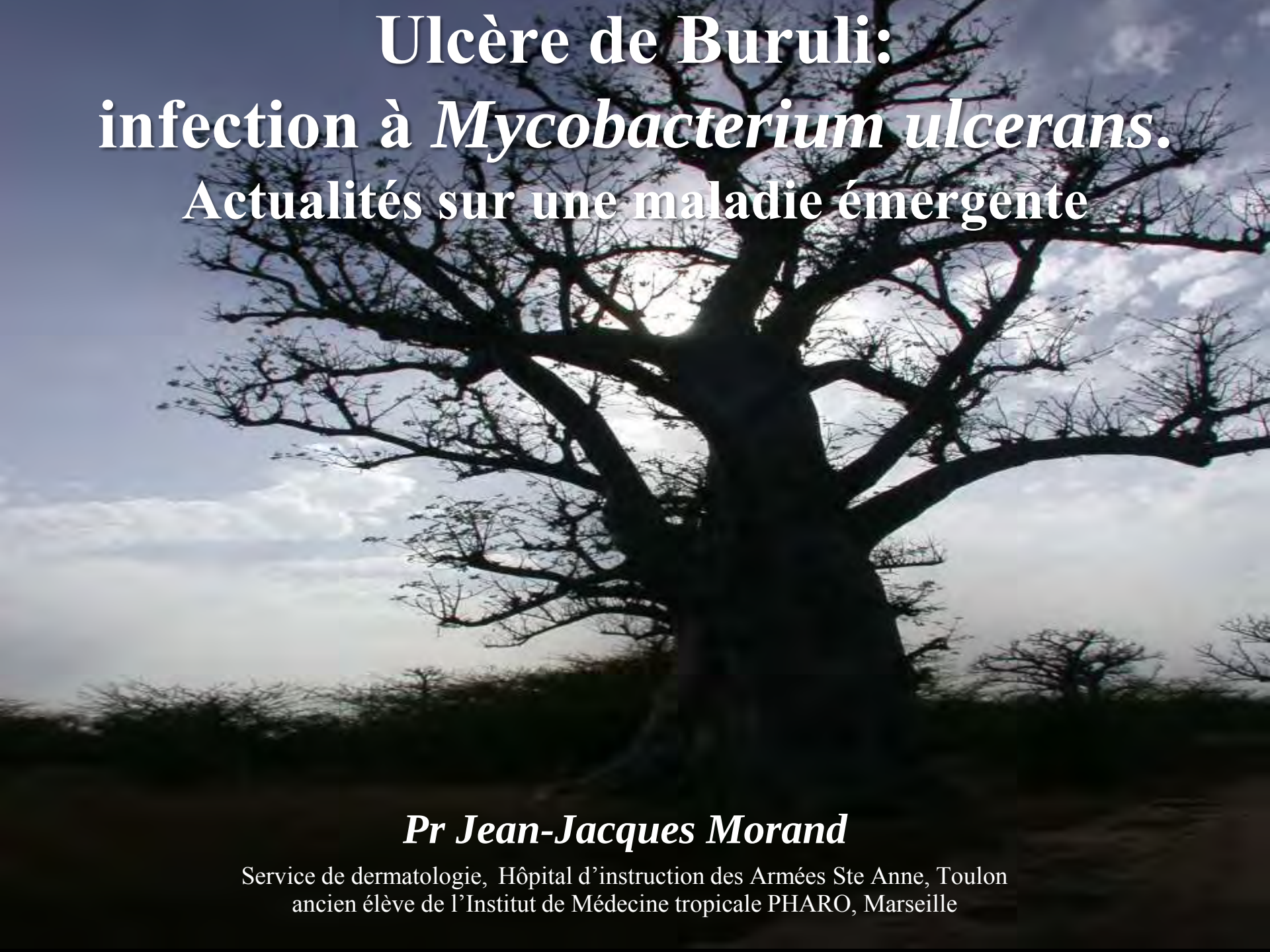


A large, gnarled tree with many branches is silhouetted against a cloudy sky. The tree is the central focus of the image, with its trunk and branches spreading out in all directions. The sky is filled with soft, white clouds, and the overall tone is somewhat somber due to the dark silhouette of the tree.

Ulcère de Buruli: infection à *Mycobacterium ulcerans*. Actualités sur une maladie émergente

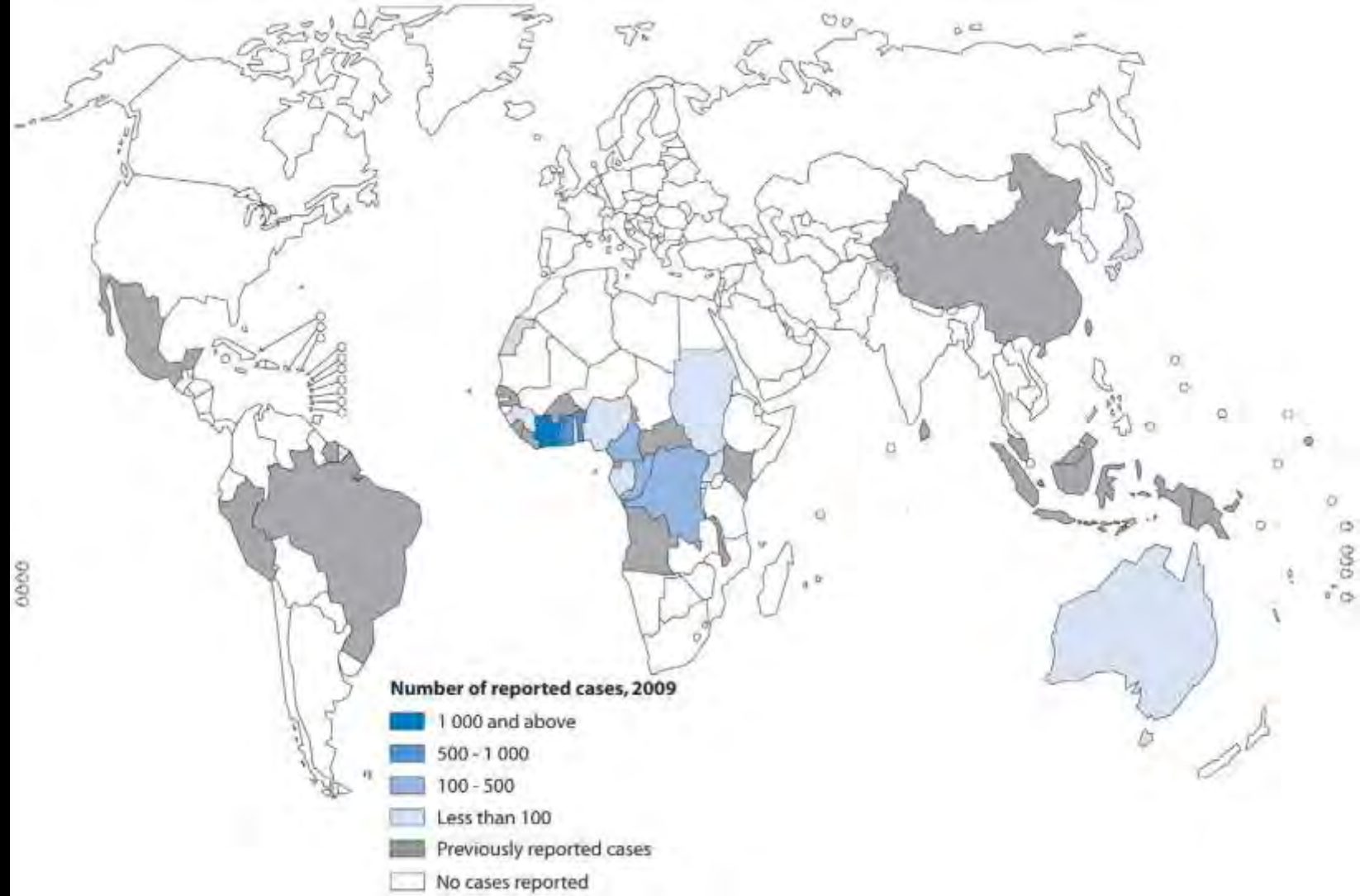
Pr Jean-Jacques Morand

Service de dermatologie, Hôpital d'instruction des Armées Ste Anne, Toulon
ancien élève de l'Institut de Médecine tropicale PHARO, Marseille

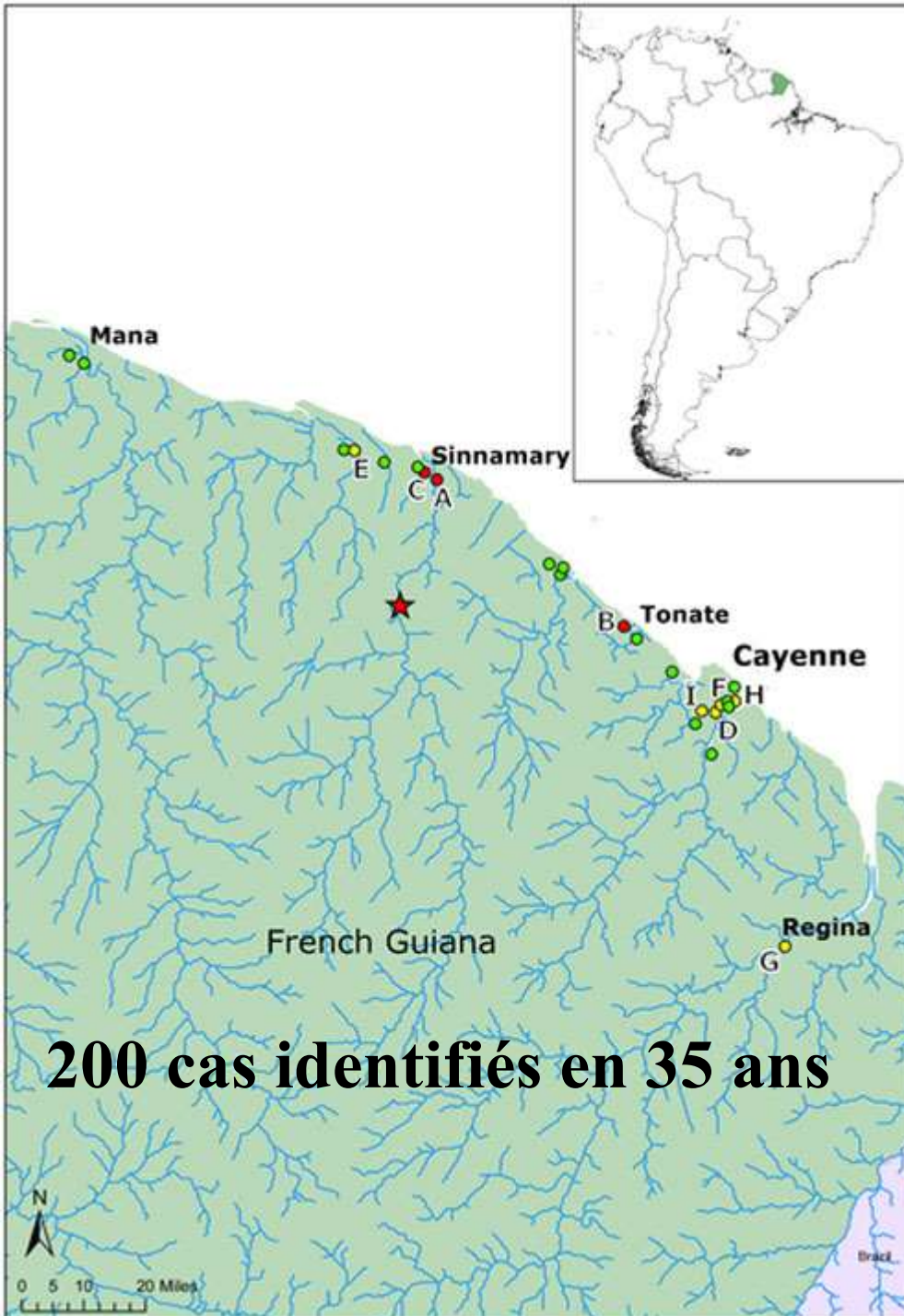


1948 ulcère de Barnsdale (Australie)
1962 Ulcère de Buruli (Ouganda)





en foyers: ++ ouest africain 20 000 nouveaux cas / dernière décade
Bénin : UB (21.5/100000) > tuberculose (20/100000) > lèpre
(13.4/100000) , République de Côte d'Ivoire, Ghana, Togo, Gabon,
Cameroun, République du Congo, Nigéria, Libéria, Angola...



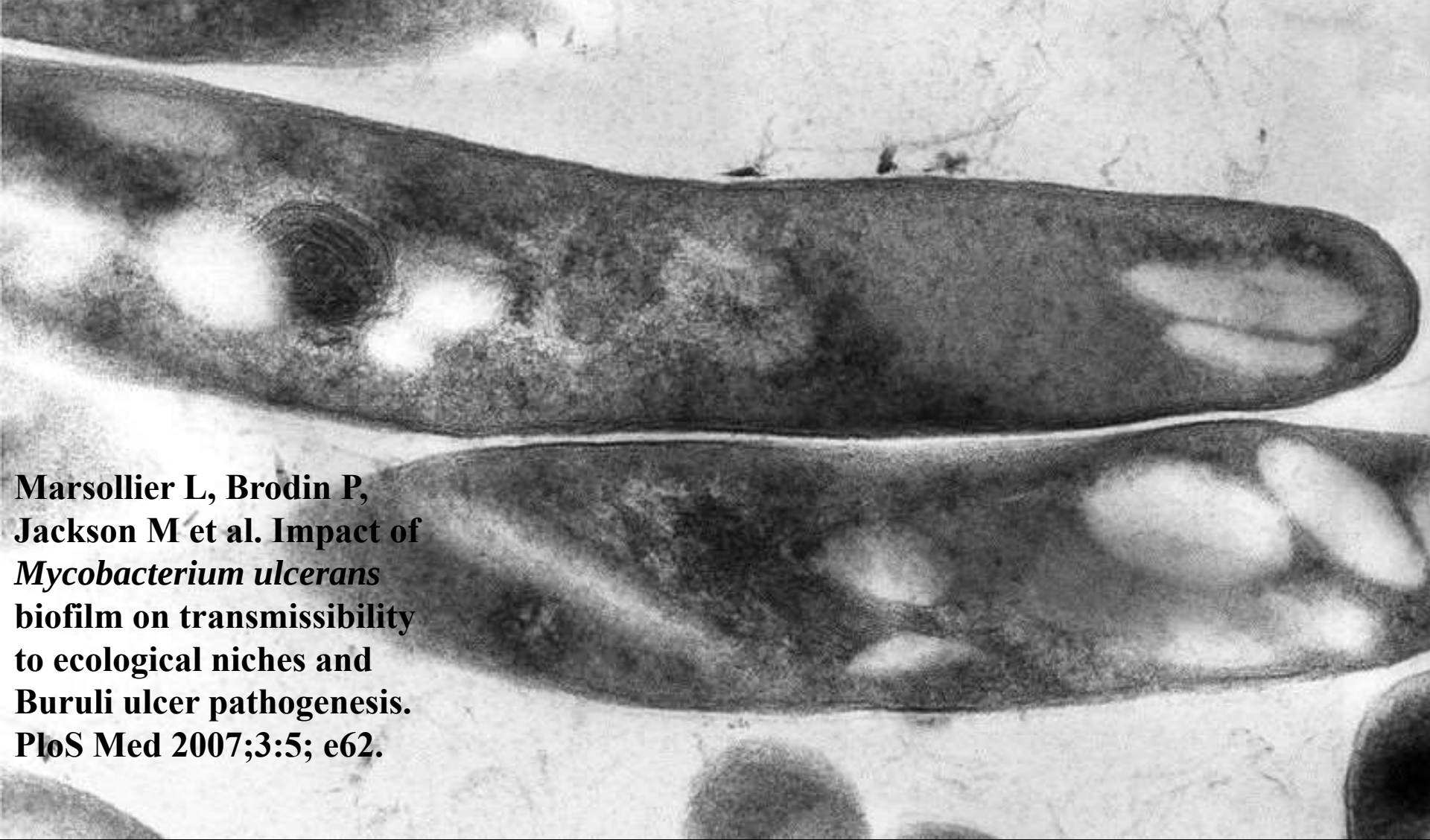
De Gentile L, Mahaza C, Rolland F, Carbonnelle B, Verret JL, Chabasse D. L'ulcère cutané à *Mycobacterium ulcerans*. A propos d'une observation en provenance de Guyane française. *Bull Soc Path Ex*, 1992, 85, 212-4.

Morris A et al. First detection of *Mycobacterium ulcerans* DNA in environmental samples from South America. *Plos Negl Trop Dis*, 2014, 8, e2660.



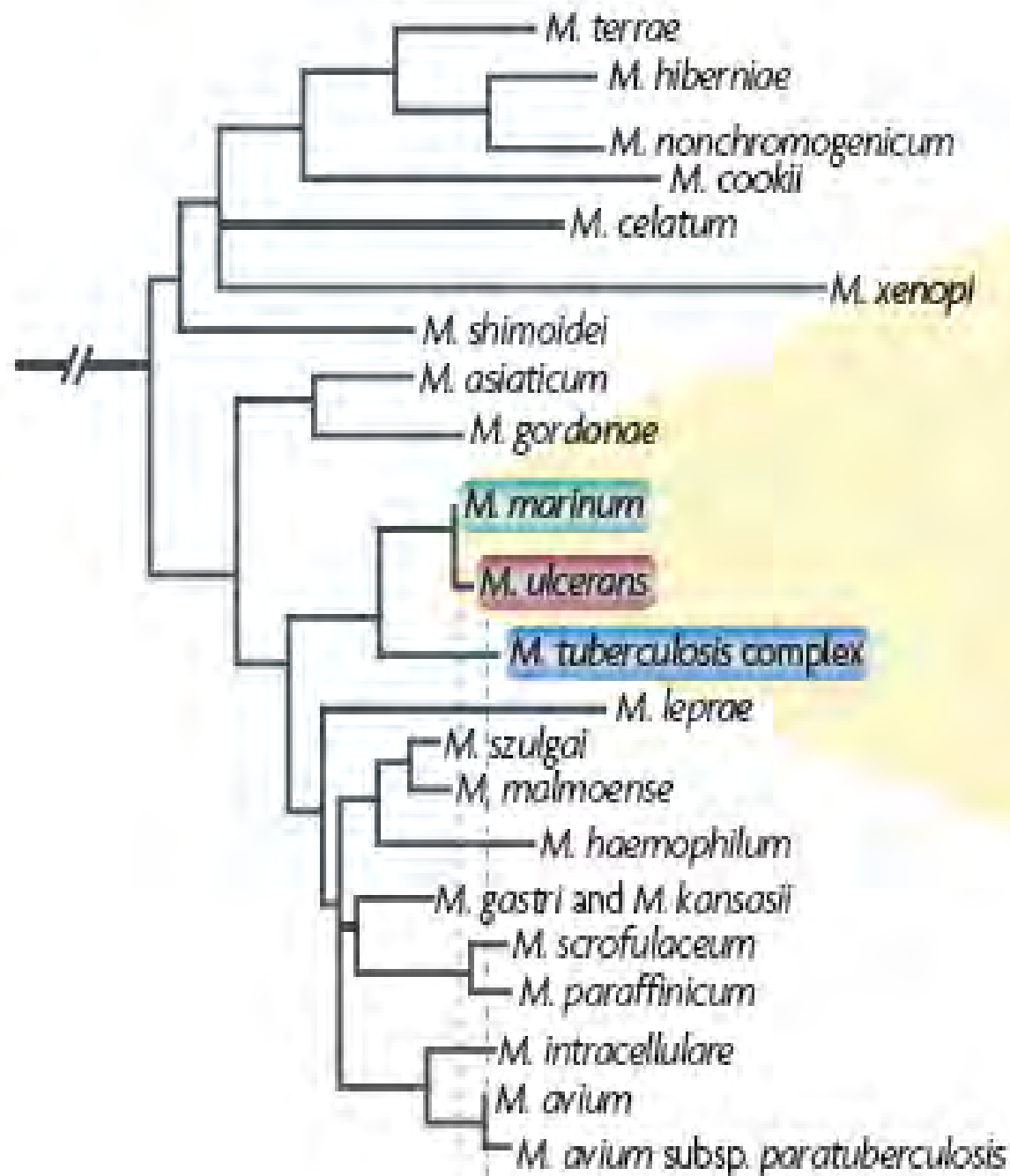
**32 cas autochtones :
sous-espèce de MU ssp.
Shinshuense / 23
malades**

**Yotsu RR, Nakanaga K, Hoshino Y et al. Buruli ulcer
and current situation in Japan: a new emerging
cutaneous Mycobacterium infection. J Dermatol,
2012, 39, 7, 587-593.**



**Marsollier L, Brodin P,
Jackson M et al. Impact of
Mycobacterium ulcerans
biofilm on transmissibility
to ecological niches and
Buruli ulcer pathogenesis.
PloS Med 2007;3:5; e62.**

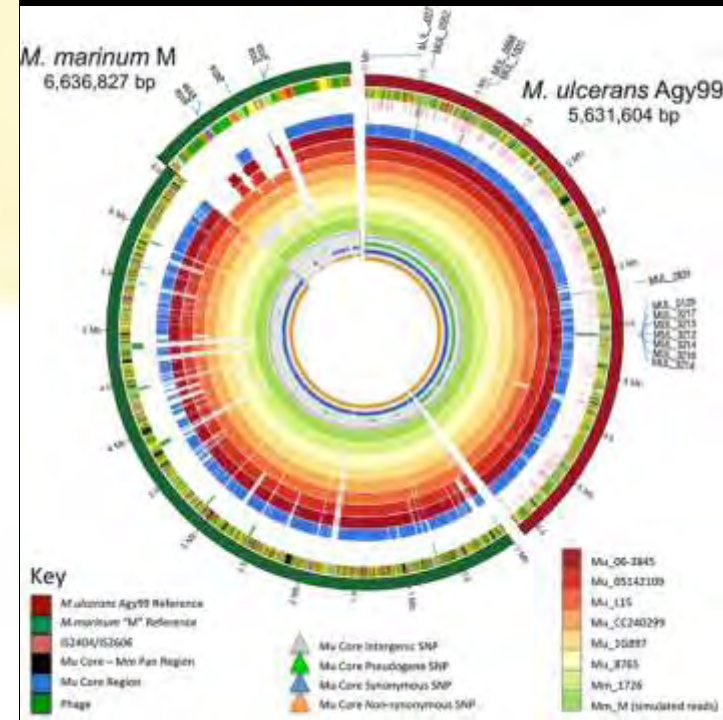
**Développement entre 30 et 33°C
Biofilm : 80 protéines dont mycolactone → vésicules très
cytotoxiques contre les macrophages et les adipocytes**



Doig KD, Holt KE, Fyfe JAM et al.: On the origin of *Mycobacterium ulcerans*, the causative agent of Buruli ulcer. BMC Genomics 2012 13:258.

• Proximité avec *M. marinum*

• *M. pseudoshottsii*, *M. shinshuense*, *M. liflandii* et *M. marinum* → mycolactone

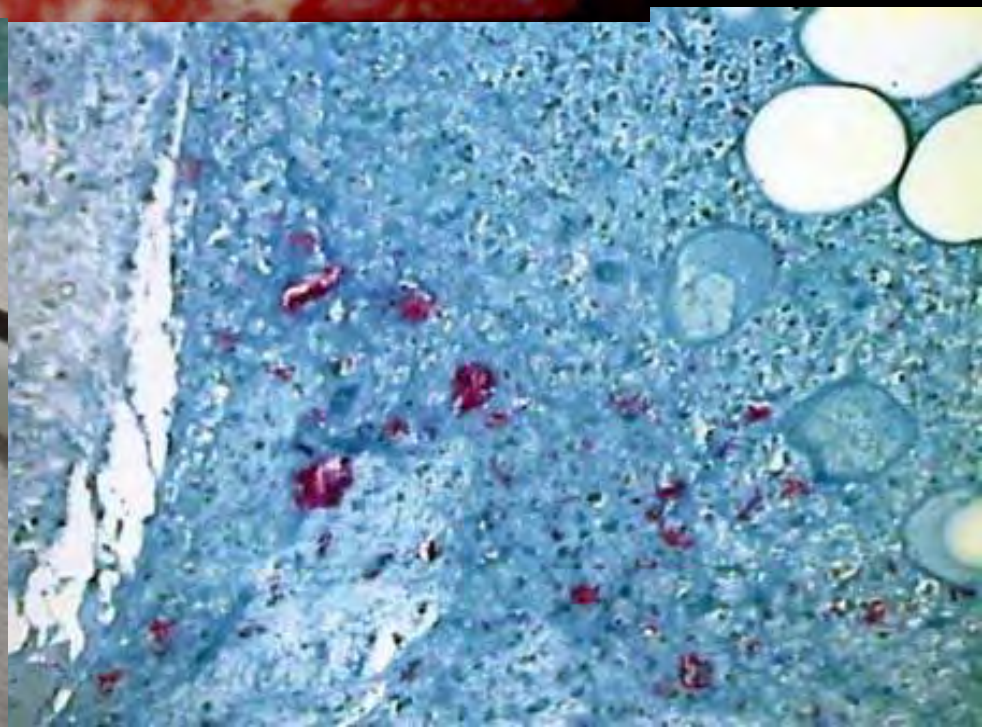
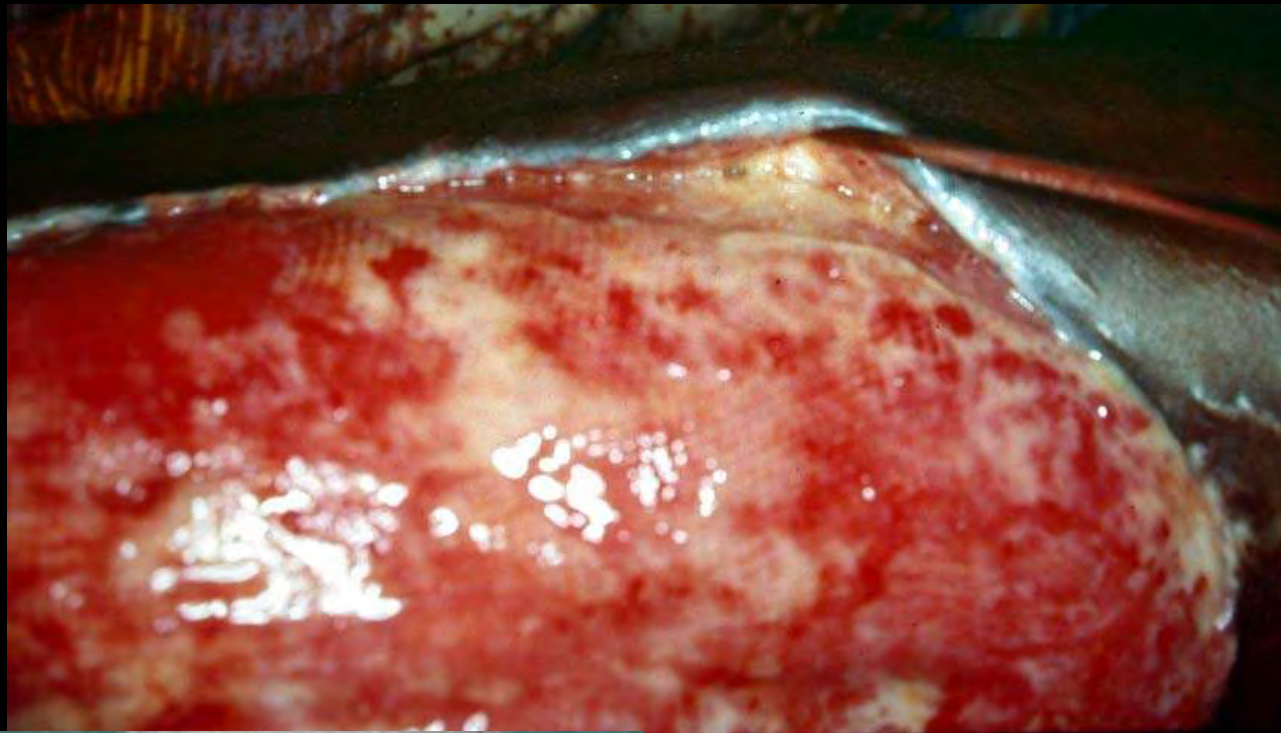


Mycolactone → nécrose hypodermique

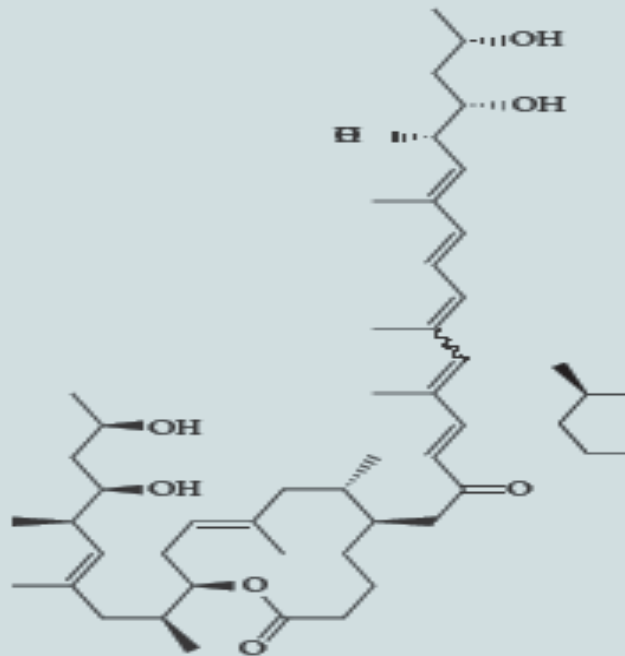
**George KM, Pascopella L,
Welty DM, Small PL. A
Mycobacterium ulcerans
toxin, mycolactone, causes
apoptosis in guinea pig
ulcers and tissue culture
cells. Infect Immun
2000;68:877-83.**

**formes africaines sécrétant
mycolactone A/B
plus agressives**

**Bacilles acido-
alcolo-
résistants
BAAR +**

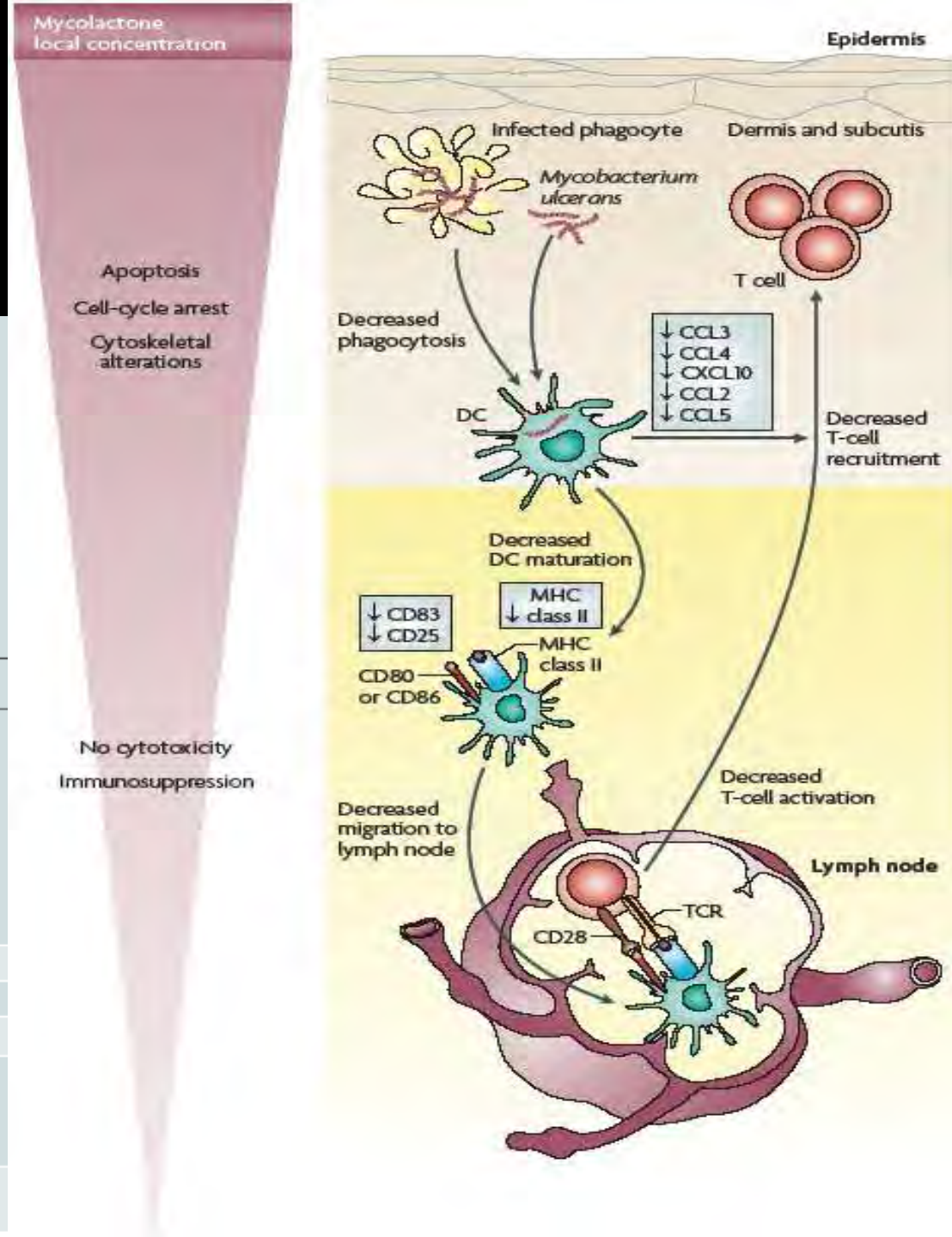


Hong H et al. Mycolactone Diffuses from *Mycobacterium ulcerans*–Infected Tissues and Targets Mononuclear Cells in Peripheral Blood and Lymphoid Organs. *PLOS Neglected Dis*, 2008 ; 2 ; 10 ; e325



Mycolactone A and B

Origin	<i>Mycobacterium ulcerans</i>
Molecular target	?
Mode of action	?
Effect on DCs	↓ Co-stimulatory molecules ↓ IL-6 and IL-12 No effect on TNF or IL-8 ↓ β -chemokines
Effects on LTs	↓ IL-2 and IFN- γ Variable cytostatic effect





A**30****B****6****C****4****D****2.5****E****30****F****12****G****2.5****H****0.8**

**Marion E, et al. Seasonal and regional dynamics of *M. ulcerans* transmission in environmental context : deciphering the role of water bugs as hosts and vectors.
PLOS Neglected Trop Dis, 2010, 4, 7, e731.**



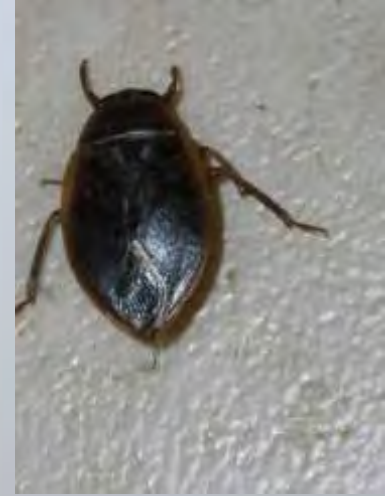
punaises d'eau du genre *Naucoris* et *Diplonychus*



Lavender CJ, Fyfe JAM, Azuolas J, and al. Risk of Buruli ulcer and detection of *Mycobacterium ulcerans* in Mosquitoes in Southeastern Australia. Plos Neglected Dis, 2011, 5, 9, e1305.

Brien CR et al. Clinical, microbiological and pathological findings of *Mycobacterium ulcerans* infection in three Australian Possum species. Plos Negl Trop Dis, 2014, 8, e2666.





Eddyani M, Ofori-Adjei D, De Weirdt D, Boakye D, Meyers WM, Portaels F. Potential role for fish in transmission of *Mycobacterium ulcerans* disease (Buruli ulcer): an environmental study. *Appl Environ Microbiol*, 2004, 70, 9, 5679-81



fréquence de la maladie proportionnelle à la proximité du village avec une source d'eau et à son utilisation domestique sans mesure de protection



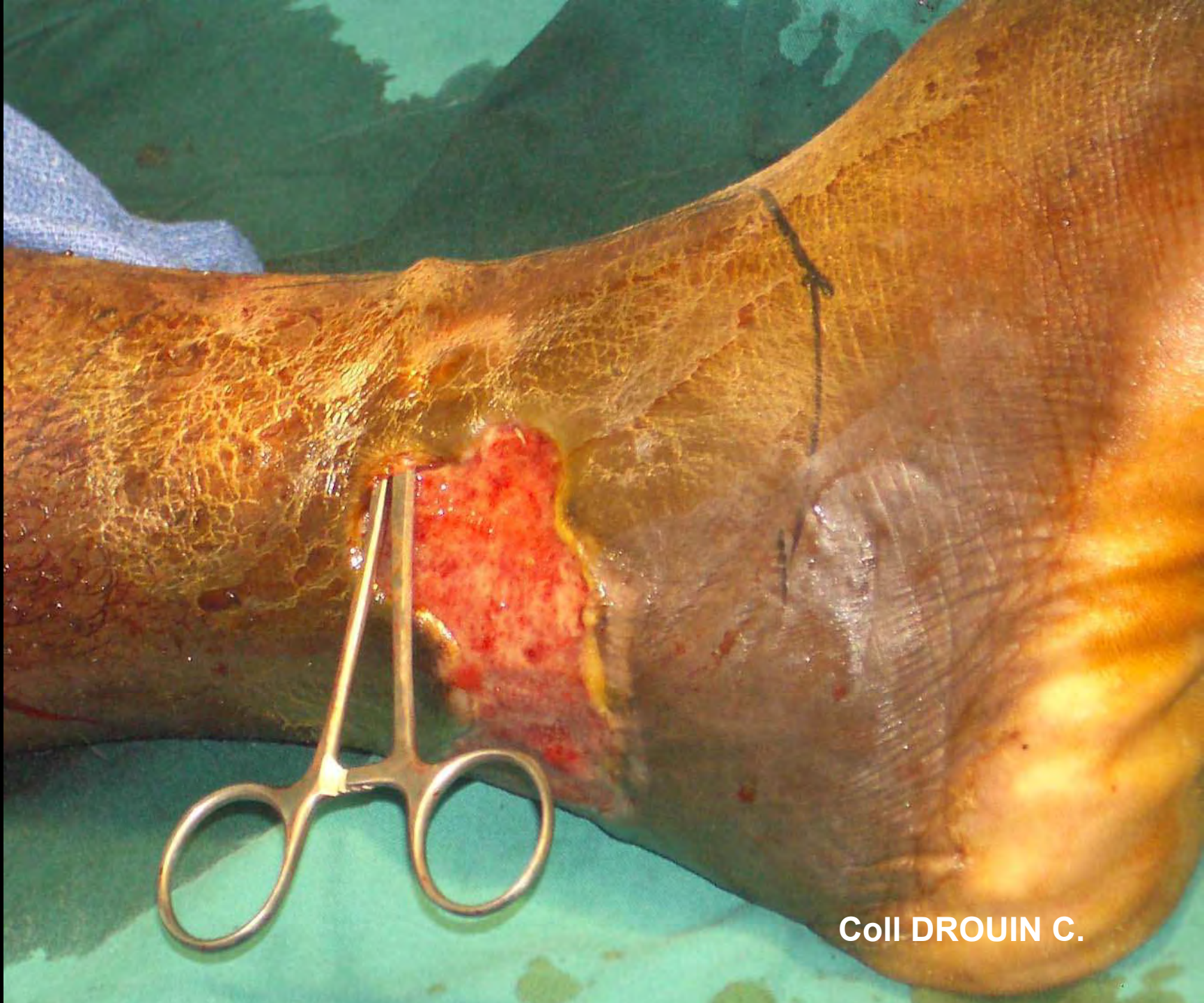




GMC LICORNE







Coll DROUIN C.









Coil DARIE H.



Coil DARIE H.

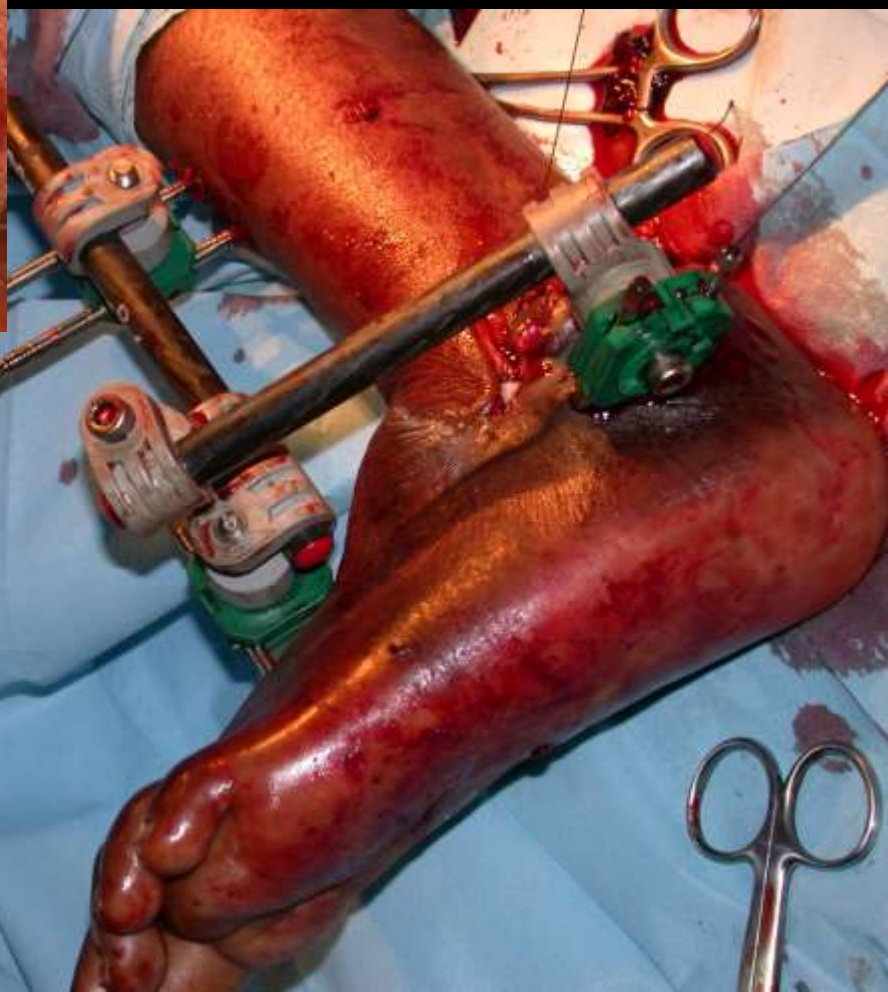


Ulcération à *Mycobacterium ulcerans* et VIH



Johnson RC, Nackers F, Glynn JR, et al.
Association of HIV infection and *Mycobacterium ulcerans* disease in Benin.
AIDS. 2008 : 23;22:901-3.





**Morand JJ, Maslin J,
Darie H. Manifestations
cutanéomuqueuses des
Mycobactéries
environnementales (dont
Mycobacterium ulcerans).
*Encycl. Médico-Chir.,
Dermatol.*, Paris, 2005,
98 365 A 10, 16p.**



CENTRE DE SANTE SAINTE-FAMILLE
DE YAMOOUSSOUKRO

L'ulcère de Buruli



Une maladie en constante progression :

70 cas en 1997 ; 340 cas en 2003...







Chauty A, Ardant MF, Adeye A, Euverte H, Guedenon A, Johnson C, Aubry J, Nuermberger E, Grosset J. Promising clinical efficacy of streptomycin-rifampicin combination for treatment of Buruli ulcer (*Mycobacterium ulcerans* disease). *Antimicrob Agents Chemother*, 2007, 51, 4029-35.

**rifampicine (RIF) +
streptomycine (STR) <
clarithromycine (CLR)
+ rifapentine (RPT)
/ 2 mois minimum**

**Almeida D, Converse PJ, Ahmad Z,
Dooley KE, Nuermberger EL, Grosset
JH. Activities of rifampicin,
rifapentine and clarithromycin alone
and in combination against
Mycobacterium ulcerans disease in
mice. PloS Negl Trop Dis, 2011, 5,
e933.**











La vaccination BCG, et plus récemment un vaccin comportant l'Antigène 85A diminueraient le risque de contracter un UB mais surtout de développer une atteinte osseuse



Tanghe A, Content J, Van Vooren JP, Portaels F, Huygen K. Protective efficacy of a DNA vaccine encoding antigen 85A from *Mycobacterium bovis* BCG against Buruli ulcer. *Infect Immun* 2001;69:5403-11.

Huygen K. Prospects for vaccine development against Buruli disease. *Expert Rev Vaccines* 2003;2:561-9.

Portaels F, Aguiar J, Debacker M, Guedenon A, Steunou C, Zinsou C, Meyers WM.

***Mycobacterium bovis* BCG vaccination as prophylaxis against *Mycobacterium ulcerans* osteomyelitis in Buruli ulcer disease. *Infect Immun*, 2004, 72, 1, 62-5.**



« *Le pied tropical* »









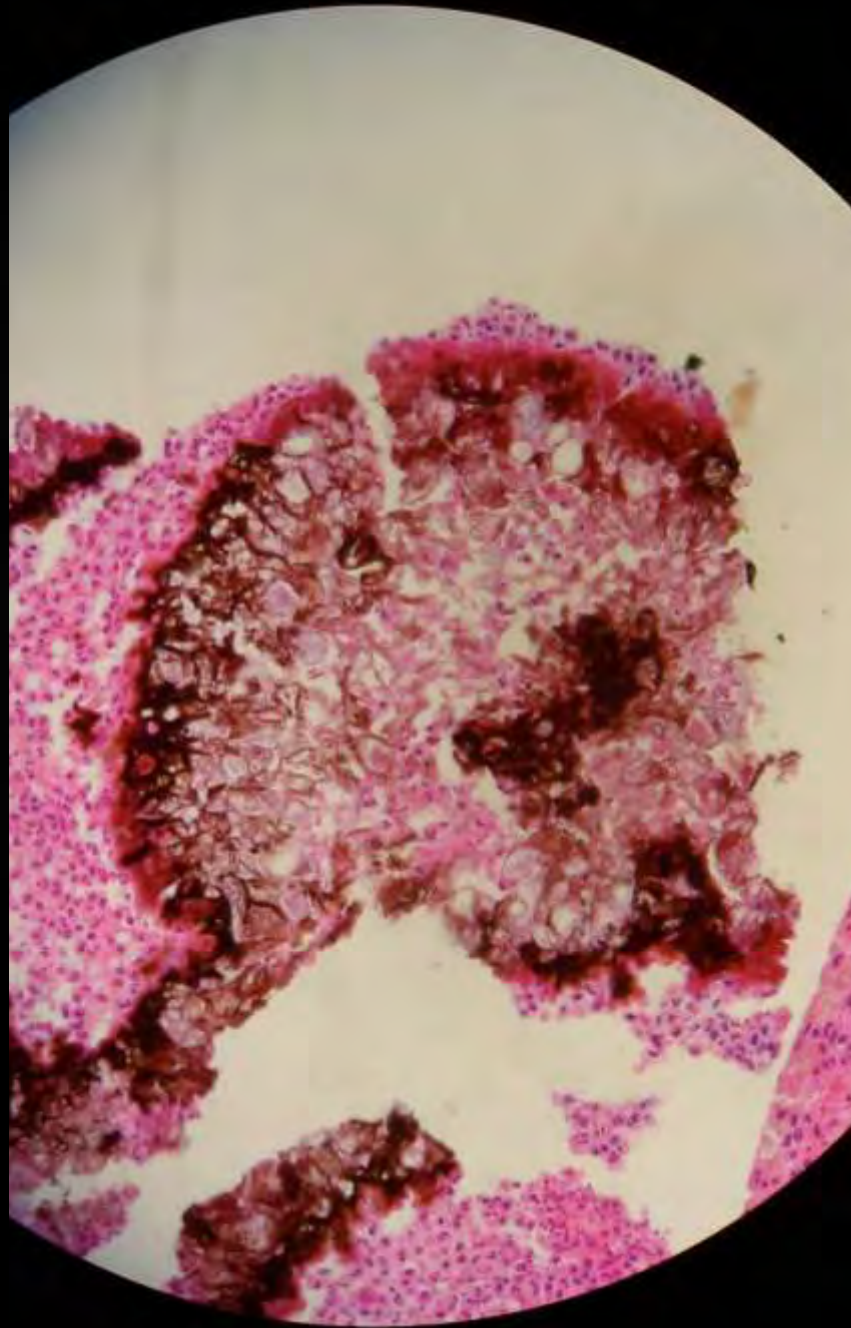
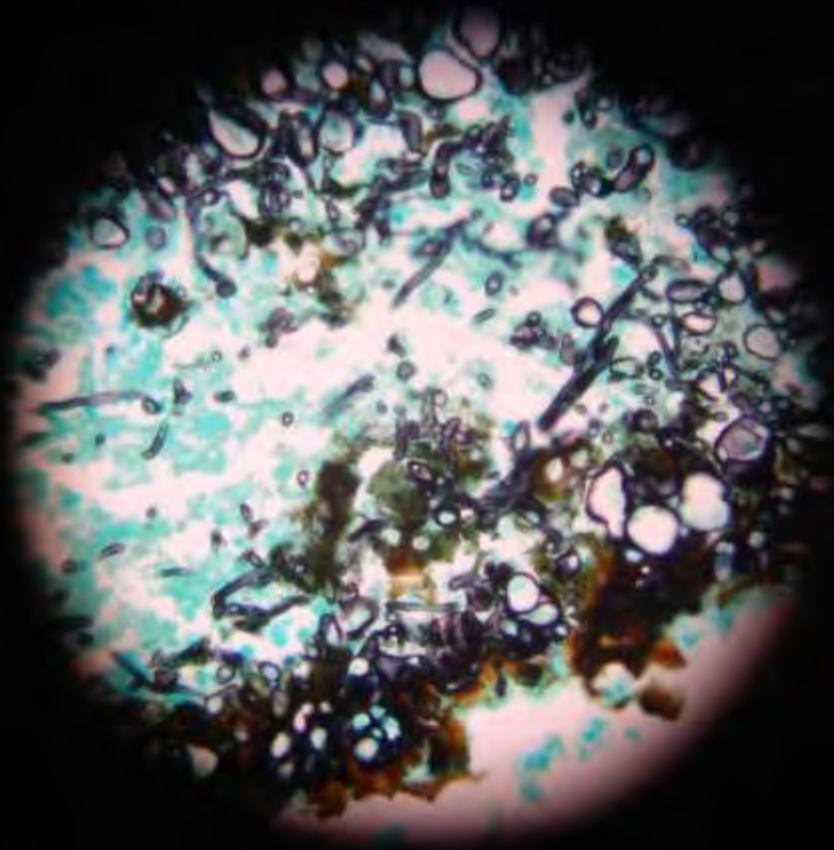




















Ulcère de jambe
chez
l'Africain

Sujet jeune
Evolution chronique

Apparition aiguë

Sujet âgé

Bords décollés:
ulcère de buruli

Ecthyma

Ulcère vasculaire

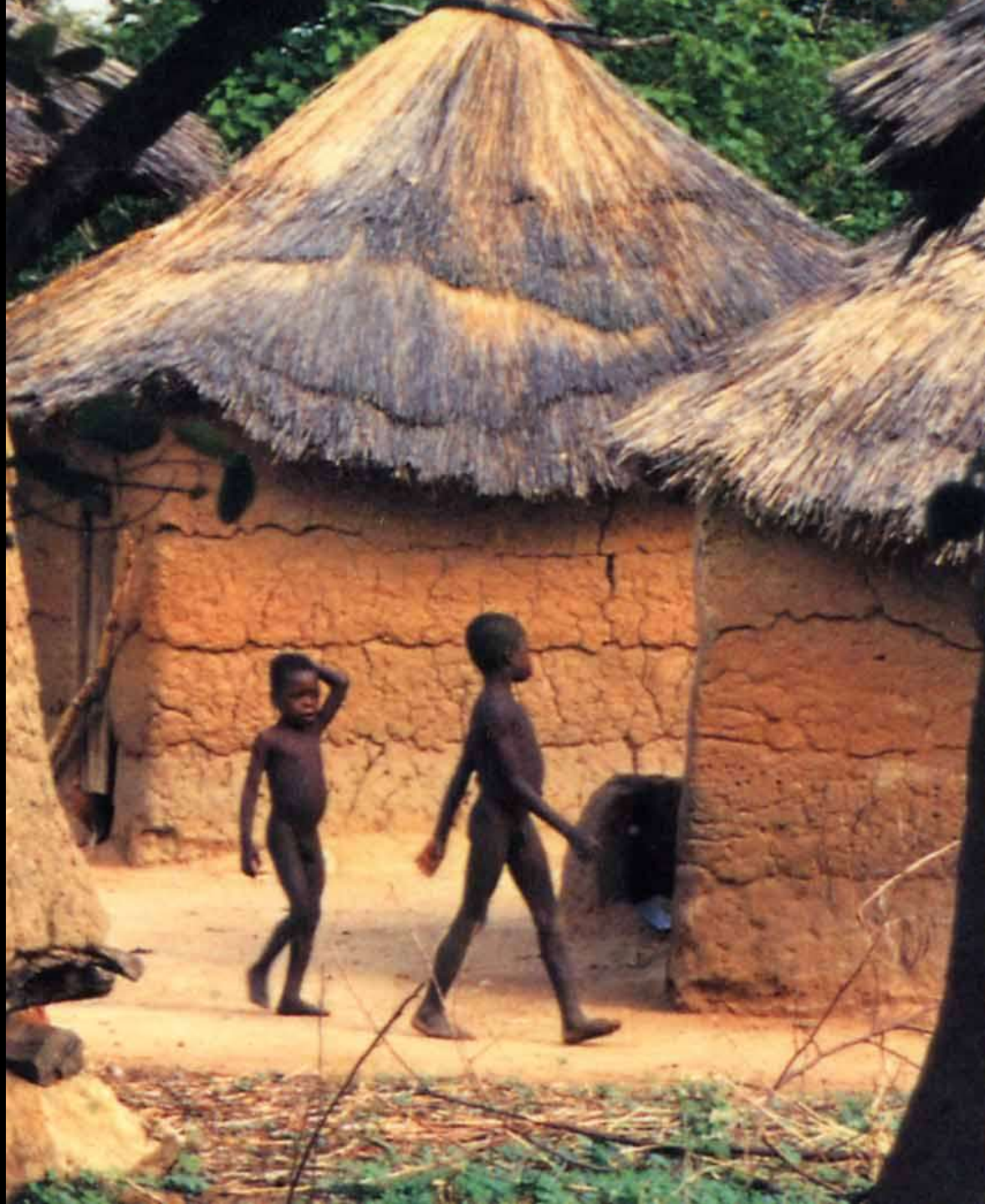
Aspect ulcéro-bourgeonnant:
Carcinome/ ulcère phagédénique

Traumatisme
et surinfection

Récurrence avec crises
douloureuses: drépanocytose

Le but du voyage n'est pas
de poser le pied
sur une terre étrangère.
C'est finalement de poser
le pied dans son propre
pays comme s'il s'agissait
d'une terre étrangère...

GK Chesterton
Tremendous Trifles





Merci, amitiés...