

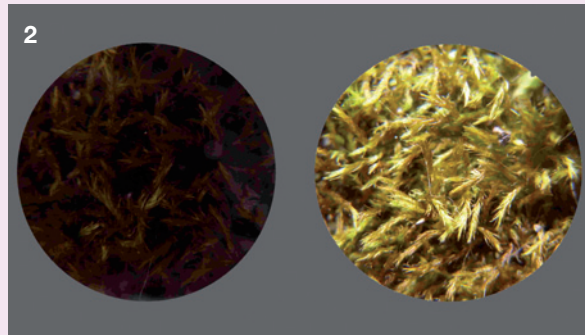
In this new occasional mini-series, **Jonathan Sleath** describes pieces of equipment that he has found particularly useful in the field.

Useful Pieces of Equipment No. 1: The ‘Opticron’ $\times 15$ illuminated hand lens

The aging human retina loses about a third of its retinal rod photoreceptors. Perhaps that is why as I trundle through middle age I seem to have more of a struggle resolving detail through a hand lens in less than ideal light conditions. I was therefore pleased to discover the existence of the ‘Opticron’ illuminated hand lens.

Advances in LED technology in recent years has led to the development of bright, compact and efficient light sources that create a white light with a spectrum similar to daylight. They are used in lightweight head torches, in some medical applications and also in photography. Their properties make them very suitable to boost the illumination provided by natural light for bryological purposes. There is a very expensive Swiss illuminated hand lens available, but Gordon Rothero told me he had seen a much more modestly priced model available in the UK. This was how I came across the version made by Opticron.

It comes in a $\times 10$ and a $\times 15$ model (Fig. 1), and is powered by three AAA batteries. The single LED is located close to the field of view and gives an excellent light. The case is plastic, and there is no easy way of attaching a string, but the lens quality in the $\times 15$ model that I bought is surprisingly good. I have been very pleased with the results both in the field and indoors. It is useful to have a simple way of examining material inside when microscopes are not available, for



example when on holiday. To give an idea of the effect, I took a photograph through the lens with the LED on and off using the same exposure (Fig. 2). The pictures were taken on a flat surface outside on a cloudy day. A simple internet search will reveal a number of suppliers.

Jonathan Sleath

The Villa, Kingstone, Herefordshire HR2 9ET
(e jonathan.sleath@btinternet.com)