

Pollen and macrofossils attributable to *Fagopyrum* in western Eurasia prior to the Late Medieval: An intercontinental mystery



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ARTICLE INFO

Article history:

Received 5 June 2015

Received in revised form 16 August 2015

Accepted 17 August 2015

Available online 30 August 2015

Keywords:

Cultivation history

Fagopyrum (buckwheat)

Palynology

Polygonaceae

Vegetation history

Western Eurasia

ABSTRACT

The widespread perception that buckwheat (*Fagopyrum esculentum* and *F. tataricum*) did not occur in western Eurasia prior to the Late Medieval is challenged by numerous pollen finds. We traced some 240 localities from the area with pollen or macrofossils attributed to *Fagopyrum* in (often much) earlier time-slices. This paper evaluates various explanations for these finds within the context of palaeological methods, vegetation history, and cultural development. The clear morphological characteristics make large-scale misidentification of the pollen unlikely. Although some records are suspect, contamination is improbable for the vast majority of the pollen diagrams. Also long-distance transport of pollen of *Fagopyrum snowdenii* or *Oxygonum* from Africa seems unlikely, as the pollen rain of that continent hardly contains that pollen. The option that *Fagopyrum* was present in western Eurasia already much earlier than the Late Medieval must therefore be seriously considered. Cultivated species may have reached the area by trade between the Mediterranean and eastern Chinese realms, which was regular since 2000 BCE. As the low pollen values argue against large scale cultivation, the taxon may merely have occurred as a weed, or its pollen was transported with other products and subsequently re-emitted. The pervasive notion that buckwheat was cultivated on large scale by the Scythians in the Ukrainian realm since 800 BCE is highly ambiguous and probably wrong. There are some indications that wild *Fagopyrum* or a related taxon may have occurred widespread in Eurasia during the Pleistocene glaciations and the early/middle Holocene, i.e. predating 2000 BCE.

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1. Introduction

In vegetation history, archaeology and earth sciences the notion is widespread that *Fagopyrum* species – i.e. *F. esculentum* and *F. tataricum* – first arrived in Europe in the Late Medieval as a result of trade with the Middle East (e.g. Bertsch and Bertsch, 1949; Biacs et al., 2002; Dieck, 1954; Jankovská, 2011; Lang, 1994; Opperer, 1985; Tahir and Farooq, 1988; Zeller, 2001). In part, this idea goes back on the work of Dodonaeus (1552), who – in reaction to contemporaneous arguments that the plant *Ocimum* mentioned by Pliny the Elder was buckwheat – stated that *Ocimum* was in fact basil and that buckwheat was unknown to ancient Greeks and Romans (Leenders, 1987, 1993; Van Haaster, 1997). The idea further builds on the fact that buckwheat is not mentioned in historical (written) sources from before ca. 1400 CE

(Aufhammer, 2000; Bertsch and Bertsch, 1949; Dieck, 1954; Leenders, 1987, 1993).

Yet, there are many finds of pollen and macrofossils attributed to *Fagopyrum* in palaeoecological records from western Eurasia (here meaning Europe and the Middle East) that pre-date the Late Medieval (Figs. 1–3 and Supplementary data). Although many, predominantly lesser known publications, discuss these early occurrences (e.g. Alenius et al., 2013; Boivin et al., 2012; Brande, 1985; Eland, 1984; Girard, 2006; Jahns et al., 2013; Janik, 2002; Kok and Kuijper, 2001; Leenders, 1993; Mohr, 1990; Slicher van Bath, 1963; Smit and Janssen, 1983; Van der Sanden and Van der Kluft, 1984), they hardly received attention in major international journals. A scientific evaluation of the phenomenon is thus long overdue.

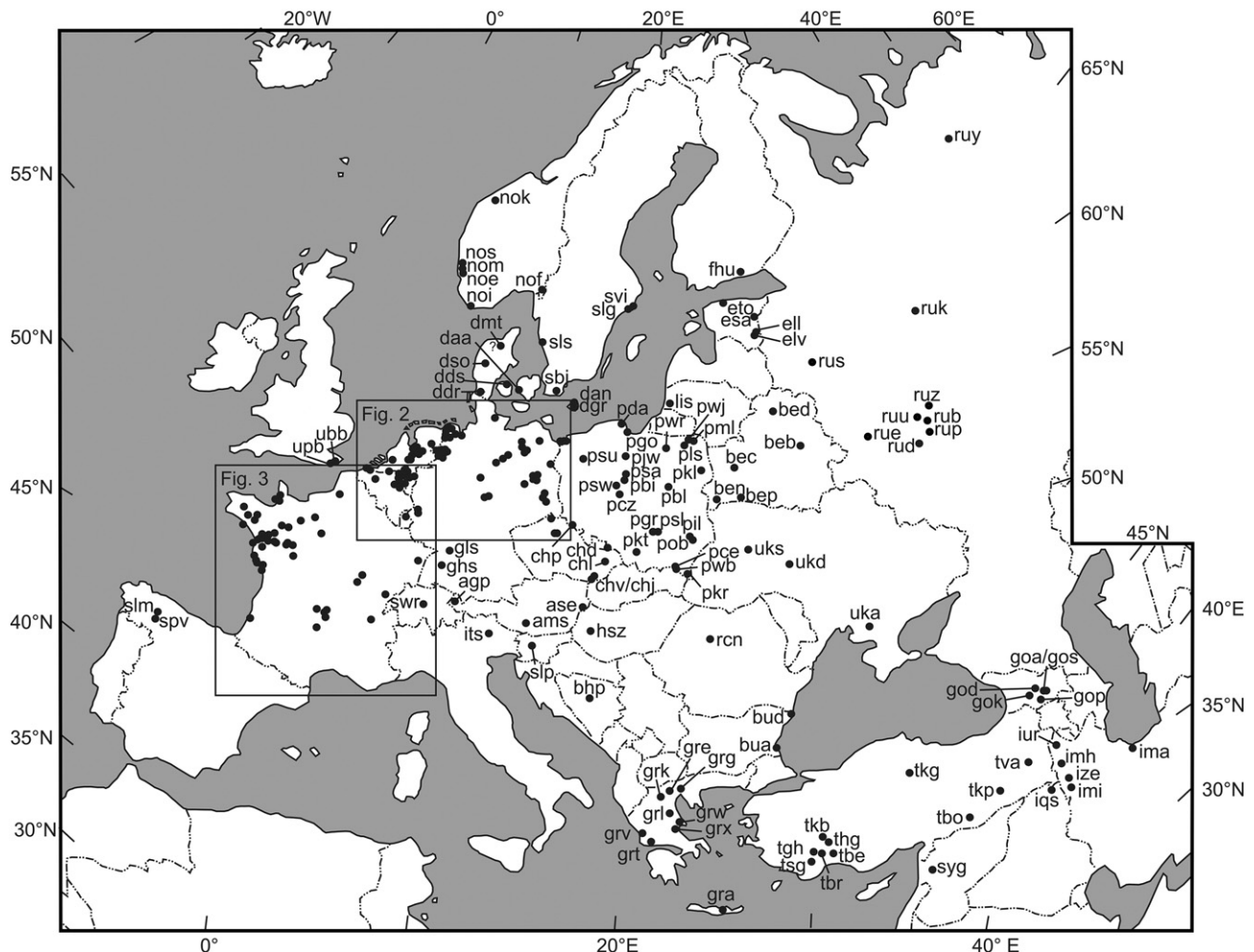


Fig. 1. Palaeoecologically investigated localities from western Eurasia that contain pollen or macrofossils attributable to *Fagopyrum* dating to time-slices prior to the Late Medieval (cf. Supplementary data).

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