

1-1-2005

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### Recommended Citation

ÖZTÜRK, ŞULE; GÜVENÇ, ŞABAN; and ORAN, SEYHAN (2005) "Floristic Lichen Records from Isparta and Burdur Provinces," *Turkish Journal of Botany*. Vol. 29: No. 3, Article 6. Available at: <https://journals.tubitak.gov.tr/botany/vol29/iss3/6>

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## Floristic Lichen Records from Isparta and Burdur Provinces

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Received: 09.03.2004

Accepted: 24.01.2005

**Abstract:** Seventy-three taxa from Isparta and Burdur provinces were identified. Thirty-eight taxa are new records for Isparta province. Two taxa, *Collema cristatum* (L.) Weber ex F.H.Wigg. and *Squamarina cartilaginea* (With.) P.James var. *pseudocrassa* D.Hawksw., were determined from Burdur province and are new records for Burdur.

**Key Words:** Lichen, Biodiversity, Isparta, Burdur.

### Isparta ve Burdur İllerinden Floristik Liken Kayıtları

**Özet:** Bu çalışmada Isparta ve Burdur illerinden 73 takson tespit edilmiştir. 38 takson Isparta ili için yeni kayıttır. Sadece *Collema cristatum* (L.) Weber ex F.H.Wigg. ve *Squamarina cartilaginea* (With.) P.James var. *pseudocrassa* D.Hawksw. taksonları Burdur için yeni kayıttır.

**Anahtar Sözcükler:** Liken, Biyoçeşitlilik, Isparta, Burdur.

### Introduction

Many studies on the Turkish lichen flora have increased in the last 2 decades (Çiçek & Özdemir Türk, 1998; Nimis & John, 1998; Yıldız et al., 2002; Öztürk & Güvenç, 2003), but the lichen flora of some regions is still insufficiently known.

There have been 3 papers referring to lichens from Burdur province (Szatala, 1960; Pisut, 1970; Schindler, 1998). Twelve lichen species are given from the Acıgöl and Çeltikci Beli regions of Burdur province in these papers. The lichen flora of Isparta province is better known. The lichen given species by Szatala (1960) had been collected from the vicinity of Eğirdir Lake. Recently, certain lichen species have been reported from the study area (Öztürk et al., 1998; Öztürk & Kaynak, 1999).

### Collection and Identification

The present paper is based on collections made by Prof. Dr. Gönül Kaynak, from Bursa. The samples were collected from 22 different localities from Isparta and Burdur provinces in 1995 and 1996 (Figure 1). The samples were identified with the aid of flora books and

identification keys (Poelt, 1974; Purvis et al., 1994; Wirth, 1995; Giralt, 2001). The specimens are now kept at the herbarium of the Faculty of Science and Arts, Uludağ University, Bursa (BULU).

### Collecting sites

#### ISPARTA:

1. Uluborlu; between Uluborlu and Senirkent, near the road, 1100 m, 38° 06' N, 30° 29' E, 18.07.1995.
2. Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, 1000-1300 m, 38° 04' N, 30° 31' E, 19.07.1995.
3. Uluborlu; İnhisar village, in the vicinity of Çizenkaya, 1400-1800 m, 38° 07' N, 30° 24' E, 21.07.1995.
4. Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, 1550 m, 38° 06' N, 30° 29' E, 21.07.1995.
5. Uluborlu; Uluborlu-Erendost road, Karatavuk Stream, 1200 m, 38° 06' N, 30° 29' E, 24.07.1995.

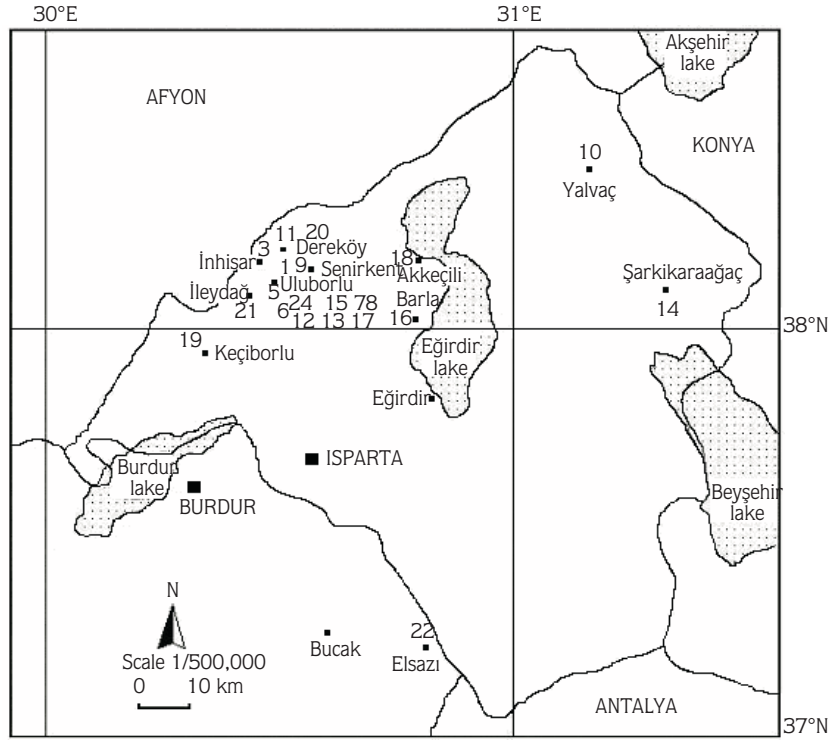


Figure 1. The study area. Localities are indicated by numbers (1-22).

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| <p>6. Uluborlu; in vicinity of İkizoluk, near stream, forest protection area, 1350 m, 38° 06' N, 30° 29' E, 24.07.1995.</p> <p>7. Uluborlu; Kapıdağ, Güden Plateau, 1950 m, 38° 06' N, 30° 29' E, 28.07.1995.</p> <p>8. Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, 1300-1600 m, 38° 06' N, 30° 29' E, 28.07.1995.</p> <p>9. In the vicinity of Senirkent, rocky area, 950 m, 38° 06' N, 30° 28' E, 29.07.1995.</p> <p>10. Yalvaç; Hisarardı valley, near stream, rocky area, 1100-1300 m, 38° 18' N, 31° 11' E, 01.08.1995.</p> <p>11. Uluborlu; in the vicinity of Dereköy, 950-1000 m, 38° 09' N, 30° 27' E, 02.08.1995.</p> <p>12. Uluborlu; Kapıdağ, rocky area, 1720 m, 38° 06' N, 30° 29' E, 11.05.1995.</p> <p>13. Uluborlu; Kapıdağ, in the vicinity of Güvercinlik, 1950 m, 38° 06' N, 30° 29' E, 12.05.1995.</p> <p>14. Şarkikaraağaç; Başdeğirmen, 1100-1400 m, 38° 05' N, 31° 23' E, 10.08.1995.</p> | <p>15. Uluborlu; Kapıdağ, Tekketepe, 1450-1800 m, 38° 06' N, 30° 29' E, 14.08.1996.</p> <p>16. Eğirdir; Eğirdir-Senirkent road, 5 km from Barla, 950 m, 38° 01' N, 30° 47' E, 17.08.1996.</p> <p>17. Uluborlu; Kapıdağ, Tekketepe, rocky area, 1450-1800 m, 38° 06' N, 30° 29' E, 18.08.1996.</p> <p>18. Senirkent; between Eğirdir and Senirkent, in the vicinity of Akkeçili, 940 m, 38° 08' N, 30° 47' E, 18.08.1996.</p> <p>19. Keçiborlu; in the vicinity of Özbahçe, 960 m, 37° 57' N, 30° 16' E, 19.08.1996.</p> <p>20. Uluborlu; in the vicinity of Dereköy, rocky area, 1130 m, 38° 09' N, 30° 27' E, 20.08.1996.</p> <p>21. Uluborlu; in the vicinity of İleydağ, rocky area, 1000-1100 m, 38° 03' N, 30° 22' E, 21.08.1996.</p> <p><b>BURDUR:</b></p> <p>22. Bucak; in the vicinity of Elsazı village, 350 m, 37° 26' N, 30° 49' E, 11.08.1996.</p> |
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## Results

The taxa are listed alphabetically. An asterisk (\*) indicates new records for Isparta province and (+) indicates new records for Burdur province. The names of authors are abbreviated according to Brummitt & Powell (1992).

### \* *Acarospora cervina* A.Massal.

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 2451. In the vicinity of Senirkent, alt. 950 m, on rock, 38° 06' N, 30° 28' E, 29.07.1995, BULU 2498. Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2530. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2549A.

### \* *A. glaucocarpa* (Ach.) Körb.

Isparta: Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, alt. 1000-1300 m, on calcareous rock, 38° 04' N, 30° 31' E, 19.07.1995, BULU 2425.

### *Anaptychia ciliaris* (L.) Körb. ex A.Massal.

Isparta: Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2470. Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus nigra*, 37° 57' N, 30° 16' E, 19.08.1996, BULU 2524.

### \* *Arthonia lapidicola* (Taylor) Branth & Rostr.

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2555.

### *Aspicilia calcarea* (L.) Mudd

Isparta: Uluborlu; in the vicinity of Dereköy, alt. 950-1000 m, on calcareous rock, 38° 09' N, 30° 27' E, 02.08.1995, BULU 2461. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2547A.

### *A. contorta* (Hoffm.) Kremp.

Isparta: Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, alt. 1000-1300 m, on calcareous rock, 38° 04' N, 30° 31' E, 19.07.1995, BULU 2426. Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky place, alt. 1550 m, on calcareous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2510.

### \* *A. desertorum* (Kremp.) Mereschk.

Isparta: Uluborlu; Kapıdağ, rocky area, alt. 1720 m, on calcareous rock, 38° 06' N, 30° 29' E, 11.05.1995, BULU 2495.

### \* *Caloplaca alnetorum* Giralt, Nimis & Poelt

Isparta: Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2476.

### *C. biatorina* (A.Massal.) J.Steiner

Isparta: Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2534.

### *C. cerina* (Ehrh. ex Hedw.) Th.Fr.

Isparta: Uluborlu; in the vicinity of İkizoluk, near stream, forest protection area, alt. 1350 m, on *Quercus* sp., 38° 06' N, 30° 29' E, 24.07.1995, BULU 2493. Şarkikaraağaç; Başdeğirmen, alt. 1100-1400 m, on log, 38° 05' N, 31° 23' E, 10.08.1995, BULU 2468. Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2477. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on *Rhamnus* sp., 38° 03' N, 30° 22' E, 21.08.1996, BULU 2505.

### \* *C. chrysodeta* (Vain. ex Räsänen) Dombr.

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2548.

### \* *C. flavovirescens* (Wulfen) Dalla Torre & Sarnt.

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4569.

### \* *C. holocarpa* (Hoffm.) A.E.Wade

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2446. Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on *Juglans* sp., 38° 09' N, 30° 27' E, 20.08.1996, BULU 2544. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on *Rhamnus* sp., 38° 03' N, 30° 22' E, 21.08.1996, BULU 2504.

### \* *C. inconnexa* (Nyl.) Zahlbr.

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4568.

**Caloplaca lactea** (A.Massal.) Zahlbr.

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4565. Eğirdir; Eğirdir-Senirkent road, 5 km from Barla, alt. 950 m, on calcareous rock, 38° 01' N, 30° 47' E, 17.08.1996, BULU 2502.

\* **C. luteoalba** (Turner) Th.Fr.

Isparta: Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, alt. 1000-1300 m, on shrub, 38° 04' N, 30° 31' E, 19.07.1995, BULU 2430.

\* **C. variabilis** (Pers.) Müll.Arg.

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4573.

**C. xantholyta** (Nyl.) Jatta

Isparta: Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2531.

\* **Candellariella aurella** (Hoffm.) Zahlbr.

Isparta: Uluborlu; İnhisar village, in the vicinity of Çizenkaya, alt. 1400-1800 m, on calcareous rock, 38° 07' N, 30° 24' E, 21.07.1995, BULU 2432. Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on calcareous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2489. Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp., 37° 57' N, 30° 16' E, 19.08.1996, BULU 2527. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on *Pinus nigra*, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2547B.

\* **Cladonia pocillum** (Ach.) O.J.Rich.

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, together with moss on calcareous soil, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2525.

\* **C. pyxidata** (L.) Hoffm.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on siliceous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2509.

**Collema crispum** (Huds.) Weber ex F.H.Wigg.

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2554.

+ **C. cristatum** (L.) Weber ex F.H.Wigg.

Isparta: Yalvaç; Hisarardı valley, near stream, rocky area, alt. 1100 – 1300 m, on calcareous rock, 38° 18' N, 31° 11' E, 01.08.1995, BULU 2455. Burdur: Bucak; in the vicinity of Elsazı village, alt. 350 m, on calcareous rock, 37° 26' N, 30° 49' E, 11.08.1996, BULU 2500.

**C. parvum** Degel.

Isparta: Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, alt. 1000-1300 m, on calcareous rock, 38° 04' N, 30° 31' E, 19.07.1995, BULU 2427. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2535.

**Dermatocarpon miniatum** (L.) W.Mann

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on calcareous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2485.

\* **Diploschistes ocellatus** (Vill.) Norman

Isparta: Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2537.

\* **Diplotomma epipolium** (Ach.) Arnold

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4566.

\* **Evernia prunastri** (L.) Ach.

Isparta: Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp., 37° 57' N, 30° 16' E, 19.08.1996, BULU 2526.

\* **Fulgensia fulgens** (Sw.) Elenkin

Isparta: Senirkent; between Eğirdir and Senirkent, in the vicinity of Akkeçili, alt. 940 m, on calcareous soil, 38° 08' N, 30° 47' E, 18.08.1996, BULU 2513.

**F. schistidii** (Anzi) Poelt

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on calcareous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2484. Uluborlu; in the vicinity of Dereköy, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2538.

\* **Heterodermia speciosa** (Wulfen) Trevis.

Isparta: Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp., 37° 57' N, 30° 16' E, 19.08.1996, BULU 2521.

\* *Lecanora achariana* A.L. Sm.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on calcareous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2487.

\* *L. carpinea* (L.) Vain.

Isparta: Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, alt. 1000-1300 m, on shrub, 38° 04' N, 30° 31' E, 19.07.1995, BULU 2431.

*L. chlarotera* Nyl.

Isparta: Uluborlu; Uluborlu-Erendost road, Karatavuk Stream, alt. 1200 m, on *Pinus* sp., 38° 06' N, 30° 29' E, 24.07.1995, BULU 2448B. Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2473. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on *Rhamnus* sp., 38° 03' N, 30° 22' E, 21.08.1996, BULU 2506.

*L. crenulata* Hook.

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2545.

*L. dispersa* (Pers.) Sommerf.

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2549B.

\* *L. hagenii* (Ach.) Ach.

Isparta: Uluborlu; in the vicinity of İkizoluk, near stream, forest protection area, alt. 1350 m, on *Quercus* sp., 38° 06' N, 30° 29' E, 24.07.1995, BULU 2492. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on *Rhamnus* sp., 38° 03' N, 30° 22' E, 21.08.1996, BULU 2503.

*L. muralis* (Schreb.) Rabenh.

Isparta: Uluborlu; Kapıdağ, Güden Plateau, alt. 1950 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 2449. Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4564. Uluborlu; Kapıdağ, rocky area, alt. 1720 m, on calcareous rock, 38° 06' N, 30° 29' E, 11.05.1995, BULU 2494. Uluborlu; Güvercinlik, alt. 1950 m, on calcareous rock, 38° 06' N, 30° 29' E, 12.05.1995, BULU 2496. Uluborlu; Kapıdağ, Tekketepe, rocky area, alt. 1450-

1800 m, on calcareous rock, 38° 06' N, 30° 29' E, 18.08.1996, BULU 2515B. Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp. 37° 57' N, 30° 16' E, 19.08.1996, BULU 2528.

*Lecidella elaeochroma* (Ach.) M.Choisy

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus* sp., 38° 06' N, 30° 29' E, 21.07.1995, BULU 2438. Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Pinus* sp. and on log, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2475, 2474. Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp., 37° 57' N, 30° 16' E, 19.08.1996, BULU 2523. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on *Rhamnus* sp., 38° 03' N, 30° 22' E, 21.08.1996, BULU 2507.

\* *Lepraria incana* (L.) Ach.

Isparta: Yalvaç; Hisarardı valley, near stream, rocky area, alt. 1100 – 1300 m, on *Salix* root with moss, 38° 18' N, 31° 11' E, 01.08.1995, BULU 2457.

\* *Leproloma membranaceum* (Dicks.) Vain.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on siliceous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2511.

\* *Leptogium lichenoides* (L.) Zahlbr.

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2553.

*Lobothallia radiosa* (Hoffm.) Hafellner

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4571. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2546.

*Megaspora verrucosa* (Ach.) Hafellner & V.Wirth

Isparta: Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on log, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2478. Senirkent; between Eğirdir and Senirkent, in the vicinity of Akkeçili, alt. 940 m, on calcareous soil, 38° 08' N, 30° 47' E, 18.08.1996, BULU 2514. Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus nigra*, 37° 57' N, 30° 16' E, 19.08.1996, BULU 2522. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, together with moss on rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2516.

\* *Melanelia exasperata* (De Not.) Essl.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2445.

\* *Peltigera praetextata* (Flörke ex Sommerf.) Vain.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on soil, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2442.

*Phaeophyscia constipata* (Norl. & Nyl.) Moberg

Isparta: Yalvaç; Hisarardı valley, near stream, rocky area, alt. 1100 – 1300 m, on calcareous rock, 38° 18' N, 31° 11' E, 01.08.1995, BULU 2456.

*Physcia adscendens* (Fr.) H.Olivier

Isparta: Şarkikaraağaç; Başdeğirmen, alt. 1100-1400 m, on *Juniperus* sp., 38° 05' N, 31° 23' E, 10.08.1995, BULU 2465. Senirkent; between Eğirdir and Senirkent, in the vicinity of Akkeçili, alt. 940 m, on log, 38° 08' N, 30° 47' E, 18.08.1996, BULU 2481.

*P. aipolia* (Ehrh. ex Humb.) Fűrnr.

Isparta: Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, alt. 1000-1300 m, on log, 38° 04' N, 30° 31' E, 19.07.1995, BULU 2432. Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on log and *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2441, 2436. Uluborlu; Uluborlu-Erendost road, Karatavuk Stream, alt. 1200 m, on *Pinus* sp., 38° 06' N, 30° 29' E, 24.07.1995, BULU 2447. Yalvaç; Hisarardı valley, near stream, rocky area, alt. 1100 – 1300 m, on *Salix* sp., 38° 18' N, 31° 11' E, 01.08.1995, BULU 2453. Şarkikaraağaç; Başdeğirmen, alt. 1100-1400 m, on log, 38° 05' N, 31° 23' E, 10.08.1995, BULU 2467. Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2472. Senirkent; between Eğirdir and Senirkent, in the vicinity of Akkeçili, alt. 940 m, on *Juniperus* sp., 38° 08' N, 30° 47' E, 18.08.1996, BULU 2480. Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on *Quercus* sp., 38° 09' N, 30° 27' E, 20.08.1996, BULU 2482.

*P. caesia* (Hoffm.) Fűrnr.

Isparta: Uluborlu; between Uluborlu and Senirkent, near the road, alt. 1100 m, on *Celtis australis*, 38° 06' N, 30° 29' E, 18.07.1995, BULU 2424. Uluborlu; İnhisar village, in the vicinity of Çizenkaya, alt. 1400-1800 m, on calcareous rock, 38° 07' N, 30° 24' E, 21.07.1995,

BULU 2433. Eğirdir; Eğirdir-Senirkent road, 5 km from Barla, alt. 950 m, on log, 38° 01' N, 30° 47' E, 17.08.1996, BULU 2543. Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on *Juglans* sp. and calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2543, 2542.

*P. semipinnata* (J.F.Gmel.) Moberg

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocks, alt. 1550 m, on log of *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2490, Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4570.

\* *P. stellaris* (L.) Nyl.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2444.

*P. tenella* (Scop.) DC.

Isparta: Uluborlu; Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2437. Uluborlu; in the vicinity of Dereköy, alt. 950-1000 m, on *Pinus nigra*, 38° 09' N, 30° 27' E, 02.08.1995, BULU 2464. Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on log, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2469.

*Physconia enteroxantha* (Nyl.) Poelt

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus* sp., 38° 06' N, 30° 29' E, 21.07.1995, BULU 2508. Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Salix* sp., 38° 06' N, 30° 29' E, 14.08.1996, BULU 2452.

*P. perisidiosa* (Erichsen) Moberg

Isparta: Uluborlu; in the vicinity of Dereköy, alt. 950-1000 m, on calcareous rock, 38° 09' N, 30° 27' E, 02.08.1995, BULU 2460.

\* *Placocarpus schaeferi* (Fr.) Breuss

Isparta: Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2540. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2552.

\* *Platismatia glauca* (L.) W.L. Culb. & C.F. Culb.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2486.

*Pseudevernia furfuracea* (L.) Zopf var. *ceratea* (Ach.) D.Hawksw.

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus* sp., 38° 06' N, 30° 29' E, 21.07.1995, BULU 2439.

*P. furfuracea* (L.) Zopf var. *furfuracea*

Isparta: Uluborlu; Kapıdağ, Tekketepe, alt. 1450-1800 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 14.08.1996, BULU 2471.

\* *Psora decipiens* (Hedw.) Hoffm.

Isparta: Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2539.

\* *Rinodina dubyana* (Hepp) J.Steiner

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4572.

\* *R. exigua* (Ach.) Gray

Isparta: Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp., 37° 57' N, 30° 16' E, 19.08.1996, BULU 2519.

\* *R. lecanorina* (A.Massal.) A.Massal.

Isparta: Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4567.

+ *Squamarina cartilaginea* (Wirh.) P.James var. *pseudocrassa* D.Hawksw.

Burdur: Bucak; in the vicinity of Elsazi village, alt. 350 m, on calcareous rock, 37° 26' N, 30° 49' E, 11.08.1996, BULU 2499.

*S. lentigera* (Weber) Poelt

Isparta: Uluborlu; Kapıdağ, in the vicinity of Akçay, rocks in valley, alt. 1000-1300 m, on calcareous soil, 38° 04' N, 30° 31' E, 19.07.1995, BULU 2429. Uluborlu; İnhisar village, in the vicinity of Çizenkaya, alt. 1400-1800 m, on calcareous rock, 38° 07' N, 30° 24' E, 21.07.1995, BULU 2435. Yalvaç; Hisarardı valley, near stream, rocky area, alt. 1100 – 1300 m, on calcareous rock, 38° 18' N, 31° 11' E, 01.08.1995, BULU 2454. Uluborlu; in the vicinity of Dereköy, alt. 950-1000 m, on calcareous rock, 38° 09' N, 30° 27' E, 02.08.1995, BULU 2462. Eğirdir; Eğirdir-Senirkent road, 5 km from Barla, alt. 950 m, on calcareous rock, 38° 01' N, 30° 47'

E, 17.08.1996, BULU 2501. Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2541. Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2550.

\* *Toninia sedifolia* (Scop.) Timdal

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on calcareous rock, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2488. Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 4563. Uluborlu; in the vicinity of Dereköy, alt. 950-1000 m, on calcareous soil, 38° 09' N, 30° 27' E, 02.08.1995, BULU 2459. Senirkent; between Eğirdir and Senirkent, in the vicinity of Akkeçili, alt. 940 m, on calcareous soil, 38° 08' N, 30° 47' E, 18.08.1996, BULU 2512. Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2532.

\* *Umbilicaria subglabra* (Nyl.) Harm.

Isparta: Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on calcareous rock, 38° 09' N, 30° 27' E, 20.08.1996, BULU 2533.

\* *Xanthoria calcicola* Oxner

Isparta: Uluborlu; in the vicinity of İleydağ, rocky area, alt. 1000-1100 m, on calcareous rock, 38° 03' N, 30° 22' E, 21.08.1996, BULU 2551.

*X. candelaria* (L.) Th.Fr.

Isparta: in the vicinity of Senirkent, rocky area, 950 m, on calcareous rock, 38° 06' N, 30° 28' E, 29.07.1995, BULU 2497.

*X. elegans* (Link) Th.Fr.

Isparta: Uluborlu; İnhisar village, in the vicinity of Çizenkaya, alt. 1400-1800 m, on calcareous rock, 38° 07' N, 30° 24' E, 21.07.1995, BULU 2434. Uluborlu; Kapıdağ, Arap Suyu, Üğünlü, alt. 1300-1600 m, on calcareous rock, 38° 06' N, 30° 29' E, 28.07.1995, BULU 2450.

\* *X. fallax* (Hepp) Arnold

Isparta: Uluborlu; in the vicinity of Dereköy, alt. 950-1000 m, on log, 38° 09' N, 30° 27' E, 02.08.1995, BULU 2463.



**Xanthoria fulva (Hoffm.) Poelt & Petutschning**

Isparta: Uluborlu; Uluborlu-Erendost road, Karatavuk Stream, alt. 1200 m, on *Quercus* sp., 38° 06' N, 30° 29' E, 24.07.1995, BULU 2448A. Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp., 37° 57' N, 30° 16' E, 19.08.1996, BULU 2520.

**X. parietina (L.) Th.Fr.**

Isparta: Uluborlu; Kapıdağ, Tekketepe, Eşekalanı, rocky area, alt. 1550 m, on *Pinus nigra*, 38° 06' N, 30° 29' E, 21.07.1995, BULU 2440. Şarkikaraağaç; Başdeğirmen, alt. 1100-1400 m, on log, 38° 05' N, 31° 23' E, 10.08.1995, BULU 2466. Senirkent; between

Eğirdir and Senirkent, in the vicinity of Akkeçili, alt. 940 m, on log, 38° 08' N, 30° 47' E, 18.08.1996, BULU 2479. Keçiborlu; in the vicinity of Özbahçe, alt. 960 m, on *Pinus* sp., 37° 57' N, 30° 16' E, 19.08.1996, BULU 2517. Uluborlu; in the vicinity of Dereköy, rocky area, alt. 1130 m, on *Prunus* sp. and *Quercus* sp., 38° 09' N, 30° 27' E, 20.08.1996, BULU 2536, 2483.

**Acknowledgement**

We thank Prof. Dr. Gönül KAYNAK for providing the samples from the study area.

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