Flavoparmelia soredians new to Poland

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A total of nearly 700 Flavoparmelia specimens from Poland were checked, complemented by recent field observations. Among them, nine specimens of F. soredians were revealed. Most of them were found in the last few years, but the oldest collections date back to the year 1964. These observations indicate a recent spread which may represent the effect of long-term climate change, with a considerable delay in the colonisation process due to persistent air pollution.


Key words: Distribution dynamics, climate change, air pollution dynamics.

Introduction
It was less than 25 years ago that Flavoparmelia soredians (Nyl.) Hale [as Parmelia s. Nyl.] was first reported from Germany; at a site located only a few kilometres from the Netherlands, where the species had first been found in 1990 and had then rapidly spread within a few years (Spier 1998). It had since colonised other parts of western Germany as well but it was still extremely rare in the eastern parts of the country (Wirth at al. 2013). More recently, it has been observed also at numerous eastern German sites (e.g. Otte et al. 2018), and the last few years finally revealed also some dozens of records from the Oberlausitz region, the easternmost part of Germany close to the 15th meridian (VO, unpubl.). It was therefore not a surprise to finally encounter it also on the Polish site of the border in the same region. More remarkably, a subsequent thorough study of Flavoparmelia specimens collected in Poland revealed that it was present here for some decennia already, but was not recognised, being hidden under the labelling F. caperata (L.) Hale. Here, we give an overview on what we know on the distribution of the species in Poland to date.

Materials and methods
All available material of Flavoparmelia from Poland in the following Polish herbaria was studied: KRAM, KRAP, KTC, LOD, OLS, POZ, SLTC, SZUB and UGDA. In total, 658 specimens were examined by the first author. Moreover, our paper includes recent field observa-