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# The Lichens of Great Britain and Ireland

*edited by*

**C.W. Smith, A. Aptroot, B.J. Coppins, A. Fletcher, O.L. Gilbert, P.W. James and P.A. Wolseley**

*The Lichen Flora of Great Britain and Ireland* published in 1992 was an outstanding achievement for British Lichenology. It was a pioneering work and the first of its type in Europe. This much enlarged revision reflects the considerable accumulation of new information that has occurred since the publication of the first edition and is symptomatic of the enormous advances in lichen taxonomy over the last two decades. There are keys to 327 genera and 1873 species, which is an increase of 386 species since it was first published. The publication provides detailed information on morphology, chemistry and distribution for each species written in language that is readily accessible, avoiding obscure terminology. Both the glossary and introductory sections have been expanded and the latter includes helpful advice on the identification and examination of lichens. The preparation of this new treatment has involved a large number of contributors both in the UK and overseas and represents the culmination of lichen studies at this time.

This book is undoubtedly the standard work for the identification of lichens in Great Britain and Ireland and will be indispensable to all serious students of British, Irish and overseas lichenology and other biologists working in related fields of ecology, pollution, chemical and environmental studies.

## The British Lichen Society

The British Lichen Society was formed in 1958 to promote and advance all branches of the study of lichens. It was the first society in the world entirely devoted to the study of lichens and has many overseas as well as British members. For further details of the Society see www.theBLS.org.uk or write to The Secretary, The British Lichen Society, Department of Botany The Natural History Museum, Cromwell Road, London SW7 5BD.

## The Editors


Dr Clifford Smith is a Scientific Associate at the Department of Botany, the Natural History Museum, London and at the Department of Botany, University of Hawaii at Manoa, Honolulu

Dr Andre Aptroot is at ABL Herbarium, Soest, The Netherlands

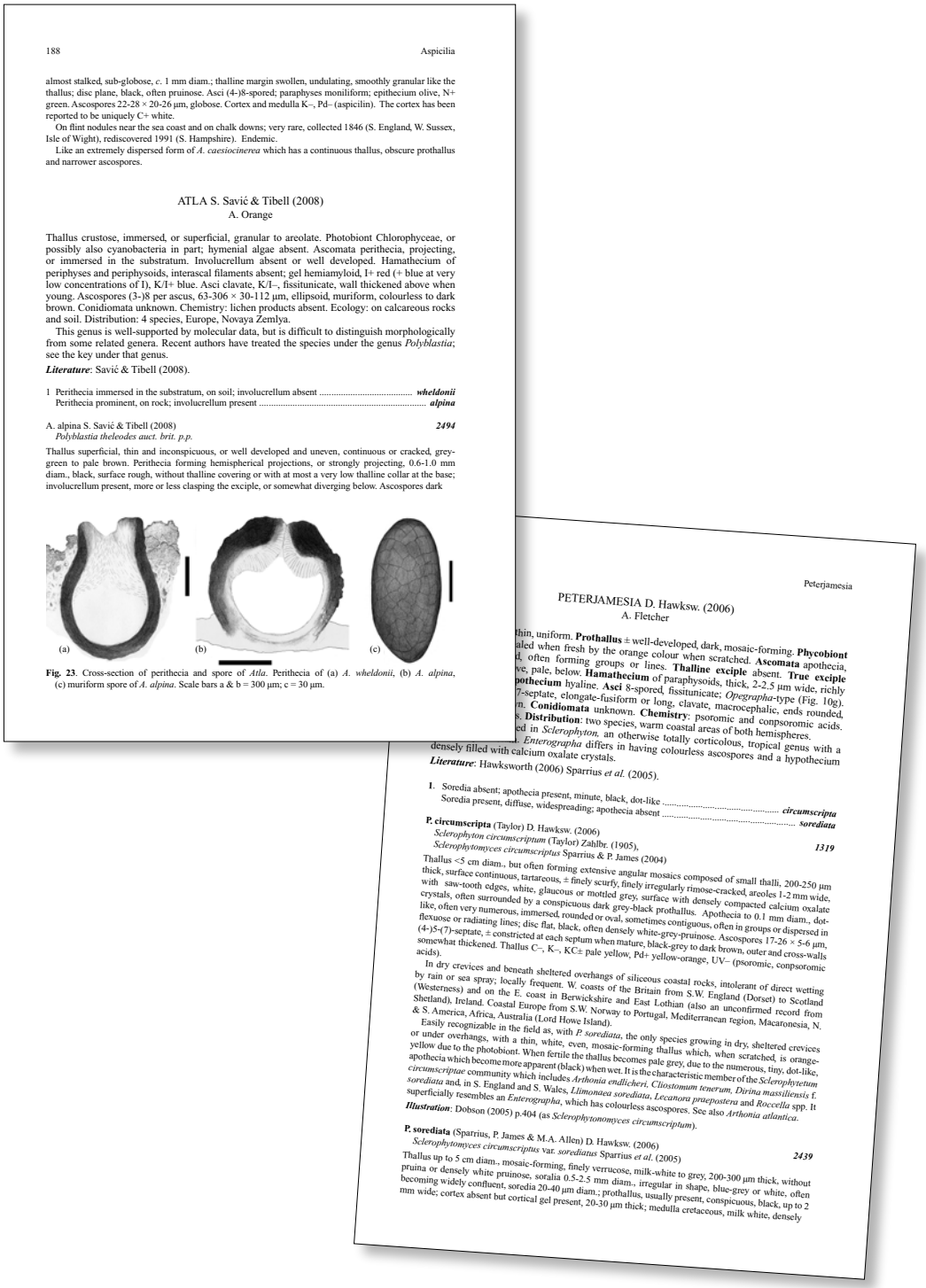
Dr Brian Coppins is Principal Scientific Officer at the Royal Botanic Garden Edinburgh

Dr Anthony Fletcher is Keeper of Natural History at Leicestershire Museums Service

Dr Oliver Gilbert was formerly Reader in the Department of Landscape Architecture, Sheffield University

Peter James was formerly Deputy Keeper of Botany at the Natural History Museum, London

Patricia Wolseley is a Scientific Associate at The Department of Botany, the Natural History Museum, London

188 Aspicilia

almost stalked, sub-globose, *c.* 1 mm diam.; thalline margin swollen, undulating, smoothly granular like the thallus; disc plane, black, often pruinose. Asci (4-)8-spored; paraphyses moniliform; epithecium olive, N+ green. Ascospores 22-28 × 20-26 µm, globose. Cortex and medulla K–, Pd– (aspicilin). The cortex has been reported to be uniquely C+ white.

On flint nodules near the sea coast and on chalk downs; very rare, collected 1846 (S. England, W. Sussex, Isle of Wight), rediscovered 1991 (S. Hampshire). Endemic.

Like an extremely dispersed form of *A. caesiocinerea* which has a continuous thallus, obscure prothallus and narrower ascospores.

ATLA S. Savić & Tibell (2008)
A. Orange

Thallus crustose, immersed, or superficial, granular to areolate. Photobiont Chlorophyceae, or possibly also cyanobacteria in part; hymenial algae absent. Ascomata perithecia, projecting, or immersed in the substratum. Involucrellum absent or well developed. Hamathecium of periphyses and periphysoids, interascal filaments absent; gel hemiamyloid, I+ red (+ blue at very low concentrations of I), K/I+ blue. Asci clavate, K/I–, fissitunicate, wall thickened above when young. Ascospores (3-)8 per ascus, 63-306 × 30-112 µm, ellipsoid, muriform, colourless to dark brown. Conidiomata unknown. Chemistry: lichen products absent. Ecology: on calcareous rocks and soil. Distribution: 4 species, Europe, Novaya Zemlya.

This genus is well-supported by molecular data, but is difficult to distinguish morphologically from some related genera. Recent authors have treated the species under the genus *Polyblastia*; see the key under that genus.

***Literature***: Savić & Tibell (2008).

1 Perithecia immersed in the substratum, on soil; involucrellum absent ..... ***wheldonii***
Perithecia prominent, on rock; involucrellum present ..... ***alpina***

A. alpina S. Savić & Tibell (2008) ***2494***
*Polyblastia theleodes auct. brit. p.p.*

Thallus superficial, thin and inconspicuous, or well developed and uneven, continuous or cracked, grey-green to pale brown. Perithecia forming hemispherical projections, or strongly projecting, 0.6-1.0 mm diam., black, surface rough, without thalline covering or with at most a very low thalline collar at the base; involucrellum present, more or less clasping the exciple, or somewhat diverging below. Ascospores dark

(a) (b) (c)

**Fig. 23**. Cross-section of perithecia and spore of *Atla*. Perithecia of (a) *A. wheldonii*, (b) *A. alpina*, (c) muriform spore of *A. alpina*. Scale bars a & b = 300 µm; c = 30 µm.

Peterjamesia

PETERJAMESIA D. Hawksw. (2006)
A. Fletcher

thin, uniform. **Prothallus** ± well-developed, dark, mosaic-forming. **Phycobiont** aled when fresh by the orange colour when scratched. **Ascomata** apothecia, d, often forming groups or lines. **Thalline exciple** absent. **True exciple** ve, pale, below. **Hamathecium** of paraphysoids, thick, 2-2.5 µm wide, richly **pothecium** hyaline. **Asci** 8-spored, fissitunicate; *Opegrapha*-type (Fig. 10g). 7-septate, elongate-fusiform or long, clavate, macrocephalic, ends rounded, n. **Conidiomata** unknown. **Chemistry**: psoromic and conpsoromic acids. s. **Distribution**: two species, warm coastal areas of both hemispheres. ed in *Sclerophyton*, an otherwise totally corticolous, tropical genus with a densely filled with calcium oxalate crystals. *Enterographa* differs in having colourless ascospores and a hypothecium

***Literature***: Hawksworth (2006) Sparrius *et al.* (2005).

1. Soredia absent; apothecia present, minute, black, dot-like ..... ***circumscripta***
Soredia present, diffuse, widespreading; apothecia absent ..... ***sorediata***

**P. circumscripta** (Taylor) D. Hawksw. (2006) ***1319***
*Sclerophyton circumscriptum* (Taylor) Zahlbr. (1905),
*Sclerophytomyces circumscriptus* Sparrius & P. James (2004)

Thallus <5 cm diam., but often forming extensive angular mosaics composed of small thalli, 200-250 µm thick, surface continuous, tartareous, ± finely scurfy, finely irregularly rimose-cracked, areoles 1-2 mm wide, with saw-tooth edges, white, glaucous or mottled grey, surface with densely compacted calcium oxalate crystals, often surrounded by a conspicuous dark grey-black prothallus. Apothecia to 0.1 mm diam., dot-like, often very numerous, immersed, rounded or oval, sometimes contiguous, often in groups or dispersed in flexuose or radiating lines; disc flat, black, often densely white-grey-pruinose. Ascospores 17-26 × 5-6 µm, (4-)5-(7)-septate, ± constricted at each septum when mature, black-grey to dark brown, outer and cross-walls somewhat thickened. Thallus C–, K–, KC± pale yellow, Pd+ yellow-orange, UV– (psoromic, conpsoromic acids).

In dry crevices and beneath sheltered overhangs of siliceous coastal rocks, intolerant of direct wetting by rain or sea spray; locally frequent. W. coasts of the Britain from S.W. England (Dorset) to Scotland (Westerness) and on the E. coast in Berwickshire and East Lothian (also an unconfirmed record from Shetland), Ireland. Coastal Europe from S.W. Norway to Portugal, Mediterranean region, Macaronesia, N. & S. America, Africa, Australia (Lord Howe Island).

Easily recognizable in the field as, with *P. sorediata*, the only species growing in dry, sheltered crevices or under overhangs, with a thin, white, even, mosaic-forming thallus which, when scratched, is orange-yellow due to the photobiont. When fertile the thallus becomes pale grey, due to the numerous, tiny, dot-like, apothecia which become more apparent (black) when wet. It is the characteristic member of the *Sclerophytetum circumscriptae* community which includes *Arthonia endlicheri*, *Cliostomum tenerum*, *Dirina massiliensis* f. *sorediata* and, in S. England and S. Wales, *Llimonaea sorediata*, *Lecanora praepostera* and *Roccella* spp. It superficially resembles an *Enterographa*, which has colourless ascospores. See also *Arthonia atlantica*.

***Illustration***: Dobson (2005) p.404 (as *Sclerophytonomyces circumscriptum*).

**P. sorediata** (Sparrius, P. James & M.A. Allen) D. Hawksw. (2006) ***2439***
*Sclerophytomyces circumscriptus* var. *sorediatus* Sparrius *et al.* (2005)

Thallus up to 5 cm diam., mosaic-forming, finely verrucose, milk-white to grey, 200-300 µm thick, without pruina or densely white pruinose, soralia 0.5-2.5 mm diam., irregular in shape, blue-grey or white, often becoming widely confluent, soredia 20-40 µm diam.; prothallus, ustually present, conspicuous, black, up to 2 mm wide; cortex absent but cortical gel present, 20-30 µm thick; medulla cretaceous, milk white, densely