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Weeds of the traditional agriculture of Crete

Abstract

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The goal of this research project was to carry out a thorough floristic survey of weeds in the traditional agriculture of the South Aegean island of Crete, Greece. Fieldwork was carried out by the authors from 2.4.-7.5.2003. Fifty cultivated localities were surveyed, at which 2455 plant records and 483 herbarium gatherings were made. Living material was collected for cytological investigation at UPA. A relational database of the results (localities, taxa observed, herbarium specimens, living material) was created and is placed online as an electronic supplement. The collections and observations were critically evaluated, and a catalogue of the taxa recorded at each locality is provided here. Distributional notes are provided on significant records and selected weed species that are indicators of (obligate to) traditional agriculture.

Introduction

Changes from traditional to modern agricultural practices on the South Aegean island of Crete, Greece, during the 20th century have adversely affected the non-invasive Mediterranean weed flora there. Many of these species were presumably originally introduced by humans (such plants are termed archaeophytes), and they often exhibit peculiar, restricted distributions reflecting the isolation under which the traditional agriculture developed. The declining populations of archaeophytes are an important but overlooked issue in the conservation of Mediterranean biodiversity. It is currently difficult or impossible to measure population decline or threat levels of Cretan weeds during the 20th century because insufficient comparative historic data exist. This is at least partly because weeds tend to be undercollected during botanical excursions. The goal of this research project, therefore, was to carry out a thorough floristic survey of weeds in the traditional agriculture of Crete not only to assess current distribution but also to provide an accurate data set for comparison by future surveys.

Material and methods

Exactly five weeks were spent in the field in Crete from 2.4.-7.5.2003. The whole island except the high mountains (above 1200 m) was covered, working from the warmer, drier east to the cooler, wetter west using a rented minivan. Turland was accompanied in the field for four periods

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of approximately one week by (1) Bareka, (2) Charalambos Kyriakopoulos, (3) Kamari and Phitos, and (4) Spyros Karakitsos. The criterion for choosing localities to survey was the presence of 'traditional agriculture', which was inferred from (1) a rich weed flora, (2) the absence or non-dominance of the highly invasive South African geophyte *Oxalis pes-caprae* L., (3) the absence of herbicidal spraying, and (4) the absence of irrigation pipe systems. Fifty cultivated localities (fields, vineyards and olive groves) were surveyed in detail for vascular plant taxa. Precise latitude/longitude coordinates and altitude were recorded for each locality by using two Garmin 'GPS 12' GPS units in tandem (accuracy stated by manufacturer to be 15 m), together with notes on size of locality, habitat, crops and a brief description of the surrounding area. The approximate area of each locality was estimated by walking with c. 1 m paces. In most cases, a single field was surveyed, except for some very large fields or extensive, contiguous olive groves, where only a part was surveyed. Islands of phrygana or other non-cultivated habitat within fields, or such habitats around field margins, were excluded from the surveys, but non-weeds actually growing in the fields (such as isolated trees or shrubs) were included. A list of all plant taxa seen at each locality, a total of 2455 records, was compiled. Herbarium specimens were collected. The aim was to try to collect only flowering or fruiting material and to attempt to make at least one gathering of every species recorded during the project as a whole (not from every species at each locality). However, extra gatherings were made for certain more critical taxa. The altogether 483 numbers were collected in sets of four duplicates wherever possible, one each for B, BM, MO and UPA. Living material was also collected and is being cultivated at UPA for cytological studies. A Microsoft Access database of the localities surveyed and taxa recorded has been placed online, as an electronic supplement to this paper, at http://www.bgbm.fu-berlin.de/bgbm/library/publikat/willd34/turland&al.htm.

List of localities surveyed

The 50 localities surveyed are mapped (Fig. 1) and listed below in the order visited. The following format is used: locality number, number of species recorded, nomos ('Nom.', prefecture), eparhia ('Ep.', administrative district), locality, latitude, longitude, altitude (in metres), habitat, approximate area (in square metres), surrounding habitats, date (day.month.year) and collectors.

1. [22 spp.] Nom. Lasithiou, Ep. Sitias: 700 m E of Sitanos, N side of road to Skalia and Zakathos, 35°06'55"N, 26°09'47"E, 615 m, small ploughed field with *Vicia* ?crop, 1250 m^2, isolated, surrounded by phrygana with a few small trees, 3.4.2003, *Bareka & Turland*.

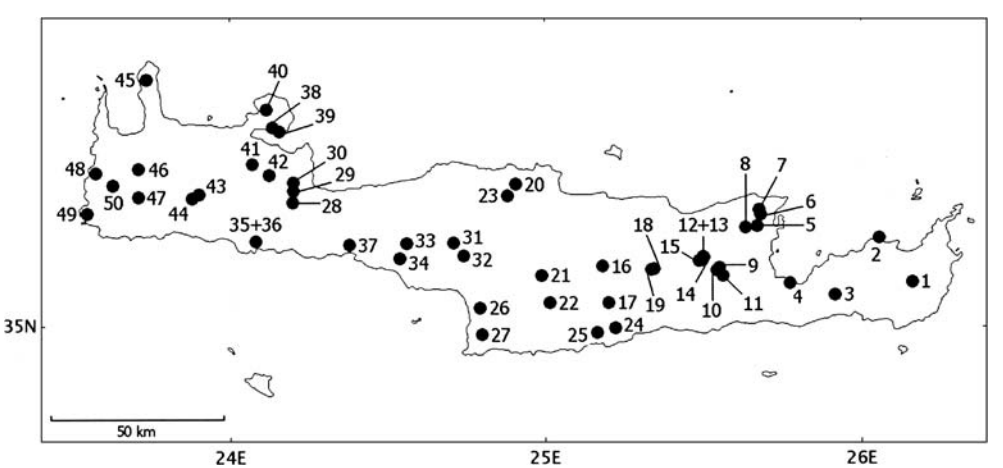


Fig. 1. Localities surveyed during the fieldwork in Crete.

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2. [31 spp.] Nom. Lasithiou, Ep. Sitias: 1 km N of Faneromeni monastery W of Sitia, at base of headland, 35°13'48"N, 26°03'30"E, 30 m, field with cereal crop, 2000 m², isolated, surrounded by open stony coastal ground, 3.4.2003, *Bareka & Turland*.

3. [13 spp.] Nom. Lasithiou, Ep. Sitias: 1 km E of Orino, 35°04'56"N, 25°55'09"E, 705 m, small ploughed field on slope without obvious crop, 300 m², cultivated area with many small fields, abandoned terraces and a few olives, 4.4.2003, *Bareka & Turland*.

4. [32 spp.] Nom. Lasithiou, Ep. Mirambellou: between N coast and Faneromeni monastery SE of Agios Nikolaos, 35°06'44"N, 25°46'38"E, 190 m, olive grove on terrace, 100 m², surrounded by olive groves all over hillside, 4.4.2003, *Bareka & Turland*.

5. [35 spp.] Nom. Lasithiou, Ep. Mirambellou: 1.5 km E of Fourni, near chapel, 35°15'37"N, 25°40'22"E, 450 m, olive grove, 500 m², several similar olive groves in area, 5.4.2003, *Bareka & Turland*.

6. [33 spp.] Nom. Lasithiou, Ep. Mirambellou: 1 km NE of Dories, 35°17'21"N, 25°41'04"E, 560 m, small stony abandoned field in doline, 650 m², surrounded by olive trees, 5.4.2003, *Bareka & Turland*.

7. [48 spp.] Nom. Lasithiou, Ep. Mirambellou: Areti monastery, field adjacent to both monastery and main road, 35°18'04"N, 25°40'43"E, 545 m, abandoned field, 1000 m², few other fields in area, otherwise limestone garigue, 5.4.2003, *Bareka & Turland*.

8. [31 spp.] Nom. Lasithiou, Ep. Mirambellou: oropedio (mountain plain) 500 m SW of Kastelli E of Neapoli, 35°15'24"N, 25°38'13"E, 290 m, level fallow field, 300 m², surrounded by similar fields, vineyards and olive groves, 5.4.2003, *Bareka & Turland*.

9. [14 spp.] Nom. Lasithiou, Ep. Mirambellou: N side of Katharo plain, 35°09'04"N, 25°33'16"E, 1100 m, small field on terrace without obvious crop, 200 m², surrounded by many similar fields and vineyards, 6.4.2003, *Bareka & Turland*.

10. [15 spp.] Nom. Lasithiou, Ep. Mirambellou: SW side of Katharo plain, 35°08'38"N, 25°32' 44"E, 1120 m, large field with cereal crop, 1000 m², surrounded by similar fields, 6.4.2003, *Bareka & Turland*.

11. [15 spp.] Nom. Lasithiou, Ep. Mirambellou: S of Katharo plain, on road to Giannitsi, 35°07'49"N, 25°33'56"E, 1140 m, small field inaccessible to tractors, schist substrate, without obvious crop, inorganic fertilizer applied, 700 m², surrounded by phrygana on schist, 6.4.2003, *Bareka & Turland*.

12. [18 spp.] Nom. Lasithiou, Ep. Lasithiou: Lasithi plain, SE of Kristallenia monastery, 35°10'45"N, 25°30'15"E, 840 m, large level ploughed field, 4500 m², many similar fields and orchards in area, 7.4.2003, *Bareka & Turland*.

13. [28 spp.] Nom. Lasithiou, Ep. Lasithiou: Lasithi plain, SE of Kristallenia monastery, 35°10'47"N, 25°30'14"E, 840 m, large level fallow field, 1000 m², many similar fields and orchards in area, 7.4.2003, *Bareka & Turland*. Locality 13 is adjacent to, and north of, locality 12.

14. [40 spp.] Nom. Lasithiou, Ep. Lasithiou: Lasithi plain, 500 m S of Agios Konstandinos, 35°10'15"N, 25°30'04"E, 850 m, level field with a few fruit trees, ¾ fallow, ¼ with cereal crop, 1200 m², many similar fields in area, 7.4.2003, *Bareka & Turland*.

15. [22 spp.] Nom. Lasithiou, Ep. Lasithiou: Lasithi plain, between Agios Konstandinos and Koudoumalia, N side of road, 35°10'09"N, 25°29'24"E, 835 m, ploughed field without crop, 600 m², surrounded on 3 sides (N, W, S) by similar fields with some fruit trees, 7.4.2003, *Bareka & Turland*.

16. [40 spp.] Nom. Irakliou, Ep. Monofatsiou: 2 km N of Amourgelles, W side of road to Panorama, 35°09'19"N, 25°11'00"E, 545 m, large field on slope with *Hordeum* crop, 2100 m², surrounded by phrygana, a vineyard and olive groves, 10.4.2003, *Kyriakopoulos & Turland*.

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17. [43 spp.] Nom. Irakliou, Ep. Monofatsiou: 300 m W of Neohori, S side of road, 35°03'35"N, 25°12'14"E, 265 m, olive grove without herbicide or irrigation, 500 m^2, surrounded by many olive groves but most full of *Oxalis pes-caprae,* 10.4.2003, *Kyriakopoulos & Turland*.

18. [47 spp.] Nom. Irakliou, Ep. Pediadas: 500 m SW of Geraki, 35°08'53"N, 25°20'52"E, 530 m, level field on hillside, 1/3 with cereal crop, 1/3 ploughed and fallow, 1/3 fallow but not recently ploughed, 800 m^2, several similar fields in area, 11.4.2003, *Kyriakopoulos & Turland*.

19. [45 spp.] Nom. Irakliou, Ep. Pediadas: 2 km SW of Geraki, 35°08'47"N, 25°20'22"E, 505 m, small field with cereal crop, part level, part sloping, 300 m^2, many similar fields in area, also young olive groves, 11.4.2003, *Kyriakopoulos & Turland*.

20. [66 spp.] Nom. Irakliou, Ep. Maleviziou: 2.5 km NW of Damasta, small oropedio (mountain plain) in Kouloukonas mountains, 35°22'03"N, 24°54'35"E, 220 m, level field with *Lathyrus ochrus* crop, 1500 m^2, surrounded by one similar field, a derelict old olive grove and sloping fields with grass, 12.4.2003, *Kyriakopoulos & Turland*.

21. [33 spp.] Nom. Irakliou, Ep. Kenourgiou/Monofatsiou: 1 km W of Agia Varvara, on road to Panasos, 35°07'48"N, 24°59'25"E, 495 m, small vineyard without herbicide, one end very marshy, 175 m^2, surrounded by vineyards and olive groves almost all sprayed with herbicide, 13.4.2003, *Kyriakopoulos & Turland*.

22. [61 spp.] Nom. Irakliou, Ep. Kenourgiou: 500 m E of Gangales, E side of road to Vali, 35°03'39"N, 25°00'57"E, 250 m, large field with *Hordeum* crop and 8 large olive trees, only SE 250 m^2 surveyed, 250 m^2, surrounded by cereal fields, vineyards, but mostly olive groves, 13.4.2003, *Kyriakopoulos & Turland*.

23. [29 spp.] Nom. Rethimnis, Ep. Milopotamou: edge of Honos village, NE side of road to Aïdonohori, 35°20'11"N, 24°53'00"E, 350 m, small terrace with *Vicia faba* crop, 40 m^2, similar terraces nearby, 14.4.2003, *Kyriakopoulos & Turland*.

24. [51 spp.] Nom. Irakliou, Ep. Monofatsiou: 200 m NNW of Ahendrias, E side of road to Mesohorio, 34°59'43"N, 25°13'29"E, 710 m, small cereal field on slope, 450 m^2, many similar fields in area, also a few vineyards, 15.4.2003, *Kyriakopoulos & Turland*.

25. [49 spp.] Nom. Irakliou, Ep. Monofatsiou: 500 m N of Mournia, E side of road to Ethia, 34°58'56"N, 25°10'01"E, 590 m, small field with cereal crop, cut or grazed, 350 m^2, many similar fields in area, 15.4.2003, *Kyriakopoulos & Turland*.

26. [93 spp.] Nom. Irakliou, Ep. Pirgiotissis: 1 km N of Kamilari, 35°02'46"N, 24°47'38"E, 55 m, level open olive groves, 2100 m^2, surrounded by young and older olive groves and a few small fields with cereal crops, 16.4.2003, *Kyriakopoulos & Turland*.

27. [73 spp.] Nom. Irakliou, Ep. Kenourgiou: 750 m N of Odigitria monastery, E side of road to Listaros, 34°58'40"N, 24°48'03"E, 240 m, small open olive grove with 3 trees, 300 m^2, similar olive groves nearby, but mostly phrygana, 16.4.2003, *Kyriakopoulos & Turland*.

28. [48 spp.] Nom. Hanion, Ep. Apokoronou: between Vrises and Askifou plain, small plain immediately N of Kare gorge, 35°19'08"N, 24°12'01"E, 520 m, large level field with cereal crop, 3100 m^2, surrounded by similar fields, 19.4.2003, *Kamari, Phitos & Turland*.

29. [93 spp.] Nom. Hanion, Ep. Apokoronou: S of Vrises on road to Hora Sfakion, 4.4 km by road from river in Vrises, 35°20'59"N, 24°12'09"E, 280 m, terraced olive grove with various fruit and nut trees, 650 m^2, surrounded by similar olive groves, 19.4.2003, *Kamari, Phitos & Turland*.

30. [52 spp.] Nom. Hanion, Ep. Apokoronou: S edge of Vrises village, E side of road to Hora Sfakion, beside Shell garage, 35°22'13"N, 24°12'08"E, 85 m, large field with cereal crop, 3500 m^2, few similar fields in area, mostly vineyards, olive groves and gardens, 19.4.2003, *Kamari, Phitos & Turland*.

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31. [72 spp.] Nom. Rethimnis, Ep. Amariou: N part of Fourfouras village, SW of road junction to Platania, 35°12'53"N, 24°42'40"E, 430 m, open olive grove, 1000 m², surrounded by similar olive groves and small fields with cereal crops, 20.4.2003, *Kamari & Turland*.

32. [90 spp.] Nom. Rethimnis, Ep. Amariou: 1 km SE of Kouroutes, E side of road to Nithavris, 35°10'52"N, 24°44'32"E, 510 m, sloping field without crop, not limestone, 1000 m², surrounded by similar fields and olive groves, 20.4.2003, *Kamari & Turland*.

33. [59 spp.] Nom. Rethimnis, Ep. Amariou: Gious Kambos plain ESE of Spili, beside stream on W part of plain, 35°12'50"N, 24°33'47"E, 755 m, fallow field, partly with deep soil over limestone, partly with very stony soil on schist, 1600 m², many similar fields in area, some fallow, some with cereal crops, 21.4.2003, *Kamari, Phitos & Turland*.

34. [56 spp.] Nom. Rethimnis, Ep. Agiou Vasiliou: between Drimiskos and Vatos, N side of pass 500 m S of Vatos, 35°10'29"N, 24°32'26"E, 710 m, roundish fallow field in small valley, serpentine substrate, 500 m², a few similar fields nearby, some on serpentine, some on schist, 21.4.2003, *Kamari, Phitos & Turland*.

35. [68 spp.] Nom. Hanion, Ep. Sfakion: W edge of Anopoli village, S side of road to Aradena, 35°13'10"N, 24°04'54"E, 585 m, small level stony fallow field, 300 m², surrounded by fallow and cultivated (with cereals) fields, vineyards and olive groves, 22.4.2003, *Kamari & Turland*.

36. [54 spp.] Nom. Hanion, Ep. Sfakion: W edge of Anopoli village, S side of road to Aradena, 35°13'10"N, 24°04'54"E, 585 m, small level field cultivated with *Avena sativa* crop, 250 m², surrounded by fallow and cultivated (with cereals) fields, vineyards and olive groves, 22.4.2003, *Kamari & Turland*. Locality 36 is adjacent to, and east of, locality 35.

37. [44 spp.] Nom. Rethimnis, Ep. Agiou Vasiliou: small oropedio (mountain plain) N of Sellia, between village and mountain ridge, 35°12'39"N, 24°22'53"E, 405 m, level field with cereal crop, 2600 m², surrounded by the same, also a few vineyards, 24.4.2003, *Kamari & Turland*.

38. [90 spp.] Nom. Hanion, Ep. Kidonias: Akrotiri peninsula, 200 m W of Sternes, S side of road to Hania, 35°30'49"N, 24°08'08"E, 170 m, level field, mostly fallow but with patch of *Vicia faba* in centre, 1300 m², a few similar fields in area though not as rich, also a few olive groves, 29.4.2003, *Karakitsos & Turland*.

39. [43 spp.] Nom. Hanion, Ep. Kidonias: Akrotiri peninsula, 1 km W of Marathi, 35°30'09"N, 24°09'28"E, 35 m, huge level field, part fallow, part with cereal crops, only fallow 8000 m² surveyed, 8000 m², vineyards but no similar fields nearby, 29.4.2003, *Karakitsos & Turland*.

40. [45 spp.] Nom. Hanion, Ep. Kidonias: Akrotiri peninsula, between Horafakia and Agia Triada, N side of road, 35°33'32"N, 24°07'00"E, 100 m, small field with sparse grazed cereal crop, 250 m², surrounded by garigue containing similar fields, 29.4.2003, *Karakitsos & Turland*.

41. [41 spp.] Nom. Hanion, Ep. Kidonias: Kambi, 35°25'07"N, 24°04'14"E, 550 m, level field, part fallow, part with *Medicago sativa* crop, 550 m², surrounded by fields with cereal crops and olive groves, 30.4.2003, *Karakitsos & Turland*.

42. [91 spp.] Nom. Hanion, Ep. Apokoronou: between Melidoni and Pemonia, 1.4 km by road from platia (square) in Pemonia, 35°23'27"N, 24°07'31"E, 330 m, young olive grove with patch of *Vicia faba,* 1000 m², surrounded by similar olive groves, phrygana and vineyards, 30.4.2003, *Karakitsos & Turland*.

43. [39 spp.] Nom. Hanion, Ep. Selinou: N part of Omalos plain, near Omalos village, 35°20' 27"N, 23°54'06"E, 1055 m, more or less level fallow field, 3500 m², several similar fields on plain, 1.5.2003, *Karakitsos & Turland*.

44. [19 spp.] Nom. Hanion, Ep. Selinou: W corner of Omalos plain, on road to Sougia, 35°19' 46"N, 23°52'50"E, 1065 m, small level fallow field, 500 m², many similar fields nearby, 1.5.2003, *Karakitsos & Turland*.

45. [77 spp.] Nom. Hanion, Ep. Kissamou: central part of Rodopou peninsula, 10.3 km by road from the platia (square) in Rodopos (35°38'12"N, 23°44'12"E), 435 m, large level field in inter-

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nally drained basin with *Secale cereale* crop, 3400 m^2, whole 700 m long bottom of basin cultivated, surrounding slopes covered with scrub/garigue, 3.5.2003, *Karakitsos & Turland*.

46. [67 spp.] Nom. Hanion, Ep. Kissamou: Sasalos, 35°24'24"N, 23°42'36"E, 325 m, level field in valley bottom, partly with vegetables and a little cereal, 1500 m^2, several similar fields in valley bottom, 4.5.2003, *Karakitsos & Turland*.

47. [56 spp.] Nom. Hanion, Ep. Selinou: 100 m S of Dris, W side of road to Plemeniana, 35°20' 03"N, 23°42'39"E, 390 m, small level roadside field with *Hordeum* crop, 350 m^2, surrounded by a few similar fields, a vineyard, but mostly olive groves, 4.5.2003, *Karakitsos & Turland*.

48. [50 spp.] Nom. Hanion, Ep. Kissamou: between Sfinari and Berpathiana, S of road junction to Melissia, 35°23'44"N, 23°34'27"E, 380 m, small narrow roadside field with *Avena* crop, 175 m^2, surrounded by olive groves and maquis, 5.5.2003, *Karakitsos & Turland*.

49. [79 spp.] Nom. Hanion, Ep. Kissamou: between Hrisoskalitissa monastery and Elafonisi, E side of road, 35°17'30"N, 23°32'45"E, 50 m, small level field with cereal crop, 800 m^2, surrounded by a few similar fields, olive groves and garigue, 5.5.2003, *Karakitsos & Turland*.

50. [71 spp.] Nom. Hanion, Ep. Kissamou: 1 km W of Elos, at road junction to Limni, 35°21'51"N, 23°37'41"E, 590 m, terraced field on hillside without crop but much grass and weeds, 950 m^2, surrounded by several similar fields, vineyards on terraces, and with olive groves lower in valley, 6.5.2003, *Karakitsos & Turland*.

List of taxa recorded

Taxa are listed alphabetically by family, genus, species and then infraspecific taxon within the four groups *Pteridophyta, Gymnospermae, Dicotyledones* and *Monocotyledones*. Taxonomy and nomenclature follow Turland & al. (1993) and its two updates (Chilton & Turland 1997, 2004). Under each taxon are listed the locality numbers where the taxon was recorded. In some cases notes are provided in parentheses immediately following the locality number. If the records are not based solely on field observations and material has been collected, the locality numbers are followed by either "s.n." for a living collection (all at UPA), or a collection number for a herbarium gathering. Collection numbers are those of the first author, although the collectors at that particular locality may be cited, e.g. *Bareka & Turland sub Turland 1085* or *Kamari & al. sub Turland 1306*. Herbaria are listed using the standard Index Herbariorum abbreviations (B, BM, MO, UPA) in parentheses after the collection number. Doubtful records have been excluded, except where indicated. Altogether 2455 plant records are listed, representing 431 taxa and 416 species, among which are 483 herbarium gatherings, comprising 1687 specimens and representing 302 taxa and 295 species.

Pteridophyta

Dennstaedtiaceae

Pteridium aquilinum (L.) Kuhn – 33 (at margin of locality), 46.

Equisetaceae

Equisetum ramosissimum Desf. – 21—*1156* (B, BM, MO, UPA).
Equisetum telmateia Ehrh. – 21—*1155* (B, BM, MO, UPA).

Selaginellaceae

Selaginella denticulata (L.) Spring – 29.

Sinopteridaceae

Anogramma leptophylla (L.) Link – 29.

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Gymnospermae

Cupressaceae

Cupressus sempervirens L. – 29 (planted).

Dicotyledones

Acanthaceae

Acanthus spinosus L. – 16, 18, 20, 22, 25, 29, 32, 33, 35, 45, 50.

Berberidaceae

Leontice leontopetalum L. subsp. *leontopetalum* – 5 (no flowering or fruiting plants seen), 26 (2 plants seen in fruit, several others without flowers or fruit)—*1215* (MO, UPA incl. living coll.), 35 (1 plant seen).

Boraginaceae

Anchusa hybrida Ten. (*A. undulata* subsp. *hybrida* (Ten.) Cout.) – 4—*1010* (MO, UPA), 14—*1082* (B, BM, MO, UPA), 18, 19, 22—*1183* (B, BM, MO, UPA), 24, 25, 26, 27, 43.

Anchusa italica Retz. *("A. azurea")* – 1, 2, 17—*1106* (B, MO, UPA), 19, 22—*1188* (B, BM, MO, UPA), 24, 26, 27, 32, 33, 34, 37, 44, 49.

Cerinthe major L. subsp. *major* – 21—*1157* (B, BM, MO, UPA), 26.

Cynoglossum columnae Ten. – 5—*1018* (BM, MO, UPA), 7, 29, 31—*1287* (B, BM, MO, UPA), 35, 36.

Cynoglossum creticum Mill. – 26, 27—*1256* (B, BM, MO, UPA), 29.

Echium angustifolium Mill. subsp. *angustifolium* – 26—*1224* (B, BM, MO, UPA).

Echium italicum subsp. *biebersteinii* (Lacaita) Greuter & Burdet – 3, 14, 33, 35, 36, 39, 42, 50.

Echium plantagineum L. – 23, 37 (at margin of locality), 39, 41—*1372* (B, BM, MO, UPA), 42, 47.

Lithospermum arvense L. (*Buglossoides arvensis* (L.) I. M. Johnst.) – 40—*1367* (MO).

Campanulaceae

Campanula erinus L. – 20—*1148* (UPA), 22, 25, 26, 35, 42, 49—*1445* (B, BM, MO, UPA).

Legousia hybrida (L.) Delarbre – 22—*1181* (B, BM, MO, UPA), 24, 25, 28.

Caryophyllaceae

Agrostemma githago L. subsp. *githago* – 9, 11, 40—*1362* (UPA), 48—*1431* (B, BM, MO, UPA).

Cerastium comatum Desv. (*C. illyricum* subsp. *comatum* (Desv.) P. D. Sell & Whitehead) – 32—*1301* (B, BM, MO, UPA), 34, 43.

Cerastium dichotomum L. – 10 (c. 5 plants seen)—*1064* (B, BM, MO, UPA).

Cerastium glomeratum Thuill. – 1—*964* (B, BM, MO, UPA), 7—*1036* (B, BM, MO, UPA), 8, 12, 13, 14, 15, 18, 20, 23, 25, 28, 29, 30, 31, 32, 33, 35, 37, 38, 40, 41, 42, 43, 44, 45, 46, 47, 50.

Herniaria hirsuta L. – 18—*1115* (B, BM, MO, UPA), 40, 50—*1463* (B, BM, MO, UPA).

Minuartia hybrida (Vill.) Schischk. subsp. *hybrida* – 25—*1204* (MO), 32, 33, 37—*1327* (B, BM, MO, UPA), 38—*1354* (B, BM, MO, UPA), 45.

Moenchia graeca Boiss. & Heldr. – 43—*1384* (B, BM, MO, UPA).

Petrorhagia dubia (Raf.) G. López & Romo (*P. velutina* (Guss.) P. W. Ball & Heywood) – 27—*1259* (B, BM, MO, UPA), 28—*1268* (B, BM, MO, UPA), 29, 32, 38, 40, 42, 50.

Polycarpon tetraphyllum (L.) L. – 25—*1205* (B, BM, MO, UPA), 27, 40, 46, 49.

Silene behen L. – 24—*1197* (B, BM, MO, UPA), 38.

Silene bellidifolia Juss. ex Jacq. – 38—*1351* (B, BM, MO, UPA), 39.

Silene cretica L. – 7—*1041* (UPA), 25—*1202* (B, BM, MO, UPA), 28—*1267* (B, BM, MO, UPA), 32, 35, 36, 37, 41, 42, 47, 48, 50.

Silene gallica L. – 25, 32, 33, 34, 37, 40, 45, 46, 47, 49, 50.

Silene nocturna L. – 18—*1110* (B, BM, MO, UPA), 27—*1246* (B, BM, MO, UPA), 45, 49.

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Silene vulgaris subsp. *macrocarpa* Turrill – 3, 7, 10, 11, 15, 18 (at margin of locality), 19, 20, 22—*1185* (B, BM, MO, UPA), 24, 28, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 43, 44, 45, 47, 48, 50.
Stellaria cupaniana (Jord. & Fourr.) Bég. (*S. media* subsp. *cupaniana* (Jord. & Fourr.) Nyman) – 7—*1038* (B, BM, MO, UPA), 21, 30, 46.
Stellaria media (L.) Vill. – 12—*1072* (B, BM, MO, UPA), 13, 17, 25, 28, 30, 46.

Chenopodiaceae

Chenopodium album L. – 50.

Cistaceae

Tuberaria guttata (L.) Fourr. – 50—*1473* (B, BM, MO, UPA).

Compositae

Anthemis altissima L. – 12, 13, 16—*1094* (B, BM, MO, UPA), 22—*1180* (B, BM, MO, UPA), 28, 29, 30, 33, 36, 38—*1333* (B, BM, MO, UPA), 41, 42, 44, 45, 46, 47, 49.
Anthemis arvensis L. – 27—*1241* (B, BM, MO, UPA), 34, 40—*1365* (MO), 50—*1464* (B, BM, MO, UPA).
Anthemis chia L. – 3—*996* (B, BM, MO, UPA), 4—*1002* (B, BM, MO, UPA), 5—*1015* (MO), 18, 19, 20—*1151* (B, BM, MO, UPA), 29, 30—*1278* (B, BM, MO, UPA), 33, 35, 36, 38, 42.
Anthemis rigida (Sm.) Boiss. ex Heldr. subsp. *rigida* – 2—*981* (UPA).
Bellis annua L. subsp. *annua* – 20—*1130* (B, BM, MO, UPA), 29.
Bellis perennis L. – 30—*1277* (B, BM, MO, UPA), 44—*1394* (B, BM, MO, UPA), 45.
Calendula arvensis L. – 1—*971* (MO, UPA), 3—*995* (B, BM, MO, UPA), 4, 6, 7, 16, 17, 18, 19, 22, 23, 24, 27, 35—*1315* (B, BM, MO, UPA), 36, 42, 45, 47, 48, 49.
Carduus pycnocephalus L. – 6, 8, 17, 18, 23, 24, 27—*1252* (B, BM, MO, UPA), 28, 29, 30, 35, 36, 41, 42, 46, 47, 48—*1439* (MO).
Carlina graeca Heldr. & Sart. (*C. corymbosa* subsp. *graeca* (Heldr. & Sart.) Nyman) – 5, 6, 7, 24, 29, 34, 43, 50.
Carlina gummifera (L.) Less. (*Atractylis gummifera* L.; *Chamaeleon gummifer* (L.) Cass.) – 42, 45, 50.
Centaurea benedicta (L.) L. (*Cnicus benedictus* L.) – 14—*1084* (B, BM, MO, UPA), 15.
Centaurea calcitrapa L. subsp. *calcitrapa* – 14.
Centaurea idaea Boiss. & Heldr. – 6—*1033* (UPA incl. living coll.), 10 (1 plant seen), 19, 20, 25, 43.
Chondrilla juncea L. – 32.
Cichorium spinosum L. – 43.
Crepis commutata (Spreng.) Greuter (*C. foetida* subsp. *commutata* (Spreng.) Babc.) or perhaps *C. foetida* L. – 5 (confirmed as *C. commutata*)—*1014* (B, BM, MO, UPA), 7, 17, 18, 19, 22, 23, 26, 27, 28, 29, 31, 32, 33, 34, 35, 38, 39, 40, 42, 48, 49.
Crepis cretica Boiss. (*C. neglecta* subsp. *cretica* (Boiss.) Vierh.) – 6—*1026* (B, BM, MO, UPA), 7, 20—*1139* (B, BM, MO, UPA), 22, 26, 27, 31, 32, 35, 36, 45, 46.
Crepis sancta (L.) Babc. – 14—*1081* (B, MO, UPA), 28—*1270* (B, BM, MO, UPA), 29, 30—*1279* (B, BM, MO, UPA), 32, 34—*1310* (B, BM, MO, UPA), 40, 41, 42.
Crepis vesicaria L. – 31.
Crupina crupinastrum (Moris) Vis. – 4, 27, 32.
Cynara cardunculus L. (*C. scolymus* L.) – 7 (at margin of locality), 23, 29 (cultivated or relic of cultivation), 38 (at margin of locality).
Erigeron sumatrensis Retz. (*Conyza albida* Willd. ex Spreng.; *C. sumatrensis* (Retz.) Walker) – 46—*1420* (B, BM, MO, UPA).
Filago eriocephala Guss. – 41—*1370* (B, BM, MO, UPA), 50.
Filago gallica L. (*Logfia gallica* (L.) Coss. & Germ.) – 50—*1472* (B, BM, MO, UPA).
Filago pygmaea L. subsp. *pygmaea (Evax pygmaea* (L.) Brot. subsp. *pygmaea)* – 6—*1032* (B, BM, MO, UPA), 16, 20, 25, 27, 31, 32, 33, 37, 45, 49.

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Galactites tomentosa Moench – 16, 17, 21, 29, 30, 31, 37, 38—*1336* (B, BM, MO, UPA), 39, 42, 46, 47. – Note: Although the name *Galactites elegans* (All.) Nyman ex Soldano (*Centaurea elegans* All.) is correct for this species (Soldano 1991: 249), we prefer to retain the long-used *G. tomentosa* Moench (*C. galactites* L.) pending one of us (Turland) submitting a formal proposal to conserve *G. tomentosa* against *C. elegans*.

Geropogon hybridus (L.) Sch. Bip. (*Tragopogon hybridus* L.) – 26—*1236* (UPA), 38—*1335* (B, BM, MO, UPA), 39.

Glebionis coronaria (L.) Cass. ex Spach sensu lato (*Chrysanthemum coronarium* L.) – 3 (not flowering), 45 (not flowering).

Glebionis coronaria (L.) Cass. ex Spach var. *coronaria* – 22—*1166* (B, BM, MO, UPA), 27.

Glebionis coronaria var. *discolor* (d'Urv.) Turland (*Chrysanthemum coronarium* var. *discolor* d'Urv.) – 17—*1096* (B, BM, MO, UPA 2 sheets), 19 (at margin of locality), 22, 25, 26, 27, 38, 39, 47, 49.

Glebionis segetum (L.) Fourr. (*Chrysanthemum segetum* L.) – 1, 12, 13, 14, 15, 18—*1109* (B, BM, MO, UPA), 19, 24, 25, 27, 28, 33, 36, 37 (abundant), 38, 39, 41, 45, 46, 47, 48, 50.

Hedypnois cretica (L.) Dum. Cours. – 2—*977* (B, BM, MO, UPA), 20, 22, 23, 26, 27, 32, 33, 35, 36, 38, 39, 40, 45, 48, 49.

Helichrysum conglobatum Steud. (*H. barrelieri* (Ten.) Greuter; *H. stoechas* subsp. *barrelieri* (Ten.) Nyman) – 26.

Helminthotheca echioides (L.) Holub (*Picris echioides* L.) – 16, 18, 21, 30, 34, 39, 46, 47.

Hyoseris scabra L. – 2—*983* (B, MO, UPA), 6—*1028* (B, BM, MO, UPA), 24, 27, 28, 35.

Hypochaeris achyrophorus L. – 20—*1145* (B, BM, MO, UPA), 26—*1229* (B, BM, MO, UPA), 27, 32, 36, 45, 49.

Hypochaeris radicata L. – 46—*1414* (B, BM, MO, UPA).

Lactuca serriola L. – 16, 17, 22, 23, 38, 39, 41, 46, 48, 50.

Lamyropsis cynaroides (Lam.) Dittrich – 25.

Leontodon tuberosus L. – 2 (almost glabrous form)—*979* (B, BM, MO, UPA), 5—*1021* (UPA), 6, 7, 8, 16, 18, 20, 22, 24, 29, 31, 32, 33, 34, 35, 37, 42, 45, 50.

Matricaria chamomilla L. (*Chamomilla recutita* (L.) Rauschert; *M. recutita* L.) – 17—*1103* (BM, MO, UPA), 47—*1428* (B, BM, MO, UPA).

Notobasis syriaca (L.) Cass. – 6, 7, 13, 16, 17, 22, 24, 25, 26, 30, 35, 36, 39, 42.

Onopordum tauricum Willd. – 7, 11.

Pallenis spinosa (L.) Cass. (*Asteriscus spinosus* (L.) Sch. Bip.) – 24, 26, 49—*1460* (B, BM, MO, UPA).

Phagnalon graecum Boiss. & Heldr. – 4, 26, 31.

Picnomon acarna (L.) Cass. – 8 (at margin of locality), 13, 14, 16, 28, 29, 34, 41, 43.

Reichardia picroides (L.) Roth – 19, 26—*1232* (B, BM, MO, UPA), 31, 32, 34, 39, 45, 50.

Rhagadiolus stellatus (L.) Gaertn. sensu lato (incl. *R. edulis* Gaertn.) – 1—*967* (MO, UPA), 6, 7, 16, 19, 20, 22, 24, 25, 28, 29, 31, 33, 35, 36, 38—*1338* (B, BM, MO, UPA), 40, 42, 45, 48, 49, 50.

Scorzonera cretica Willd. – 25, 26, 32, 35, 42.

Senecio vulgaris L. – 1—*959* (B, BM, MO, UPA), 2, 4, 5, 6, 7, 12, 13, 14, 17, 20, 24, 25, 30, 32, 33, 34, 35, 41, 43, 45, 47, 50.

Sonchus asper (L.) Hill sensu lato – *50.*

Sonchus asper (L.) Hill subsp. *asper* – 8—*1043* (B, BM, MO, UPA), 21—*1163* (MO), 37—*1326* (B, BM, MO, UPA).

Sonchus bulbosus subsp. *microcephalus* (Rech. f.) N. Kilian & Greuter (*Aetheorhiza bulbosa* subsp. *microcephala* Rech. f.) – 16—*1089* (B, BM, MO, UPA), 18, 19, 25, 32, 33, 34, 37, 45, 50—*1467* (B, BM, MO, UPA).

Sonchus oleraceus L. – 2, 3, 4, 5—*1023* (MO), 7, 13, 14, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 30, 31, 32, 34, 35, 37, 38, 39, 41, 42, 46, 47, 48, 49, 50.

Taraxacum sect. *Scariosa* Hand.-Mazz. emend. Dahlst. – 13—*1074* (UPA), 24, 43—*1381* (B, BM, MO, UPA), 44, 48.

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Tragopogon sinuatus Avé-Lall. (*T. porrifolius* subsp. *australis* (Jord.) Nyman) – 5—*1022* (UPA), 26—*1213* (B, MO, UPA), 38, 42, 49, 50.
Urospermum picroides (L.) Scop. ex F. W. Schmidt – 2—*987* (MO, UPA), 5—*1019* (B, BM, MO, UPA), 6, 17, 20, 22, 27, 28, 31, 35, 38, 42, 45, 46, 48, 49, 50.

Convolvulaceae

Convolvulus althaeoides L. – 2.
Convolvulus arvensis L. – 17, 26, 39.
Convolvulus elegantissimus Mill. (*C. althaeoides* subsp. *tenuissimus* (Sm.) Stace) – 26—*1226* (B, BM, MO, UPA), 31, 45.

Crassulaceae

Sedum litoreum Guss. sensu stricto – 38—*1353* (B, BM, MO, UPA).
Sedum rubens L. sensu stricto – 38—*1352* (B, BM, MO, UPA).

Cruciferae

Alyssum minutum Schltdl. ex DC. – 11 (at margin of locality)—*1066* (B, BM, MO, UPA).
Alyssum simplex Rudolphi (*"A. minus"* [nom. inval.]) – 20 (in adjacent field)—*1152* (MO).
Arabidopsis thaliana (L.) Heynh. – 13—*1076* (MO).
Arabis verna (L.) R. Br. – 29.
Biscutella didyma L. – 4—*1005* (B, BM, MO, UPA), 5, 6, 7, 18, 19, 20, 22, 25, 27, 28, 29, 31, 32—*1290* (B, BM, MO, UPA), 33, 34, 35, 42, 43, 45, 47, 49, 50.
Brassica geniculata (Desf.) Snogerup & B. Snogerup (*Hirschfeldia incana* (L.) Lagr.-Foss.) – 1—*963* (B, BM, MO, UPA), 4—*1000* (B, BM, MO, UPA), 16, 17, 18, 19, 22, 23, 25, 26, 27, 29, 30, 33, 35, 36, 38, 40, 42, 45, 46, 47, 49.
Capsella bursa-pastoris (L.) Medik. – 6—*1031* (B, BM, MO, UPA), 12—*1071* (B, BM, MO, UPA), 13, 14, 17, 18, 20, 28, 30, 41, 42, 43, 45, 47, 49.
Cardamine hirsuta L. – 20—*1129* (B, BM, MO, UPA), 28, 29, 30, 32, 42, 43, 46, 50.
Didesmus aegyptius (L.) Desv. – 2—*985* (B, BM, MO, UPA).
Draba verna L. sensu lato (*Erophila verna* (L.) Chevall.; incl. *Draba praecox* Steven) – 1—*961* (B, BM, MO, UPA), 9—*1062* (B, BM, MO, UPA), 10, 11, 13, 14, 18, 32, 38, 43, 44.
Eruca vesicaria (L.) Cav. (*E. sativa* Mill.; *E. vesicaria* subsp. *sativa* (Mill.) Thell.) – 12, 13, 14, 18, 19, 20, 23, 28, 30, 32, 33, 36, 37, 38, 40, 41, 45, 46, 50.
Lepidium draba L. subsp. *draba (Cardaria draba* (L.) Desv. subsp. *draba)* – 12.
Lepidium hirtum subsp. *oxyotum* (DC.) Thell. – 43—*1388* (MO, UPA).
Neslia apiculata Fisch. & al. (*N. paniculata* subsp. *thracica* (Velen.) Bornm.) – 20 (in adjacent field)—*1153* (MO).
Raphanus raphanistrum L. subsp. *raphanistrum* – 1—*966* (B, BM, MO, UPA), 7—*1037* (B, MO, UPA), 8, 23, 46 (flowers yellow)—*1418* (B, BM, MO, UPA), 47 (flowers cream)—*1426* (B, BM, MO, UPA).
Rapistrum rugosum (L.) All. – 2, 8—*1051* (B, BM, MO, UPA).
Ricotia cretica Boiss. & Heldr. – 35 (on limestone rubble by field wall)—*1322* (B, BM, MO, UPA).
Sinapis alba subsp. *mairei* (H. Lindb.) Maire – 3—*997* (MO, UPA), 16—*1088* (B, BM, MO, UPA), 17—*1108* (B, BM, MO, UPA), 22—*1182* (MO, UPA), 23, 26, 27, 39, 47—*1425* (B, MO, UPA), 48, 49.
Sinapis arvensis L. subsp. *arvensis* – 2—*993* (MO).
Sisymbrium officinale (L.) Scop. – 6—*1030* (MO, UPA), 13, 28, 30, 40, 41, 42, 43, 45, 46, 47, 50.
Sisymbrium orientale L. – 4—*1001* (B, BM, MO, UPA).

Cucurbitaceae

Bryonia cretica L. subsp. *cretica* – 29, 42.

Dipsacaceae

Knautia integrifolia subsp. *mimica* (Borbás) Greuter – 38—*1349* (B, BM, MO, UPA).

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Lomelosia brachiata (Sm.) Greuter & Burdet (*Scabiosa brachiata* Sm.; *Tremastelma palaestinum* (L.) Janch.) – 22—*1169* (MO, UPA).

Euphorbiaceae

Euphorbia characias L. – 7, 29.
Euphorbia exigua L. – 20, 45.
Euphorbia helioscopia L. – 8—*1049* (UPA), 17—*1104* (B, MO, UPA), 20—*1150* (MO, UPA), 21—*1158* (B, BM, MO, UPA), 23, 24, 26, 29, 30—*1275* (B, BM, MO, UPA), 31, 38, 39, 41, 43—*1382* (B, BM, MO, UPA), 45—*1402* (B, BM, MO, UPA), 46, 48.
Euphorbia peplus L. – 26—*1235* (MO), 30, 31, 32—*1296* (B, BM, MO, UPA), 35, 36.
Mercurialis annua L. – 29, 30, 38, 42, 46—*1409* (B, BM, MO, UPA).

Fagaceae

Quercus coccifera L. – 29.

Gentianaceae

Centaurium tenuiflorum (Hoffmanns. & Link) Fritsch – 49—*1447* (B, BM, MO, UPA).

Geraniaceae

Erodium cicutarium (L.) L'Hér. – 43—*1386* (B, BM, MO, UPA), 45.
Erodium gruinum (L.) L'Hér. – 2—*989* (B, BM, MO, UPA) & *990* (BM, MO, UPA), 4, 5, 24, 28, 29, 31, 35, 36, 49.
Erodium laciniatum (Cav.) Willd. subsp. *laciniatum* – 49—*1456* (UPA).
Erodium malacoides (L.) L'Hér. – 2—*992* (B, BM, MO, UPA), 4—*1003* (B, BM, MO, UPA), 5, 6, 17, 20, 26, 27, 31, 32, 35, 36, 38, 39, 49.
Erodium moschatum (L.) L'Hér. – 17, 18, 24, 28, 35, 41, 45, 46.
Geranium columbinum L. – 20—*1142* (B, BM, MO, UPA).
Geranium dissectum L. – 8—*1046* (B, BM, MO, UPA), 13, 17, 20 (flowers purple, pink and white on separate plants)—*1134* (B, BM, MO, UPA), 21, 45, 46, 47.
Geranium lucidum L. – 29.
Geranium molle L. subsp. *molle* – 1—*968* (B, BM, MO, UPA), 6, 7, 14, 16, 17, 21, 24, 26, 28, 30, 31, 33, 34, 35, 36, 42, 43, 45, 46.
Geranium purpureum Vill. – 20—*1137* (B, BM, MO, UPA), 21, 29, 35, 42, 48, 50.
Geranium rotundifolium L. – 20—*1154* (B, BM, MO, UPA), 28, 29, 31, 35, 36, 41, 46, 48.
Geranium tuberosum L. subsp. *tuberosum* – 14 (common, but only 2 plants seen in flower)—*1080* (MO, UPA incl. living coll.), 15, 18—*s.n.* (UPA living coll.) 19—*1122* (B, BM, MO, UPA), 22—*1184* (B, BM, MO, UPA), 26 (1 small leaf seen). – Note: also collected very near locality 24: Nom. Irakliou, Ep. Monofatsiou: Ahendrias, within village (34°59'27"N, 25°13'25"E), 685 m, field with cereal crop and many weeds, 15.4.2003, *Kyriakopoulos & Turland sub Turland 1199* (B, BM, MO, UPA 2 sheets incl. living coll.).

Guttiferae

Hypericum perforatum subsp. *veronense* (Schrank) H. Lindb. – 46.
Hypericum triquetrifolium Turra – 19, 22, 26, 32, 38, 39, 42, 49.

Labiatae

Coridothymus capitatus (L.) Rchb. f. (*Thymus capitatus* (L.) Hoffmanns. & Link) – 26.
Lamium amplexicaule L. subsp. *amplexicaule* – 1—*962* (MO, UPA), 4, 12, 13, 17, 18, 23, 24, 25, 28, 29, 30, 32, 35, 38, 41, 42, 43, 45, 48, 50.
Lamium purpureum L. – 46 (corollas in poor condition, but seem less than 10 mm, upper lip seems entire, lateral lobes linear-oblong, minute)—*1411* (B, BM, MO, UPA).
Marrubium vulgare L. – 27, 42.
Melissa officinalis subsp. *altissima* (Sm.) Arcang. – 21.
Mentha pulegium L. – 37, 47.

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Origanum onites L. – 29.
Phlomis ×*cytherea* Rech. f. (*P. cretica* C. Presl × *P. fruticosa* L.) – 32 (near adjacent field margin on NW side of surveyed field, with both parents and other apparent hybrids in area)—*1305* (B, BM, MO, UPA).
Phlomis fruticosa L. – 26, 29, 31, 32.
Prasium majus L. – 26, 31.
Rosmarinus officinalis L. – 29 (cultivated).
Salvia fruticosa Mill. (*S. triloba* L. f.) – 5, 26, 29.
Salvia verbenaca L. – 2—*991* (MO), 20, 26, 35, 36, 37, 42, 44.
Salvia viridis L. – 27—*1263* (B, BM, MO, UPA), 29, 49.
Satureja calamintha (L.) Scheele *("Calamintha nepeta")* – 46.
Satureja nana (P. H. Davis & Doroszenko) Ralf Jahn (*Acinos nanus* P. H. Davis & Doroszenko) – 32—*1302* (MO, UPA).
Satureja nervosa Desf. (*Micromeria nervosa* (Desf.) Benth.) – 29, 49—*1449* (B, BM, MO, UPA).
Sideritis curvidens Stapf – 20—*1147* (B, BM, MO, UPA).
Stachys arvensis (L.) L. – 8—*1056* (B, BM, MO, UPA), 20, 46.
Stachys cretica L. subsp. *cretica* – 26, 30, 32, 42.

Leguminosae

Anagyris foetida L. – 26.
Astragalus hamosus L. – 24—*1198* (MO), 27—*1257* (BM, MO, UPA).
Bituminaria bituminosa (L.) C. H. Stirt. (*Psoralea bituminosa* L.) – 17, 20, 29, 30, 39, 42, 49—*1450* (B, BM, MO, UPA).
Calicotome villosa (Poir.) Link – 6, 29.
Ceratonia siliqua L. – 29.
Coronilla scorpioides (L.) W. D. J. Koch – 4—*1007* (B, BM, MO, UPA), 16, 19.
Dorycnium rectum (L.) Ser. – 21.
Genista acanthoclada DC. subsp. *acanthoclada* – 43.
Hippocrepis biflora Spreng. or perhaps *H. ciliata* Willd. – 4 (without fruits)—*1008* (B, BM, MO, UPA), 20, 22 (confirmed as *H. biflora*)—*1172* (B, BM, MO, UPA), 26, 27, 30, 31.
Hymenocarpos circinnatus (L.) Savi – 5—*1020* (B, BM, MO, UPA), 7, 14, 18, 20, 22, 27, 31, 32, 33, 34, 36, 45, 50.
Lathyrus annuus L. – 16, 19—*1124* (B, BM, MO, UPA), 22, 24, 31, 32, 35, 38.
Lathyrus aphaca L. – 14, 16—*1095* (B, BM, MO, UPA).
Lathyrus cicera L. – 8—*1059* (MO), 19—*1121* (B, BM, MO, UPA).
Lathyrus ochrus (L.) DC. – 20 (cultivated, the crop)—*1131* (B, BM, MO, UPA), 38—*1348* (B, BM, MO, UPA).
Lotus conimbricensis Brot. – 32—*1294* (B, BM, MO, UPA), 37, 46, 50.
Lotus cytisoides L. – 2.
Lotus edulis L. – 22—*1176* (B, BM, MO, UPA), 26, 27, 31, 32, 38, 40, 50.
Lotus ornithopodioides L. – 5—*1011* (B, BM, MO, UPA), 6, 7, 8, 19—*1125* (B, BM, MO, UPA), 20, 21, 22—*1175* (B, BM, MO, UPA), 24, 26, 27, 29, 30, 31, 32, 34, 36, 38, 39 (co-dominant), 42 (flowers smaller than the other collections of *L. ornithopodioides* made during this fieldwork; also 'normal' form observed)—*1376* (B, BM, MO, UPA). 45.
Lotus tetragonolobus L. (*Tetragonolobus purpureus* Moench) – 2—*988* (B, MO, UPA), 8, 16, 19, 21, 26, 30, 32, 34, 39.
Lupinus pilosus L. (*L. varius* subsp. *orientalis* Franco & P. Silva) – 32—*1295* (MO, UPA).
Medicago arabica (L.) Huds. – 7—*1039* (B, BM, MO, UPA), 13, 14, 23, 33, 44, 46, 47.
Medicago coronata (L.) Bartal. – 17—*1105* (B, BM, MO, UPA).
Medicago doliata Carmign. *("M. aculeata")* – 26—*1223* (B, BM, MO, UPA).
Medicago minima (L.) L. – 2—*994a* (B, MO, UPA), 27—*1238* (B, BM, MO, UPA).
Medicago monspeliaca (L.) Trautv. (*Trigonella monspeliaca* L.) – 27—*1255* (MO), 32—*1298* (B, BM, MO, UPA), 49.

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Medicago murex Willd. – 47—*1429* (B, BM, MO, UPA), 50—*1465* (B, BM, MO, UPA) & *1468* (B, BM, MO, UPA).
Medicago orbicularis (L.) Bartal. – 22—*1167* (B, BM, MO, UPA), 27, 49.
Medicago polymorpha L. – 5—*1017c* (MO), 17—*1100* (B, BM, MO, UPA), 21—*1162* (B, BM, MO, UPA), 22—*1177* (B, BM, MO, UPA), 26—*1219* (B, BM, MO, UPA), 31—*1281* (B, BM, MO, UPA), 32, 35, 36, 37, 38, 40, 41, 42, 45, 46—*1412* (B, BM, MO, UPA), 48, 49, 50.
Medicago rigidula (L.) All. – 35—*1317* (B, BM, MO, UPA).
Medicago rugosa Desr. – 5—*1017a* (B, BM, MO, UPA), 7—*1034* (B, BM, MO, UPA).
Medicago sativa L. subsp. *sativa* – 41 (cultivated, the crop).
Medicago scutellata (L.) Mill. – 35—*1318* (B, BM, MO, UPA), 38—*1337* (B, BM, MO, UPA).
Medicago truncatula Gaertn. – 5 (tentative determination, as fruits too immature)—*1017b* (MO), 22—*1168* (B, BM, MO, UPA), 49—*1451* (MO).
Melilotus sulcatus Desf. – 47—*1424* (B, MO, UPA).
Onobrychis aequidentata (Sm.) d'Urv. – 31, 32, 33.
Onobrychis caput-galli (L.) Lam. – 26—*1237* (B, BM, MO, UPA), 27, 34.
Ononis spinosa subsp. *diacantha* (Sieber ex Rchb.) Greuter – 19, 25, 32, 42, 43, 45.
Ononis viscosa subsp. *breviflora* (DC.) Nyman – 26—*1234* (B, BM, MO, UPA).
Ornithopus compressus L. – 20—*1136* (B, BM, MO, UPA), 33—*1308* (B, BM, MO, UPA), 41, 43, 46, 50.
Pisum sativum L. subsp. *sativum* – 20.
Scorpiurus muricatus L. – 2—*980* (MO, UPA), 5, 16, 27—*1239* (B, BM, MO, UPA), 29, 32, 34, 47, 49.
Securigera cretica (L.) Lassen (*Coronilla cretica* L.) – 26—*1227* (B, MO, UPA).
Securigera securidaca (L.) Degen & Dörfl. – 20—*1138* (UPA), 21, 26—*1212* (B, BM, MO, UPA), 29, 31, 36, 38, 42.
Sulla spinosissima (L.) B. H. Choi & H. Ohashi (*Hedysarum spinosissimum* L.) – 27—*1262* (B, BM, MO, UPA).
Trifolium angustifolium L. – 48—*1434* (MO), 50.
Trifolium campestre Schreb. – 26—*1217* (B, BM, MO, UPA), 27, 36, 38, 40, 45, 47, 48, 49, 50.
Trifolium infamia-ponertii Greuter (*T. intermedium* Guss., non Lapeyr.) – 49—*1458* (B, BM, MO, UPA).
Trifolium nigrescens Viv. sensu lato – 22, 25, 32, 33, 35, 36, 38, 40, 41, 42, 46, 47, 50.
Trifolium nigrescens Viv. subsp. *nigrescens* – 7—*1035* (B, BM, MO, UPA), 8—*1045* (B, BM, MO, UPA), 20—*1132* (B, BM, MO, UPA), 31—*1282* (B, BM, MO, UPA).
Trifolium physodes Steven ex M. Bieb. – 34—*1312* (B, BM, MO, UPA).
Trifolium repens L. subsp. *repens* – 46—*1415* (B, BM, MO, UPA).
Trifolium scabrum L. – 49 (heads longer and more cylindric than is normal for *T. scabrum;* cf. *T. lucanicum* Gasp. ex Guss.)—*1454* (MO, UPA).
Trifolium stellatum L. – 4—*1006* (B, BM, MO, UPA), 27—*1261* (B, BM, MO, UPA), 31, 32, 34, 35, 45, 49, 50.
Trifolium subterraneum L. – 43—*1387* (B, BM, MO, UPA).
Trifolium tomentosum L. – 22—*1174* (MO, UPA), 25, 27—*1260* (UPA), 32—*1289* (B, BM, MO, UPA), 34, 35, 38, 40, 45, 49, 50.
Tripodion tetraphyllum (L.) Fourr. (*Anthyllis tetraphylla* L.) – 4, 22—*1186* (B, BM, MO, UPA), 27, 49—*1443* (B, BM, MO, UPA).
Vicia faba L. – 23 (cultivated, the crop), 38 (cultivated, small crop in centre of field), 42 (cultivated, in a patch), 49 (1 plant seen).
Vicia hybrida L. – 5—*1012* (B, BM, MO, UPA), 6, 7, 8, 21, 29, 31, 32, 38, 47—*1427* (B, BM, MO, UPA).
Vicia lathyroides L. – 43—*1383* (B, BM, MO, UPA), 50—*1466* (B, BM, MO, UPA).
Vicia lutea L. – 8—*1044* (B, BM, MO, UPA).
Vicia parviflora Cav. *(V. laxiflora* Brot.; *"V. tenuissima")* – 42—*1378* (B, BM, MO, UPA).

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Vicia sativa L. – 16—*1091* (MO), 20—*1143* (B, BM, MO, UPA), 23, 24, 26, 28, 29, 33, 34, 37, 38, 39, 42, 46, 47, 48.
Vicia villosa subsp. *varia* (Host) Corb. – 34—*1313* (B, BM, MO, UPA).

Linaceae

Linum bienne Mill. – 47, 48, 50.
Linum strictum L. – 49—*1440* (B, BM, MO, UPA).

Lythraceae

Lythrum junceum Banks & Sol. – 16, 21, 34, 47.

Malvaceae

Lavatera bryoniifolia Mill. – 21, 29, 33 (at margin of locality), 42.
Lavatera cretica L. – 21—*1159* (MO, UPA), 22, 26—*1230* (B, BM, MO, UPA), 27, 38, 39, 42, 48.
Malva cretica Cav. subsp. *cretica* – 39—*1359* (B, BM, MO, UPA), 49.
Malva parviflora L. – 49—*1459* (B, BM, MO, UPA).
Malva sylvestris L. – 14, 15, 17—*1097* (B, BM, MO, UPA), 21, 24, 26, 27, 28, 35, 36, 41, 45—*1399* (B, BM, MO, UPA), 46, 47.

Moraceae

Ficus carica L. – 29 (cultivated).

Oleaceae

Olea europaea L. var. *europaea* – 4 (cultivated), 5 (cultivated), 17 (cultivated), 22 (cultivated; 8 large trees in part of field not surveyed), 26 (cultivated), 27 (cultivated; 3 trees), 29 (cultivated), 31 (cultivated), 42 (cultivated).
Olea europaea var. *sylvestris* Brot. – 29.

Orobanchaceae

Orobanche crenata Forssk. – 38 (parasitizing *Vicia faba* L.)—*1355* (UPA).
Orobanche pubescens d'Urv. – 2 (parasitizing *Tordylium apulum* L.), 27—*1253* (B, BM, MO, UPA), 29, 31, 38, 42, 48, 49.
Orobanche ramosa L. sensu lato – 2 (parasitizing *Oxalis pes-caprae* L.), 5, 19, 22, 26—*1222* (B, BM, MO, UPA), 27—*1242* (B, BM, MO, UPA), 31, 36, 39.

Oxalidaceae

Oxalis corniculata L. – 46.
Oxalis pes-caprae L. – 1, 2—*972* (B, BM, MO, UPA), 3 (at margin of locality), 4, 5, 7, 8 (at margin of locality, near road), 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 29, 30, 31, 33, 35, 37, 38 (both single- and double-flowered forms), 39 (double-flowered form)—*1358* (B, BM, MO, UPA), 40, 41, 42, 45 (both single- and double-flowered forms), 46, 47.

Papaveraceae

Fumaria officinalis L. subsp. *officinalis* – 17—*1098* (B, BM, MO, UPA), 18, 19, 23, 24, 25.
Hypecoum procumbens L. subsp. *procumbens* – 4—*999* (MO, UPA), 18—*1114* (B, BM, MO, UPA).
Papaver apulum Ten. – 18—*1117* (B, BM, MO, UPA), 23—*1194* (B, BM, MO, UPA 6 sheets), 25—*1201* (B, BM, MO, UPA), 41—*1369* (B, BM, MO, UPA), 46, 48—*1432* (MO), 50.
Papaver hybridum L. – 17—*1099* (B, BM, MO, UPA), 25—*1200* (MO), 40—*1366* (MO), 45—*1401* (B, BM, MO, UPA).
Papaver rhoeas L. (*P. guerlekense* Stapf) – 2—*984* (B, BM, MO, UPA), 3, 4, 10, 11, 12, 13, 14, 15, 17, 18—*1112* (MO) & *1120* (MO), 19, 20, 22, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 45, 46, 47, 48, 49, 50.

Plantaginaceae

Plantago afra L. – 20—*1127* (MO, UPA), 22—*1187* (MO, UPA), 23, 24, 26, 27, 29, 31, 32, 33, 38, 40, 48.

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Plantago bellardii All. subsp. *bellardii* – 27—*1249* (MO, UPA), 50—*1471* (B, BM, MO, UPA).
Plantago lagopus L. – 6—*1024* (B, BM, MO, UPA), 7, 27, 38—*1346* (B, BM, MO, UPA), 40, 41, 45, 47, 49.
Plantago lanceolata L. – 8—*1055* (B, BM, MO, UPA), 46, 47, 48, 50.
Plantago major L. subsp. *major* – 46—*1416* (B, BM, MO, UPA).
Plantago weldenii Rchb. subsp. *weldenii* (*P. coronopus* subsp. *commutata* (Guss.) Pilg.) – 1, 20, 24, 25, 27, 32, 43, 45.

Polygonaceae

Polygonum equisetiforme Sm. – 8 (forming low hedge at field margin).
Rumex acetosella subsp. *acetoselloides* (Balansa) Nijs – 46, 50—*1469* (B, BM, MO, UPA).
Rumex bucephalophorus L. sensu lato – 32, 33, 34, 40, 41, 46, 47, 50.
Rumex bucephalophorus L. subsp. *bucephalophorus* – 18—*1111* (B, BM, MO, UPA).
Rumex obtusifolius L. – 46—*1410* (B, BM, MO, UPA).
Rumex pulcher L. sensu lato – 37, 38 (valves not yet developed, so cannot determine subspecies)—*1347* (B, BM, MO, UPA), 40, 42, 45, 46 (valves not yet developed, so cannot determine subspecies)—*1413* (B, BM, MO, UPA), 47.
Rumex pulcher subsp. *woodsii* (De Not.) Arcang. (*Rumex pulcher* subsp. *divaricatus* (L.) Murb.) – 48—*1437* (B, BM, MO, UPA).
Rumex tuberosus subsp. *creticus* Rech. f. – 23, 29.

Primulaceae

Anagallis arvensis L. var. *arvensis* – 16—*1092* (B, BM, MO, UPA), 18, 19, 20, 21, 23, 25, 32, 37, 40, 41, 45, 46, 47, 48, 50.
Anagallis arvensis var. *caerulea* (L.) Gouan – 2—*974* (B, BM, MO, UPA), 4, 5, 6, 7, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 50.
Asterolinon linum-stellatum (L.) Duby – 4—*1009* (MO, UPA).
Cyclamen creticum Hildebr. – 29.

Ranunculaceae

Adonis cretica (Huth) Runemark (*A. microcarpa* subsp. *cretica* (Huth) Vierh.) – 38 (1 plant seen)—*1334a* (MO).
Adonis microcarpa DC. – 30 (flowers red)—*1274* (B, BM, MO, UPA 4 sheets), 38 (flowers red)—*1334b* (B, BM, MO, UPA 2 sheets).
Anemone coronaria L. – 1 (flowers blue)—*960* (B, BM, MO, UPA), 3, 4, 7 (flowers blue), 9 (flowers red; both red and blue at locality)—*1060* (B, BM, MO, UPA), 10 (flowers all blue at locality)—*1063* (B, BM, MO, UPA), 13 (flowers red), 14 (flowers mauve; both mauve and red at locality)—*1079* (B, BM, MO, UPA), 16 (flowers blue), 18 (flowers both red and blue), 19 (flowers blue), 22 (not flowering), 24 (flowers blue), 25 (flowers blue), 26, 27, 28, 29 (flowers red; plants mostly in fruit), 31 (not flowering), 32 (flowers mauve), 35, 36, 37 (flowers blue-mauve), 38, 42, 44 (flowers all red at locality)—*1392* (B, BM, MO, UPA).
Anemone hortensis subsp. *heldreichii* (Boiss.) Rech. f. – 10 (at margin of locality), 11—*1068* (B, BM, MO, UPA), 16, 32, 33, 34.
Ranunculus arvensis L. – 12—*1073* (MO, UPA), 13—*1075* (B, MO, UPA), 14, 44, 45—*1405* (B, BM, MO, UPA).
Ranunculus asiaticus L. sensu lato – 7 (not flowering), 16 (not flowering).
Ranunculus asiaticus var. *albus* Hayek – 2—*982* (B, BM, MO, UPA).
Ranunculus asiaticus var. *flavus* Dörfl. – 4 (at margin of locality)—*1004* (B, BM, MO, UPA).
Ranunculus asiaticus var. *sanguineus* (Mill.) DC. – 29—*1272* (B, BM, MO, UPA 2 sheets), 30 (common)—*1273* (B, BM, MO, UPA 2 sheets), 31—*1280* (B, BM, MO, UPA), 32, 35—*1314* (B, BM, MO, UPA), 36, 42—*1375* (MO, UPA).
Ranunculus chius DC. – 46—*1417* (B, BM, MO, UPA), 47.

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Ranunculus ficaria subsp. *chrysocephalus* P. D. Sell *("R. ficaria* subsp. *ficariiformis")* – 1—*965* (B, BM, MO, UPA), 6, 7, 8, 9, 10, 11—*1065* (B, BM, MO, UPA), 12, 13, 14, 15, 18, 22, 24, 28, 29, 30, 31, 33, 35, 36, 41, 42, 43, 44.
Ranunculus gracilis E. D. Clarke – 14, 15, 30, 31, 32—*1300* (B, BM, MO, UPA), 33, 42, 44 (plants somewhat atypical)—*1393* (B, BM, MO, UPA).
Ranunculus marginatus d'Urv. – 8—*1048* (B, BM, MO, UPA), 40—*1363* (B, BM, MO, UPA), 45, 46, 47, 48, 49.
Ranunculus muricatus L. – 17—*1107* (B, BM, MO, UPA), 20—*1140* (B, BM, MO, UPA), 23, 30, 41, 42, 45, 47.
Ranunculus paludosus Poir. – 1, 6—*1029* (B, BM, MO, UPA), 11, 16—*1087* (B, BM, MO, UPA), 20, 24, 25, 32, 33, 34, 35, 36, 37, 42, 43, 45, 50.
Ranunculus sprunerianus Boiss. – 9 (abundant), 10 (abundant), 11, 14, 15, 44.

Resedaceae

Reseda alba L. – 22—*1165* (B, BM, MO, UPA).

Rhamnaceae

Rhamnus lycioides subsp. *oleoides* (L.) Jahand. & Maire – 26.

Rosaceae

Aphanes arvensis L. – 16—*1090* (MO), 20—*1135* (B, BM, MO, UPA), 25—*1207* (MO).
Malus pumila Mill. – 29 (cultivated).
Potentilla reptans L. – 21.
Prunus dulcis (Mill.) D. A. Webb – 29 (cultivated).
Prunus webbii (Spach) Vierh. – 29.
Pyrus spinosa Forssk. (*P. amygdaliformis* Vill.) – 32.
Rubus sanctus Schreb. *("R. canescens"; "R. ulmifolius")* – 21, 29.
Sanguisorba minor Scop. sensu lato – 2, 5 (hypanthium immature, so cannot determine subspecies)—*1016* (B, MO, UPA), 20, 28, 29, 31, 34, 35, 36, 38, 42, 43.
Sanguisorba minor subsp. *verrucosa* (Ehrenb. ex Decne.) Holmboe (*S. minor* subsp. *magnolii* (Spach) Briq.) – 26—*1216* (B, BM, MO, UPA).
Sarcopoterium spinosum (L.) Spach – 26, 32, 42.

Rubiaceae

Asperula arvensis L. – 11, 14, 15, 22 (first Cretan record outside Dikti massif)—*1178* (B, MO, UPA).
Galium aparine L. – 7, 8—*1058* (MO, UPA), 13, 20, 21, 22, 23, 29, 30, 31, 42, 45, 46, 47, 48, 50.
Galium murale (L.) All. – 6—*1027* (B, BM, MO, UPA), 7, 19—*1126* (B, BM, MO, UPA), 20, 24, 25, 26, 34, 35, 37, 38, 42, 45, 49—*1442* (B, BM, MO, UPA), 50.
Galium setaceum Lam. – 49—*1457* (B, BM, MO, UPA).
Galium tricornutum Dandy – 24—*1195* (B, BM, MO, UPA), 39—*1361* (MO), 45.
Galium verrucosum Huds. – 39—*1360* (B, BM, MO, UPA).
Sherardia arvensis L. – 2—*973* (B, BM, MO, UPA), 4, 6, 7, 8, 15, 16, 18, 19, 20, 22, 23, 24, 26, 28, 29, 30, 32, 34, 35, 37, 38, 42, 45, 46, 47, 49, 50.
Valantia hispida L. – 2—*975* (B, BM, MO, UPA), 4, 27, 49.

Rutaceae

Ruta chalepensis L. subsp. *chalepensis* – 29.

Santalaceae

Osyris alba L. – 29.

Scrophulariaceae

Bellardia trixago (L.) All. – 26—*1220* (B, BM, MO, UPA), 37.
Linaria chalepensis (L.) Mill. – 38—*1341* (B, BM, MO, UPA).

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Linaria pelisseriana (L.) Mill. – 32—*1292* (B, BM, MO, UPA), 40, 48, 50.
Linaria triphylla (L.) Mill. – 36—*1320* (B, BM, MO, UPA).
Misopates orontium (L.) Raf. – 27—*1240* (MO, UPA), 31, 38, 49.
Parentucellia latifolia (L.) Caruel subsp. *latifolia* – 22—*1171* (B, BM, MO, UPA), 27, 32, 33, 34, 43, 44, 45.
Parentucellia viscosa (L.) Caruel – 26—*1233* (B, BM, MO, UPA), 33.
Scrophularia lucida L. – 21—*1161* (B, BM, MO, UPA), 29, 31, 34.
Scrophularia peregrina L. – 29, 41—*1371* (B, BM, MO, UPA).
Verbascum macrurum Ten. – 14, 15 (at margin of locality), 43.
Verbascum sinuatum L. – 26, 29, 33, 38, 42.
Veronica arvensis L. – 20—*1128* (B, BM, MO, UPA), 25—*1206* (MO, UPA), 28, 30, 31, 35—*1316* (B, BM, MO, UPA), 36, 40, 41—*1373* (B, BM, MO, UPA), 42, 43, 45.
Veronica cymbalaria Bodard – 1—*970* (B, BM, MO, UPA), 3—*994b* (B, BM, MO, UPA), 7, 9, 12, 14, 18, 19, 24, 25, 28, 31, 35, 46, 48.
Veronica persica Poir. – 12—*1069* (B, BM, MO, UPA), 14, 18, 28, 30, 42, 46.
Veronica triloba (Opiz) Wiesb. (*V. hederifolia* subsp. *triloba* (Opiz) Čelak.) – 14—*1083* (B, BM, MO, UPA), 15, 18—*1113* (B, BM, MO, UPA), 24.

Solanaceae

Datura stramonium L. – 12, 13 (dead remains from previous year).
Mandragora officinarum L. (*M. autumnalis* Bertol.) – 4, 5, 7, 20, 24, 25, 26, 27, 29, 37, 45.

Theligonaceae

Theligonum cynocrambe L. – 26, 27, 30, 31, 32, 34—*1311* (B, BM, MO, UPA), 35, 36, 45, 49.

Umbelliferae

Ammi majus L. – 8, 17, 18, 19, 22, 23, 30, 39.
Bifora testiculata (L.) Spreng. ex Schult. – 9, 14, 15, 24—*1196* (B, BM, MO, UPA), 40.
Bunium ferulaceum Sm. – 9, 10 (abundant), 11, 16—*1086* (B, BM, MO, UPA), 19, 22, 28, 32, 34, 38, 40, 42.
Conium maculatum L. – 13.
Daucus carota L. – 14, 17, 19, 21—*1160* (B, BM, MO, UPA), 22, 24, 25, 26, 27, 29, 32, 33, 34, 37, 38, 41, 42, 46, 47, 48, 50.
Eryngium campestre L. – 1, 5, 9, 10, 14, 15, 16, 18, 19, 20, 22, 24, 25, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 42, 44, 45, 49.
Eryngium creticum Lam. – 29.
Ferula communis L. sensu lato – 38.
Ferula communis subsp. *glauca* (L.) Rouy & Camus – 5, 7, 10 (at margin of locality), 14, 24.
Foeniculum vulgare subsp. *piperitum* (Ucria) Cout. – 14, 19, 24, 34, 38, 39, 42, 45, 48, 50.
Lagoecia cuminoides L. – 4, 32—*1297* (MO, UPA), 48—*1433* (MO), 49.
Oenanthe pimpinelloides L. – 33, 34, 37—*1325* (B, BM, MO, UPA), 46, 47.
Orlaya daucoides (L.) Greuter (*O. kochii* Heywood) – 20—*1149* (B, BM, MO, UPA), 40—*1368a* (MO), 48—*1438* (B, MO, UPA).
Pimpinella peregrina L. – 29, 31, 42.
Scandix australis L. – 28—*1269* (MO, UPA), 32—*1293* (B, BM, MO, UPA), 33, 34, 40, 42, 49, 50.
Scandix pecten-veneris L. – 1—*969* (BM, MO, UPA), 3, 4, 5, 7, 8—*1053* (B, BM, MO, UPA), 9, 14, 15, 16, 17, 18, 19, 20, 22, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38—*1339* (B, BM, MO, UPA), 39, 40, 42, 44, 45, 46, 47, 48, 49, 50.
Smyrnium olusatrum L. – 38.
Smyrnium perfoliatum subsp. *rotundifolium* (Mill.) Hartvig (*S. rotundifolium* Mill.) – 18—*1119* (MO, UPA), 33 (at margin of locality)—*1307* (B, BM, MO, UPA).
Tordylium apulum L. – 2—*976* (B, BM, MO, UPA), 4, 5, 6, 7, 17, 18, 19, 20, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 38, 39, 41, 42, 45, 48, 49, 50.
Tordylium officinale L. – 28—*1271* (B, BM, MO, UPA).

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Torilis arvensis (Huds.) Link – 46—*1421* (B, BM, MO, UPA).
Torilis leptophylla (L.) Rchb. f. – 32—*1299* (B, BM, MO, UPA), 38—*1344* (B, BM, MO, UPA), 42.
Torilis nodosa (L.) Gaertn. – 17—*1101* (B, BM, MO, UPA), 20—*1141* (MO), 27, 29, 30, 38—*1356* (B, BM, MO, UPA), 41, 42, 45, 48.

Urticaceae

Parietaria judaica L. (*P. diffusa* Mert. & W. D. J. Koch) – 46—*1419* (B, BM, MO, UPA).
Urtica pilulifera L. – 28, 29.
Urtica urens L. – 17—*1102* (B, BM, MO, UPA).

Valerianaceae

Valerianella coronata (L.) DC. or perhaps *V. discoidea* (L.) Loisel. – 2—*978* (MO), 20—*1133* (B, BM, MO, UPA), 27—*1250* (MO, UPA), 36—*1319* (B, BM, MO, UPA), 38—*1343* (B, BM, MO, UPA), 40, 45—*1404* (B, BM, MO, UPA).
Valerianella echinata (L.) DC. – 18—*1118* (B, BM, MO, UPA).
Valerianella vesicaria (L.) Moench – 27—*1245* (B, BM, MO, UPA).

Monocotyledones

Alliaceae

Allium ampeloprasum L. – 25, 26, 27, 32, 38, 42, 46.
Allium nigrum L. – 1, 5, 6, 7, 8, 9, 10, 14, 19 (at margin of locality), 28, 29, 30, 33, 34, 35, 36, 37 (in adjacent field to south, in identical habitat)—*1331* (MO, UPA), 38, 39 (co-dominant), 41.
Allium subhirsutum L. – 15, 42—*1377* (B, BM, MO, UPA incl. living coll.).
Allium trifoliatum Cirillo – 19—*1123* (B, BM, MO, UPA incl. living coll.), 22—*1179* (B, BM, MO, UPA), 24, 25, 30, 31, 38, 45.

Amaryllidaceae

Narcissus tazetta L. subsp. *tazetta* – 26.

Araceae

Arisarum vulgare Targ. Tozz. – 26, 31, 37.
Arum concinnatum Schott – 7, 21, 25, 29, 30 (1 plant seen), 41.
Dracunculus vulgaris Schott – 26.

Asparagaceae

Asparagus aphyllus subsp. *orientalis* (Baker) P. H. Davis – 26, 29, 31, 32, 42, 49.

Asphodelaceae

Asphodeline lutea (L.) Rchb. – 6.
Asphodelus ramosus L. subsp. *ramosus ("A. aestivus")* – 6, 7, 16, 29, 32, 33, 35, 36, 40, 42, 43.

Colchicaceae

Colchicum macrophyllum B. L. Burtt – 29, 36.

Gramineae

Aegilops neglecta Req. ex Bertol. (*Triticum neglectum* (Req. ex Bertol.) Greuter) or perhaps *A. biuncialis* Vis. (*A. lorentii* Hochst.) – 40—*1364* (B, BM, MO, UPA), 49—*1455* (B, BM, MO, UPA).
Aira elegantissima Schur – 50—*1470* (B, BM, MO, UPA).
Anthoxanthum odoratum L. – 33 (at margin of locality).
Avena barbata Pott ex Link – 27 (lemma aristulae 7.5-10 mm, lateral seta(e) absent)—*1244* (B, BM, MO, UPA).
Avena sativa L. – 36 (cultivated, the crop), 48 (cultivated, the crop).
Avena sterilis subsp. *ludoviciana* (Durieu) Gillet & Magne – 5—*1013* (B, BM, MO, UPA), 27—*1258* (B, BM, MO, UPA).

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Brachypodium distachyon (L.) P. Beauv. (*Trachynia distachya* (L.) Link) – 26—*1225* (B, BM, MO, UPA).
Briza maxima L. – 26—*1218* (MO, UPA), 27, 32, 49, 50.
Bromus alopecuros subsp. *caroli-henrici* (Greuter) P. M. Sm. (*"B. alopecuros* subsp. *biaristulatus"; B. caroli-henrici* Greuter) – 38—*1340* (B, BM, MO, UPA).
Bromus catharticus Vahl (*B. unioloides* Kunth; *B. willdenowii* Kunth; *Ceratochloa cathartica* (Vahl) Herter) – 46—*1407* (B, BM, MO, UPA).
Bromus diandrus Roth (*Anisantha diandra* (Roth) Tutin ex Tzvelev) or perhaps *B. rigidus* Roth (*A. rigida* (Roth) Hyl.) – 8 (confirmed as *B. diandrus*)—*1050* (B, BM, MO, UPA), 17, 21, 23, 24, 26, 27, 29, 30, 31, 33, 34, 35, 37, 38, 39, 41, 42, 45, 46, 47, 48, 49, 50.
Bromus hordeaceus subsp. *molliformis* (J. Lloyd ex Godr.) Maire & Weiller *("B. hordeaceus* subsp. *divaricatus")* – 31—*1288* (B, MO, UPA), 37—*1330* (B, MO, UPA), 42—*1374* (MO), 45—*1403* (B, BM, MO, UPA), 46—*1422* (B, BM, MO, UPA), 47.
Bromus japonicus Thunb. – 8—*1052* (B, BM, MO, UPA), 26—*1221* (B, BM, MO, UPA) & *1231* (B, BM, MO, UPA), 38—*1342* (B, BM, MO, UPA), 40, 48—*1435* (B, BM, MO, UPA), 49.
Bromus madritensis subsp. *haussknechtii* (Boiss.) H. Scholz (*Anisantha madritensis* subsp. *haussknechtii* (Boiss.) H. Scholz; *B. haussknechtii* Boiss.) – 30—*1276* (B, BM, MO, UPA).
Bromus madritensis L. subsp. *madritensis (Anisantha madritensis* (L.) Nevski subsp. *madritensis)* – 8—*1057* (B, BM, MO, UPA), 49 (lemmas narrow, 2-2.5 mm wide, awns long, 23-27 mm)—*1448* (B, BM, MO, UPA).
Bromus scoparius L. – 38—*1357* (B, BM, MO, UPA).
Bromus tectorum L. (*Anisantha tectorum* (L.) Nevski) – 18—*1116* (B, BM, MO, UPA), 27—*1243* (B, BM, MO, UPA), 49—*1453* (B, BM, MO, UPA).
Catapodium rigidum (L.) C. E. Hubb. ex Dony (*Desmazeria rigida* (L.) Tutin) – 22—*1170* (B, BM, MO, UPA), 25—*1208* (MO), 31—*1283* (B, BM, MO, UPA), 32, 35, 36, 38, 40, 42, 45, 47, 48, 49, 50.
Cynosurus echinatus L. – 48—*1436* (B, BM, MO, UPA), 50.
Dasypyrum villosum (L.) P. Candargy – 26—*1214* (B, BM, MO, UPA), 31, 32, 34, 37, 38, 39, 50.
Gastridium phleoides (Nees & Meyen) C. E. Hubb. – 49—*1462* (B, BM, MO, UPA).
Hordeum bulbosum L. – 38—*1350* (B, BM, MO, UPA), 39, 42.
Hordeum leporinum Link (*H. murinum* subsp. *leporinum* (Link) Arcang.) – 8—*1054* (B, BM, MO, UPA), 17, 18, 22, 24, 27, 30, 40, 41, 45, 46, 47, 48, 49.
Hordeum vulgare subsp. *agriocrithon* (Åberg) A. Löve & D. Löve, emend. H. Scholz *("H. spontaneum")* – 26—*1228* (B, BM, MO, UPA), 38, 42.
Hordeum vulgare L. subsp. *vulgare* – 16 (cultivated, the crop), 22 (cultivated, the crop), 37 (cultivated, the crop), 47 (cultivated, the crop).
Hyparrhenia hirta (L.) Stapf – 26, 49.
Lagurus ovatus L. – 31—*1285* (B, BM, MO, UPA), 49, 50.
Lolium perenne L. – 27 (stem base looks probably perennial; if annual then *L. rigidum* subsp. *rigidum*)—*1247* (B, BM, MO, UPA).
Lolium rigidum Gaudin subsp. *rigidum* – 49—*1444* (B, BM, MO, UPA) & *1461* (B, BM, MO, UPA).
Lolium temulentum L. – 37—*1328* (B, BM, MO, UPA).
Phalaris minor Retz. – 38—*1345* (B, BM, MO, UPA).
Phleum subulatum (Savi) Asch. & Graebn. subsp. *subulatum* – 49—*1452* (B, BM, MO, UPA).
Phragmites australis (Cav.) Trin. ex Steud. – 21.
Piptatherum miliaceum (L.) Coss. – 26, 29, 31.
Poa annua L. (*Ochlopoa annua* (L.) H. Scholz) – 20—*1144* (B, BM, MO, UPA).
Poa bulbosa L. or perhaps *P. pelasgis* H. Scholz – 31—*1284* (B, BM, MO, UPA), 32, 33, 34, 35, 36, 42, 43—*1389* (B, BM, MO, UPA), 45, 47, 50.
Poa infirma Kunth (*Ochlopoa infirma* (Kunth) H. Scholz) – 12—*1070b* (B, BM, MO, UPA), 13, 17, 20, 30, 41, 43.

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Poa maroccana Nannf. (*Ochlopoa maroccana* (Nannf.) H. Scholz) – 12—*1070a* (B, BM, MO, UPA), 13.
Rostraria cristata (L.) Tzvelev (*Lophochloa cristata* (L.) Hyl.) – 22—*1189* (UPA), 27—*1248* (MO, UPA), 31—*1286* (B, BM, MO, UPA), 35, 38, 40, 42, 45, 48, 49.
Secale cereale L. – 45 (cultivated, the crop)—*1400* (B, BM, MO, UPA).
Stipa capensis Thunb. – 38, 49—*1441* (B, BM, MO, UPA).

Hyacinthaceae

Charybdis maritima (L.) Speta (*Drimia maritima* (L.) Stearn; *Urginea maritima* (L.) Baker) – 7, 16, 20, 26, 29, 31, 32, 42.
Muscari comosum (L.) Mill. – 1, 2, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 22—*1173* (B, BM, MO, UPA), 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 43, 44, 48, 49, 50.
Ornithogalum divergens Boreau (*O. umbellatum* L. p.p.) or perhaps relatively large individuals of the following taxon – 35, 36—*1321* (B, BM, MO, UPA), 38.
Ornithogalum exscapum var. *collinum* (Guss.) Stearn (*O. collinum* Guss.) – 29, 45.
Ornithogalum narbonense L. – 16, 26, 39, 49—*1446* (B, BM, MO, UPA).
Ornithogalum nutans L. – 9—*1061* (UPA incl. living coll.), 14 (common)—*1078* (B, BM, MO, UPA incl. living coll.), 15.

Iridaceae

Gladiolus italicus Mill. – 1, 3, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 22—*1164* (B, MO, UPA), 26, 28, 31, 32, 33, 34, 35, 36, 37, 38, 39 (co-dominant), 42, 44, 47, 49.
Hermodactylus tuberosus (L.) Mill. – 32, 33—*1309* (B, BM, MO, UPA).
Moraea sisyrinchium (L.) Ker-Gawl. (*Gynandriris sisyrinchium* (L.) Parl.) – 7, 19, 25—*1203* (B, BM, MO, UPA), 26, 32, 35, 36.

Juncaceae

Juncus bufonius L. – 37.

Liliaceae

Gagea chrysantha (Jan) Schult. & Schult. f. (*G. amblyopetala* Boiss. & Heldr.) – 11—*1067* (B, BM, MO, UPA), 43—*1385* (B, BM, MO, UPA).
Gagea graeca (L.) A. Terracc. – 32—*1291* (B, BM, MO, UPA).
Tulipa doerfleri Gand. *("T. orphanidea")* – 33—*1306* (B, BM, MO, UPA).
Tulipa saxatilis Sieber ex Spreng. (*T. bakeri* A. D. Hall) – 15 (dominant)—*1085* (B, BM, MO, UPA incl. living coll.), 43—*1380* (B, BM, MO, UPA incl. living coll.).

Orchidaceae

Himantoglossum robertianum (Loisel.) P. Delforge (*Barlia robertiana* (Loisel.) Greuter) – 5, 29, 32.
Ophrys bombyliflora Link – 16—*1093* (UPA incl. living coll.).
Ophrys cretica (Vierh.) E. Nelson sensu lato (probably *O. ariadnae* Paulus; less likely *O. cretica* (Vierh.) E. Nelson) – 7.
Ophrys lutea Cav. sensu lato (*O. phryganae* Devillers-Terschuren & Devillers or *O. sicula* Tineo) – 4, 6-*1025* (UPA incl. living coll.), 31, 32, 34.
Orchis sitiaca (Renz) P. Delforge – 34.
Orchis boryi Rchb. f. – 34.
Orchis collina Banks & Sol. (*O. saccata* Ten.) – 6.
Orchis laxiflora Lam. – 33.
Orchis papilionacea L. – 20.
Orchis tridentata Scop. – 33 (at margin of locality).
Serapias bergonii E. G. Camus (*S. vomeracea* subsp. *laxiflora* (Soó) Gölz & H. R. Reinhard) – 26.
Serapias orientalis (Greuter) H. Baumann & Künkele (*S. vomeracea* subsp. *orientalis* Greuter) – 26.

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Discussion

The coincidence map (Fig. 2) is based on the numbers of species recorded at each locality. It shows a distinct upward trend in species richness from east to west, which is at least in part a result of our starting the survey in the east on 2 April, early in the flowering season, when most of the weeds were insufficiently developed to be visible or identifiable, especially at the higher altitudes of the Katharo and Lasithi plains. The survey finished in the west on 7 May, when many species were in flower or fruit and therefore readily identifiable. Other contributing factors may include decreasing rainfall from west to east, variations in altitude, geological substrate, field size and land management regime. We note that, despite covering much ground in the east (Ep. Ierapetras and Ep. Sitias), we actually found very few examples of traditional agriculture there.

We observed *Oxalis pes-caprae* L. to be dominating the weed flora in many parts of Crete, especially in herbicide-treated, mechanically tilled, irrigated olive groves and vineyards. The relatively young olive groves of Ep. Sitias are a case in point: very little grows under the trees there except *Oxalis*. Herbicides tend to kill off the weeds competing with the *Oxalis,* which itself is relatively resistant, at least to non-translocated herbicides. Mechanical tillers spread the bulblets via the mud that adheres to their blades. This was illustrated well at Neohori in central Crete (locality 17), where the olive grove surveyed was not tilled and had a rich weed flora with very little *Oxalis,* whereas all the surrounding groves, which had been tilled, had abundant *Oxalis*. Indeed, absence or relative scarcity of *Oxalis* was often taken as an indication that traditional agriculture was surviving. Of the 19 localities where *Oxalis* was not recorded during the fieldwork, 15 were above 500 m, which is probably too high for the species to thrive, and certainly the ten localities above 700 m exceed the altitudinal limit for the species (c. 600 m). Of the four remaining localities, two are remote from villages (20 and 27), and two are on the far western coast of Crete (48 and 49). It is quite likely that *Oxalis* has not yet arrived in those places.

The commonest species, those recorded at 25 or more of the 50 localities, were as follows (total of localities in parentheses): *Scandix pecten-veneris* L. (39), *Anagallis arvensis* L. (38), *Muscari comosum* (L.) Mill. (38), *Papaver rhoeas* L. (37), *Sonchus oleraceus* L. (32), *Oxalis pes-caprae* L. (31), *Cerastium glomeratum* Thuill. (29), *Gladiolus italicus* Mill. (29), *Tordylium apulum* L. (29), *Eryngium campestre* L. (28), *Sherardia arvensis* L. (28), *Silene vulgaris* (Moench) Garcke (28), *Anemone coronaria* L. (26) and *Ranunculus ficaria* L. (25). The localities for all are widely distributed on the island, with no noticeable trends, with the exception of the last two species, which

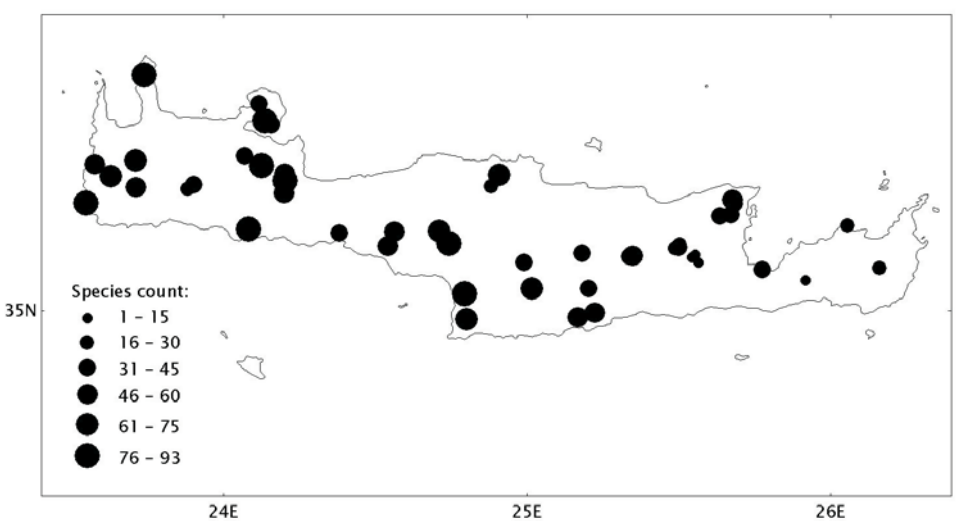


Fig. 2. Coincidence map based on numbers of species recorded at each locality.

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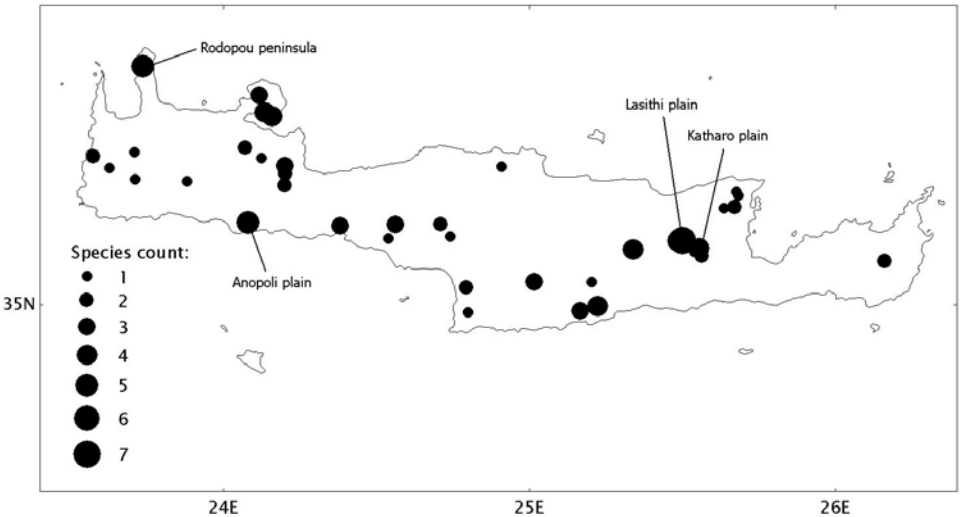


Fig. 3. Coincidence map of obligate weeds.

were not recorded in the far west. However, this may be because they are both early-flowering geophytes that have normally set seed and withered by May when the far west was surveyed. They may well have been present but invisible. They were both last seen on 1 May at over 1000 m on the Omalos plain (localities 43 and 44).

Obligate weeds of traditional agriculture

The 20 taxa listed in Table 1 may be regarded as reliable indicators of traditional agriculture, in that they are restricted (obligate) to such habitats, in contrast to less specialized (facultative) weeds, which can tolerate a wider variety of cultivation methods and rapidly colonize newly cultivated land such as ploughed phrygana. Six additional obligate weeds known to occur in Crete (all annuals) were not found during the fieldwork: *Adonis annua* subsp. *cupaniana* (Guss.) C. Steinb. *(Ranunculaceae), Bupleurum lancifolium* Hornem. *(Umbelliferae), Lolium subulatum* Vis. *(Gramineae), Roemeria hybrida* (L.) DC. *(Papaveraceae), Turgenia latifolia* (L.) Hoffm. *(Umbelliferae)* and *Vaccaria hispanica* (Mill.) Rauschert *(Caryophyllaceae)*. The list of 26 taxa is not intended to be comprehensive, and there are perhaps a few others that should be added.

The coincidence map in Fig. 3 is based on the records of obligate weeds listed in Table 1. The primary 'hot spot' is the Lasithi plain in the Dikti massif of the east (localities 12-15), with a total of seven obligate weed species recorded at the four localities. This plain, at least its drier eastern part, has been cultivated for well over 500 years (Rackham & Moody 1996: 95-96, 149-150) and the altitude (800-850 m) is too high for *Oxalis pes-caprae* L. to invade and out-compete the 'traditional' weeds. Other hot spots are the Katharo plain (localities 9-11), east of and higher (1100-1150 m) than the Lasithi plain, with six species at the three localities; the Rodopou peninsula (locality 45), with five species; and the Anopoli plain (localities 35 and 36), with five species at the two adjacent localities.

Asperula arvensis L. – Our record from Gangales (locality 22), just above the northern edge of the Mesara plain, is the first Cretan record of this annual species outside the Dikti massif of the east. Only a few individuals were seen in the part of the field surveyed. In the Dikti massif, the species is known from the Lasithi and Katharo plains, where it was first recorded by Greuter & al. (1984: 288) and where we also found it.

Bupleurum lancifolium Hornem. – This annual species was not found during this fieldwork, and we know of no post-1930 records from Crete. Several older records were cited by Rechinger

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Table 1. Obligate weeds of traditional agriculture recorded during the fieldwork in Crete.

| **Obligate weed taxon** | **Life form** | **Locality number and habitat** (f = field; o = olive grove; v = vineyard) | | |

(1943: 402), both under the species and under var. *longifolium* (Desv.) Hayek. Confirmation of its continued existence in Crete would be welcome.

Cerastium dichotomum L. – The only records of this annual species from Crete are from the Katharo plain, where we ourselves collected it. It was first recorded there by Greuter & al. (1984: 31).

Leontice leontopetalum L. – This conspicuous, large-tubered geophyte is nowadays rare in Crete and has almost certainly been decreasing over the last century. We found it at only three localities. We searched for it in the complex of vineyards and olive groves around locality 21, west of Agia Varvara, on the basis of J. Fielding (pers. comm.) having seen a non-flowering individual there on 5 April 2000, but almost all the cultivated ground in that area is now heavily treated with herbicides and the weed flora has been devastated.

Linaria chalepensis (L.) Mill. – We found this annual species only at Sternes (locality 38), on the Akrotiri peninsula. However, we may have overlooked it at some of the previously visited localities because it was insufficiently developed for determination.

Ranunculus asiaticus var. *sanguineus* (Mill.) DC. – We found the red-flowered variety of this tuberous geophyte at seven localities. In Crete, it seems to have a completely different ecological niche to the plants with deep or pale yellow flowers (var. *flavus* Dörfl.) and white or pink flowers (var. *albus* Hayek). Instead of growing in semi-natural phrygana and garigue habitats, or on steep banks, the red-flowered variety seems invariably to occur in cultivated ground. When collecting specimens, we noticed that the plants have underground stolons, by which they were spreading vegetatively.

Tulipa doerfleri Gand. – This bulbous geophyte is the only endemic weed in the Cretan flora, assuming it is distinct from *T. hageri* Heldr. from the Greek mainland. It has its centre of distribution – and its largest population – on the Gious Kambos plain (locality 33), where we collected it. The plants spread copiously by bulblets and underground stolons, infesting the fields they inhabit, but they appear never to produce seeds. The showy red flowers are used by the people for ornament. Indeed, we saw four large bowlfuls for sale by a street vendor in Hania city on 29 April.

Turgenia latifolia (L.) Hoffm. – This annual species was not found during this fieldwork, and we know of no post-1930 records of from Crete. Three older records, the most recent from 1914, were cited by Rechinger (1943: 418), and another was given by Weiss (1869: 50). Confirmation of its continued existence in Crete would be welcome.

Other significant records

Bromus catharticus Vahl – Our record from Sasalos (locality 46) is the third from Crete. This short-lived perennial grass from South America was previously recorded from the same part of Crete: near Plakalona (Ep. Kissamou) by Böhling & Scholz (2003: 37, as *Ceratochloa cathartica* (Vahl) Herter) and between Maleme and Platanias (Ep. Kidonias) by Kalheber in Greuter & al. (1985: 31).

Bromus japonicus Thunb. – This annual, weedy species was overlooked by Turland & al. (1993) and Chilton & Turland (1997), but had been previously recorded from Rethimno and Ep. Maleviziou by Damanakis & Economou (1986), subsequently cited by Böhling & Scholz (2003: 34). We found it at six localities, and our five gatherings were determined by K. Ammann. The species might possibly be confused with the similar and related *B. arvensis* L., which was recently recorded as new to Crete from Neos Kournas in Ep. Apokoronou (Scholz & Böhling 2000: 257, Böhling & Scholz 2003: 33).

Rumex obtusifolius L. – Our record from Sasalos is the second for this perennial species from Crete. The first, from Anisaraki, also in Ep. Selinou (Böhling & Snogerup in Greuter & Raus 2000: 239), was for subsp. *subalpinus* (Schur) Rech. f. However, the valves on the Sasalos gathering, although immature, are more or less lanceolate, with a few short teeth in the proximal half, and all three valves bear a tubercle; in addition, the leaves are papillate abaxially. In these features it agrees with subsp. *transiens* (Simonk.) Rech. f. as described by Akeroyd (in Tutin & al. 1993: 106).

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Scorzonera cretica Willd. – Our records from Anopoli and near Pemonia (localities 35 and 42 respectively) supplement the known distribution of this Aegean endemic species. Previously, the western limit of the main distribution was thought to be the Asfendos gorge in Ep. Sfakion (21 April 1989, *Chilton & Turland obs.;* mapped in Turland & al. 1993: map 442), with an outlier 23 km further west in the Samaria gorge (also Ep. Sfakion); Anopoli is halfway in-between. The Samaria gorge population had been described as a locally endemic species, *S. dependens* Rech. f. (Rechinger 1934: 18-19, 1943: 687, 1944: 159), which was briefly discussed by Chater (in Tutin & al. 1976: 322, in a note under *S. cretica*) and was subsequently treated as a questionable synonym of *S. cretica* by Barclay (1986: 35), who was followed by Turland & al. (1993: 71).

Veronica triloba (Opiz) Wiesb. – The two previous records for this annual species from Crete (Greuter & al. 1984: 291, as *V. hederifolia* subsp. *triloba* (Opiz) Čelak.) are both from natural habitats at higher altitudes (calcareous slopes and scree at 1400 m) in the Psiloritis and Afendis Kavousi massifs. It is noteworthy, therefore, that the species also occurs as a weed in higher-altitude cultivated fields (530-850 m) in the Dikti massif (Lasithi plain), at its western base (Geraki, locality 18), and in the Asterousia mountains (Ahendrias, locality 24).

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