



***Polyporus* spp. (POLYPORACEAE, BASIDIOMYCOTA): RARE RECORD FROM ECOSYSTEM OF FALLUJAH, IRAQ**

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Abstract

Based on morphological examination, genus of mushroom *Polyporus* sp. was identified, which constitutes the first record of this fungus in Iraq. It is necessary to study ecology of the rare species of polypores then conservation of their habitats. Because most of polypores live on the substrate of fallen trunks and rotten wood, it is very important to keep such substrate in the ecosystem. Polypors fungus was identified as genus level only which appeared on September 2013 in Fallujah city. The aim of this study to collect and identify of wild mushroom that grow naturally in different orchards and gardens.

Keywords: Anbar Province, biodiversity, collection and identification, Fallujah city, polypore mushroom.

Introduction

Fungi play very important roles in the ecosystem (Carlile *et al.*, 2001). When autumn season comes, mushrooms begin to appear above the soil, logs, stumps, and fallen branches (Hall *et al.*, 2003). They are found suitable everywhere; therefore, we concentrated on mushroom that can be grown in our Iraqi environment naturally to record all species which appear in this country (Owaid *et al.*, 2014) while other species cultivation in farms such as *Agaricus bisporus* (Alheeti *et al.*, 2010; Muslat *et al.*, 2011) and *Pleurotus* sp (Alheeti *et al.*, 2013; Owaid *et al.*, 2015) especially.

From spring through fall, species of *Polyporus* are growing on hardwood and conifer logs, around stumps, and on the ground from a buried sclerotium or wood (Trudell and Ammirati, 2009). Approximately, 92% of species of *Polyporus* can be decompose the cellulose, semi cellulose and lignin of the fallen trunks, and promote the matter cycling and maintain the carbon balance in forest ecosystem (Wu and Wei, 2013). In China, the polypore species are diversity on different habitats. Out of 43 genera were recorded, 107 polypore species belonging to 11 families (Wu and Wei, 2013). Good ability of *Polyporus* species to decolorize the chemical dyes (Barrasa *et al.* 2009) or important medicinally (Zhao *et al.*, 2013).

In Iraq, few researchers made and study varieties of wild mushroom in recent time. In the northern Iraq, Aziz and Toma (2012) mentioned observations about 34 species belonging to 23 genera of basidiomycetes. Also, 44 species of mushrooms belonging to 29 genera were collected and identified from different localities in Erbil Governorate of kurdistan region (Toma *et al.*, 2013). Recently, Owaid *et al.* (2014) mentioned finding 12 genera and species which collected from different localities in Hit city western Iraq.

This study was aimed to collect and identify pore fungus that grow naturally in different orchards and gardens in Fallujah district, Anbar province, Iraq.

Materials and Methods

This article represents the first recorded paper made to identify some mushrooms in Fallujah city, Iraq, which collected in different orchards and gardens into this district on September 2013 in order to finding mushroom but never study to record that yet. Euphrates River inters the city to two sides (Fig. 1), therefore; different gardens and orchards placed on sides the river. The collected mushroom was appeared on September in the end of summer season with climate similar to semi-desert climate with high rate of evaporation, thus few mushrooms could be growing until fruit stage (Owaid *et al.*, 2014).

The geographical location of Fallujah is on the north and east hemisphere. Fallujah city lies at north latitudes 33°21'20" N and east longitudes 43°47'10" E and 47 meters elevation above the sea level. Whereas climate of this district either dry

or semi-dry climate characterized by less than 150 mm of rain per year and high evaporation rates (MOE, 2012).

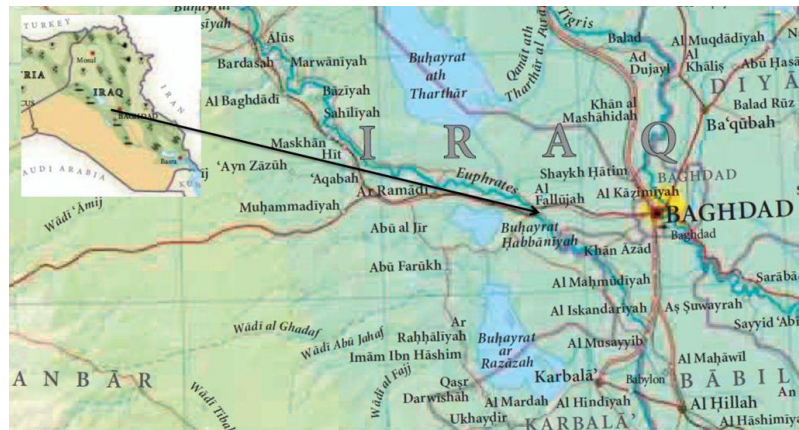


Figure 1: Fallujah city place on the geographical map

Source: World Atlas, 9th ed. Dorling Kindersley Limited. A Penguin company, London on July 2013

Genus of wild mushroom Polypore Fungus was collected from some orchards and gardens of Fallujah district during end of summer season 2013. Standard methods of collection, and identification were followed on genus level according to (Fergus and Fergus, 2003; Deacon, 2006; Trudell and Ammirati, 2009) which used for identification of mushrooms; depending on their taxonomic keys

Results and Discussion

Genus *Polyporus* spp. belongs to phylum Basidiomycota, class Basidiomycetes, order Polyporales, family Polyporaceae (Deacon, 2006). The wood-rotting fungus was showed on ground rich green grasses which appeared in Figure 2 with weight of its fruit body at average 138.4 grams on fallen stalks of trees in Fallujah gardens on September 2013.

Its fruit is Semicircular with length about 45 mm, Whitish color of fruit, its stem length 18 mm, its diameter 24 mm, thickness of cap around 10-15 mm, its diameter 204 mm, its spores color is white (Fig. 3c) drop from irregular gills (Fig. 3a & 3b) its depth to 6 mm. Other details, the texture serobiculate shallow pit depressed arched spongy with grass throughout basidiocarp (Fig. 3c).

It has in common stipe that is central to off-center, caps that are depressed in the center, small to larger pores that are often decurrent (Trudell and Ammirati, 2009).The upper surface is generally smooth, sometimes rough, often undulating, while the lower surface is porous. In some species, the upper surface is distinctly striated. Bracket or shelf-like shape fungi are common on tree trunks or on wood in damp forests as reported by Bendre and Kumar (2010).

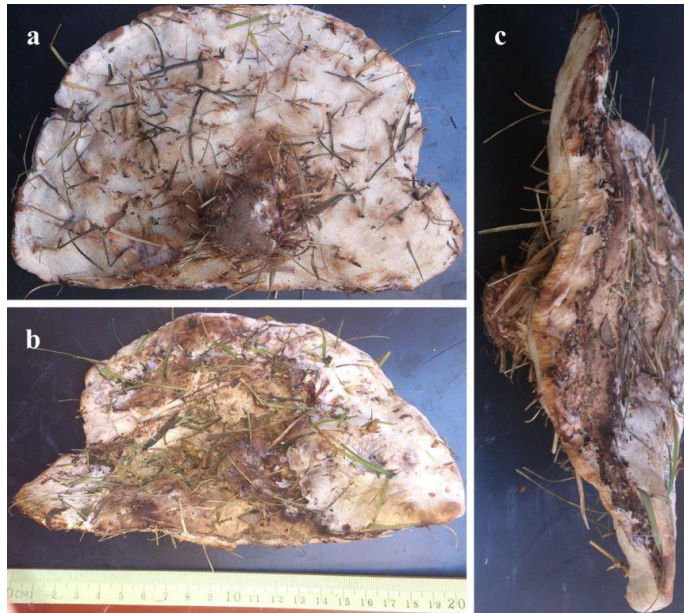


Figure 2: The collected *Polyporus* sp., basidiocarp as seen from lower (a), upper (b) and lateral (c) sides

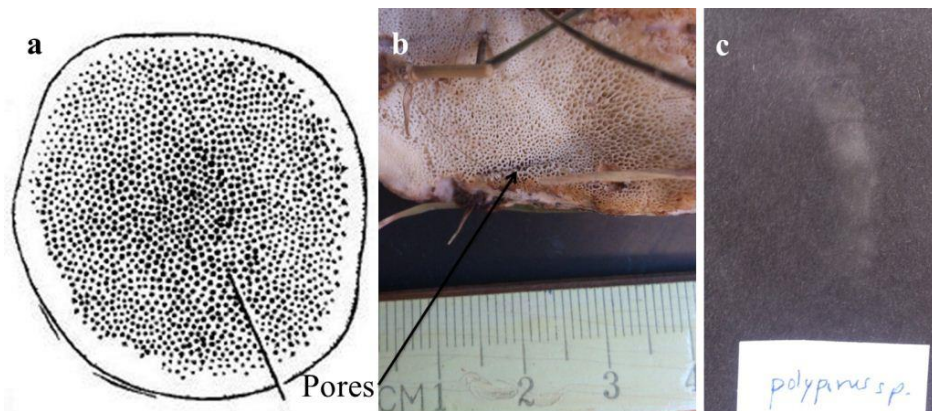


Figure 3: The lower side (a) texture of gills (b) and printing spore (c) of the collected *Polyporus* sp.

Source (a): Bendre and Kumar 2010

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