

The Kew Fungarium

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The origin of the Fungarium goes back to the Rev. M.J. Berkeley in the late 19th Century. Before his death he donated his collection of over 10,000 fungal specimens to Kew Gardens. Since then, Kew has had a permanent mycological presence with a growing research group and a team of curators looking after the collection.

It has grown to over 1.3 million specimens (we think), covering over 170 years of collecting, every country on earth and has representatives of around 60% of known fungal genera (Figs 1 & 2).

It also has over 50,000 type specimens which are currently the subject of a DEFRA funded project to sequence the full genomes of as many of those 50,000 as possible. The resulting data will then be open source and fully available online.

Annually, something in the region of 3000–4000 new specimens are accessioned into the collection. Notably a significant proportion of these come from the amateur community, often via the British Mycological Society. These can be an invaluable source of new species, new UK records, and generally interesting and important species that keeps the collection growing and useful.

So why are Fungaria important?

Collections like the Fungarium, or Herbarium if you are plant inclined, act like a preserved microcosm of the world's fungal diversity through time and space. That diversity can be studied all in one place with relative ease, and a whole series of snapshots of global diversity are preserved for centuries.

What was once used for morphological and micromorphological study only, is now being used for DNA extraction and analysis. In the future we may also be able to study metabolites, enzymes, pigments or other elements of the species that we don't even have technology for. When that time comes, the collection will be here ready to be used, maintaining centuries worth of fungi.

How they are used

The simplest way to explain how they get used is to revert to the library metaphor: they act as a repository that can be visited for research

whether that be taxonomic or ecological. Other disciplines also visit to make use of the collections, particularly the arts and humanities.

Like a library, you can also borrow specimens, and to that end we annually send 50–60 packages of specimens to other research institutions around the world.

We also allow destructive sampling – within reason – so that genomic data can be extracted from the collection to improve our understanding of species and their relationships.

Do we want more specimens?

Absolutely, yes! This is where we trust you, the mycological community. Whilst it might seem that we don't want things that are common, that isn't necessarily true; often collections-based institutions have a lack of common species as people think we won't need them so we don't get any accessioned. Nice examples of common species are still welcomed.

Then of course there are the obvious things; new species to science, new species records for the UK, or in fact new species records for counties or the home nations.

How to get a specimen into the collection

The first thing is to contact the Collection Manager at fungarium@kew.org

They can tell you not only how to get specimens to us, but also whether it is something of interest that we really do want (or maybe something we might not want right now). They will also be the one to send you a Donation Form. The form can either be posted with the specimen or emailed in advance and is a requirement for our accepting specimens as we need to be able to demonstrate we acquired the specimens legally. We may also ask for copies of permits to show you were on the land legally and had permission to collect. Any doubts, queries, or questions, drop the Collection Manager a line.

Once we receive a new accession, it will take a month or so to make its way through the system, but after that time it should be formally accessioned, databased, and incorporated into the collection

Whilst I have written these latter parts from the point of view of the Kew Fungarium and getting new and exciting material into our collection, there are other more locally based, and focussed, collections in the National Museum of Wales in Cardiff and the Royal Botanic Garden, Edinburgh. It is also worth contacting them to see what their requirements are and what

material they will accept. The ideal situation would be a good distribution of fungal specimens across multiple institutions making those specimens more accessible and easier to examine and study.

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Fig. 1. Part of the fungarium at Kew where specimens are stored and research work undertaken. Photograph © Kew fungarium.



Fig. 2. Just a few of the thousands of fungarium storage boxes, with each box holding folders of dried specimens of one or more species. Photograph © Kew fungarium.