

Anew record of *Trichophyton gourvilii* Catanei , the etiological agent of tinea pedis in Iraq .

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Summary

Skin scrapings collected from (190) patients attending the Dermatology Clinic at Al-Zubair general hospital and some clinical laboratories in Al-Zubair city , Basrah , Iraq during June 2003 to November 2004 . were surveyed for the prescence of dermatophytes.

Direct microscopical examination was carried out with 15% KOH preparation , and cultures were performed in petri dishes on Sabouraud's Dextrose Agar with Cycloheximide and Chloramphenicol . Among the 190 samples only one case was assigned to tinea pedis in a 15-year-old girl . The causal agent was identified as *Trichophyton gourvilii* Catanei . The fungus is described and illustrated . Characteristics of the species are compared with the related species of *Trichophyton* . The reported species is newly recorded in Iraq .

1-Introduction

Tinea pedis , or athlete's foot , is a dermatophyte infection of occlusive foot wear (Philpot, 1977) . Most commonly , tinea pedis present , with toe-web maceration (Weinsten and Berman , 2002) .

The dermatophytes most often implicated in tinea pedis are *Trichophyton rubrum* , *T. mentagrophytes* and *Epidermophyton floccosum* (Masri-Fridling , 1996) .

Tinea pedis is a contagious infection spread by the skin particles which harbor the fungus , and then come in contact with another host (Evans , 1997) .

Lesions of this most frequent type of dermatophytosis often begin in the web between the 4th and 5th toe as fissures bordered by narrow zones of peeling epidermis (Venugopal and Venugopal , 1992) . Mycoses of the feet are found to develop

predominantly in adults and the incidence is higher in the male , than in the females (Ellabib and Khalifa , 2001) . Some of the more common surfaces which serve as fomites include , shoes , socks , rungs , sheets , towers and shower floors (Masri-Fridlings , 1996) .

Tinea pedis may present as one of these types : (a) chronic intertriginous , type (b) chronic papulosquamous type (c) vesicular or vesiculobulbous type and (d) acute ulcerative type (Matsumoto , 1996).

During study of superficial mycoses in al-Zubair city , Basrah governorate , Iraq , a rare fungus was recovered from tinea pedis , the fungus was identified as *Trichophyton gourvilii*, the reported species is described and illustrated.

2-Materials and methods

During June 2003 to November 2004, 190 specimens were taken from skin lesions of patients who were attending the out patient units of Dermatology Department at Al-Zubair general hospital and some clinical laboratories, in Al-Zubair city, Basrah, Iraq.

Specimens were transferred to the Mycology laboratory by folded paper packet.

A portion of the sample was placed on a slide and an aqueous solution of 15% potassium hydroxide (KOH) was added, then heated gently over a flame and examined under the microscope for the presence of fungal elements and their diagnostic morphology. All samples were cultured on Sabouraud Dextrose Agar with Chloramphenicol and Cycloheximide (SDA) (Dextrose 40g, Peptone 10g, Agar 20g, Cycloheximide (Actidione) 0.5g, Chloramphenicol 50mg, D.W. 1000ml). Additional culture media viz, Potato Dextrose Agar (P.D.A) (Potatoes 200g, Dextrose 20g, Agar 20g, Chloramphenicol 50mg, D.W. 1000 ml), Christensen's Urea Agar (Pepton 1g, Glucose 1g, Sodium chloride 5g, Di potassium hydrogen phosphate, K_2HPO_4 2g, Phenol red 0.012 g, Agar 20g, D.W. 1000ml, Urea 20% sterilized by filtration (miliopore filter paper 0.45 μ m), Chloramphenicol 50mg), and Lactrimel Agar (LA) (Skimmed milk 200ml, Wheat flour 20g, Honey 10g, Chloramphenicol 50mg, Agar 15g, D.W. 1000ml), were used in made the diagnosing. Cultures were examined twice weekly for evidence of growth. Fungal isolates were examined

macroscopically and microscopically using lactophenol cotton blue as a mounting material.

The dermatophyte species were identified based on the criteria enumerated by Rippon (1988), Kwon-Chung & Bennett (1992) and Hoog de and Guarro (1995).

3-Description and discussion

During the examination of 190 samples taken from patients with suspected superficial mycoses infection, a case of tinea pedis on a 15-year-old girl caused by *Trichophyton gourvilii* Catanei was identified. *T. gourvilii* represents a new record for Iraq.

***Trichophyton gourvilii* Catanei, Bull. Soc. Pata. Exot. 26:377-381 (1933).**

Colonies on Sabouraud's Dextrose Agar spreading slowly, reaching 20mm diam. in 14 days at 27 °C, glabrous to granular, folded, membranous, violet with brown pigments diffused into the medium just in primary isolate; reverse salmon or yellowish; micro and macroconidia very sparse. Fig (1).

Colonies on Potato Dextrose Agar growing moderately, attaining 30mm diam. in 14 days at 27 °C, glabrous, cream or waxy in appearance; reverse salmon; micro and macroconidia appear relatively abundant.

Colonies on Lactrimel Agar growing moderately reaching 35mm diam. in 14 days at 27 °C, velvety; white; reverse salmon; micro and macroconidia more abundant than on SDA and PDA. Fig. (2).

On Christensen Urea Agar, no growth. while on Sabouraud's Dextrose Agar at 37°C, growth present.

Mycelium composed of twist, septate, smooth, hyaline hyphae. Microconidia

pyriform , 4-6×2-5 μm , sessile along side undifferentiated hyphae . Macroconidia irregular-shaped , smooth , thick-walled , 4-8septate , 25-45×4-8 μm , opposite arrangement on the two side of hyphae. Plate (1) , Fig (3) .

Isolate examined : from 15-year-old girl complained of tinea pedis who attending Al-Zubair general hospital / Basrah , 30. Dec. 2003. Cultures deposited at mycology laboratory , Biology Department , College of Science , University of Basrah .

T. gourvilii is morphologically similar to *T. violaciun* , *T. soudanense* , *T. megninii* and *T. rubrum* . All have red-pigmented colonies and urease negative , but the species can be differentiated from each other as follows : *T. violaciun* requires thiamine and has a leathery colony . *T. soudanense* may require nicotinic acid , other vitamins. *T. megninii*, can be distinguished by , it's requirement for L-histidin and usually , by its more cottony colony . *T. rubrum* do not

require a vitamin for the primary isolation and do not produce brown pigments , while *T. gourvilii* is distinguished from all the former species by it's lack of vitamin requirement and the differences in the morphological characteristics .

This species was reported for the first time by Catanei (1933) in north west of Africa . Infections due to *T. gourvilii* extremely rare. This fungus has been reported in rare cases from south of America and Europe , causes tinea corporis and occasionally tinea pedis and onychomycosis . (Hoog de and Guarro , 1995 ; Kane *et al* , 1997) .

In previous studies in Iraq on tinea pedis , Ghani and ythia (1979) ; Muhsin *et al* (1999) and Abdullah *et al* (2002) showed that the causative agents were *Epidermophyton floccosum* , *T. mentagrophytes* , *T.rubrum* and *T. verrucosum* with different incidence , thus it is for the first time to be recorded in Iraq .



Fig (1) Colony of *Trichophyton gourvilii* on Sabouraud's Dextrose Agar

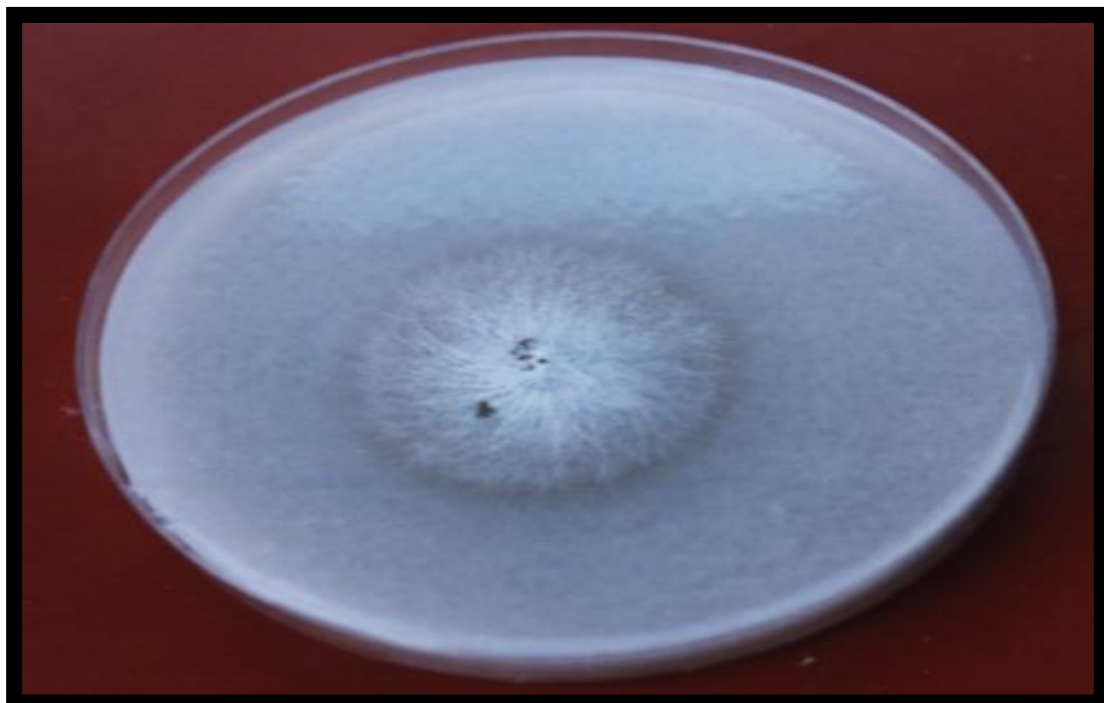


Fig (2) Colony of *T. gourvilii* on Lactritmel Agar

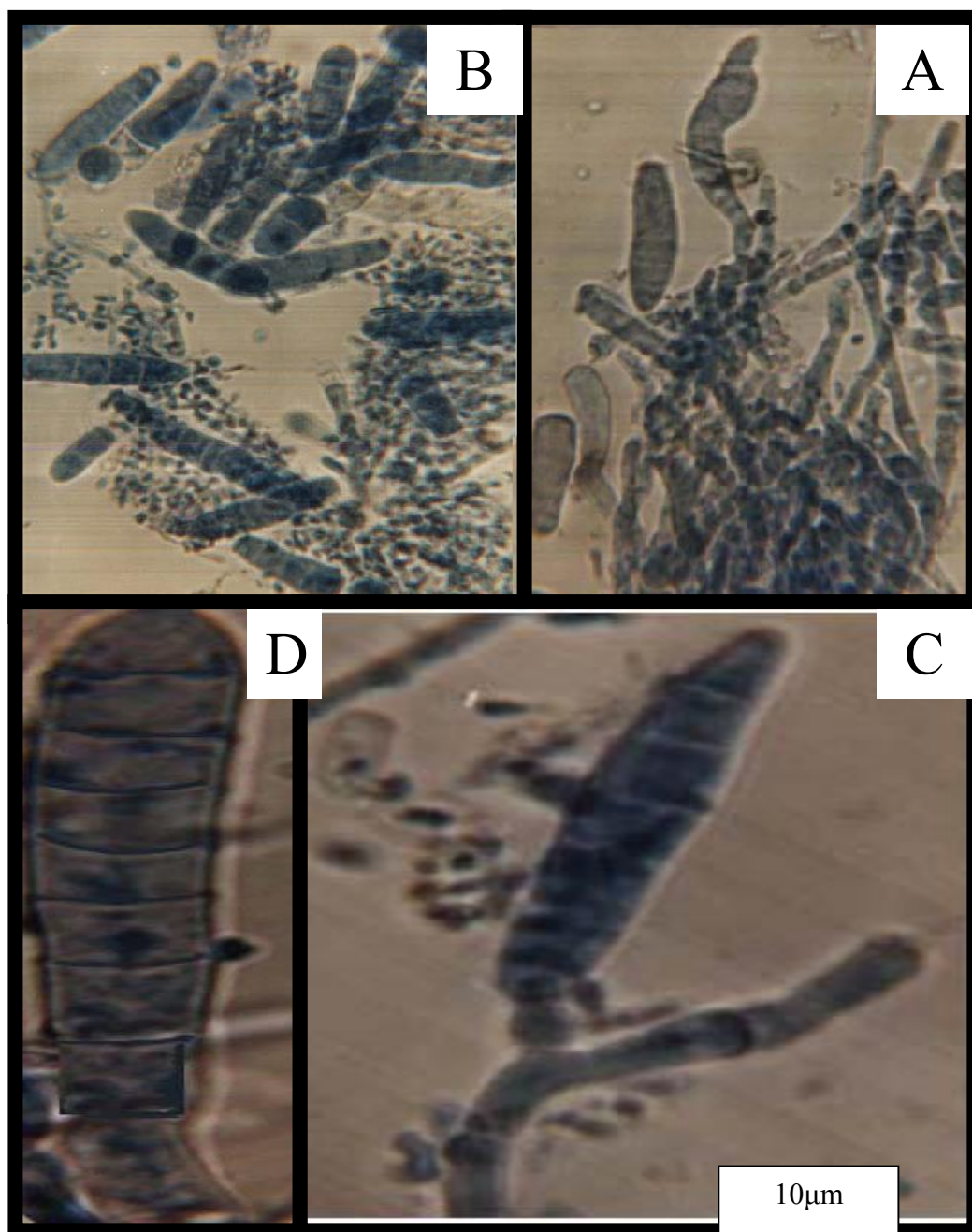


Plate (1) *T. gourvilii* A- Mycelium B- Macroconidia and microconidia C,D- Macroconidia

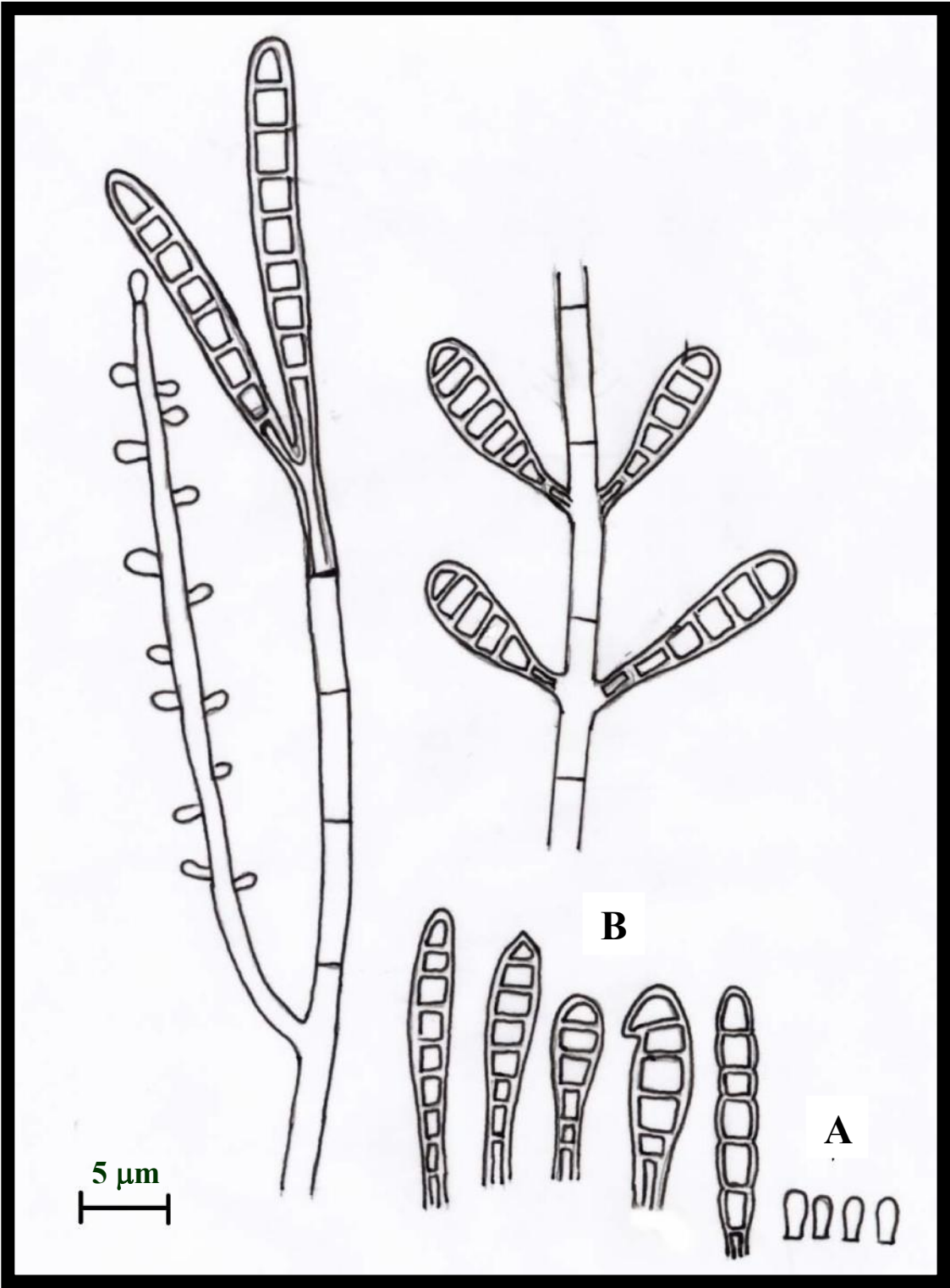


Fig (3) *T. gourvilii* A- Microconidia B- Macroconidia

4- Acknowledgments

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تسجيل جديد للفطر *Trichophyton gourvilii* Catanei العامل المسبب لسعفة القدم في العراق

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الذ

تم جمع 190 عينة سريرية من 190 مريض يعانون من أعراض سريرية للإصابة بأمراض الفطار السطحي الجلدي راجعوا مستشفى الزبير العام وبعض المختبرات للتحليلات المرضية في محافظة البصرة للمدة من (2003/6/1) الى (2004/11/28).
فحصت النماذج مجهرياً بعد معاملةً بمحلول هيدروكسيد البوتاسيوم KOH 15 % وتم زرع العينات المتمثلة بالقسور الجلدية على وسط آغار السابروود مضاف له السايكلوهكسيمايد والكلورامفينيكول .
وسجلت حالة واحدة فقط لسعفة القدم من بين 190 عينة سريرية ، واخذت من فتاة بعمر 15 سنة و شخص المسبب المرضي بوصف *Trichophyton gourvilii* . وتم وصف الفطر ومقارنته مع الانواع المقاربة من جنس *Trichophyton* ويعد هذا النوع تسجيل جديد في العراق .