

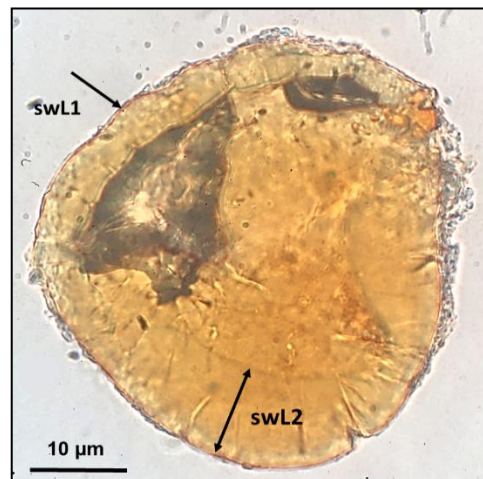
***Glomus nanolumen*, a new report from Iran**

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The campus of Iranian Research Institute of Plant Protection (Tehran, Iran), due to the great extent, rich vegetation, specific geographical boundary between urban and Alborz mountain, high altitude, as well as from various aspects of biological, ecological, biodiversity and environment, and help to reduce air pollution of the region, is considered as an important location. Regarding the importance of fungi in various ecosystems, particularly in terms of biodiversity, stability of plants and plant pathology, identification of these organisms was essentially required. In 2013, in the form of a research project, the mycorrhizal fungi of the said place was investigated. Randomly sampling was done from the rhizosphere of dominant trees (ca. 0–30 cm depth) and a mix of four randomly selected samples of each plant species was chosen for decanting and identification of arbuscular mycorrhizal fungal species. Fungal spores separated by wet sieving (Gerdemann & Nicolson 1963) followed by centrifugation with sugar solution (Furlan *et al.* 1980) were placed in two small drops of polyvinyl alcohol-lactic acid-glycerol (PVLG; Koske & Tessier 1983), and in a mixture of PVLG and Melzer's reagent (100 g chloral hydrate + 100 ml distilled water + 1.5 g iodine + 0.5 g potassium iodide) (Brundrett *et al.* 1994) on the surface of the microscopic slides. From examined spores, one species corresponded to the characteristics of *Glomus nanolumen* Koske & Gemma (*Glomeromycota*, *Endogonaceae*) (Błaszowski 2012).

This fungus was merely isolated from the rhizosphere of mulberry trees (*Morus alba* L.) located in the southern side of the Biological Control Research Department of the Iranian Research Institute of Plant Protection (Tehran, Iran). The distinguishing features of the examined spore were as follows: spore yellowish in color, without attached hyphae, irregular in shape with  $130 \times 150 \mu\text{m}$  diameter. Subcellular structure of spores consists of a spore wall comprising two layers (swL1 and 2): Layer 1, forms the spore surface, permanent, unit, hyaline, pale yellow up to  $1 \mu\text{m}$  thick; and layer 2, laminate, yellowish, with regions differing 2–3 times in thickness, up to  $26 \mu\text{m}$  thick (Fig. 1). The unique structure of this species is its very uneven thickness laminate spore wall layer 2, which remains as a small internal space in the spore. In the Melzer's reagent, however, layers 1 and 2 did not get stain. This specimen is deposited in the Fungi Reference Collection (Iranian Research Institute of Plant Protection, Tehran, Iran) under the number IRAN 16593 F. *G. nanolumen* has been reported from the dunes of Hawaii in USA (Koske & Gemma 1989).



**Fig. 1.** *Glomus nanolumen* spore with a small internal space; swL1, permanent, unit, hyaline spore wall layer 1, swL2, uneven, laminate, yellowish spore wall layer 2.

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*Glomus nanolumen*. گزارشی جدید از ایران

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محوطه مؤسسه تحقیقات گیاه‌پزشکی کشور (تهران)، دارای یک محدوده اقلیمی ویژه، از نظر پوشش گیاهی نسبتاً بکر، وسعت و شرایط گیاهشناسی گیاهی، از اهمیت بالایی برخوردار است. در سال ۱۳۹۳ در قالب یک طرح تحقیقاتی، رستنی‌های محل مذکور بررسی و شناسایی شد. در قسمت مربوط به شناسایی بیوتای قارچ‌های میکوریزی ریزوسفر گیاهان، نمونه‌برداری به شکل تصادفی، از عمق ۳۰-۰ سانتی‌متری ریزوسفر درختان غالب در پوشش گیاهی محوطه مؤسسه مذکور انجام شد. هاگ قارچ‌ها با روش الک تر (Gerdemann & Nicolson 1963) و سپس سانتریفوژ با محلول قندی (Furlan *et al.* 1980) جداسازی و بر سطح اسلاید میکروسکوپی در دو قطره کوچک از PVLG (پلی‌وینیل‌الکل-لاکتیک اسید-گلیسرول) و PVLG مخلوط با معرف Melzer بر سطح اسلاید میکروسکوپی قرار داده شدند (Brundrett *et al.* 1994). از هاگ‌های نمونه بررسی شده، *Glomus nanolumen* (Koske & Gemma, ) *Glomeromycota*, (*Endogonaceae*) برای نخستین بار از ایران گزارش می‌شود (شکل ۱). این قارچ از ریزوسفر درختان توت (*Morus alba* L.) واقع در ضلع جنوبی محوطه بخش تحقیقات کنترل بیولوژیک مؤسسه مذکور جداسازی و با شماره IRAN 16593 F در مجموعه قارچ‌های هرباریوم "ایران" نگهداری می‌شود.