

mykosen

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9/1970

1. September

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First case of tinea infection by *Microsporum nanum* in Romania

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Herrn Prof. Dr. Dr. h. c. K. Linser zum 75. Geburtstag

Microsporum nanum, described for the first time by FUENTES in 1954, is usually considered as a dermatophyte invading mainly the pig and more rarely affecting man. Infections by *M. nanum* in pig have been reported from Kenya, USA, Australia and Cuba. Human infections due to the same species were observed in Cuba (FUENTES et al. — 1954 and 1956), Mexico (BEIRANA and MAGAÑA — 1960), USA (BROCK & McCOMB — 1961; AJELLO et al. — 1962; MULLINS et al. — 1966), Canada (CARMICHAEL and REIS — 1962), Italy (SBERNA and GARDENGI — 1969). SMITH (1969) has also reported *M. nanum* among the zoophilic species isolated from animals and man in New Zealand.

Tinea corporis (6 cases) and *tinea capitis* (4 cases) were the main types of *M. nanum* infection reported up to now. It seems that the endothrix type of invasion is the most frequently seen for hair involvement by *M. nanum*. Fluorescence was sometimes observed, but not as a rule. In relation to its natural habitat, based on its finding in the soils of various countries (AJELLO et al., 1964; COUBERT, 1966; MARCELOU-KINTI, 1966; GIP et al., 1966; YOUSEF-AL-DOORY, 1967), *M. nanum* must be quoted, according to AJELLO, as a geophilic dermatophyte. The perfect state of *M. nanum* was described by DAWSON and GENTLES in 1961 as *Nannizzia obtusa*.

Up to the present, no mention of *M. nanum* was made in Romania (In 1963, some soil isolates had been taken by EVOLCEANU et al. as being *M. nanum*, but later it has been proved to be only *C. keratinophilum*).

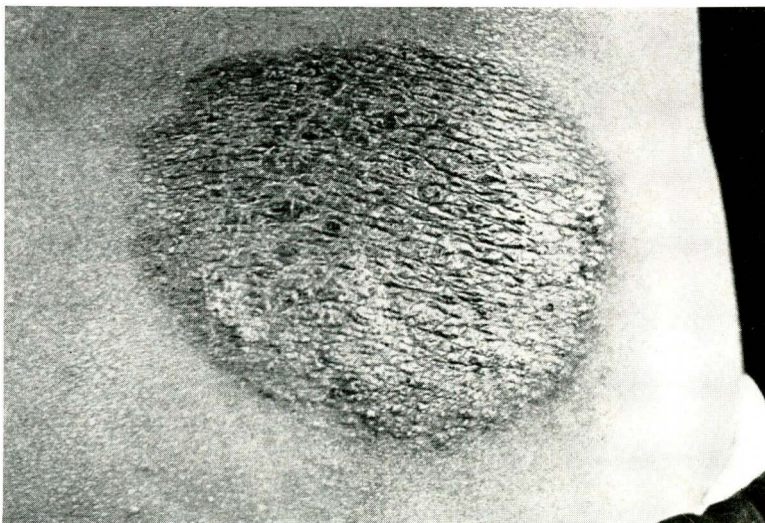


Fig. 1: *Tinea corporis* by *M. nanum* on the upper half of the right quadrangular of the dorsum

Enough recently, we had the opportunity to observe a case of tinea corporis, from which we succeeded to isolate the true *M. nanum*.

Case history

Girl C. G., 8 years old, living at the country, had come to be examined for a solitary erythematous-scaly plaque, located on the glabrous skin of the upper half of her back. With peripherally extending vesicular active borders, slightly elevated, the lesion did not exhibit any significant central healing (fig. 1). The patient complained of a mild itching. No definite information could be obtained in relation to the source of infection, excepting the fact that she had payed a visit, two weeks ago, to a friend who had a few pigs at their farm.

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Direct microscopic examination, in 15% potassium hydroxide, of skin scrapings from the vesicles and scales showed the presence of numerous hyphae. The transfer of pathologic material onto Sabouraud's glucose agar, supplemented with chloramphenicol, yielded white-creamy fluffy colonies, changing, after 7—10 days, for a slight powdery buff color, reddish brown on the reverse side. The main microscopic character of the above mentioned colonies consisted in the presence of abundant pear-shaped, very slightly echinulated, "light-bulb" macroconidia, containing 1—2 cells (fig. 2 and fig. 3). Very few microconidia



Fig. 2: Pear-shaped macroconidia of the isolate (*M. nanum*)

could be seen. The form and size of macroconidia observed enabled us to identify the isolate as *M. nanum* — FUENTES, 1954—1956.

Experimental inoculation of the isolated strain gave positive results in 3 from 5 guinea pigs and in 2 from 3 human volunteers. The agent proved to be enough virulent in our experiments, the lesions obtained making evidence of a marked inflammation, which persisted more than usually seen in practice.

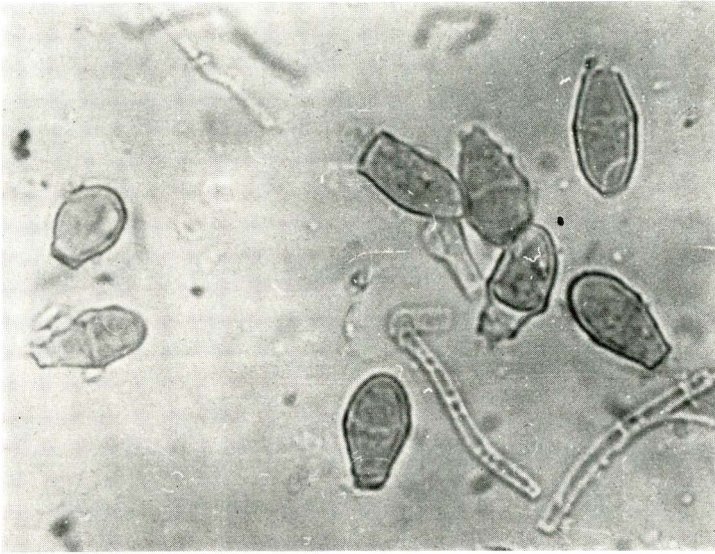


Fig. 3: Macroconidia of *M. nanum* seen at a higher magnification

The immuno-biologic properties of our *M. nanum* strain, issued from the researches in animal and man with an antigen prepared by heating at 80° C, were almost the same with those observed in *M. gypseum* complex, i. e.:

1. intense response of the intracutaneous test made in 3 patients with Kerion type of infection;
2. positive complement fixing reaction in the serum of 3 from 5 immunized rabbits;
3. marked improvement, through vaccination method, in 2 subjects with deep tinea barbae.

No specimens of hair or scales could be obtained from the pigs, presumed to be the source of our patient's infection. Attempts to isolate *M. nanum* from some samples of soil collected in the vicinity of the suspected pigs gave no results. Further investigations are necessary to find out whether *M. nanum* could be present in the Romanian soil or not. With this species, the total number of dermatophytes reported in Romania, up to now, has reached 18 (16 of them affecting man and animal, the rest being geophilic organisms).

Summary

The first human infection by *M. nanum* in Romania is here reported. The agent was isolated from a solitary lesion on the glabrous skin in a girl, aged 8 years. The causative fungus was identified by the presence of numerous, rarely bisepate, "light-bulb" macroconidia found in the culture. The strain was inoculated with positive results into guinea-pig and man. Its antigenic capacity proved to be similar with that of *M. gypseum* complex.

Résumé

On rapporte le premier cas roumain d'infection mycosique par *M. nanum*. L'agent a été isolé d'une lésion solitaire cutanée apparue sur le dos d'une petite fille de 8 ans. L'identification du parasite a été possible grâce à la présence dans les cultures de nombreux petits fuseaux caractéristiques. La souche isolée a été inoculée avec succès au cobaye et à l'homme. Les propriétés antigéniques du *M. nanum* se sont montrées similaires avec celles du *M. gypseum*.

Resumen

Se relata la primera infección humana por *M. nanum* en Rumania. El agente causal fue aislado de una lesión solitaria de piel lampiña de una niña de 8 años de edad. El hongo fue identificado por la presencia de numerosas macroconidias, rara vez biseptadas, piriformes halladas en los cultivos. La cepa fue inoculada con resultados positivos en cobayo y en seres humanos. La capacidad antigénica resultó ser similar a la del complejo *M. gypseum*.

Zusammenfassung

Erster Bericht über eine *M. nanum*-Infektion beim Menschen in Rumänien. Der Erreger wurde aus einem Einzelherd vom oberen Teil des Rückens eines 8jährigen Mädchens isoliert. Die Ränder des Krankheitsherdes waren etwas erhaben und mit Bläschen besetzt, eine zentrale Abheilung war jedoch nicht festzustellen. Im Nativpräparat von den Bläschen und Schuppen fanden sich zahlreiche Pilzfäden. Auf Sabouraud-Glucose-Agar mit Chloramphenicol-Zusatz wuchsen weißcremige flaumige Kolonien, die nach 7—10 Tagen pudrig und leicht gelblichbraun wurden. Die Identifizierung erfolgte aufgrund der typischen, sehr zahlreichen, zwiebelförmigen, ein- bis zweizelligen, selten dreizelligen Makrokonidien.

Die experimentelle Übertragung des Stammes auf Meerschweinchen gelang in 2 von 3 Fällen; auch bei 2 von 3 freiwilligen Versuchspersonen konnten deutliche Krankheitserscheinungen erzeugt werden. Die antigenen Eigenschaften des Stammes erwiesen sich als ähnlich wie die des *M. gypseum*-Komplexes.

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