*Detailed pollination process in the studied Clades*

*Pollination in the Subg.* Salvia *Clade*

Four endemic species were studied in this clade. *Salvia blepharochlaena* and *S. recognita* have quite large flowers (30–50 mm long, table A3) when comparing all other studied species (fig. 1A–B, 2A–E), so only large bees (i.e. *Bombus argillaceus*, *Anthophora mucida*, *A. plumipes* and *A. pubescens*) were able to pollinate their flowers with over 80% release of the staminal lever mechanism and varying stigma contact ratio between ca. 24% and 85% (table A1–A2). *Bombus argillaceus* was the most successful pollinator with respect to release of the staminal lever mechanism, stigma contact and high visitation frequency in *S. blepharochlaena* and *S. recognita*. Due to the large body size of the main pollinators of *S. blepharochlaena* and *S. recognita*, pollen grains were loaded onto the posterior head, thorax and/or anterior abdomen parts (table A1–A2, fig. 2B, 2D). In *S. blepharochlaena* and *S. recognita* with very large and half closed corolla tube entrances, *Apis mellifera* and other small bees (even some beetles) easily entered the corolla tube and were seen robbing nectar (fig. 2C, E). *Salvia absconditiflora* and *S. tchihatcheffii* have small to medium size flowers, therefore they are pollinated by considerably smaller-sized pollinators than are seen in *S. blepharochlaena* and *S. recognita* (table A1, fig. 2F, G). Thus, although *Apis mellifera* is a nectar robber in *Salvia blepharochlaena* and *S. recognita*, it is the main pollinator for *S. absconditiflora* and *S. tchihatcheffii*. *Salvia absconditiflora* was studied both in study area 1 (Ankara, METU campus) and study area 2 (Nevsehir, above Dervent valley) (table A1). Morphometric measurements demonstrate that the flowers of *Salvia absconditiflora* are clearly larger in study area 1 (flower length 18–25 mm, n = 30, table A3) relative to in study area 2 (flower length 10–18 mm, n = 30) (t-value= 12.64, p < 0.05). *Salvia absconditiflora* was pollinated by four and seven bee species in the two study areas, respectively (table A1). Only *Apis mellifera* was observed in both study areas. The other pollinators were seen either in the study area 1 or in the study area 2. In addition to *Apis mellifera*, *Amegilla quadrifasciata*were the most successful pollinator with respect to release of the staminal lever mechanism, stigma contact, visitation frequency and handling time in study area 1 (table A1, A2). In study area 2, however, *S. absconditiflora* had no main pollinator as seven species each made minor contributions to reproductive success (table A1).

*Pollination in the Subg.* Sclarea *Clade*

All studied species in the subg. *Sclarea* clade possess a very narrow corolla tube entrance which is also completely closed by spoon shaped lower lever arms (fig. 1E–J, A2A). Therefore, this flower construction minimizes illegitimate flower visitation. *Salvia hypargeia*, *S. candidissima* and *S. cyanescens* have flowers greater than 20 mm in length, whereas the other species in this clade have smaller flowers.

*Salvia virgata* is the most attractive species among all studied species based on pollinator numbers. *Salvia virgata* was pollinated by 23 insect species, including 20 bee species from seven genera of Apidae and three fly species from three genera of Tabanidae and Nemestrinidae (table A1). Though fluctuations in pollinator numbers are evident year to year, the dominant bee genera were *Anthophora* (5 spp.), *Bombus* (4 spp.), and *Eucera* (4 spp.). *Nemestrinus reticulatus* Latreille (Nemestrinidae) was the most frequently observed fly in 2010; however, it was not observed after 2011. On the other hand, the fly *Pangonius pyritosus* appeared as a low frequent visitor on *S. virgata* flowers for nine years. *Bombus terrestris* (fig. 2H) was the most successful species in terms of release of the staminal lever mechanism (92%), stigma contact (72%), high visitation frequency, and average 0.9 ± 0.4 seconds handling time in *S. virgata*. The other pollinator species have seen and they are making relatively low contribution to reproductive success in *S. virgata* (table A2).

Pollination of *Salvia hypargea* (fig. 2I) was recorded in both study area 1 (Ankara, METU campus) and 2 (Nevsehir, above Dervent valley). *Salvia hypargeia* was pollinated by four and two bee species in study areas 1 and 2, respectively, with *Anthophora* species the main pollinators in both study areas. Overall, the field observations indicate, that while *Anthophora aestivalis* and *A. pubescens* were the main pollinators in study area 1, *A. fulvitarsis* and *A. pubescens* were the main pollinators in study area 2 (table A1).

*Salvia aethiopis* was pollinated by eight bee species, with one additional illegitimate visitor. *Anthophora aestivalis* and *Apis mellifera* visited the flowers with “high” visitation sequence, whereas *A. pubescens and* *Bombus zonatus* visited the flowers with “medium” visitation sequence (table A1). However, these latter were more successful in releasing the staminal lever and in stigma contact (table A2). Therefore, these four species represent the main pollinators for *S. aethiopis*.

*Salvia candidissima* and *S. cyanescens* are a very similar species pair in terms of vegetative and floral morphology (white vs. light to dark blue-violet flowers), and they have overlapping flowering seasons in study area 1. Although most *Salvia* flowers are hermaphroditic but protandrous with temporal change in male and female function, gynodioecious populations of both *Salvia candidissima* and *S. cyanescens* were found in study site 1. Both *Salvia candidissima* and *S. cyanescens* were pollinated by six bee species (table A1). *Anthophora robusta*, *Bombus argillaceus* and *Rhodanthidium septemdendatum* successfully pollinated the species with “medium” visitation frequency. Although *Apis mellifera* visited these flowers with “medium” frequency, it not always successfully contacted the pollen sacs and stigma likely due to its small body size and the long upper staminal lever arm of the flowers. Contact of the abdomen of *A. mellifera* was occasionally seen with pollen sacs, but not with the stigma (fig. 2K). Following pollination observations, pollinators were captured for morphometric measurements; however, video quality was not adequate for quantifying the release of the staminal lever mechanism nor for stigma contact.

Hybrid individuals between *Salvia candidissima* and *S. cyanescens*, as previously reported (Hedge 1982), were found in study area 1. Hybrid specimens had color variations in the corolla and calyx. Further complicating the pollination ecology of these two species, both species are gynodioecious. Female flowers have longer styles, which position further down the corolla tube entrance than they do in hermaphroditic flowers (fig. 2L). In this way, the stigma makes better contact with the pollinator body. Although we did not observe stigma contact with *Apis mellifera*, contact might occur in female flowers due to their very long and downward styles.

*Salvia viridis* was primarily pollinated by *Anthophora aestivalis* (90.0% release of the staminal lever mechanism and 63% stigma contact) with average handling time 0.9 ± 0.4 seconds (n = 36) (table A2). *Rhodanthidium septemdendatum* was observed only a few times as a pollinator (table A1).

*Pollination in the* Salvia verticillata *Clade*

In this clade, the lower lip of corolla is bent downward and presents a style that is not hidden below the upper lip (figs. 1K–L, 2N–O). The flower construction forces the insects to behave in a constant and predictable manner. Therefore, pollen is precisely loaded on the anterior or posterior head part (between the eyes, fig. 2N–O) of pollinators irrespective of their body size, head width, and proboscis length. In addition, detailed observations demonstrate that foraging bees and flies walking horizontally across verticillasters and vertically up and down on the inflorescence, contact the anthers and stigma the ventral side of their bodies (fig. 2N–O). Thus, pollen grains are transferred to both the frontal head and ventral side of the visitor body, and increase geitonogamy in these species. Both *Salvia verticillata* subsp. *amasiaca* and *S. russellii* have a large number flowers in the inflorescences ranging between 300-9500 flowers (ca. 30–40 flowers per verticillaster, 5–10 verticillasters in per stem, up to 30 stems per individual). Therefore, both species offered a large amount of nectar and displayed constant pollination activity during field observations despite their small to medium sized populations. *Salvia verticillata* subsp. *amasiaca* was pollinated by seven insect species, among them one fly (table A1). When comparing the visitation sequence, handling time and pollinator size (table A2), *Bombus terrestris*, *Apis mellifera*, and the fly *Pangonius pyritosus* were the main pollinators in *S. verticillata* subsp. *amasiaca* in study area 1. *Salvia russellii* was pollinatedby ten species. Its main pollinator was *Apis mellifera*. Although *S. russellii* was pollinated by five different *Eucera* species, these pollinators did not visit co-occurring *S. verticillata* subsp. *amasiaca* (table A1).

*Population Size, Pollinator Diversity, and Species Isolation within Study Areas*

Flowering times of the 12 *Salvia* species in the three study areas are provided (fig. 3). The 12 species were visited by 39 bees and 3 flies and the pollinator network across this suite of species of *Salvia* and their pollinators is depicted in fig. 4.

*Study site 1:* *METU-Campus*

Three species, *Salvia virgata*, *S. viridis* and *S. absconditiflora*, have large population sizes (> 1000 individuals), while the remaining seven have medium sized populations (300–800 individuals). A total of 34 bee species from 15 genera and three fly species were observed on the ten *Salvia* species, with most of them observed on *S. virgata*, *S. aethiopis*, *S. russellii*, and *S. verticillata* subsp. *amasiaca*.

*Salvia russellii* and *S. verticillata* subsp. *amasiaca* are morphologically very different from the rest of the species in study site 1 in their overall floral shape and size. Therefore, *S. russellii* and *S. verticillata* subsp. *amasiaca* were mechanically isolated from the other species. Although *S. russellii* began flowering earlier than *S. verticillata* subsp*. amasica* at this site, they had overlapping flowering later in June. *Apis mellifera* extensively visited both species in later June. A few individuals assumed to be hybrids may result from this pollinator sharing.

*Salvia tchihatcheffii* flowered earlier than most of the other species in study site 1. It overlapped considerably with *S. absconditiflora*, but only partly with *S. hypargeia*, *S. aethiopis* and *S. viridis* from the end of May to the second week of June (fig. 3). *Salvia tchihatcheffii* and *S. absconditiflora* shared only *Apis mellifera* as a pollinator (fig. 4). Due to the smaller corolla in *S.* *tchihatcheffii*, pollen grains were placed on the head and anterior part of thorax in *Apis mellifera*. However, pollen grains were placed on the posterior thorax of this pollinator by the larger flowered *S. absconditiflora*, thus providing mechanical isolation between the two co-flowering species via differential pollen placement. *Salvia tchihatcheffii* did not share pollinators with *S. hypargeia* or *S. viridis* which provides behavioral isolation between the species. Although *S. tchihatcheffii* shared *Apis mellifera* as a pollinator with *S. aethiopis* during a short time interval, we did not observe any hybrids between the two species at this study site or in any other area of sympatry and there are no published records or observations of such hybrids. In addition, *S. tchihatcheffii* has 2n = 18 (Özkan 2006) and *S. aethiopis* has 2n = 22 (Ranjbar et al. 2015) chromosome numbers.

*Salvia hypargeia* flowered at the same time as *S. absconditiflora*, *S. tchihatcheffii*, *S. russellii* and *S. aethiopis*. *Salvia hypargeia* exhibited both mechanical and behavioral isolation from co-occurring *S. absconditiflora*, *S. tchihatcheffii*, *S. russellii* as the former was pollinated by different species. *Salvia hypargeia* does share *Anthophora aestivalis* and *A. pubescens* as pollinators with *S. aethiopis* in study area 1. However, *S. hypargeia* and *S. aethiopis* are mechanically isolated as *S. hypargeia* has a considerably larger corolla and corolla tube than does *S. aethiopis* allowing pollen grains to be loaded on different parts of the shared pollinators (table A2).

The small, annual *S. viridis* flowered synchronously with all the perennial species: *S. absconditiflora*, *S. tchihatcheffii*, *S. virgata*, *S. hypargeia,* *S. aethiopis, S. candidissima, S. cyanescens, S. russellii*,and *S. verticillata* subsp. *amasica*. However, *S. viridis* utilized different pollinators (behavioral isolation) relative to *S. absconditiflora*, *S. tchihatcheffii*, *S. russellii*,and *S. verticillata* subsp. *amasica*. Due to the smaller floral size of *S. viridis* relative to *S. hypargeia*, *S. candidissima,* and *S. cyanescens*, pollen grains are placed on different parts of the same pollinators (mechanical isolation). *Salvia viridis* shared *Anthophora aestivalis* as a pollinator with *S. aethiopis* and *S. virgata* and used the same body position on the insect for loading pollen grains. Although no obvious behavioral or mechanical isolation appears to be operating, genetic isolation may be due to their different life cycles (annual vs. perennial), meiotic incompatibilities with their different chromosome numbers (2n = 16 in *S. viridis*, 2n = 16 or 32 in *S. virgata*, 2n = 22 in *S. aethiopis,* Martin et al. 2011, 2015;Ranjbar et al. 2015), or other postzygotic barriers.

*Salvia virgata*, *S. candidissima*, *S. cyanescens*, and *S. verticillata* subsp. *amasiaca* overlapped in flowering during June and July. *Salvia verticillata* subsp. *amasiaca* is mechanically isolated from the other species due to its different corolla morphology and smaller flower size. Although *S. virgata* shared *Anthophora robusta* as a pollinator with *S. candidissima* and *S. cyanescens*, the species were mechanical isolated as pollen grains were loaded on different parts of the pollinators’ body (tables A1, A2). *Salvia aethiopis* shared the same pollinators with *S. virgata*, but the two species are phenological isolated as *S. aethiopis* flowers earlier. In addition, *S. virgata* has 2n = 16, 32 and *S. aethiopis* has 2n = 22 chromosome numbers (Martin et al. 2011;Ranjbar et al. 2015).

*Salvia cyanescens* is morphologically very similar to *S. candidissima* but differs from the latter by its light lilac corolla (not white with yellow lipped corolla) and calyx (not greenish) and its slender habit. Both species were visited by the same pollinators and flowered at the same time.

*Study site 2:* *Devrent*

Nine species of bees from four genera were observed pollinating the synchronously flowering *S. blepharochlaena*, *S. hypargeia*, and *S. absconditiflora* at study site 2. All studied species have small population sizes (*S. blepharochleana* has 100-200 individuals, and the other two species <100 individuals). *Salvia blepharochlaena* exhibits behavioral isolation relative to *S. hypargeia* and *S. absconditiflora* with its pollination specialization to *Bombus argillaceus*. Although infrequent visits of *B. argillaceus* to *S. absconditiflora* were documented, pollen grains were placed on a different part of the pollinator body, relative to *S. blepharochlaena* pollen, due to the considerably smaller corolla size of *S. absconditiflora*; thus, the two species exhibit mechanical isolation (tables A1, A2). *Anthophora pubescens* visited both *S. blepharochlaena* and *S. hypargeia* only three times in these four years of observation. Although pollen grains appear to be loaded on the same body part of *A. pubescens* (dorsal thorax), we have never observed hybrids between these two species. The chromosome numbers of the two are different: *S. blepharochlaena* with 2n = 14, *S. hypargeia* with 2n = 22 (Ranjbar et al. 2015; Tekin et al. 2016).

*Study site 3: Zemi Valley*

Five bee species from three genera were observed pollinating *Salvia recognita*, which has a large population (>1000 individuals) in Zemi Valley. *Salvia recognita* and *S. blepharochlaena* shared *Bombus argillaceus* as pollinators, but the two species appear genetically isolated based ecological (habitat), geographical, and phenological isolating mechanisms. The two populations are separated physically about 10 km. While *S. blepharochlaena* grows in open dry steppe, *S. recognita* grows in humid and shrubby and woody valleys. Lastly, *S. blepharochlaena* flowered a little earlier (in May) and with a shorter flowering span than did *S. recognita* which flowered from mid-May to mid-August with the main peak in June and July.

**Literature Cited Only in the Online Appendix**

Martin E, O Cetin, A Kahraman, F Celep, M Dogan 2011 A cytomorphological study in some taxa of the genus *Salvia* L. (Lamiaceae). Caryologia 64:272–287.

Martin E, F Altınordu, F Celep, A Kahraman, M Doğan 2015 Karyomorphological studies in seven taxa of the genus *Salvia* (Lamiaceae) in Turkey. Caryologia 68:13–18.

Özkan M 2006 Karyotype analysis on two endemic *Salvia* L. (Lamiaceae) species in Turkey. Int J Bot 2:333–335.

Ranjbar M, A Pakatchi, Z Babataheri 2015 Chromosome number evolution, biogeography and phylogenetic relationships in *Salvia* (Lamiaceae). J Plant Taxon Geogr 70:293–312.

Tekin M, O Gedik, Y Kiran, M Kurşat 2016 Karyological studies on six endemic plant taxa in Turkey. Cytologia 81:363–370.