Portable DNA sequencer can identify plant species in hours, not months

In a paper published today in *Scientific Reports* , researchers at the Royal Botanic Gardens, Kew, detail for the first time the opportunities for plant sciences that are now available with portable, real-time DNA sequencing.

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In this new study, Kew scientists used the portable DNA sequencer, the MinION from Oxford Nanopore Technologies, to analyse plant species in Snowdonia National Park. This was the first time genomic sequencing of plants has been performed in the field.

This technology, commercially launched in 2015, has since been used in Antarctica, in remote regions affected by disease, and on the International Space Station.

One of the successes illustrated in the paper is the field identification of two innocuous white flowers, Arabidopsis thaliana and Arabidopsis lyrata ssp. petraea. This was achieved by sequencing random parts of the plants' genomes, avoiding the tricky and time consuming process of targeting specific pieces of DNA which is the more traditional approach for identifying species with DNA.

The researchers compared their new data to a freely available database of reference genome sequences to make their identification. Crucially, replicating their experiment in Kew's Jodrell Laboratory with other DNA sequencing methods allowed them to devise sophisticated statistics to understand the useful properties of this new kind of data for the first time.

The GLP aggregated and excerpted this article to reflect the diversity of news, opinion and analysis. Read full, original post: Scientists sequence a whole genome to identify a plant species within hours