

# ***Journée scientifique de l'Institut Pasteur de Nouvelle-Calédonie***

***Nouméa : jeudi 21 novembre 2013***

***« Arboviroses et leptospirose : réservoir, vecteurs et maladies humaines »***



**Institut Pasteur**  
de Nouvelle-Calédonie



Réseau International  
des **Instituts Pasteur**

## **Reservoirs, vectors and human endemic**

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## Endemic disease

◆ endêmon nosêma

◆ Diseases taking root  
in a particular ecosystem



**Endemic disease**



**Taking root by the Reservoir of pathogenic agent**

**Endemic disease**

**Under development**

**Geo-climatic  
factors**

**Behaviour**

**Control**

**Taking root by the Reservoir of pathogenic agent**

**Control - Elimination - Eradication**

Reservoir



## Human reservoir

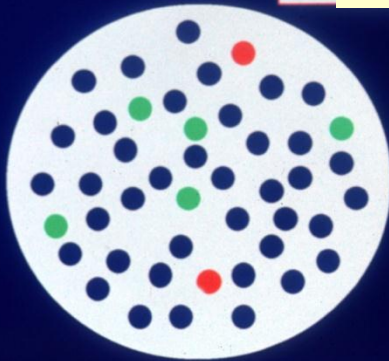
Meningococcal Meningitis  
Measle - Poliomyelitis

Asymptomatic carrier  
« healthy carrier »

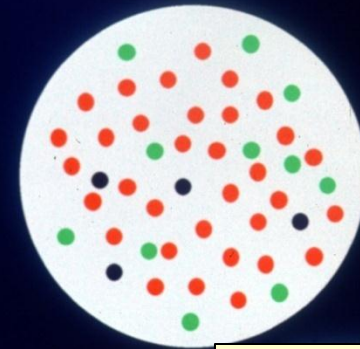
Receptive subject

Clinical sporadic case

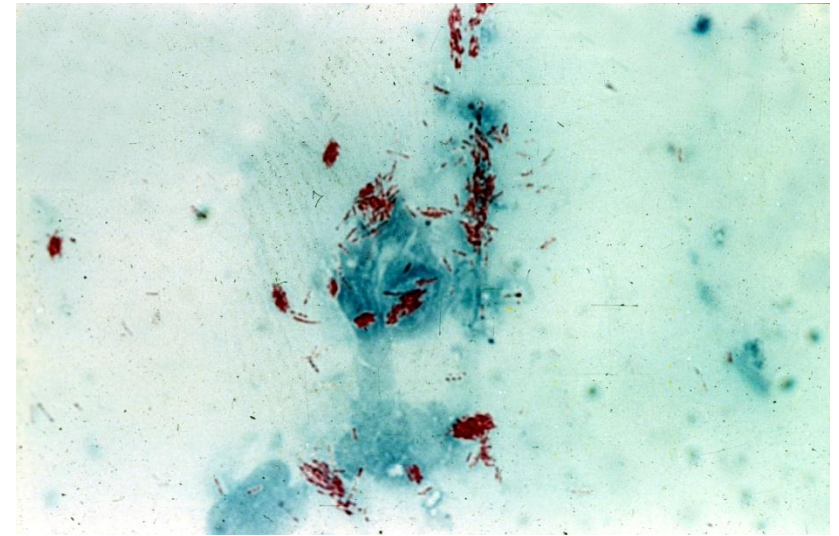
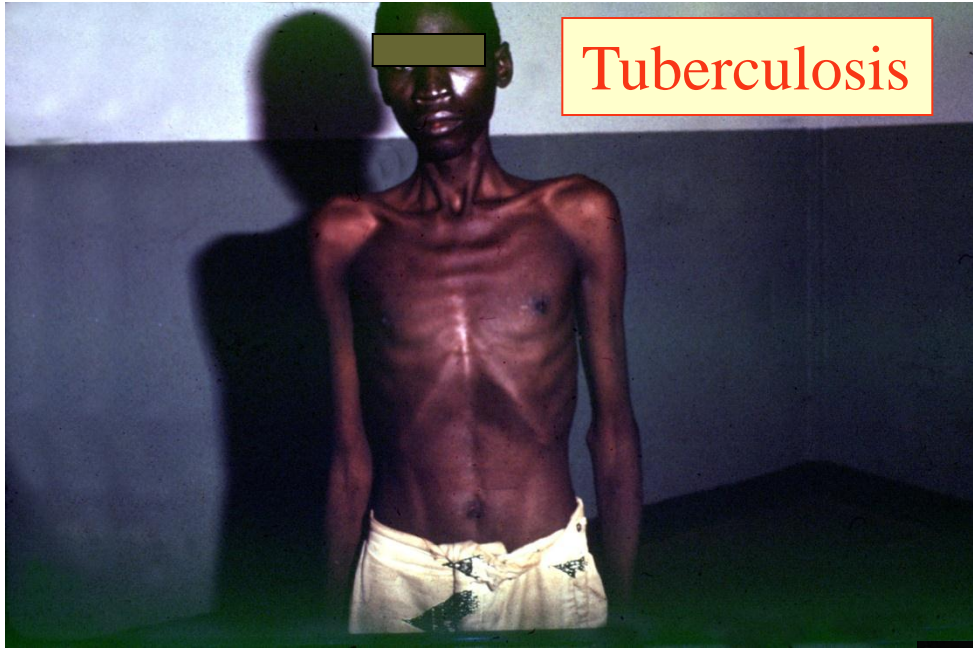
Reservoir



Epidemic



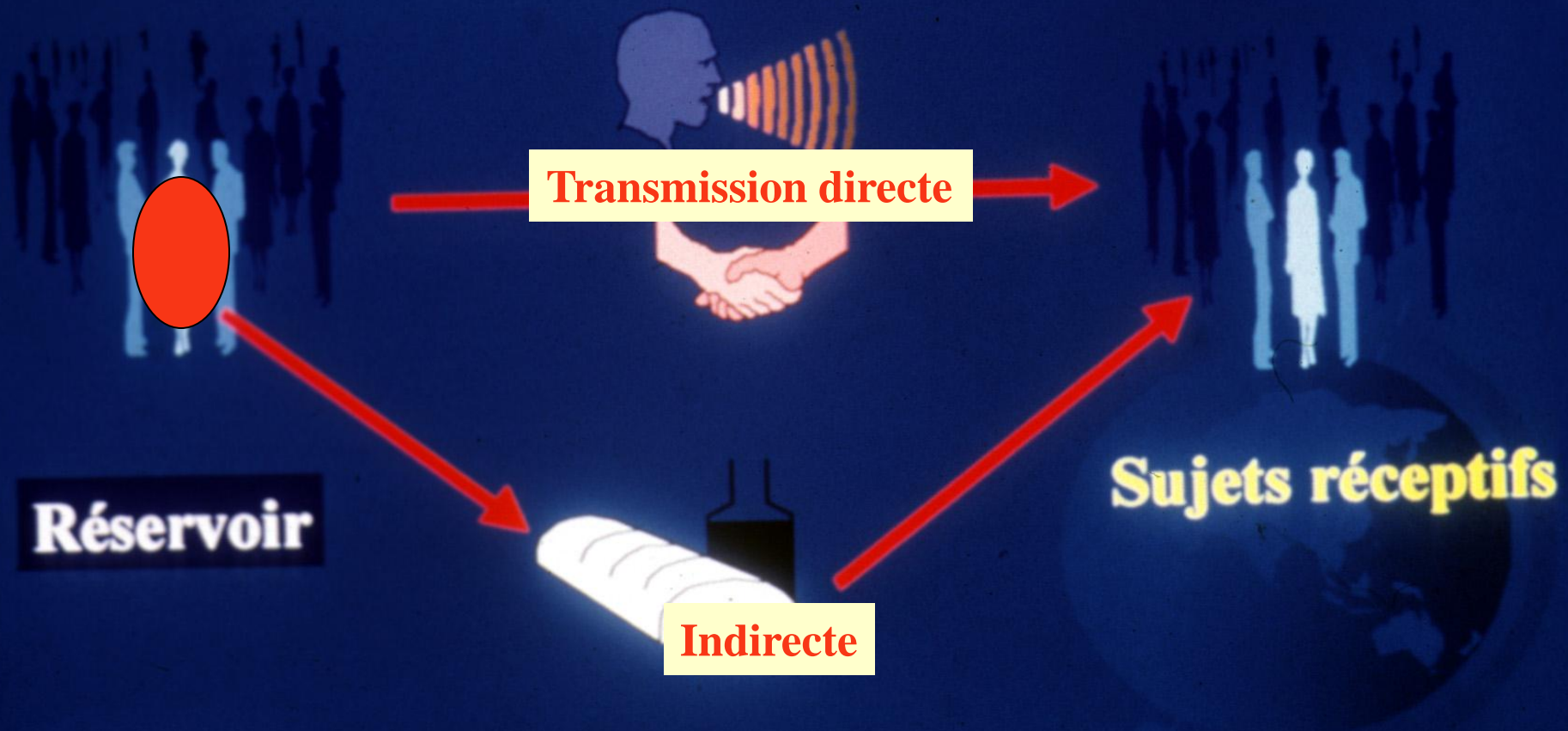
Reservoir = population



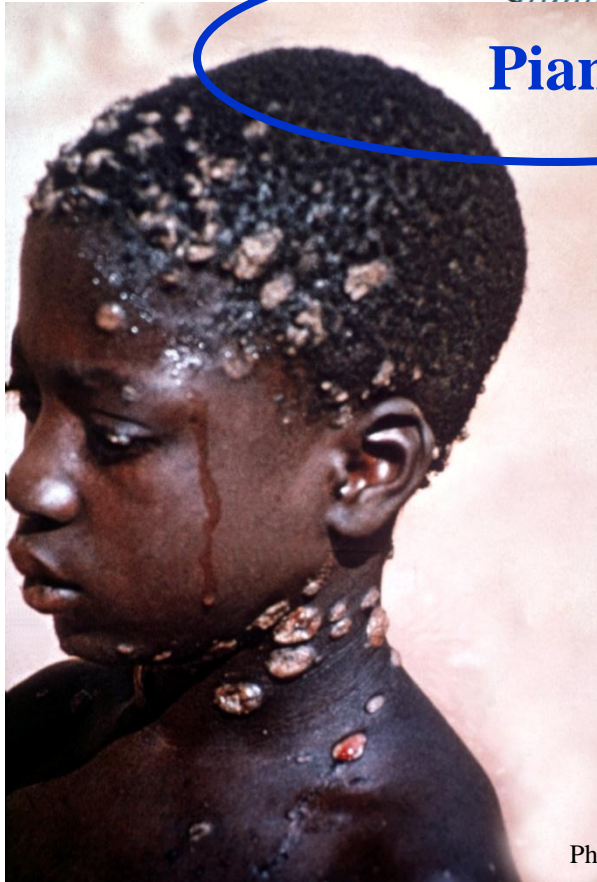
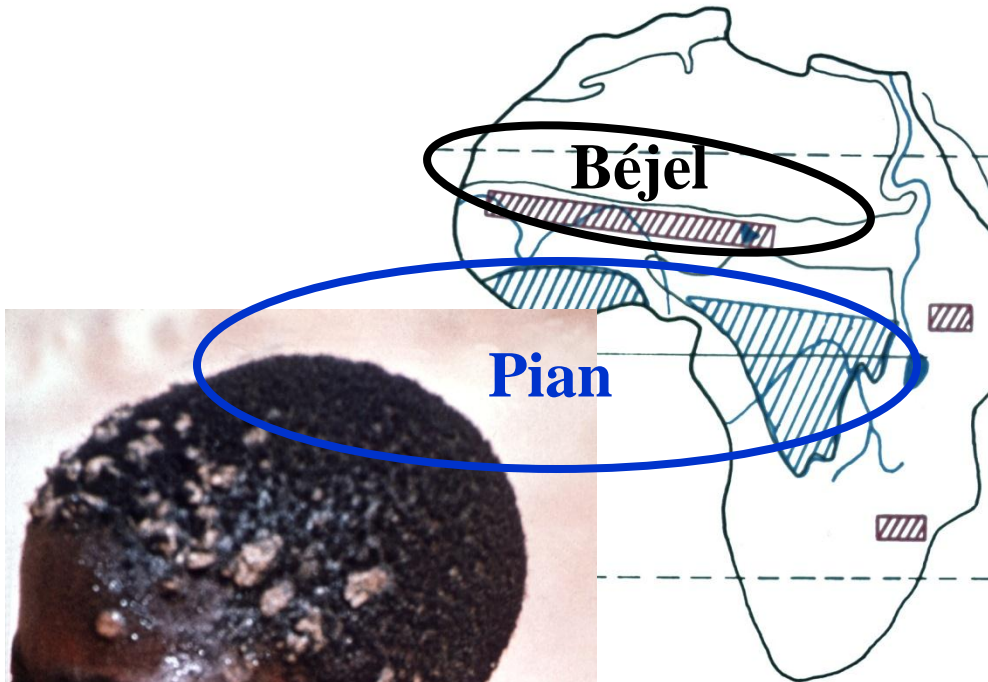
**Taking route factors**

**Socio economic : poverty**





# Tréponématoses non vénériennes



Taking route factors

**Geo climatic**

**Poverty**





**Small pox**  
**Variole**

**Reservoir : humans**

**Vaccination**

**Eradication**



## Endemic disease



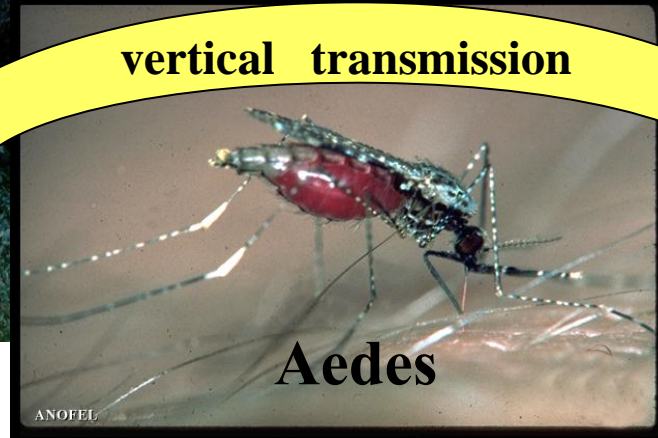
Taking route by the Reservoir of pathogenic agents

# Fièvre jaune Yellow fever



**Monkey**

**vertical transmission**



**Aedes**

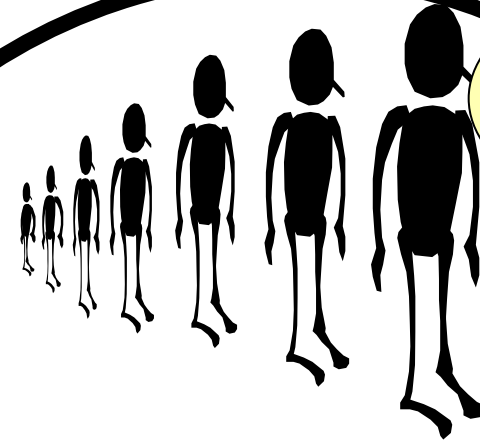
**Reservoir of virus**

Taking route factors  
**Geo climatic**

# Taking route factors

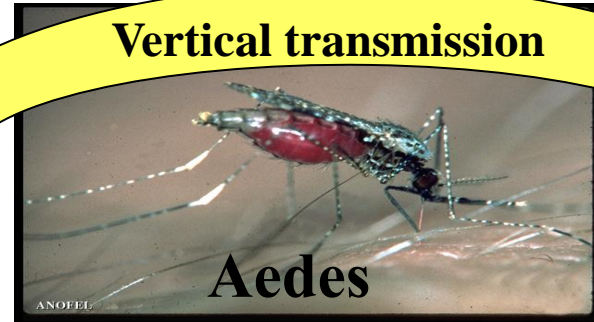
Geo climatic

Reservoir animal ?



Antivectorial control

Vertical transmission

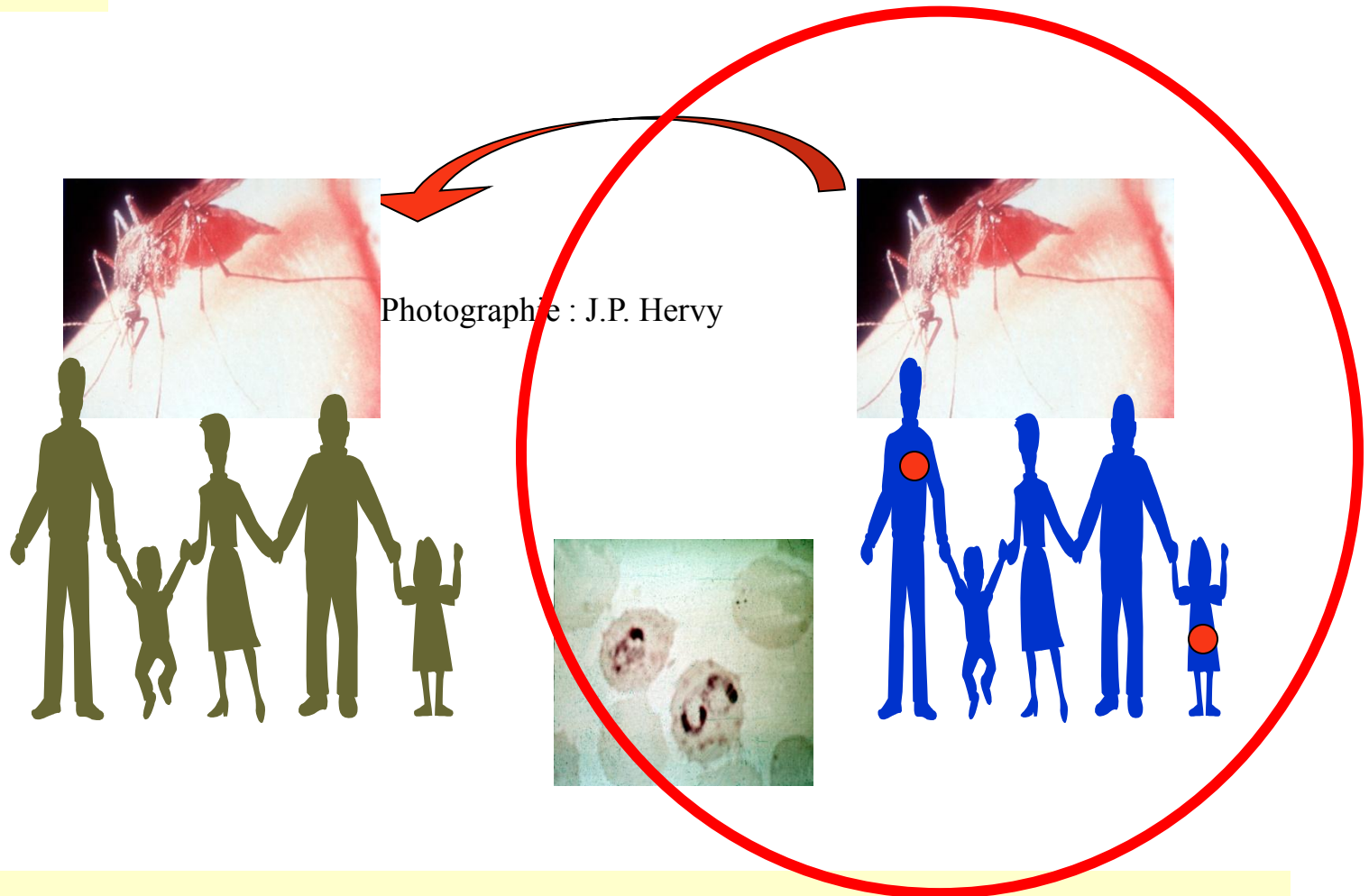


Dengue

Reservoir of virus

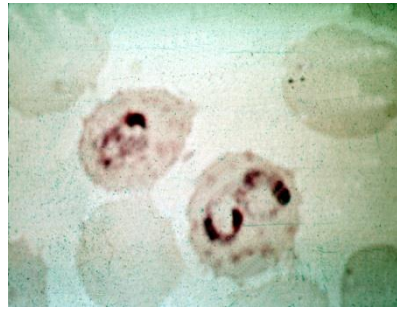


# Malaria



**Parasite reservoir : Couple human anopheles**

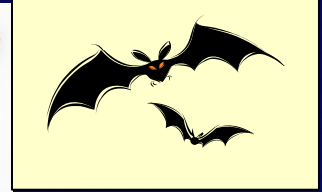
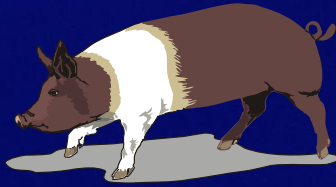
**Indirecte transmission by a vector**



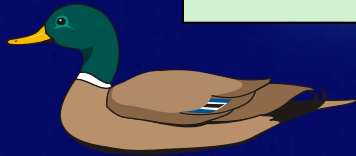
**Malaria : taking root factors:  
geo-climatic**

**extension and limitation factors:  
Human behaviour  
Control**

# Rabies



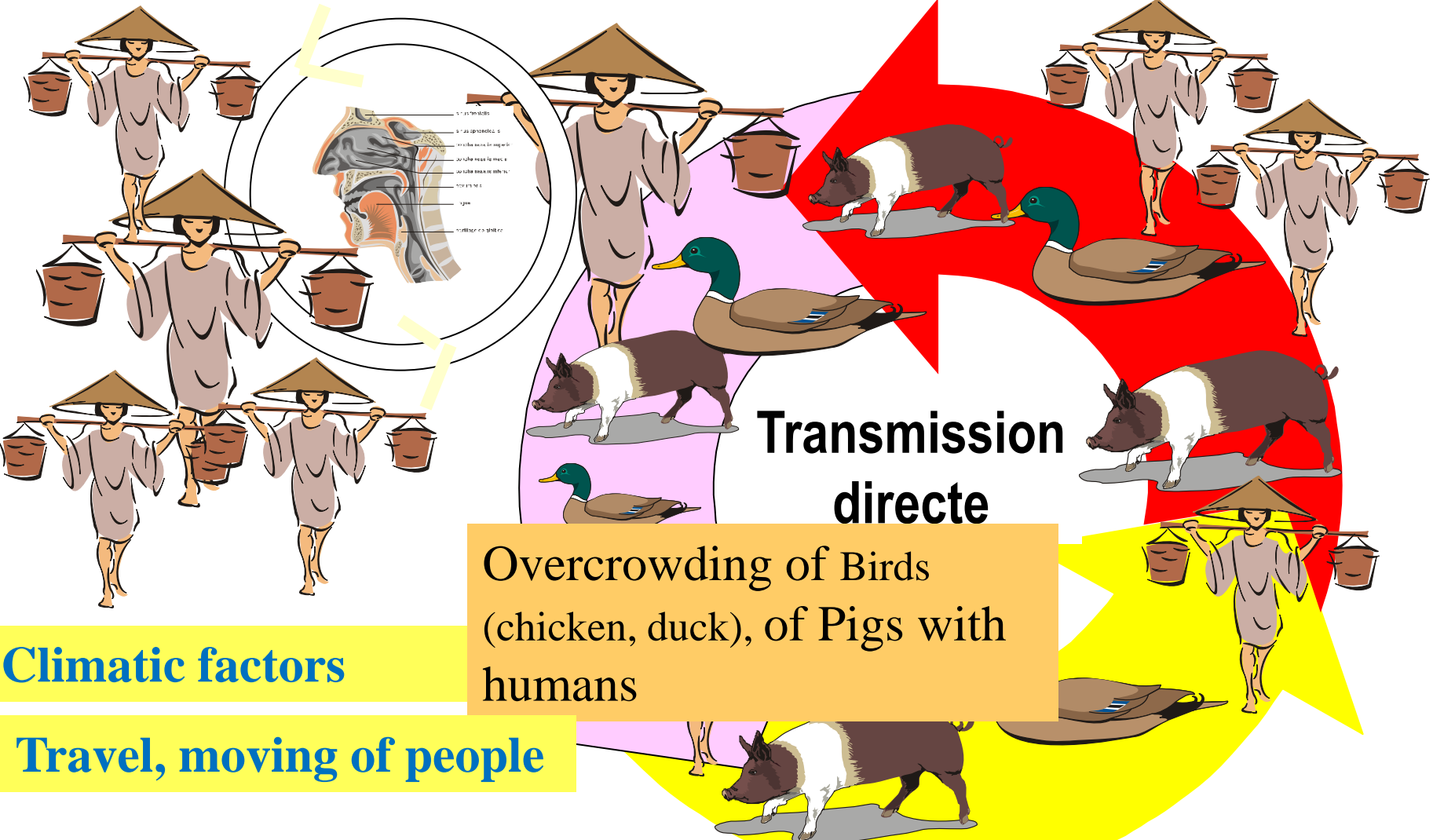
Animal reservoir



Taking route by the Reservoir of pathogenic agents

inter human transmission

# Influenza



Climatic factors

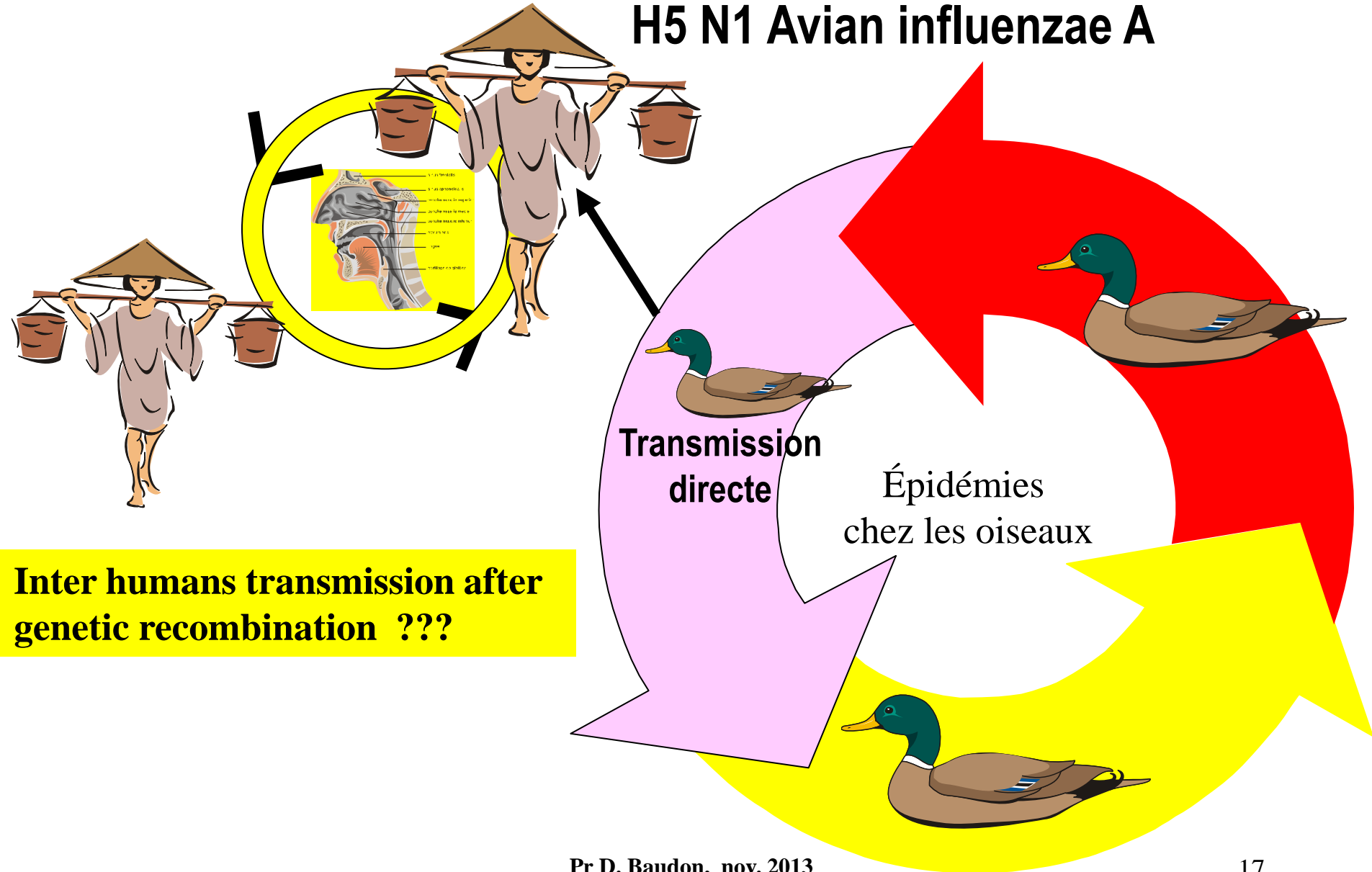
Travel, moving of people

Vaccination



# Grippe du poulet, virus aviaire A, H5 N1

## H5 N1 Avian influenzae A



# Leptospirosis

## Reservoir animal

mammals, asymptomatic carriers

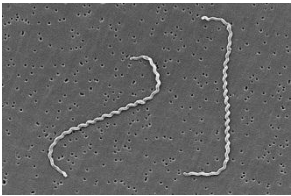
Environment : secondary reservoir

Taking root factors

**Geo-climatic**

**Social and economic**

**Behavior**



Photos : C. Goarant



**Occupationnel  
disease**

*Maladie  
professionnelle*



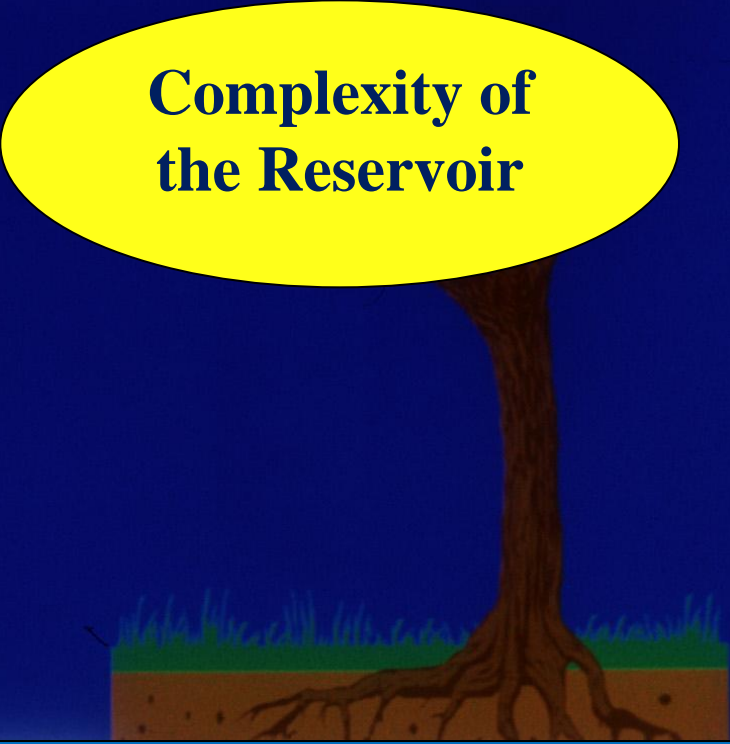
**Leisure  
Loisirs**



**SLUMS  
Bidonvilles**



**Tribes in NC : 80 % of the leptospirosis cases**



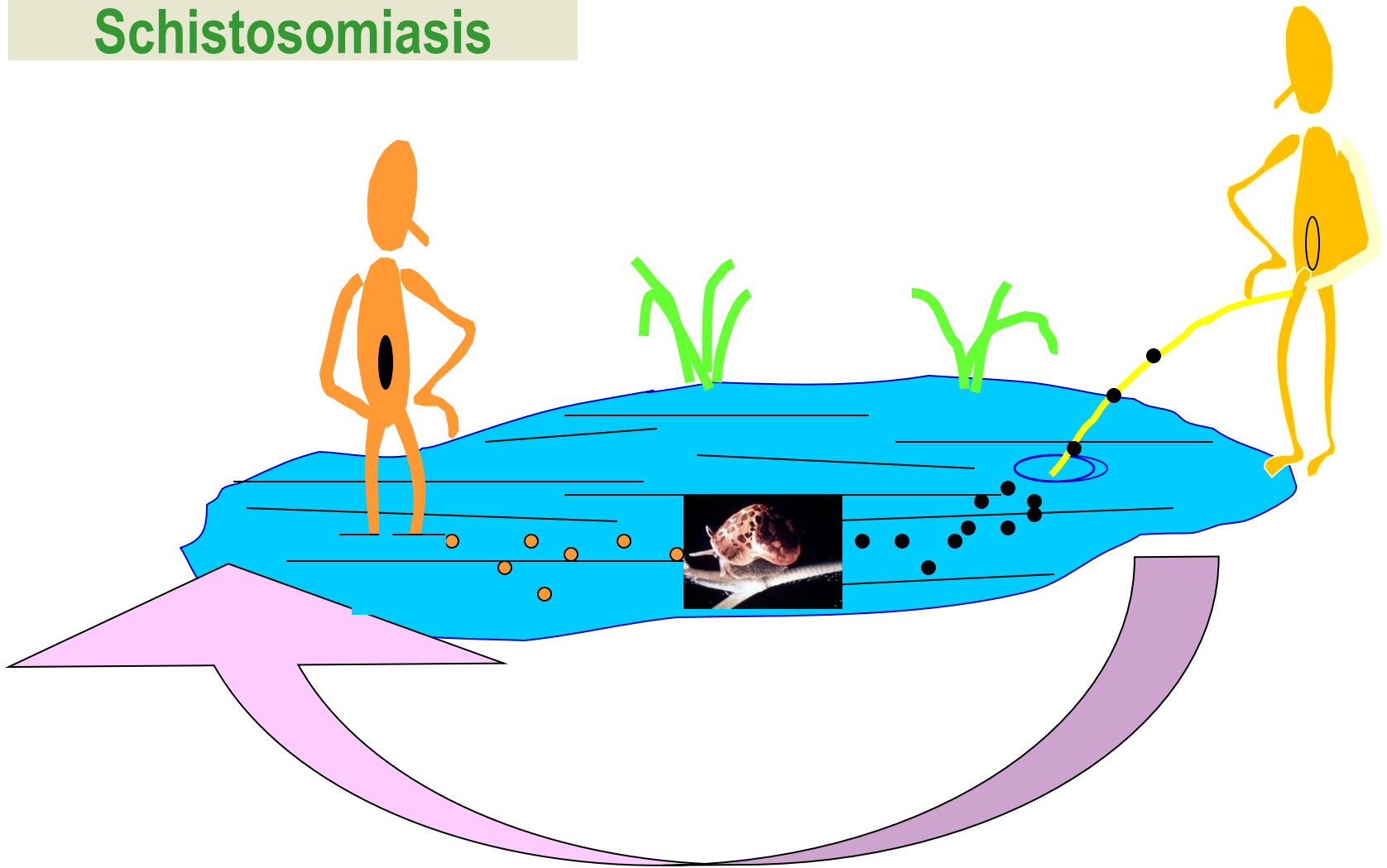
**Complexity of  
the Reservoir**

**Endemic disease**

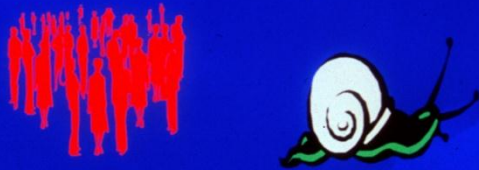
**Taking route by the Reservoir of pathogenic agents**

# Schistosomiasis

## Schistosomiasis



Réservoir



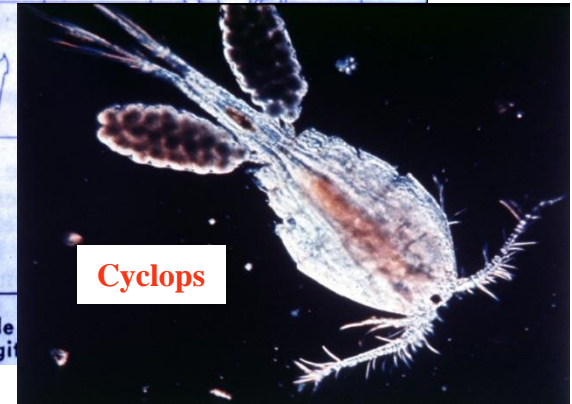
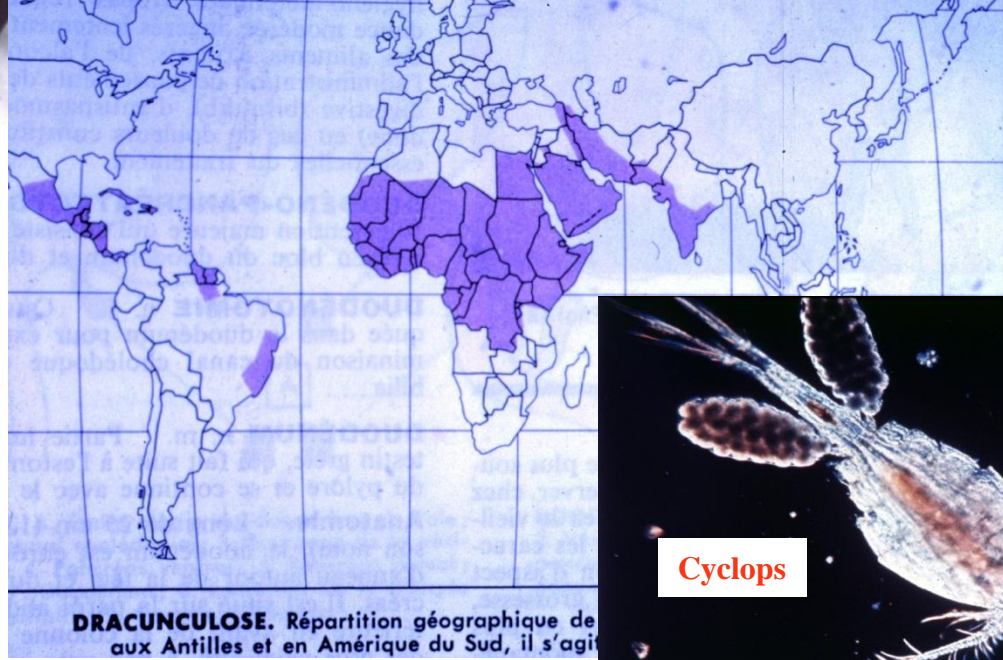
**Taking root factors**

**Geo climatic**  
**Behavior**

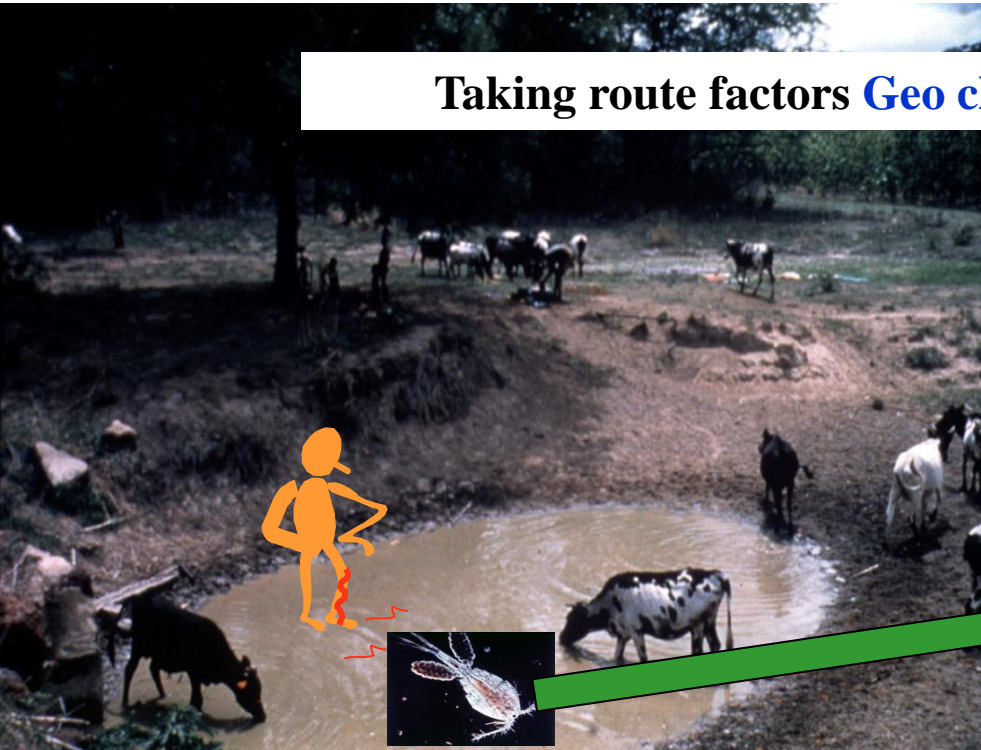
**Economic development !**

e.g. : **dam**





Taking route factors **Geo climatic** **Behaviour** **Poverty**



# Elimination -----toward Eradication



**The wells**



**Endemic diseases**

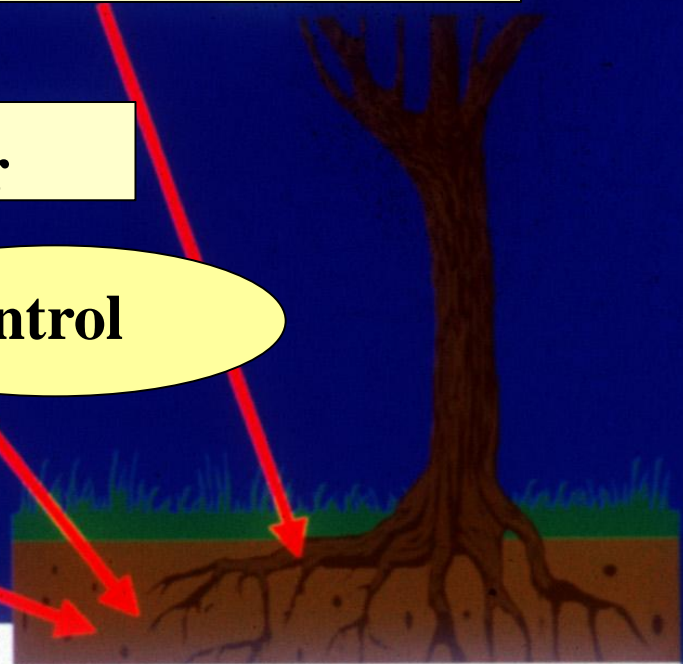
**Under development**

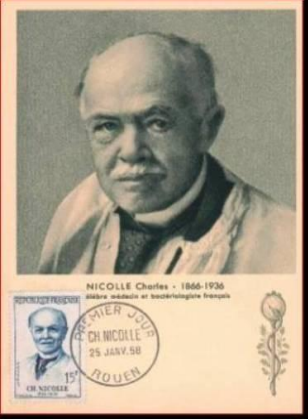
**Behaviour**

**Geo-climatic  
factors**

**Control**

**Taking root of the Reservoir**





*Naissance, vie et mort  
des maladies infectieuses*  
**Charles Nicolle, 1930**

**Les migrations humaines importeront en tous pays  
les maladies humaines et animales de chaque région.  
L'œuvre est déjà avancée, elle est assurée d'avenir.**

**Il y aura donc des maladies nouvelles :  
c'est un fait fatal.**

**The human migrations will import in all countries the human and  
animal diseases of every areas. This is already moved forward, it is  
insured by future.**

**There will be thus new diseases: It is a fatal fact.**