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# AN INTRODUCTION TO BRITISH POWDERY MILDEWS — 1.

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The powdery mildews — *Erysiphales* — are a well-marked group of obligate ascomycete parasites of angiosperms which are commonly found on a wide range of hosts, especially in dry summers. They are easily collected, and may be preserved as herbarium specimens by lightly pressing the host material and mounting on paper. They are fairly readily identified. Many are narrowly host-specific while others attack hosts from numerous families. Some hosts are infected with more than one species. Because they have been recorded more frequently in recent years and because of the scatter of the literature it now seems appropriate to offer some guidance for their identification.

The most conspicuous stage is the usually white, powdery, superficial mycelium covering leaves and other parts of affected plants. This is the anamorph spore stage, usually a simple chain of hyaline conidia budded off from an upright hypha. This conidial state is often of value in separating closely similar species on the same host. Late in the season, often during the winter, the sexual spore stage is found attached to leaves. It consists of spherical, dark-coloured and thick-walled, indehiscent ascocarps containing a variable number of asci with varying numbers of ascospores. The actual numbers are of taxonomic importance. The surface of this **cleistocarp** carries appendages which may be branched, with or without hook-tips. The details of the appendages are important for separating genera and species. These features will be described in the key sections of later parts.

The standard work used in Britain for some years has been Junell (1967) which has been followed by Cannon, Hawksworth & Sherwood-Pike (1985) and Ellis & Ellis (1985). However, the publication of a new monograph by Braun (1987) includes several important taxonomic and nomenclatural changes and has also made available names for species which had previously only been listed as anamorphs, usually in *Oidium*. The first part of this introduction to powdery mildews is a revised check list of British species, with sufficient synonymy and host relationships to enable the list to be used in conjunction with the works cited above. Later parts will include a detailed host-list and keys to the British species.

## REFERENCES

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- JUNELL, L (1967). *Erysiphaceae of Sweden. Symbolae botanicae upsaliensis* **29**.