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A HISTORICAL NOTE

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Tinea nigra *(Pityriasis nigra, Keratophytia nigra)* occurs, as well known, in the tropical and subtropical zones of both the Eastern and Western hemispheres, but while tinea nigra of the West has attracted much attention and there is a large literature on it, tinea nigra of the East has awakened hardly any interest, and the literature on it is very scanty, notwithstanding the fact it was in the East that the mycosis was first described and its fungus discovered.

Tinea nigra was first observed and its causative fungus found and cultivated in Ceylon as long ago as 1905 by Castellani, who, during the following eight years, carried out further clinical and mycological investigations on the subject until in 1913 he gave a full description of the condition and its aetiology in the second edition of Castellani and Chalmers' *Manual of Tropical Medicine* (Ballière, Tindall and Cox, Publishers, Henrietta Street, Covent Garden, London, 1913), at p. 1502 and subsequent pages, and repeated it in the third and last edition (1919), p. 2078 and subsequent pages.

Some historical and other details may be of interest. To the fungus he found Castellani gave in 1905 the specific term *mansoni* in honour of Patrick Manson, placing it in the genus *Microsporon* Gruby, which in those days had a very wide meaning (*Brt. Med. Journ., 2:* 1271, 1905). In 1907 he sent cultures of the fungus tc Dr. McLeod, the well-known dermatologist at Charing Cross Hospital, London, who informed him later that the cultures had arrived dead. In 1908 Castellani transferred the fungus to a genus of its own, *Foxia,* after Dr. Fox one of his English teachers in Dermatology (*Journ. Trop. Med. & Hyg., 11,* 260, 1908). In 1911 he observed the first case in an European, Sir Allan Perry, the principal civil medical officer of Ceylon and his administrative chief. Sir Allan Perry had gone to Burma on a short holiday and during his journey back he developed tinea nigra on the palm of his left hand. The case was quoted without of course giving the patient's name, in the second edition (1913) of the above mentioned *Manual,* at p. 1503. «On coming back to Ceylon he noticed a small, roundish, very slightly elevated, non-desquamating, black patch on the palm of his left hand. There was no pruritus. The patch spread slowly for two months, reaching the size of a sixpenny piece. It desappeared after a single application of formalin; three months later it reappeared in the same place as a tiny black dot which slowly spread. Another application of formalin caused it to again disappear. From the patch a fungus was grown identical with the one found in native cases.» It was quoted also in the third and last edition (1919) of the *Manual,* p. 2079.

In 1912 cultures were sent by Castellani to the famous mycologist of the Pasteur Institute of Paris, Prof. Pinoy, who placed the fungus in the genus *Cladosporium* Link (*Ann. Derm. Syph.,* vol. 3, 341, 1912).

Pinoy's classification was generally accepted and Brumpt, in his 1913 edition of *Précis de Parasitologie* (Masson & Cie., Paris), at p. 928, gives a good description of the mycete using the terminology *Cladosporium mansoni* (Castellani) Pinoy, a description remaining practically unchanged in subsequent editions.

Castellani, too, accepted Pinoy's classification and in the second edition, 1913, p. 1502, and third and last edition, 1919, p. 2078, of Castellani and Chalmers' *Manual of Tropical Medicine,* he described it as a *Cladosporium,* this classification he maintained in the Milroy Lectures given in 1920 in London before the Royal College of Physicians (*Lancet,* vol. 1, 1920, p. 944). He also considered it a *Cladosporium* in the account he gave jointly with Chalmers of tinea nigra in Byam and Archibald's *Practice of Medicine in the Tropics,* published in London in 1921. Pollacci and Nannizzi, during 1919 and

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the following years, made a prolonged mycological investigation of the cultures supplied by Castellani and they placed the fungus in the genus *Cladosporium*. Vuillemin (*C. R. Acad. Sci.*, 189, 405, 1929). However, in 1929, transferred it to the genus *Torula* Persoon (*sensu* Persoon, not Turpin and Pasteur). This taxonomic position was not generally accepted and Nannizzi, in his well known *Miceti dell'Uomo e degli Animali,* Siena, 1934, continued to place it in the genus *Cladosporium,* giving a very complete description of the mycete (p. 405). Later the fungus was placed in the genus *Dematium* Persoon by Dodge (*Med. Mycol.*, p. 678) and in the genus *Aureobasidium* Viale and Boyer by W. Bridge Cooke, who has made a prolonged and complete investigation of it (*Mycoph. et Mycologia Applicata,* vol. XVII, I, pp. 1-45, 1962). The majority of mycologists still regard it as a *Cladosporium*. The fact is *Cladosporium mansoni,* like so many other so-called «yeast-like fungi» (*sensu lato*), is pleomorphic (not *sensu* Sabouraud), and may present the most different morphological appearances at different periods of time and when grown on different media, hence the difficulty of giving it a definite taxonomic position.

At the time of his early researches, Castellani thought the first clinical description of tinea nigra was given by Patrick Manson in China in the 70s of the last century, this statement has frequently been repeated by others since that time. Many years later, in the late 20s, Castellani was able in London to consult Manson's original communications on dermatological subjects in the *China Imperial Maritime Customs Medical Reports,* a most difficult publication to find, and was compelled to form the opinion that Manson was not referring to true tinea nigra but to cases of pityriasis versicolor of dark colour due to the deposition of dust and dirt on the mycotic patches. As a matter of fact, the term tinea or pityriasis nigra does not appear in those reports, nor is any mention made of microscopic researches or attempts at cultivation.

It is interesting to note that some years later, in 1930, in the course of a discussion at a meeting of the Royal Society of Tropical Medicine in London, following the paper «Minor Tropical Diseases» by Castellani, Manson-Bahr recalled that Manson in his later years used to say that by the application of a little soap and water tinea nigra could always be converted into tinea alba. Manson-Bahr inferred his agreement with this. Replying to the discussion, Castellani considered «Manson-Bahr was mistaking for tinea nigra the dark type of pityriasis versicolor due to dust and dirt deposited on the patches of pityriasis. No washing will make patches of tinea nigra disappear». The lecture and discussion were reported in full in the 4th volume of the *Transactions of the Royal Society of Tropical Medicine,* the former on p. 413 and the latter on p. 419.

Literature on tinea nigra in the East, as already mentioned, is scanty and few papers on it have been published apart from those of Castellani and Richard de Silva. The latter investigated the mycosis in Ceylon off and on from 1919 until 1957 confirming Castellani's old researches in reports to the Ceylon Medical Research Institute and other local publications, and finally in a communication to the International Congress of Microbiology held in Rome in 1953 (*Att. VI Congresso Internazionale di Microbiologia,* Roma, *5,* 121). In 1947 an important paper by Neves and Costa appeared in the *Archives of Dermatology and Syphyliography* (*65,* 67). Another important paper was published by Kirk and Morgan in 1957 in the *Journal of Tropical Medicine and Hygiene* (*89,* 38), they regarded tinea nigra as a clinical entity and they stated that «Mycologists agree that the fungi isolated from cases of tinea nigra in the East and the New World all belong to the genus *Cladosporium* although there is still room for doubts about the species».

In the same year, 1957, a joint paper on tinea nigra was published by Castellani and Richard de Silva in the *Journal of Tropical Medicine and Hygiene* (*60,* 193) and soon after another in *Mykosen,* Band I, Heft 3, Seite 41-48, 1957.

With regard to very recent literature, the best account of tinea nigra and its history is found in the chapter on tinea nigra written by João Ramos e Silva in the last edition of Jadassohn's *Handbuch der Haut and Geschlechtskrankheiten,* vierter Band, vierter teil, edited by A. Marchionini and H. Gotz, pp. 436-451, published by Springer — Verlag/Berlin. Gottingen, Heidelberg.

Owing probably to the remoteness of the initial investigation of the disease some inexactitudes have crept in the historical accounts given in one or two modern textbooks on medical mycology from which it would appear that Castellani confused tinea nigra with pityriasis versicolor. To correct this inexactitude one has simply to look up the account of the disease given by him in Castellani and Chalmers' *Manual of Tropical Medicine,* 1913, edition in which under the heading diagnosis at page 1513 the following statement is found: «Pityriasis versicolor is generally of lighter colour than tinea nigra and the fungus *(Malassezia versicolor)* is morphologically very different and cannot be grown». This statement is repeated in the last edition of that *Manual* (1919 at page 2079). It has also been said that Castellani identified *Cladosporium mansoni* with one of the fungi of the genus *Montoyella* and also with *Cryptococcus metaniger*. Anyone taking the trouble to read his old papers will find out that he never did so.

Geographical distribution. — The cases seen by Castellani and Richard de Silva in Ceylon contracted the mycosis in Ceylon, Burma, India, Indochina, Borneo and Java.

Aetiology. — In Castellani and Chalmers' *Manual of Tropical Medicine,* 2nd. ed. (1913, p. 1503) and 3rd. and last ed. (1919, p. 2078), it is stated that tinea nigra is caused by a fungus of the genus *Cladosporium — C. mansoni* Castellani 1905 which is readily cultivable: «The fungus is easily cultivated by inoculating scrapings of the affected patches on maltose agar. After two to four days roundish hemispheric colonies appear which are black but at first have usually a greenish tinge, and may present at the periphery some radiating delicate, pale greenish hyphae. These colonies may remain separate or more often gradually coalesce into a jet black knobby mass, deeply rooted into the medium.

The fungus grows well, though less abundantly, on other sugar agars and also on ordinary agar. In *broth* and *peptone water* the growth is very slow, and takes place at the bottom of the tubes, with the formation of a black or greenish black sediment.

The optimum temperature for the growth of the fungus is bewteen 30°C and 35°C, above 35°C and below 25°C the growth is much slower and maybe nil under 20°C.»

It may be noted that cultures of *Cladosporium mansoni* have been available to investigators since the first decade of the century and that they have been studied at different times by well known mycologists among whom Pinoy (as already mentioned), Brumpt, Pollacci and Nannizzi, W. Bridge Cooke.

Experimental reproduction. — Richard de Silva has reproduced experimentally tinea nigra on himself and other volunteers, scarifying superficially the skin of the forearm and appiying a pure culture of *Cladosporium mansoni* under a bandage which is not removed for ten days.

Clinical. — According to the experience of Castellani and de Silva any region of the body may be affected excepting the face. In Europeans and Eurasians the region of predilection is the palms of the hands. It has been stated that the soles of the feet are never attacked but one such case in a Singhelese clerk in Colombo has been reported by de Silva.

On the affected region one or two or more black spots are seen which gradually coalesce, in most cases, in a single black patch which is not prurigenous, not tender, not painful. The general health is not affected. No tendency to spontaneous cure unless the patient moves to the hills or some country in the temperate or cold zones.

Diagnosis. — This is made easily by microscopic and cultural methods.

Differential diagnosis. — Differentiation from *pityriasis versicolor* is easy. The paragraph in Castellani and Chalmers' *Manual of Tropical Medicine,* 2nd. ed. (1913, p. 1503) and 3rd. ed. (1919, p. 2079), may be again quoted: «*Pityriasis versicolor* is generally of lighter colour than tinea nigra and the fungus *(Malassezia versicolor)* is morphologically very different and cannot be grown.» More difficulty is encountered in differentiating tinea nigra from *Aspergillosis nigra,* which, however, is a very rare affection. A case was described and fully investigated in Ceylon by S. E. Fernando in 1932, who believed it to be pinta (we now know that true pinta is a treponematosis). Usually a single black patch is seen on the face or neck or chest that when fully developed is approximately the size of a half crown piece, it has a slightly rough surface and is very prurigenous, the miscroscopic and cultural examination shows the presence of *Aspergillus* fungi; after a time a process of depigmentation begins, and part of the black patch is transformed into a white leucoderma-like small area in which fungi are no longer found.

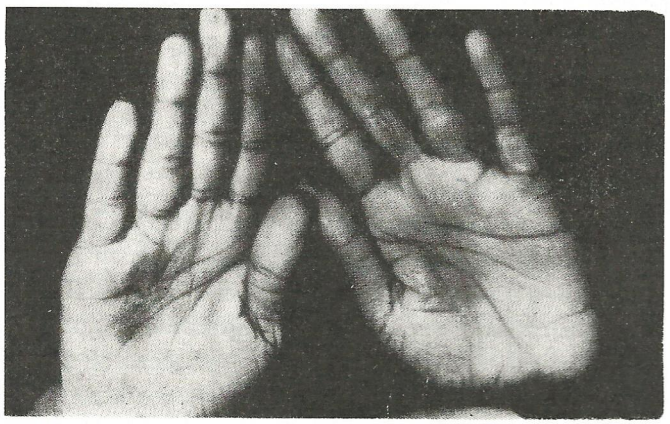
In *cutis pseudospurca mycotica,* a little known but not very rare tropical dermatosis described by Castellani years ago in Ceylon, the patches, usually found on the limbs, chest and back, are of a brownish or dirty yellowish colour have a peculiar dry appearance and the microscopical examination will show presence of numerous budding cells which have not been grown (*Torulopsis epidermidis* Cast., also known as *Cryptococcus epidermidis* (see Castellani and Chalmers' *Manual of Tropical Medicine,* p. 2092, and also *Annals of the New York Academy of Sciences,* vol. 93, p. 176, 1962). Ordinary soap and water will not remove them but thorough scrubbing with sand soap will do it and in resistant cases a strong salicylic or resorcin lotion and sulphur ointment are succesful.

Treatment. — The following is found in Castellani and Chalmers' *Manual of Tropical Medicine,* 1913 ed., p. 1502, and 1919 ed., p. 2080: «The disease is easily curable, except when it attacks the palms of the hands where the treatment must be more prolonged. A salicylic alcoholic lotion (2 per cent), followed by a resorcin ointment (resorcin I drachm, vaselin Ioz.), answers well. When the patches are small, pure formalin may

be used with care.» In persistant cases Whitfield's ointment or Castellani's fushsin paint may be used with advantage.

TINEA NIGRA IN THE WESTERN HEMISPHERE

In 1921 João Ramos e Silva diagnosed tinea nigra in a patient attending the Policlinica Geral of Rio de Janeiro and it is interesting to note that he says he based his diagnosis on Castellani's work in the East. In the historical account he gives in Jadassohn's *Handbuch der Haut Geschlechtreskrankeiten,* vol. IV, pp. 436-451, one reads at p. 438 that: «Konnte J. Ramos e Silva, gestützt auf dei klinische und mycologische Beschreibung Castellani, 1921 den erstan Fall in Rio de Janeiro indentifizieren, der in der Policlinica Geral diesser Stadt beobachtet wurde». João Ramos e Silva made scrapings from the patch and handed them over to the mycologist of that Institution, Paolo Parreiras Horta who at the end of the same year published the case calling the fungus *Cladosporium wernecki.* Since that time tinea nigra in the Western hemisphere has attracked much



Tinea Nigra, Ceylon case (from Castellani and de Silva's «A Short General Account on Tinea Nigra based on Far Eastern Experience»)

more attention than tinea nigra in the East and there is quite an abundant literature on it. It has been asserted that the American form was first observed and described by Alexandre Cerqueira in Brasil in 1891, but Cerqueira never published his observations and, therefore, the priority of description cannot be given to him. His observations were first mentioned in 1916 by Antonio Castro Cerqueira Pinto in a medical thesis which never appeared either in part or in full in any medical publication. As in science it is the rule that priority goes by date of publication, the credit of having first recorded and investigated tinea nigra in America belongs to João Ramos e Silva and Paulo Parreiras Horta (1921).

Are tinea nigra of the East and tinea nigra of the West the same entity? It seems to me there can hardly be any doubt that they are the same clinical entity but it is quite possible that the condition may be caused by more than one species of *Cladosporium* and that *Cl. mansoni* Cast. 1905 and *Cl. wernecki* Horta, 1921 are two different species; the identity or non-identity of the two fungi requires further investigation.

Genuine strains of *Cladosporium mansoni* (Ceylon strains) can be obtained from the American Type Culture Collection, 12 301 Parklawn Drive, Rockville, Maryland, and also from Castellani's private collection at the Instituto de Medicina Tropical, Lisbon, Portugal.

SUMMARY

A detailed historical account is given of tinea nigra with special regard to tinea nigra in the Far East.

Tinea nigra was first observed and its causative fungus found and cultivated as long ago as 1905 by Castellani who during the following eight years carried out further clinical and mycological investigations until in 1913 he gave a full description of the condition and its aetiology in the second edition of Castellani and Chalmers' *Manual of Tropical Medicine* (Balliere, Tinadall and Cox, Publishers 1913) at p. 1502 and subsequent pages and repeated it in the third and last edition (1919) at p. 2078 and subsequent pages.

To the fungus he found Castellani gave in 1905 the specific term *mansoni* placing it in the genus *Microsporon* Gruby which in those days had a wide meaning. In 1908 he transferred the mycete to a genus of its own, *Foxia.* In 1911 he observed the first case in a European, the case was quoted in the 2nd. edition of the *Manual,* 1913, and also in the third and last edition, 1919.

In 1912 cultures were sent by Castellani to the well known mycologist *Pinoy,* of the Paris Pasteur Institute, who placed the fungus in the genus *Cladosporium* Link. Pinoy's classification was generally accepted and it is still used by the majority of mycologists.

Tinea nigra in the western hemisphere. — In 1921 João Ramos e Silva diagnosed tinea nigra in a patient attending the Policlinica Geral do Rio de Janeiro and he says that he based his diagnosis on Castellani's work in the East (J. Ramos e Silva, Jadassohn's Handbuch der Haut u. Geschlechtreskrankeiten, vol. IV, p. 438). The case was mycologically investigated by Paulo Parreiras Horta, who, at the end of that year, published it calling the fungus *Cladosporium wernechi.*

There can be little doubt that tinea nigra of the East and tinea nigra of the West are the same clinical entity but it is quite possible that the condition may be caused by more than one species of *Cladosporium.*

RESUMO

É dada uma descrição histórica pormenorizada sobre *Tinea nigra,* particularmente no que diz respeito à *Tinea nigra* do Extremo Oriente.

A *Tinea nigra* foi estudada e o fungo causativo foi descoberto e cultivado pela primeira vez, em 1905, por Castellani. Durante os oito anos seguintes, este autor procedeu a subsequentes pesquisas clínicas e micológicas, até que, em 1913, for-

neceu uma descrição completa da doença e da sua etiologia, que vem incluída na segunda edição do *Manual de Medicina Tropical,* por Castellani e Chalmers (ed. Balliere, Tinadall e Cox, 1913), a pp. 1502 e seguintes, e repetida depois na terceira e última edição (1919), a pp. 2078 e seguintes.

Ao fungo descoberto deu Castellani, em 1905, o nome específico de *mansoni,* incluindo-o no género *Microsporon* Gruby, cujo significado era então bastante lato. Em 1908, transferiu o fungo para um género próprio, *Foxia*. Em 1911, estudou o primeiro caso num europeu e citou-o na 2.ª edição do *Manual,* 1913, e também na 3.ª e última, em 1919.

Em 1912, Castellani enviou várias culturas ao célebre micólogo Pinoy, do Instituto Pasteur de Paris, que incluiu o fungo no género *Cladosporium* Link. A classificação de Pinoy foi geralmente aceite e ainda é empregada pela maioria dos micólogos.

A Tinea nigra *no hemisfério ocidental.* — Em 1921, João Ramos e Silva diagnosticou *Tinea nigra* num doente da Policlínica Geral do Rio de Janeiro e declara que baseou o seu diagnóstico no trabalho de Castellani no Oriente. O caso foi investigado micològicamente por Paulo Parreiras Horta, o qual, no fim do mesmo ano, o publicou, chamando ao fungo *Cladosporium wernecki.*

Restam poucas dúvidas de que a *Tinea nigra* do Oriente e a *Tinea nigra* do Ocidente sejam a mesma entidade clínica, mas é muito possível que a crença possa ser causada por mais do que uma espécie de *Cladosporium.*

RÉSUMÉ

On fait une description historique détaillée sur la *Tinea nigra,* particulièrement en ce qui concerne la *Tinea nigra* de l'Extrême-Orient.

La *Tinea nigra* a été étudiée, et le champignon causatif a été découvert, par la première fois en 1905 par Castellani. Pendant les huit années suivantes, cet auteur a effectué des recherches cliniques et mycologiques subséquentes jusqu'à ce que, en 1913, il a fourni une description complète de la maladie et de son étiologie, description incluse dans la deuxième édition du *Manual of Tropical Medicine,* par Castellani et Chalmers (éd. Balliere, Tinadall et Cox, 1913), pages 1502 et suivantes, et répétée dans la troisième et dernière (1919), pages 2078 et suivantes.

Au champignon découvert, Castellani a donné, en 1905, le nom spécifique de *mansoni,* en l'incluant dans le genre *Microsporon* Gruby, dont la signification était alors très large. En 1908, il a transféré le champignon dans un genre propre, le *Foxia*. En 1911, il a étudié le premier cas chez un européen et l'a cité dans la 2ème édition du *Manual* et aussi dans la 3ème et dernière, en 1919.

En 1912, Castellani a envoyé plusieurs cultures au célèbre mycologue Pinoy, de l'Institut Pasteur de Paris, lequel a inclué le champignon au genre *Cladosporium* Link. La classification de Pinoy fut généralement acceptée et elle est encore employée par la plupart des mycologues.

La Tinea nigra *dans l'hemisphère occidental.* — En 1921, João Ramos e Silva a diagnostiqué *Tinea nigra* chez un malade de la Policlinique Générale du Rio de Janeiro et déclare qu'il a basé son diagnostique sur les travaux de Castellani en Orient. Le cas a été investigué mycologiquement par Paulo Parreiras Horta, lequel, à la fin de la même année, l'a publié nommant le champignon *Cladosporium wernecki.*

Peu de doutes subsistent sur que la *Tinea nigra* de l'Orient et la *Tinea nigra* de l'Occident soient la même entité clinique, mais il est bien possible que la maladie puisse être causée par plus qu'une espèce de *Cladosporium.*

Composto e impresso na Casa Portuguesa — Lisboa