

***Fuscopannaria leucosticta* (Tuck.) P.M. Jørg. rediscovered in Europe**

Fuscopannaria leucosticta was first described by Tuckerman (1859) from the eastern United States. During the course of the 20th century, the species was widely reported from Europe, especially in central and south-eastern Europe (e.g. Körber 1865, 1867, as *Pannaria craspedia*; Zahlbruckner 1906; Szatala 1943; Krause & Klement 1962; Poelt 1969, as *Pannaria leucosticta* Tuck.). Much of this material was, however, subsequently shown to belong to a distinct Mediterranean species, *Fuscopannaria olivacea*, described by Jørgensen (1978). The few records of *F. leucosticta* from Europe (Italy and Slovenia) accepted by Jørgensen all date from 1902 or earlier, leading him to speculate that it may have become extinct. This assumption was restated in a recent article reporting the species for the first time from the tropics (Jørgensen & Sipman 2007). Jørgensen (1978) has already pointed out the Tertiary relict nature of the world distribution of *F. leucosticta*. The map provided by Jørgensen & Sipman (2007) clearly shows the 'East-East'-type distribution of the species, centred on Tertiary relict hotspots of eastern Asia and eastern North America, with disjunct populations in Africa, central America, and Ecuador. A prominent cross on the map represents the previous occurrence of the now extinct species in northern Italy [a recent specimen reported from southern Turkey by John & Nimis (1998) was not shown on the map and could not be checked for the present paper]. Jørgensen (1978) hypothesized that the European population must have survived Quaternary glaciations in the forests of the Balkans.

The mountains and ravines of the Balkans have long been recognized as a hotspot for Tertiary relicts and are often mentioned as a main source of post-glacial recolonization by plants and animals in Europe (e.g. Taberlet

et al. 1998). During recent lichen surveys in the Pindos Mountains and Arachthos River region in northern Greece, I had the opportunity to study epiphytic cyanolichen communities in montane *Quercus* woodlands and *Abies borisii-regis* forests, documenting over 120 epiphytic macrolichen species (T. Spribille, unpublished data). These included several species of *Fuscopannaria*, including the two most common species, *F. olivacea* and *F. mediterranea*, which frequently occur on *Quercus frainetto* and *Abies* bark, and the rarer *F. sampaiana*, found once on *Abies*. Most interesting was the discovery of *F. leucosticta* in an open woodland locality particularly rich in frost-sensitive, broad-leaved evergreen scrub, including *Laurus nobilis*, *Arbutus unedo* and *Daphne laureola*. Here it was corticolous on *Phillyrea latifolia*, where it was closely associated with the superficially similar *Pannaria rubiginosa*, which also appears to be uncommon in northern Greece. The mixed evergreen-deciduous woodland on the steep east-facing walls of the Arachthos River gorge is composed of *Ostrya carpinifolia*, *Phillyrea latifolia*, *Quercus ilex*, *Carpinus orientalis*, *Fraxinus ornus* and *Pistacia terebinthus*.

Fuscopannaria leucosticta is one of the rarest macrolichens in Europe. The specimen cited here represents the first confirmed collection of the species in Europe in 107 years and the first correct report from Greece [previous reports of *F. leucosticta* can be referred to *F. olivacea*, see Jørgensen (1978) and Spribille *et al.* (2006)]. The species was found at a single locality in 2006; the full extent of the population is not known. Population surveys and conservation measures to ensure long-term viability and habitat conservation will be important for ensuring the protection of what may be the only extant European population of *F. leucosticta*.

Specimens examined. **Greece:** Epirus: Nomos Ioanninon, west of Arachthos River above Politsa, 39°31'02-04"N 20°59'57-58"E, on bark of *Phillyrea latifolia*, elev. 460–500 m, 2006, T. Spribille 19863 (GZU, confirmed by P. M. Jørgensen).—**Japan:** Honshu: prov. Suruga, Shin-i gome, Mt. Fuji, 1960, *Kashiwadami* 16530 (BG).—**USA:** North Carolina: Swain Co, Great Smoky Mountains National Park, 2004, T. Tønsberg 34171, 34176 (BG).

Fieldwork took place in the context of a biodiversity assessment co-funded by the European Union – European Social Fund (ESF) and Greek national sources in the framework of the program 'Pythagoras II' of the 'Operational Program for Education and Initial Vocational Training' of the 3rd Community Support Framework of the Hellenic Ministry of Education. Special thanks to Vassiliki Kati and Panayotis Dimopoulos (University of Ioannina, Agrinio) for organizing fieldwork, to Tor Tønsberg (BG) for a loan of comparative material, and to Per Magnus Jørgensen and an anonymous reviewer for improvements to the manuscript.

REFERENCES

- John, V. & Nimis, P. L. (1998) Lichen flora of Amanos Mountain and the Province of Hatay [Hatay ili ve Amanos Dağları'nin liken florası]. *Turkish Journal of Botany* **22**: 257–267.
- Jørgensen, P. M. (1978) The lichen family Pannariaceae in Europe. *Opera Botanica* **45**: 1–123.
- Jørgensen, P. M. & Sipman, H. J. M. (2007) The lichen *Fuscopannaria leucosticta* (Tuck.) P. M. Jørg. found in the tropics. *Lichenologist* **39**: 305–307.
- Körber, G. W. (1865) *Parerga Lichenologica. Ergänzungen zum Systema Lichenum Germaniae*. Breslau: Eduard Trewendt.
- Körber, G. W. (1867) Lichenen aus Istria, Dalmatien u. Albanien. *Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien* **17**: 611–618.
- Krause, W. & Klement, O. (1962) Zur Kenntnis der Flora und Vegetation auf Serpentinstandorten des Balkans. 5. Flechten und Flechtengesellschaften auf Nord-Euböa (Griechenland). *Nova Hedwigia* **4**: 189–262.
- Poelt, J. (1969) *Bestimmungsschlüssel europäischer Flechten*. Lehre: Cramer.
- Spribille, T., Schultz, M., Breuss, O. & Bergmeier, E. (2006) Notes on the lichens and lichenicolous fungi of western Crete (Greece). *Herzogia* **19**: 125–148.
- Szatala, Ö. (1943) Lichenes. In *Neue Beiträge zur Flora von Kreta*. (K. H., Rechinger, ed.) Akademie der Wissenschaften in Wien, Mathematisch-Naturwissenschaftliche Klasse, Denkschrift, **105**: 27–47.
- Taberlet, P., Fumagalli, L., Wust-Saucy, A.-G., Cosson, J.-F. (1998) Comparative phylogeography and postglacial colonization routes in Europe. *Molecular Ecology* **7**: 453–464.
- Tuckerman, E. (1859) Observations on North American and some other lichens. *Proceedings of the American Academy of Arts and Sciences* **4**: 383–407.
- Zahlbruckner, A. (1906) Beitrag zur Flechtenflora Kretas. *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften in Wien, Mathematisch-Naturwissenschaftliche Klasse* **115**: 503–523.

Toby Spribille

T. Spribille: Department of Vegetation Analysis, Albrecht von Haller Institute of Plant Sciences, University of Göttingen, Untere Karspüle 2, D-37073 Göttingen, Germany. (Current address: Institute of Plant Sciences, Karl Franzens University of Graz, Holteigasse 6, A-8010 Graz, Austria; Email: toby.spribille@uni-graz.at)