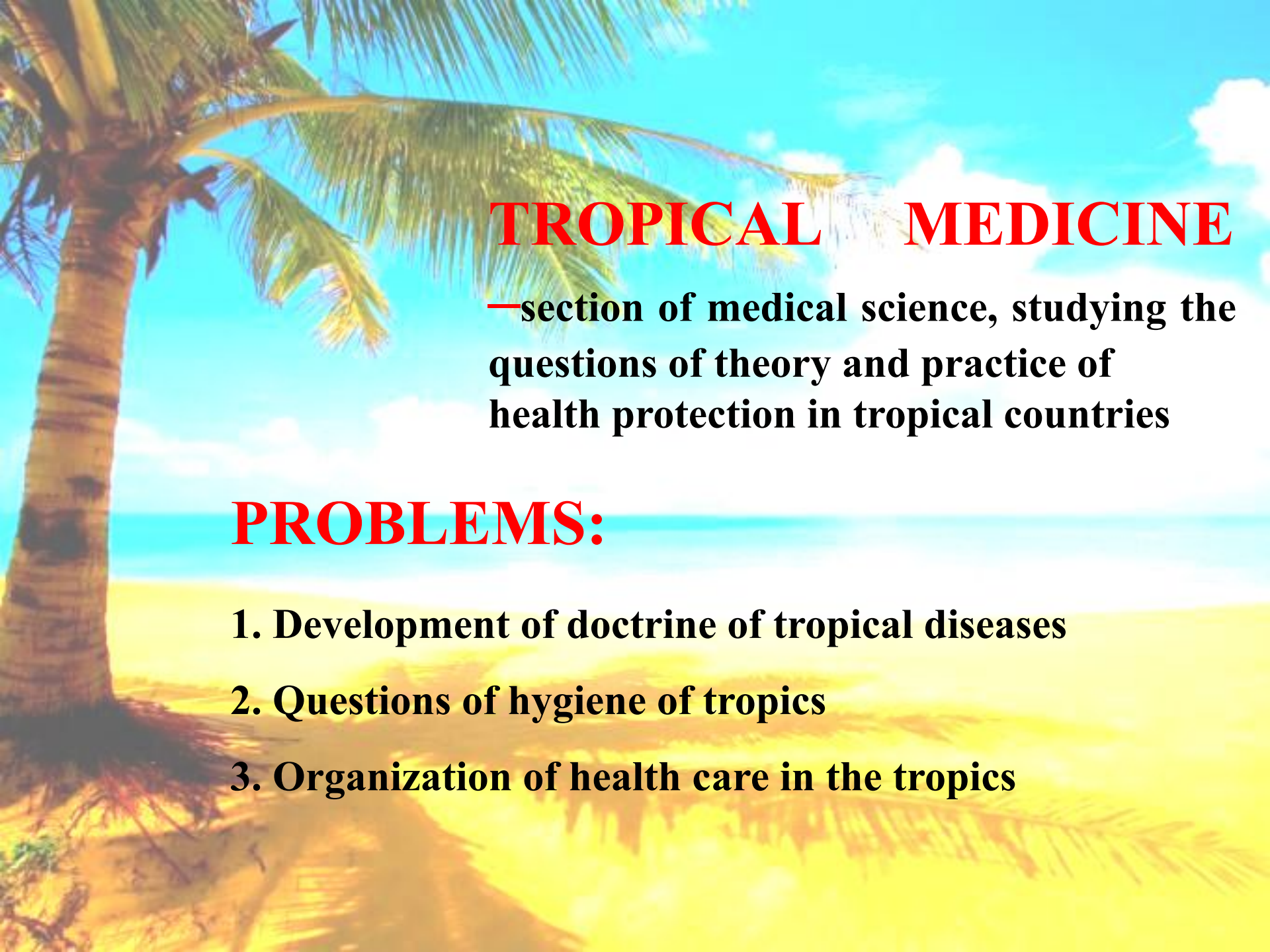
Features of tropical pathology. Classification of tropical diseases. Peculiarities of infectious diseases in countries with tropical climate



TROPICAL MEDICINE

–section of medical science, studying the questions of theory and practice of health protection in tropical countries

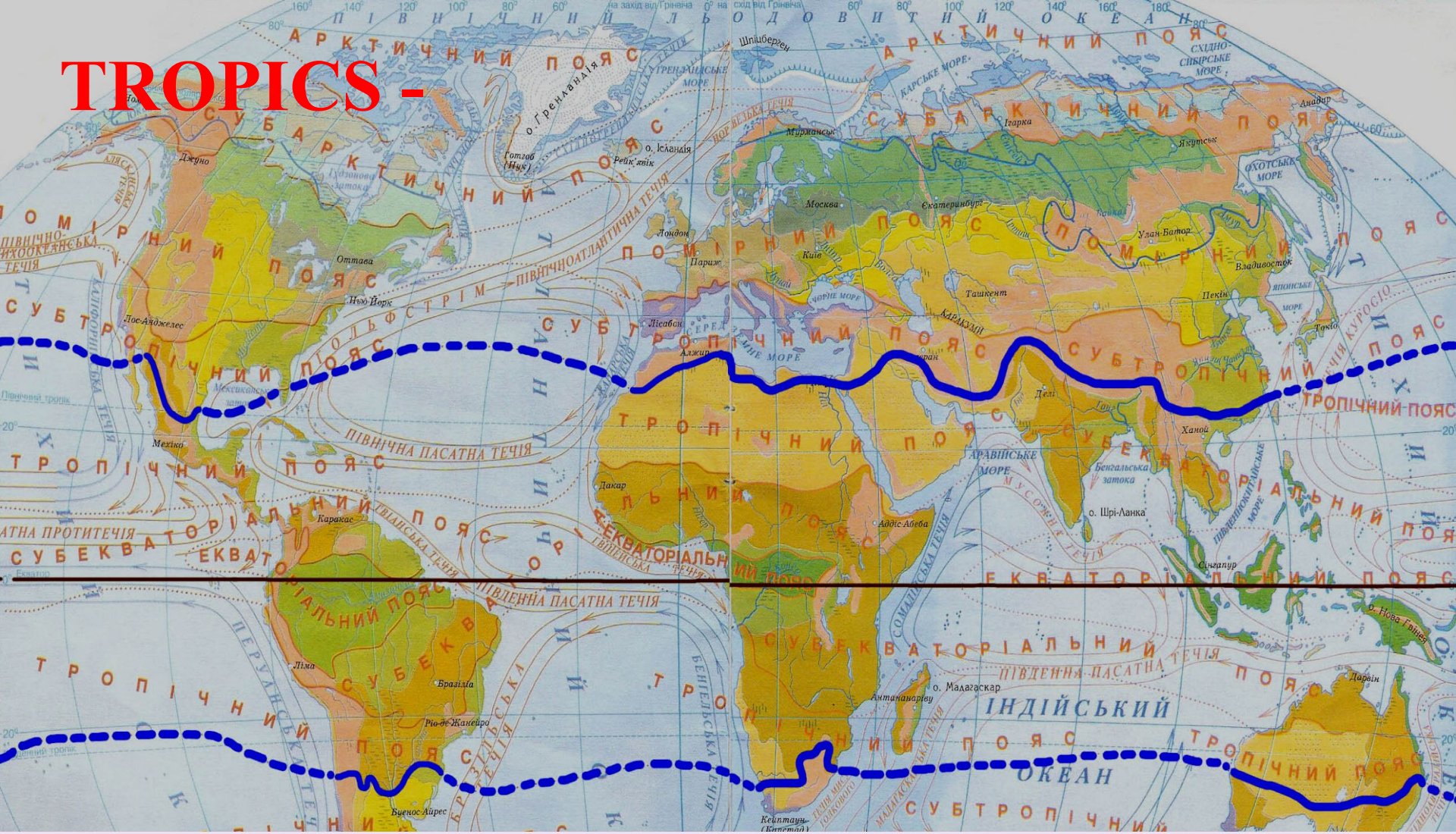
PROBLEMS:

1. Development of doctrine of tropical diseases

2. Questions of hygiene of tropics

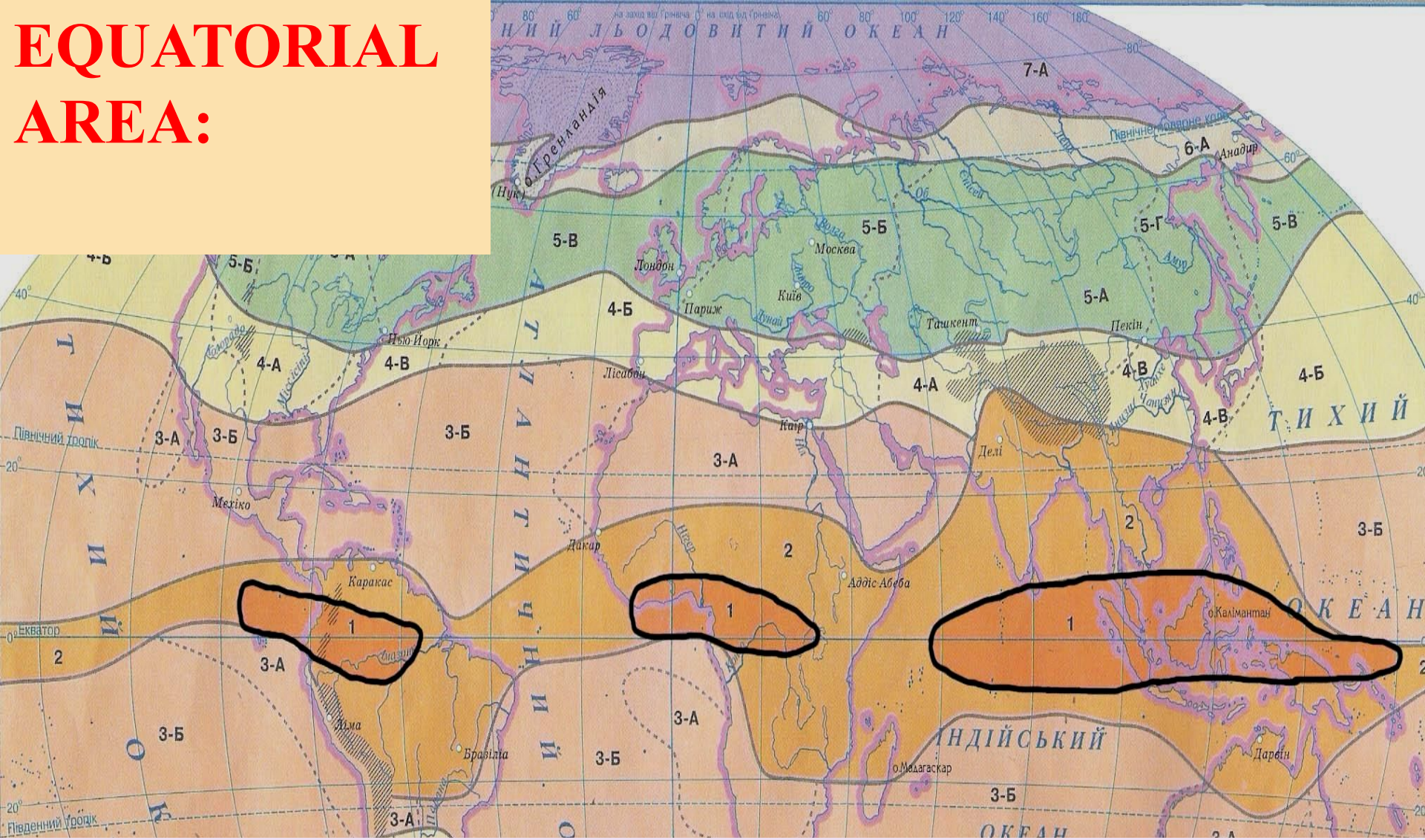
3. Organization of health care in the tropics

TROPICS -



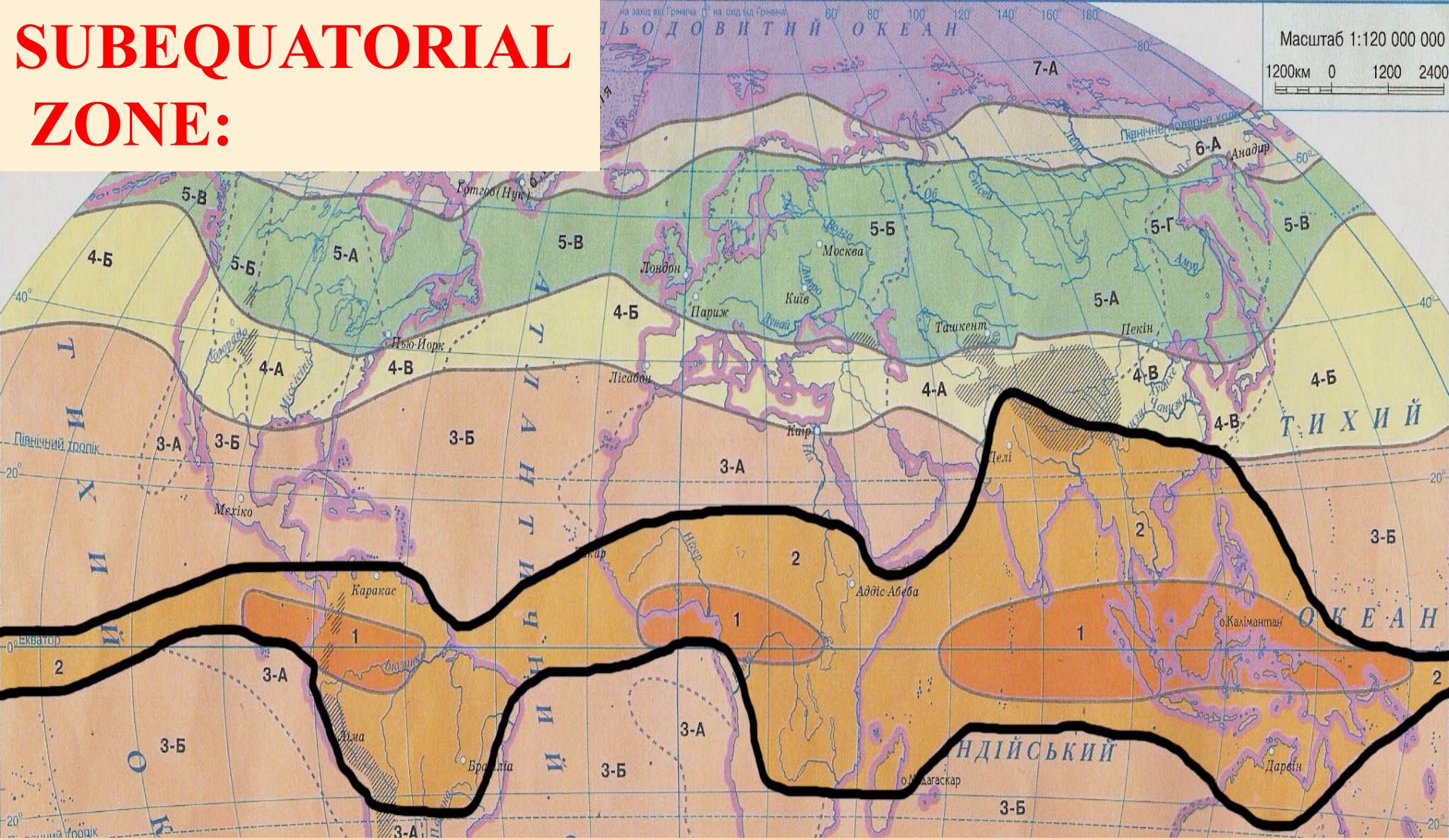
part of the earth's surface, located in the equatorial, subequatorial, tropical and subtropical climate zones between 23.5 degrees Northern latitude and 23.5° degrees South latitude. This zone includes Africa, Australia, India, Indochina, Indonesia, Iran, Iraq, Pacific Islands, South and Central America

EQUATORIAL AREA:



constantly high temperature (24 - 28°C), abundant rainfall (1500 - 3000 mm, in some places – up to 10000 mm). Thick multileveled forests, variety of flora and fauna (CONGO, KENYA)

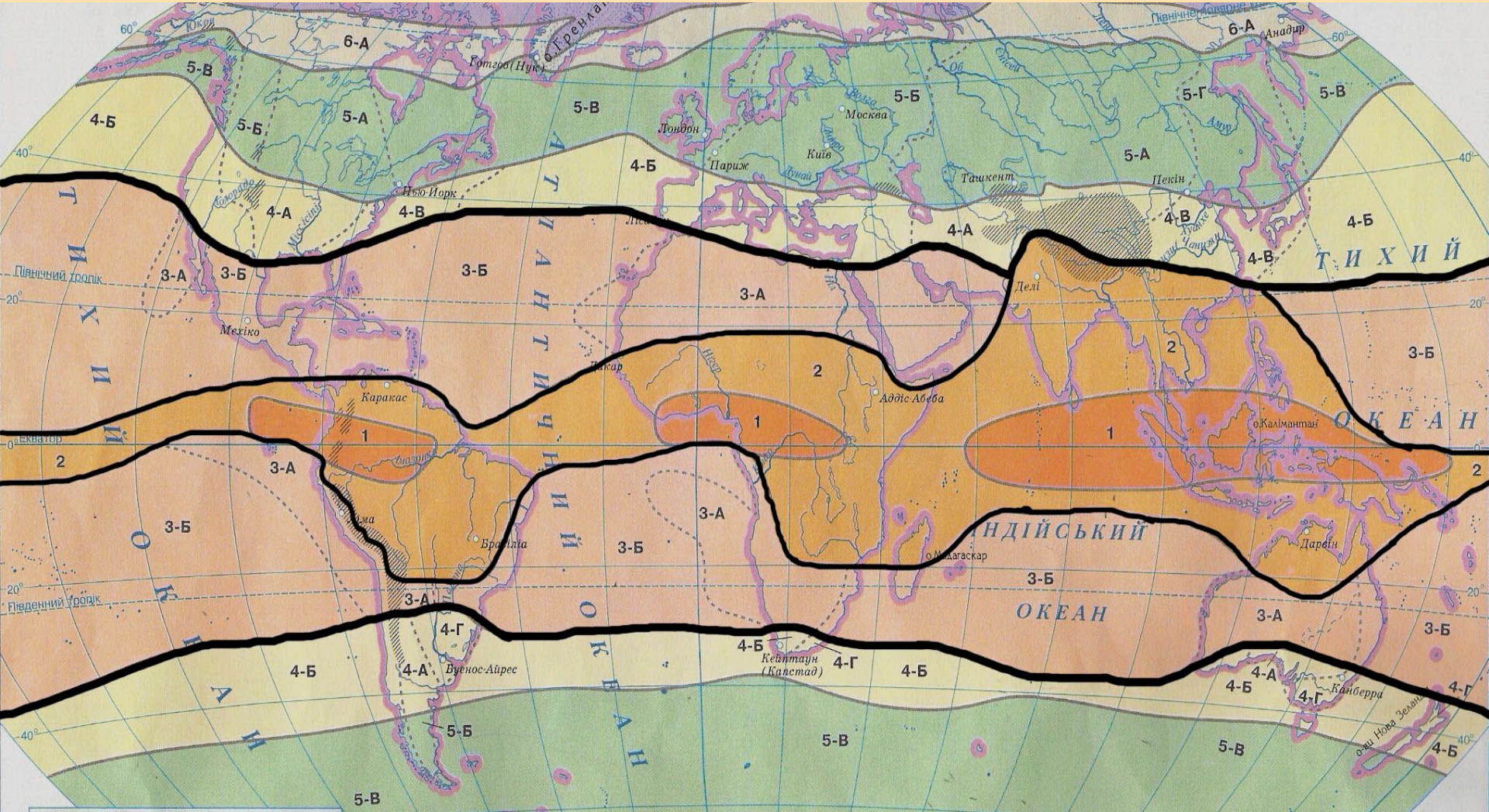
SUBEQUATORIAL ZONE:



constant high air temperature (22 - 25ºC), change of dry and wet seasons. Domination of savanna, deciduous and evergreen forests, deserts and semi-deserts (SUDAN, CHAD and MALI)

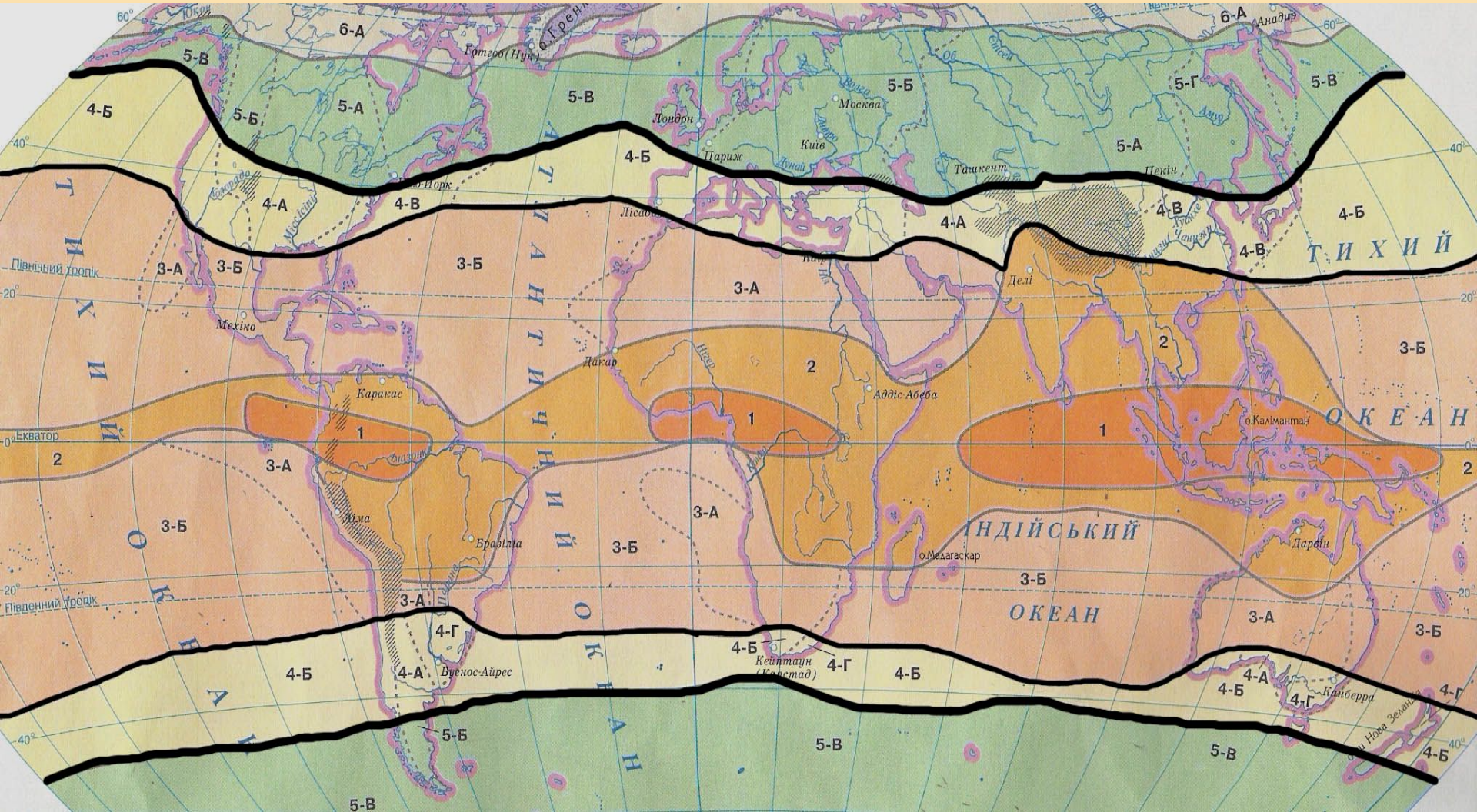
TROPICAL AREA:

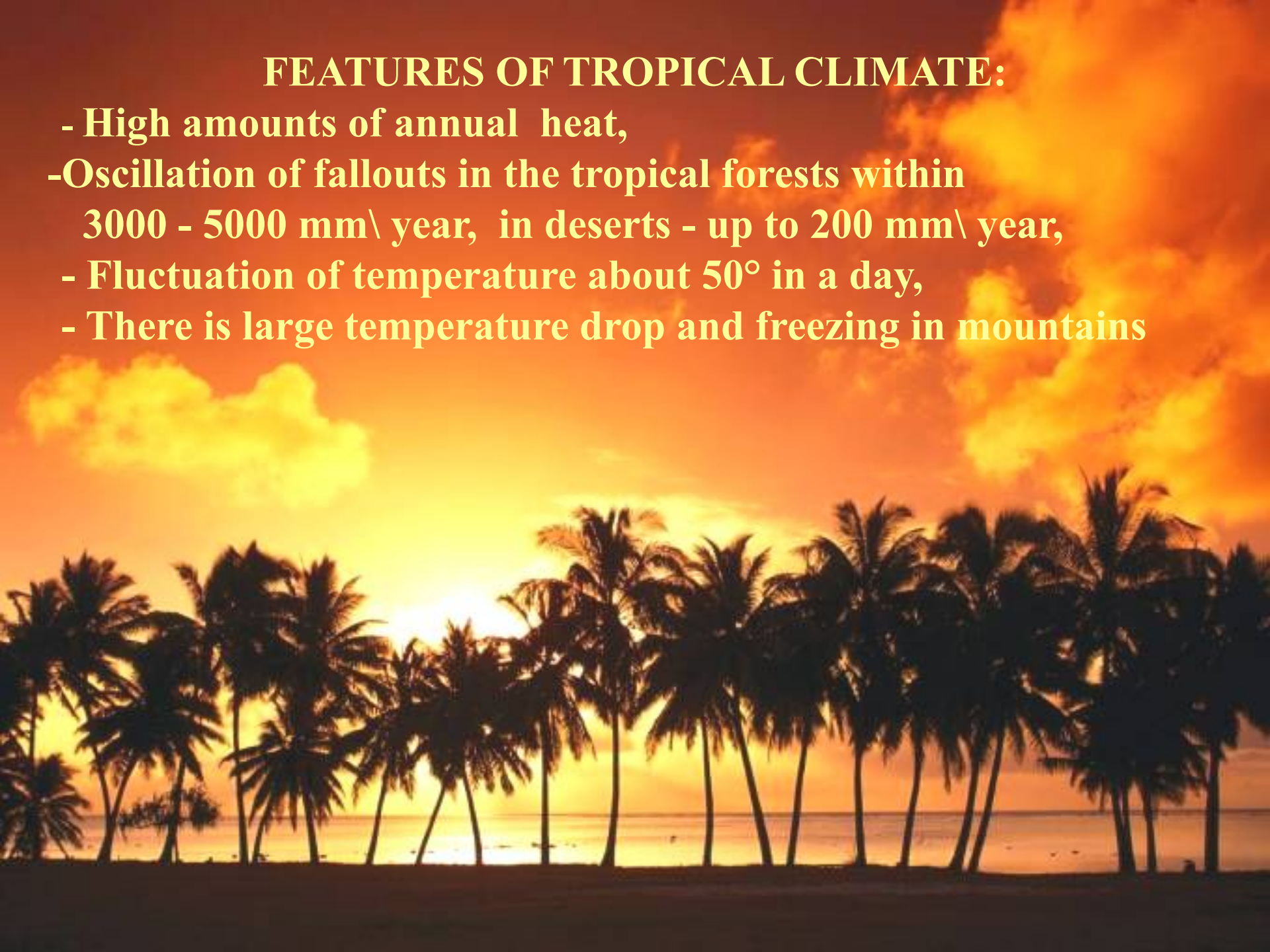
Winter temperature is not below 10°, in summer - 30 - 35°, distinguish the season of rains (summer) and season of drought (winter). Deserts, semi-deserts, savanna, deciduous forests (LIBYA, ALGERIA, EGYPT)



SUBTROPICAL AREA:

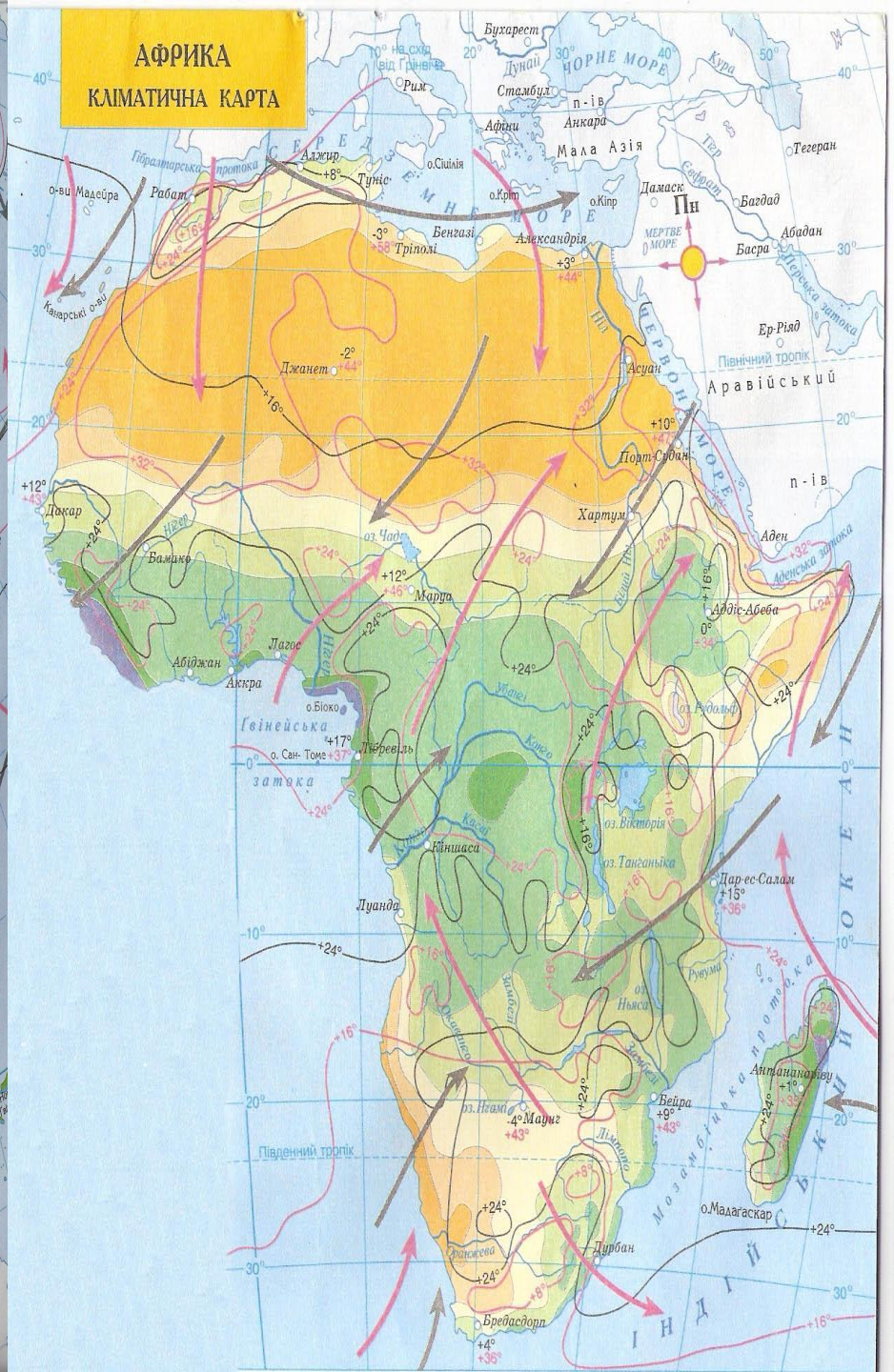
alternation of moderate (in winter) and tropical (in summer) temperature condition, monsoon, expressed differences in the rainfall. Deserts, semi-deserts and evergreen forests





FEATURES OF TROPICAL CLIMATE:

- High amounts of annual heat,
-Oscillation of fallouts in the tropical forests within 3000 - 5000 mm\ year, in deserts - up to 200 mm\ year,
- Fluctuation of temperature about 50° in a day,
- There is large temperature drop and freezing in mountains



The FEATURES of tropical pathology depend on environment conditions and social factors

FACTORS OF THE NATURAL ENVIRONMENT:

TEMPERATURE

DIRECT INFLUENCE:

Violation of mechanisms, regulating body-temperature and electrolyte balance

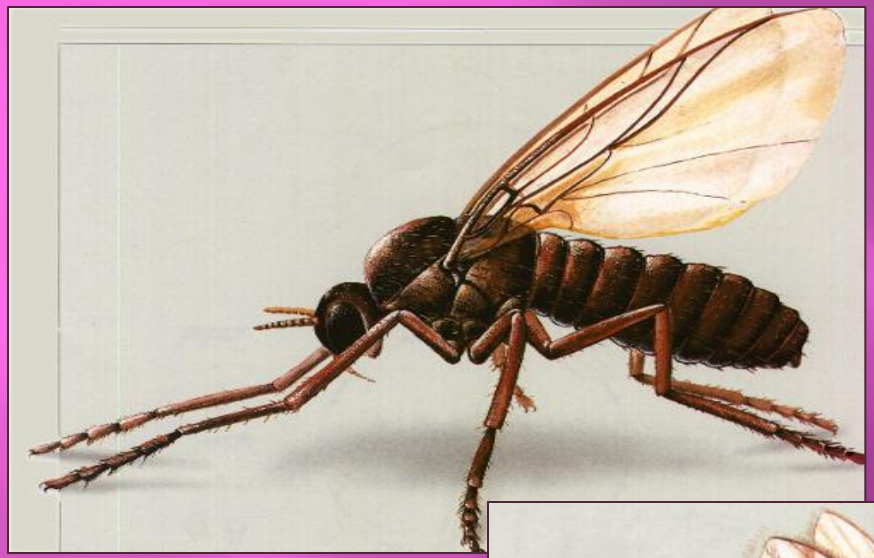
Increased water consumption and high risk of intestinal infections

Desorder of water - salt metabolism (low acidity of gastric juice and decreased barrier function of the stomach

High frequency of colds (temperature variation and decreased barrier function of the upper RT)

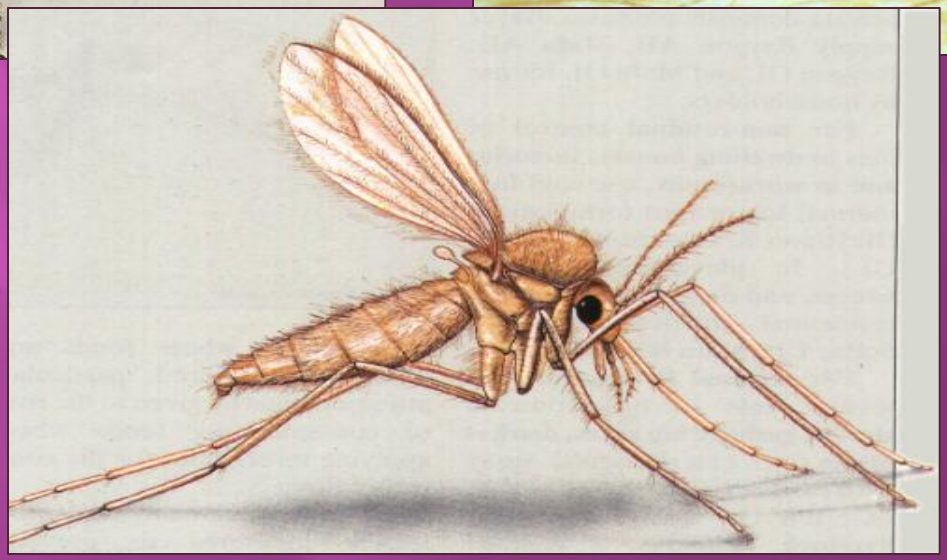
INDIRECT INFLUENCE:

1. Wide distribution of numerous kinds of insects (including bloodsucking)



Simulium

Anopheles



Phlebotomus

2. A hot climate assists the height of different types of plants and animals

3. Favourable conditions for existence of heat-loving causative
agents of infectious and invasion diseases (viruses of yellow,
Denge fever, filarias)

4. Optimal habitat for development of geogelmints (ascariasis, trichuris and other)

5. High variety of special vectors dwelling in a temperate climate (anopheles mosquitoes)

6. Existence of some vectors is possible only in the conditions of tropics (tse-tse flies, kissing bugs and other)

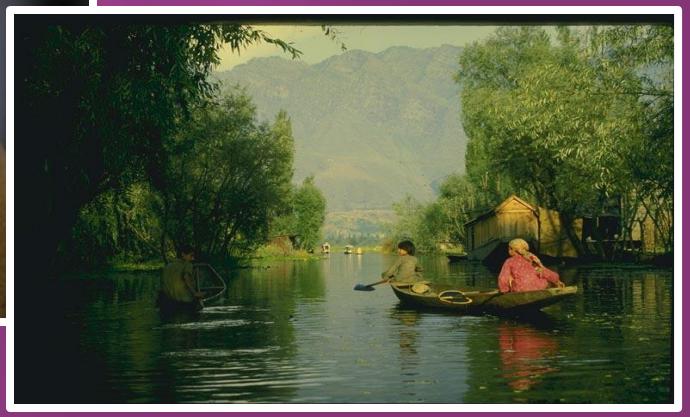

Various species of reduviid bugs transmit Chagas' disease.


Various species of *Glossina* transmit African trypanosomiasis.

Water

1. Reproduction of causative agents and preservation of them in the water (cholera, typhoid, dysentery, amebiasis, leptospirosis), shellfishes (schistosomiasis, dracunculosis), fishes (opisthorchiasis)

2. Development of special vectors - mosquitoes (malaria, filariasis, yellow and denge fever), midges and other



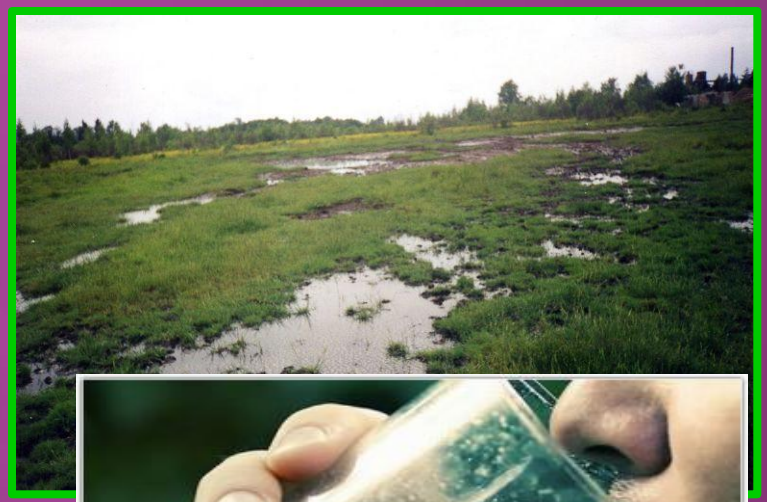
The role of water increases due to next reasons:

1. Swimming in reservoirs.
2. Using of reservoirs with a technical purpose.

3. Drinking of unboiled water.
4. Use in food of raw water plants (mint, chestnut, nut, lotus), fish, shellfishes.

5. Contamination of the rivers, ponds, wells, soils by microbes and eggs of helmints in the rain period.

6. Increase of concentration of the contagious material in reservoirs in the period of drought.



SOIL

1. Sourse of developing helmints - primary cause of disease agricultural workers
2. Reservoir for multiplication of insects transmitting infectious illnesses

SOLAR RADIATION

1. High frequency of sunburn and skin cancer
2. A radiation assists the sanation of environment

SOCIAL - ECONOMIC FACTORS

1. Low level of sanitary culture and illiteracy of population (taking of unboiled water is a reason of 50% of infectious diseases, absence of the sewage system, dirty hands, bad housing terms)
2. High death rate especially among children
3. High birth-rate - 4-5% in a year.
4. Insufficient nourishment (is albuminous starvation, hypovitaminosis and pellagra)

5. Occupation of the population

Leptospirosis and geohelminthiases more often registered among the peasants, brucellosis, anthrax, echinococal disease - among nomads. Loggers and hunters, as a rule, suffer from yellow fever and cutaneous leishmaniasis, plantation workers – from larva

6. Lifestyle, dietary habits, superstitions and customs (presence of blood in the boys urine in schistosomiasis is regarded as evidence of sexual maturity)

7. Underdeveloped medicine, centralization of hospitals in cities and their absence in the villages, the remoteness of villages from each other impede the provision of medical assistance (per 1 physician 10 000 - 60 000 persons in rural area)

Medical feature of tropical diseases

There are ubiquitous and proper tropical (millions of sick people: filariasis - 250 million; schistosomiasis - 270 million; leprosy 12 million)

Infectious tropical diseases	Nonifectious tropical diseases	Tropical diseases of unknown origin
-Registrated only in tropics -In tropics and outside the tropics	- Connecting with the direct action of the environment; - Connecting with the effect of natural and social factors; - Genetic diseases; - Other therapeutic diseases	-Cardiac fibrosis -Cardio myopathy -Kaposhi sarcoma - Malignant tumor of lymphatic sistem

Infectious tropical diseases

Registrated in and outside the tropics	Registrated only in tropics
VIRAL	
measles, chicken pox, influenza, acute respiratory viral infections, rabies, polio	yellow fever, dengue, Lassa, Marburg, Ebola
SPIROCHETOSIS	
Leptospirosis, louse-born recurent typhoid	yaws, Pinta, tick-born recurent typhoid
BACTERIAL	
cholera, plague, salmonellosis, dysentery	Buruli ulcer

HELMINTIC	
ascariasis, enterobiasis, teniosis, gimenolepidosis, difillobotriasis, echinococal disease, opisthorchiasis	Guinea-worm disease, filariatosis, schistosomiasis
FUNGOUS	
trichophytosis	maduromycosis
PROTOZOAL	
Vivax malaria, balantidiasis	Tropical malaria, leishmaniasis, trypanosomiasis

Peculiarity of the course of the tropical disease:

1. Unfavorable background (insufficiency of power, hypovitaminosis and others).
2. Massiveness of the infection.
3. Early age of primary infection.
4. The direct influence of the original conditions of the environment.
5. Possibility to get several species of parasites – polyparazitism (2, 3 and more worms or worm infections with bacterial infection).
6. Subclinical or obliterated course of many diseases in the population of endemic foci due to constant contacts with pathogenic microorganism and development of the immunity.

7. Severe course of the disease (meningococcal infection, measles, tuberculosis and other).

8. Chronization of many diseases.

9. Unusual course of some infections (skin diphtheria –often, faryngeal diphtheria - rarely).

10. Presence of some diseases prevents contamination of other diseases (anemia S and C prevents malaria infection).

11. Combination of some infections provokes development of tumors (EBV+malaria provokes Berkit's lymphoma).

Features the work of doctor in the tropics

1. **In all cases of unclear fever appoint antimalaria drugs.**

2. **In the treatment of all infectious diseases simultaneously appoint antimalaria drugs.**

3. **Before a surgical operation appoint antimalaria drugs.**

4. **Before the surgical operation examine the patient for helminths and treat him.**

5. **After reviling a single parasite continue to search of other pathogens**

The most important diseases of the tropics (according to WHO)

malaria

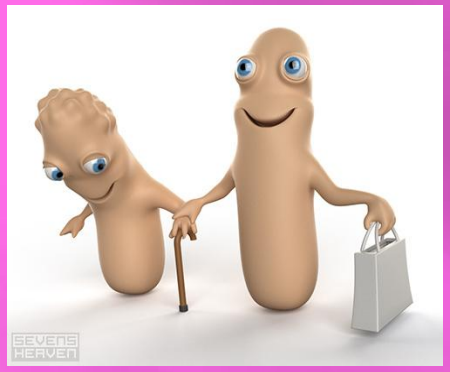
filariatosis

leishmaniasis

schistosomiasis

trypanosomiasis

leprosy



MEASURES OF HEALTH PROTECTION IN THE TROPICS

1. Before traveling to tropical countries is necessary total medical examination

2. Vaccination against typhoid, paratyphoids, tetanus, polio, yellow fever, cholera, hepatitis A.

3. Follow measures of food hygiene (boiling, chlorination and filtration of water, thermal processing of vegetables and fruits).

4. Chemical prophylaxis of malaria and sleeping sickness (West and Central Africa).

5. Protection from the bites of insects (mechanical protection, canopies impregnated mosquito repellents, measures of chemical protection – the use of insecticides and repellents).