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British Ferns, Clubmosses, Quillworts & Horsetails

James Merryweather

2007. DVD-ROM. Privately published.

Price £15.00 incl. postage, available from the author by contacting him via his website at www.merryweather.me.uk.



This DVD is designed to complement James Merryweather's existing *Fern Guide* which can be ordered from the Field Studies Council via a link from the same web address above, but it can be used on its own and it is reviewed here as a standalone aid to fern identification, although the author quite rightly points out the dangers of the "haphazard practice of picture matching". Basically it consists of 14 PowerPoint presentations most of which consist of between 50 and 100 individual slides, which occupy the full screen of a PC. Moving from one slide to the next, or to the previous slide is simple and easy, while right-clicking with the mouse enables the user to choose a particular slide from a list.

The first presentation is an introduction to the history and evolution of the pteridophytes and their classification, illustrated by simple and pleasing graphics (watch for the appearance of early man at the end of the time line - is he, in fact, an early pteridologist?). The 'Pteridophyta' are an assemblage of six major lines of descent (one of which constitutes the true ferns) that progressively diverged from a common ancestral group between about 430 and 350 million years ago (by contrast the earliest fossil flowering plants date to around 120 million years ago). After illustrating the differences between these lines by photographs of examples, the author goes on to explain that they reproduce by spores and shows some fine illustrations of sporangia in ferns, horsetails, quillworts and clubmosses. Indeed, it is the high quality of the photography that marks out this DVD as exceptional.

The second presentation deals with the so called 'fern allies', *i.e.* the clubmosses, 'spikemosses' (*Selaginella*), horsetails and quillworts. Each British and Irish species is illustrated by habitat photographs, general habit pictures, close-ups, including close-tips of the strobili or sporangial clusters - all of a very high standard. I particularly liked the interspersing of habitat photographs showing the sort of ground or landscape where particular species are normally found, and there is a nice little series of pictures illustrating the vegetative dispersal of *Huperzia selago* by means of its bulbils. Many of the detailed macro-photographs are annotated on the screen so that the significance or function of particular structures is made clear to the user. This is used to particular advantage in the horsetail section where the diagnostic detail of such things as the lengths of the leaf sheaths on the stems and branches or the detail of the sheath teeth is well illustrated. The section on *Isoetes lacustris* and *I. echinospora* is very detailed and contains advice on distinguishing quillworts from other submerged 'lookalikes'. Not surprisingly, the very rare *I. hystrix* defeated Merryweather who has been unable to source any photographs of this species.

There are two PowerPoint files which go into detail on rhizome structure and leaf structure, the latter explaining the use of terminology such as pinna, pinnule, rachis, stipe, etc. and illustrating the different degrees of leaf dissection from simple through pinnate, bipinnate to tripinnate.

The presentation on filmy ferns and Killarney Fern (*Trichomanes speciosum*) is exquisitely illustrated, and I particularly appreciated the pictures and photomicrographs of the gametophyte of the Killarney Fern.

A presentation on ferns with pinnate fronds includes an excellent series of images and identification pointers for differentiating the three polypody species (*Polypodium* spp.), with a 'health warning' that field identification is not always possible. There is no mention of the three hybrids, which are not uncommon and can further confuse the issue, but these and other hybrid ferns and the subspecies of *Asplenium trichomanes* are all listed in the checklist of British and Irish ferns that is available as a pdf under 'Checklist' on the main menu. There are two presentations which deal with the five male ferns - *Dryopteris filix-mas* s.s., *D. oreades*, *D. affinis*, *D. borrieri* and *D. cambrensis*, as now recognized by Christopher Fraser-Jenkins (see his paper: 2007 *The Fern Gazette* 18(1): 1-26) - in great detail, as is necessary for a difficult group. As a further aid, the DVD has a pdf of a chart which sets out the diagnostic features of these five species; but note that the subspecies of *D. affinis* and *D. cambrensis* are not treated. Merryweather has also published a summary article on the subject of male ferns in the *Pteridologist* 4(6): 173-177 (2007) which it is useful to read in conjunction with his DVD.

The final presentation on this DVD is of ferns in winter. "Why do we not record ferns in winter?" asks the author, as he demonstrates that many are winter-green, and those that are not frequently retain sufficient characters to be able to identify them accurately.

The DVD is supposedly aimed at beginners, but many experienced botanists will appreciate its content. In addition, it can be used as a basis for a lecture on ferns, or as a teaching aid in schools, field study centres or universities. I can think of no better or more enjoyable introduction to the subject than this disk.

On the technical side, the programme of presentations can be run directly from the DVD, or it can be loaded onto a PC's hard drive where it will occupy over 1 GB of space, but from where it will operate more quickly. Installation is simple and trouble-free.

Paul Hackney