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'Omphalina Patch Disease' and the Rickenellaceae

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Purpose: A condition resulting in vernal patches of stunted or dying cereal crops was called 'Omphalina Patch Disease' (OPD) in England after they were linked to coincidental, co-located basidiomes identified as *Omphalina pyxidata*. Original OPD vouchers from the 1980-90s were located in the Royal Botanic Gardens, Edinburgh, where they had been sent for identification. These were analysed both molecularly and anatomically to confirm or correct the identification. A recently published 2018 analysis on the biological status of the *Hymenochaetales* suggested the genus *Loreleia* be split between two families in two orders. In order to address this question and to resolve the generic placement of the patch fungus, an in-depth investigation was conducted to clarify the taxonomy of agaric genera in the *Rickenellaceae*.

Methods: DNA cloning, followed by screening of the clones using higher resolution gel electrophoresis, and plasmid DNA sequencing were required to resolve the phylogenetic signatures of the old herbarium material and of the type species of *Loreleia*, *L. postii*.

Results and conclusions: Neither patch disease sample is *O. pyxidata* (*Tricholomataceae*, *Agaricales*). Both were conspecific with each other; a species of agaric in the *Rickenellaceae* (*Hymenochaetales*). We determined that *Loreleia* is not split between two families and orders and that a misdetermined voucher had led to an erroneous conclusion. Additionally, *Contumyces* and *Loreleia* remain phylogenetically distinct but both require new circumscriptions.