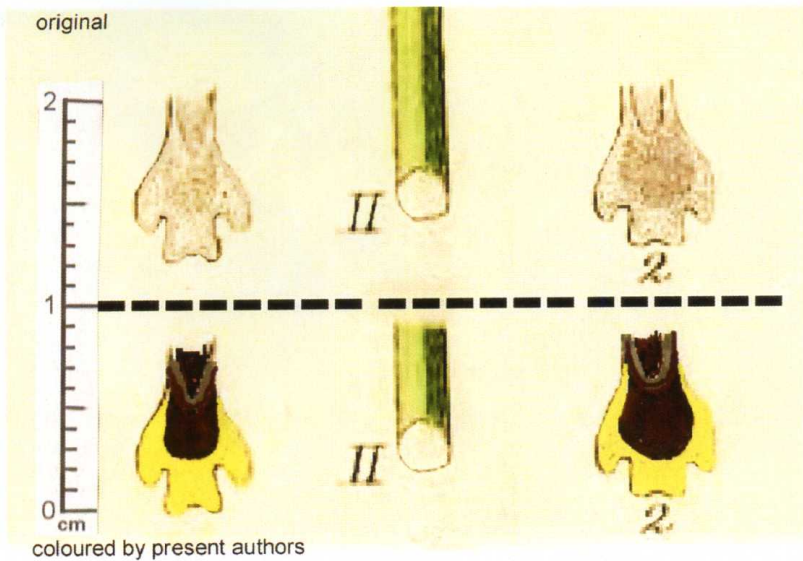


Fig. 6: Enlargement of figs. 1-2 from REICHENBACH, H. G. fil. (1851a: Tab. 165): original monochrome and copy coloured by present authors.



Fig. 7: *Ophrys iricolor* subsp. *hospitalis*. Ghar il-Kbir, l/o Dingli Cliffs, Siggiewi, Malta, 9 January 2009. Photo: S. Mifsud.



Fig. 8: *Ophrys iricolor* subsp. *hospitalis* (underlip). Ghar il-Kbir, l/o Dingli Cliffs, Siggiewi, Malta, 9 January 2009. Photo: S. Mifsud.

The identity of *O. lutea* var. *subfusca* was studied in detail by GÖLZ & REINHARD (2000: 17-29), together with other members of the *O. lutea-fusca* complex in North Africa. Although noting that the quality of Reichenbach's illustrations of *O. lutea* var. *subfusca* in figs. 1-2 (reproduced here in Fig. 1 below) is "not especially good", they also state (in English translation) "An essential feature for a judgement [on the identity of var. *subfusca*] is nevertheless still clearly distinguishable: a noticeable contrast in brightness is distinguishable between the central surface of the lip (\pm circular dark specks) and the wide border zone, which is typical of the *lutea*-complex. In the case of similar analyses on *fusca* [presumably = *O. fusca* s.l.], the central of the lip with the speculum scarcely stands out from the remaining lip surface." To illustrate this feature as described by GÖLZ & REINHARD (l.c.), an enlargement of these two lips in their original monochrome is shown in Fig. 6 below, together with a coloured copy of them prepared by the present authors to show the position and extent of these "circular dark specks" and "wide border zone". If this coloured copy is correct, then the yellow margin is much too wide for *O. caesiella* which means that var. *subfusca* as illustrated by REICHENBACH (1851a) must then be a member of the *O. lutea* complex, as was concluded by GÖLZ & REINHARD

GÖLZ & REINHARD (2000: 21) also observed (in English translation) "Reichenbach's opinions are generally based on careful examination – he had extensive reference material at his disposal. It is scarcely likely that without a reason he would have reached the conclusion that "*subfusca*" is a variety of *lutea* and not a variety of *fusca*."

Consistent with the conclusion of GÖLZ & REINHARD (2000) that *subfusca* is a member of the *O. lutea* complex, DELFORGE (2006: 409) lists *O. murbeckii* Fleischm. as a synonym. In addition, in their "Catalogue synonymique commenté de la Flore de Tunisie", LE FLOC'H et al (2010) similarly take the view that *subfusca* is a member of the *O. lutea* complex, listing the following subspecies and synonyms, as updated by E. VELA and C. A. J. KREUTZ (pers. comms. 2013) (possible synonyms are indicated by a question mark):

Ophrys subfusca (Rchb. f.) Hausskn., Mitth. Thüring. Bot. Ver., N.F. 13/14: 25. 1899, pro hybr.

Ophrys subfusca (Rchb. f.), Batt., Suppl. Fl. Algérie 84. 1910.

Ophrys lutea var. *subfusca* Rchb., Icon. Fl. Germ. Helv. 13/14: 76, Tafel 165, figs. 1-2. 1851.

Ophrys lutea subsp. *subfusca* (Rchb. f.) Murb., Acta Reg. Soc. Physiogr. Lund 10: 21. 1899.

Ophrys fusca "subsp. ou hybr." *subfusca* (Rchb. f.) E.G. Camus & A. Camus, Iconogr. Orchid. Europe, Text (1): 292. 1928.

subsp. *subfusca*

Ophrys murbeckii Fleischm., Österr. Bot. Zeitschr. 74 (7-9): 183 (1925).

Ophrys lutea subsp. *murbeckii* (Fleischm.) Soó, Repert. Spec. Nov. Regni Veg. 24: 25. 1927.

Ophrys galilaea subsp. *murbeckii* (Fleischm.) Del Prete, Webbia 38: 213. 1984.

Ophrys numida Devillers-Tersch. & Devillers, Natural. belges 81 (Orchid. 13): 297. 2000.

Ophrys subfusca subsp. *numida* (Devillers-Tersch. & Devillers) Kreutz, Die Orchidee (Hamburg) 57(1): 103. 2006.

Ophrys lutea subsp. *numida* (Devillers-Tersch. & Devillers) Kreutz, Kompend. Eur. Orchid.: 106. 2004.

?*Ophrys archimedeae* P. Delforge & M. Walravens, Natural. belges 81 (Orchid. 13): 256. 2000.

?*Ophrys subfusca* subsp. *archimedeae* (P. Delforge & M. Walravens) Kreutz, Kompend. Eur. Orchid.: 105. 2004.

?*Ophrys lutea* subsp. *archimedeae* (P. Delforge & M. Walravens) Kreutz, Die Orchidee (Hamburg) 57(1): 101. 2006.

subsp. *aspea* (Devillers-Tersch. & Devillers) Kreutz, Die Orchidee 57: 102. (2006).

Ophrys lutea subsp. *minor* sensu Vallès & Vallès-Lombard, Orchid. Tun.: 78. 1988.

Ophrys aspea J. Devillers-Tersch. & P. Devillers, Natural. belges 81 (Orchid. 13): 297. 2000.

Ophrys lutea subsp. *aspea* (Devillers & Devillers-Tersch.) Faurholdt, Ber. Arbeitskrs. Heim. Orchid. 20: 83. 2003.

subsp. *battandieri* (E.G. Camus) Kreutz, Die Orchidee 57: 102. 2006.

Ophrys battandieri E.G. Camus, Monogr. Orchid. 307. 1908.

Ophrys lutea subsp. *battandieri* (E.G. Camus) Kreutz, Komp. Orch. Europ.: 105. 2004.

However, LOWE (2011) concluded that *O. subfusca* is an earlier synonym for certain *Ophrys* sectio *Pseudophrys* taxa pollinated by the Mining Bee *Andrena flavipes*, namely *O. caesiella*, *O. gazella* and *O. africana*. As he explains, the background to this is as follows: "The identity of *Ophrys lutea* var. *subfusca* Rchb. f. (REICHENBACH 1851a: 76) and, at specific rank, *O. subfusca* (Rchb. f.) Hausskn. has hitherto been problematic (see for example GÖLZ & REINHARD

2000). The plant was described with the diagnosis “fascia velutina prope marginem attingente. Haec varietas forsā nos coget, ut utramque conjungamus. An hybrida existimanda? Reperi inter flores *Ophrydis* luteae a cl. Durieu explantos.” Further details are provided under the heading of *Ophrys fusca* (REICHENBACH 1851a: 74) and in the German language version (REICHENBACH 1851b: 95). The critical factors are that the taxon has a labellum with a pilosity that extends almost to the edges and that the margin of the labellum is yellow. Two illustrations are provided (REICHENBACH 1851a: 99 tab, 165, figs. 1-2) and reproduced here in Fig. 3 [= LOWE 2011: 474]. The material upon which the illustrations were made was collected by DURIEU from near Oran in Algeria (REICHENBACH 1851a: 74 & 1851b: 95), however no matching material has been found within REICHENBACH’s herbarium at Vienna (BAUMANN & KÜNKELE 1986: 567) or other sources.”

As further background, LOWE (2011) states that “The identity of the material collected by DURIEU from Oran, Algeria is assisted by material in the Muséum national d’Histoire Naturelle, Paris. In particular P00428830 collected by M. DE MARSILLY on 18 February 1847 ‘audessu [sic] de Christel, Oran’ and shown here in Fig. 10 [=LOWE (2011; 478)]. The early flowering date is consistent with GODFERY (1925: 38) who noted a flowering time of January - February for the small form of *O. fusca*.” However, even if the specimens concerned are attributable to *O. caesiella*, there is no evidence that they are the same species as the *O. lutea* var. *subfusca* plants found near Oran by Durieu. It is clearly possible that more than one species of *Ophrys* grew near Oran in the 1840s.

Lowe’s main reason for concluding that *O. subfusca* is an earlier synonym *O. caesiella*, *O. gazella* and *O. africana* is based on a comparison of *Ophrys lutea* var. *subfusca* with specimens of *O. subfusca* sensu Lowe (= *O. caesiella*) and *O. murbeckii*. This comparison is in the form of a Venn-type diagram shown in Fig. 1 of his paper entitled “Discriminant analysis of labellum characters with 95% confidence limits of *Ophrys subfusca* and *O. murbeckii* colonies from Tunisia and 13 mm for labellum length shown by bold squares.” (LOWE 2011: 459). Nevertheless, despite the claimed 95% confidence, there are doubts as to the accuracy of this analysis. This is because the *O. subfusca* labella used for this discriminant analysis were Reichenbach’s two illustrations of *O. lutea* var. *subfusca* in [figs.] 1 and 2 on Tab. 165. As can be seen from Fig. 1 and, more clearly, from the monochrome enlargement of Reichenbach’s figs. 1 and 2 in Fig. 6, these illustrations do not have the appearance of having been accurately drawn to represent the precise dimensional proportions of the lips, as would be needed for any meaningful discriminant analysis. Also, although the illustrations look as if they probably represent dried specimens, there is nothing to indicate if this is the case. It is therefore possible that they

are illustrations of specimens preserved in some other way; it is even possible that they are Durieu's illustrations of fresh flowers.

There is also another problem with the use by LOWE (2011: 459) of Reichenbach's figs. 1 and 2 on Tab. 165 for this discriminant analysis. As expressly stated in the title of Lowe's Fig. 1, the labellum characters for these two figures were "cross-validated at 11, 12 and 13 mm for labellum length". However, there is no basis for assuming that these labella were in fact 11-13 mm long. As has been confirmed by measurements made on the actual book – see also Fig. 1 the illustrated lips are 8.5 and 8 mm long respectively, consistent with the dimensions for *O. subfusca* sensu DELFORGE (2006: 409). This small size of Reichenbach's figs. 1 and 2 compared with his other illustrations on the same Table and elsewhere in the same book clearly suggests that these lips were indeed very small. BAUMANN & KÜNKELE (1986: 567) and DEVILLERS & DEVILLERS-TERSCHUREN (2000a: 289) both state that the scale of these illustrations is 1:1. As explained by H. BAUMANN (pers. comm. 2013):

"If you compare the inflorescences and flowers, and not only on the same Plate [= Tab. 165], you can see, that nearly all flowers, with the exception of details, are presented in this scale (Tab. 165: e.g. spur of *Platanthera bifolia* 26-33 mm, lip length of *Ophrys araneola* 5-8 mm and *O. bertolonii* 13-17 mm). These measurements correspond approximately with the data published by BAUMANN et al. (2006) in "Orchideen Europas". By reason of this supposition, the two lips of "*Ophrys subfusca*" have only a small size (8.5-9 (-10) × 5.9-6.1 mm). The size and shape of the two lips and the description ("Sammtbinde fast bis zum Rande") indicate a small-flowered representative of the *Ophrys fusca* - group from North Africa, which I found at different places in this region."

If the scale of Reichenbach's figs. 1 and 2 is 1:1, then the lips are too small for *O. caesiella* (syn. *O. gazella*, *O. africana*): as first described, *O. caesiella* has a lip length of 9-13 mm (DELFORGE 2000:234), *O. gazella* has a lip length of 9-10 mm (DEVILLERS & DEVILLERS-TERSCHUREN 2000b: 322), *O. africana* has a lip length of 10.2-14.2 mm (FOELSCHE & FOELSCHE 2001: 656). Our studies on Malta similarly showed a labellum length of (9) 10-13 mm (MIFSUD & LEWIS 2011: Table 6). But, as has already been noted by GÖLZ & REINHARD (2000: 23), it cannot be verified that the scale of figs. 1 and 2 is 1:1. Equally, it cannot be verified that the lips were 11-13 mm long as assumed by Lowe for the purposes of his discriminant analysis. (Indeed, if the lips were 11-13 mm long, such discriminant analysis would be unnecessary since they would, in any case, then be too big to be *O. murbeckii*.)

A further problem is that Lowe's discriminant analysis was based on a comparison of Reichenbach's illustrations of *O. lutea* var. *subfusca* with only *O. murbeckii*. The possibility cannot be excluded that the plants found at Oran by Durieu were a different member of the *O. lutea* complex known from Algeria, in particular *O. lutea* subsp. *numida* (syn. *O. subfusca* subsp. *numida*) and *O. lutea* subsp. *battandieri* (syn. *O. subfusca* subsp. *battandieri*).

SOCHE & ROMOLINI (2012: 80-81) also discuss the conclusions on *subfusca* published by LOWE (2011). However, in their view, *O. lutea* var. *subfusca* is a *nomen confusum* and that *O. subfusca* sensu Haussknecht is not legitimate because the relevant description related to the hybrid *O. fusca* × *O. lutea*.

For the above reasons, present authors are of the view that – although it may remain a possibility – the discriminant analysis published by LOWE (2011) does not satisfactorily establish that *O. subfusca*, syn. *O. lutea* var. *subfusca* as described and illustrated by REICHENBACH (1851a), is an earlier synonym for *O. caesiella*, *O. gazella* and *O. africana*. Instead, *O. subfusca*, if legitimate, should continue to be considered as a member of the *O. lutea* complex as concluded by GÖLZ & REINHARD (2000: 17-27) and listed by LE FLOCH et al (2010).

2.2 Unification of the names *Ophrys caesiella*, *O. gazella*, and *O. africana*

In our earlier paper, we reported that the results of field studies at various locations on Malta indicated that *O. caesiella*, *O. gazella* and *O. africana* are all the same species (MIFSUD & LEWIS 2011). However, we did not formally unite these three names under one species. A similar conclusion concerning these three names was also reached by LOWE (2011) who listed them as later synonyms of *O. subfusca*. However, as also explained above, the present authors have concluded that it has not been satisfactorily established that they are such synonyms.

Under Article 11.4 of the *International Code of Nomenclature of algae, fungi, and plants* (ICN), when two or more names are united, the earliest legitimate name has priority. In this case, the name *O. africana* (2001) was published last. However, the earlier names *O. caesiella* (DELFORGE 2000: 233) and *O. gazella* DEVILLERS & DEVILLERS-TERSCHUREN (2000b: 322) were both published simultaneously in *Natural. belges* (2000), vol. 81(3) so these have equal priority under Article 11.4 and 11.5. In this case, the first such choice to be effectively published establishes the priority of the chosen name; this choice is effected by adopting one of the competing names and simultaneously

relegating to synonymy the other(s) (see Note 3 to Article 11.5).

O. caesiella has been reported much more widely than *O. gazella* – namely from Malta and Sicily in addition to North Africa. Accordingly, it is chosen under Article 11.4 and 11.5 for the combined species, as follows:

Ophrys caesiella P. Delforge, *Natural. belges* 81 (Orchid. 13): 233 (2000).

Synonyms:

Ophrys africana G. Foelsche & W. Foelsche, *Jour. Eur. Orch.* 1(2): 656 (2001).

Ophrys gazella J. Devillers-Terschuren & P. Devillers, *Natural. belges* 81 (Orchid. 13): 322 (2000).

Ophrys fusca subsp. *caesiella* (P. Delforge) Kreutz, *Kompend. Eur. Orchid.* 93 (2004).

Ophrys fusca subsp. *gazella* (J. Devillers-Terschuren & P. Devillers) Kreutz, *Kompend. Eur. Orchid.*, 94 (2004).

Ophrys marmorata subsp. *caesiella* (P. Delforge) Vela & R. Martin, *Catalogue synonymique commenté de la Flore de Tunisie*, 367 (2010).

2.3 Further locations of *Ophrys caesiella* on the Maltese archipelago

In our earlier paper, we also reported that, in addition to the five previously known sites on the island of Malta and one on the island of Comino, *O. caesiella* has subsequently been found by one of the present authors (SM) at il-Qortin tal-Magun on Gozo (a first record for that island), as well as at two further sites on Malta, namely Manikata (l/o Mellieha) and Wied Babu (MIFSUD & LEWIS 2011: 620). SM has now found a second site at Isopu on Gozo and two further sites on Malta as follows:

2.3.1. Qortin ta'Issopu (l/o Nadur), Gozo (VV3790), 23 March 2011:

A dense population of about 200 specimens was found on the escarpments facing west/northwest; growing in labiate garrigue over an area of roughly 60×60m. A typical specimen is illustrated in Fig. 5. A small population of *O. iricolor* subsp. *hospitalis* was previously reported by the present authors from this station (MIFSUD & LEWIS 2011: 613). This newly-found population is possibly the second largest on the Maltese archipelago as it outnumbers the population at the Red Tower, Mellieha although not that of Bajda Ridge/San Martin which consists of several small metapopulations, mostly along its north facing slopes and ridges.

2.3.2. Xemxij, Saint Paul's Bay, Malta (VV4479), 22 February 2011:

A population of about 30 specimens was found growing in degraded garrigue on a rocky slope facing Mistra and Selmun, close to the Roman Punic tombs.

2.3.3. Wied Babu, Zurrieq, Malta (VV5164), 28 March 2011:

A clump of 9 specimens was found growing in labiate garrigue on the east bank of the Wied Babu valley. *O. iricolor* subsp. *vallesiana* also grows here (BARTOLO et al. 2001:778).

3. Reclassification of *Ophrys hospitalis* P. Delforge as a subspecies of *Ophrys iricolor* s.l.

The present authors also reported that the early-flowering form of *Ophrys iricolor* s.l. on Malta appeared attributable to *O. mesaritica*, consistent with the description of this species and the existing records of this species on the Maltese archipelago (MIFSUD & LEWIS 2011: 619-620). However, in the light of our analysis DELFORGE (2012) concluded that this early-flowering form of *O. iricolor* s.l. on Malta was morphologically different from *O. mesaritica* on Crete and described it under the new name *O. hospitalis*. The upper lip of this taxon and its characteristic underlip are illustrated in Figs 7 and 8, respectively.

The appropriate rank for names of *Ophrys* taxa is problematic. DELFORGE (2012: 69) chose the rank of species for his new name *O. hospitalis*; this is not surprising because he has expressly stated that he does not use the rank of subspecies (DELFORGE 2010: 22). As is apparent from the summaries above, in their earlier paper the present authors also used the rank of species for the names of taxa within the *O. iricolor* s.l. complex, namely *O. iricolor*, *O. astypalaeica*, *O. eleonora*, *O. mesaritica* and *O. vallesiana*. However, having considered the matter further, we are now of the opinion that the rank of subspecies is more appropriate for these taxa, as listed by KREUTZ (2004) and BAUMANN et al. (2006).

Accordingly, *Ophrys hospitalis* now reclassified as a subspecies of *O. iricolor* as follows:

***Ophrys iricolor* Desfontaines subsp. *hospitalis* (P. Delforge) Mifsud & L. Lewis comb. et stat. nov.**

Basionym: *Ophrys hospitalis* P. Delforge, Natural. belges. 93 (Orchid 25): 69. 2012.

4. Legal protection of orchids on Malta

It is to be noted that *Ophrys iricolor* subsp. *hospitalis* (under the name *O. cf. mesaritica*) and *O. caesiella*, together with other wild orchids, are now protected in Malta under the Flora, Fauna and Natural Habitats Protection Regulations, 2006 - Legal Notice 311 of 2006 as amended (FFNHPR, 2006). In particular, Regulation 24(1) provides that such orchids may not be deliberately picked, collected, cut, uprooted, destroyed or damaged. However, under Regulation 43, the Malta Environment & Planning Authority may issue a permit prior to the taking and/or keeping of any specimen, the export of any specimen, or *bona fide* scientific studies.

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