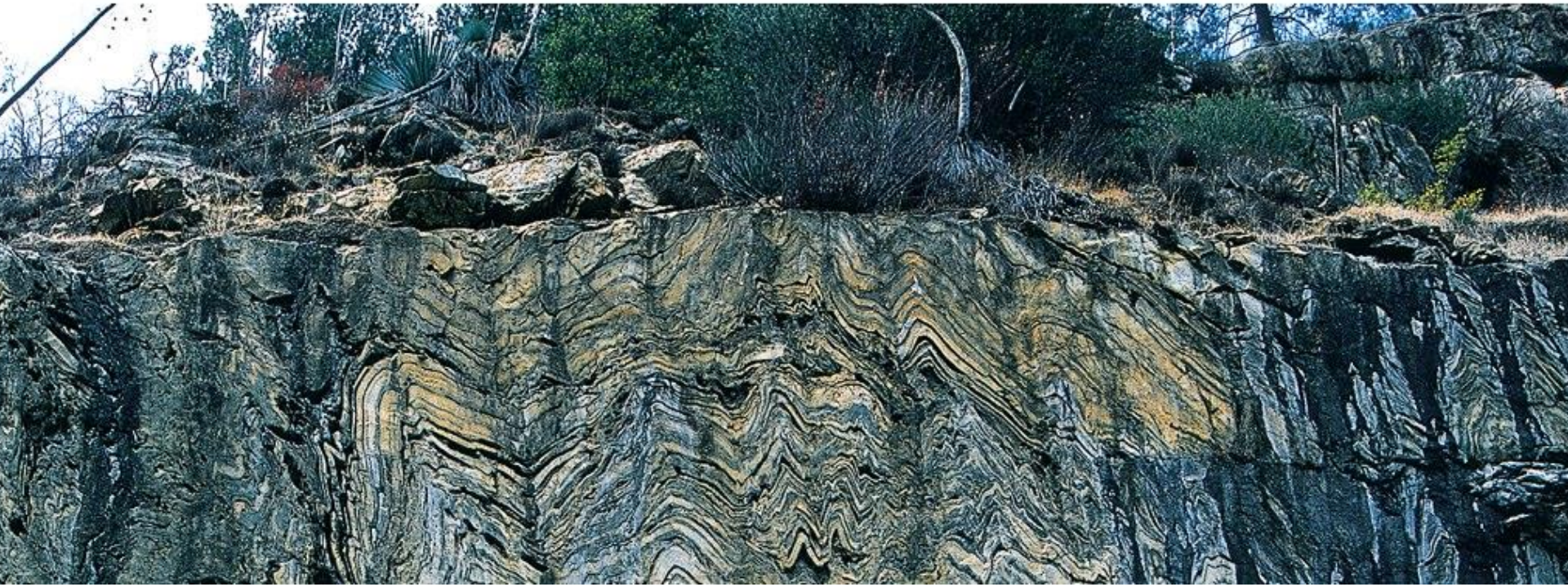
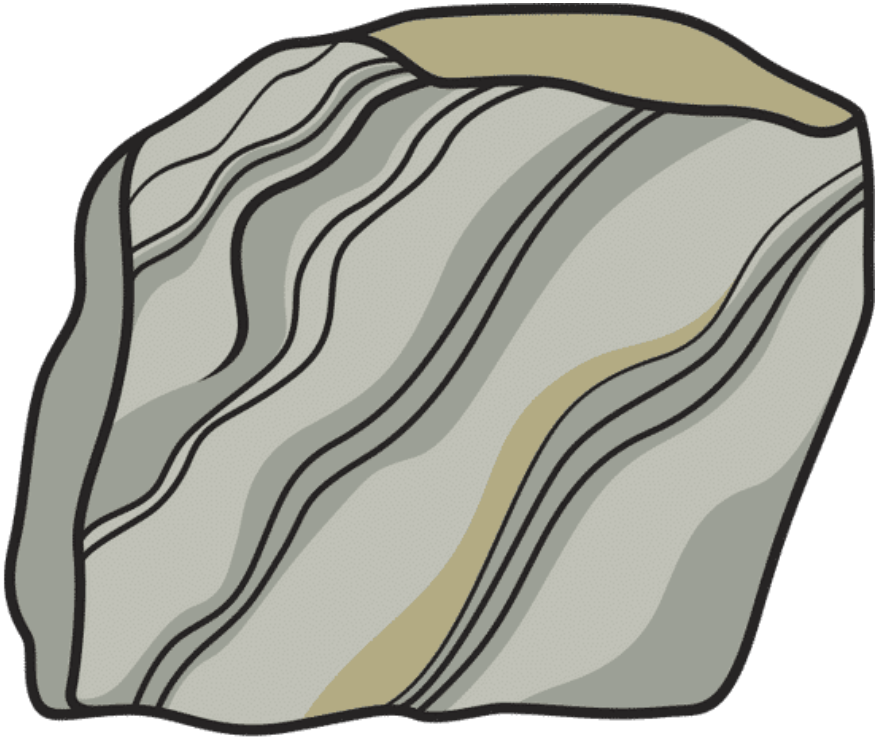
METAMORFISMO
E
ROCHAS METAMÓRFICAS (II)





Tipos de metamorfismo

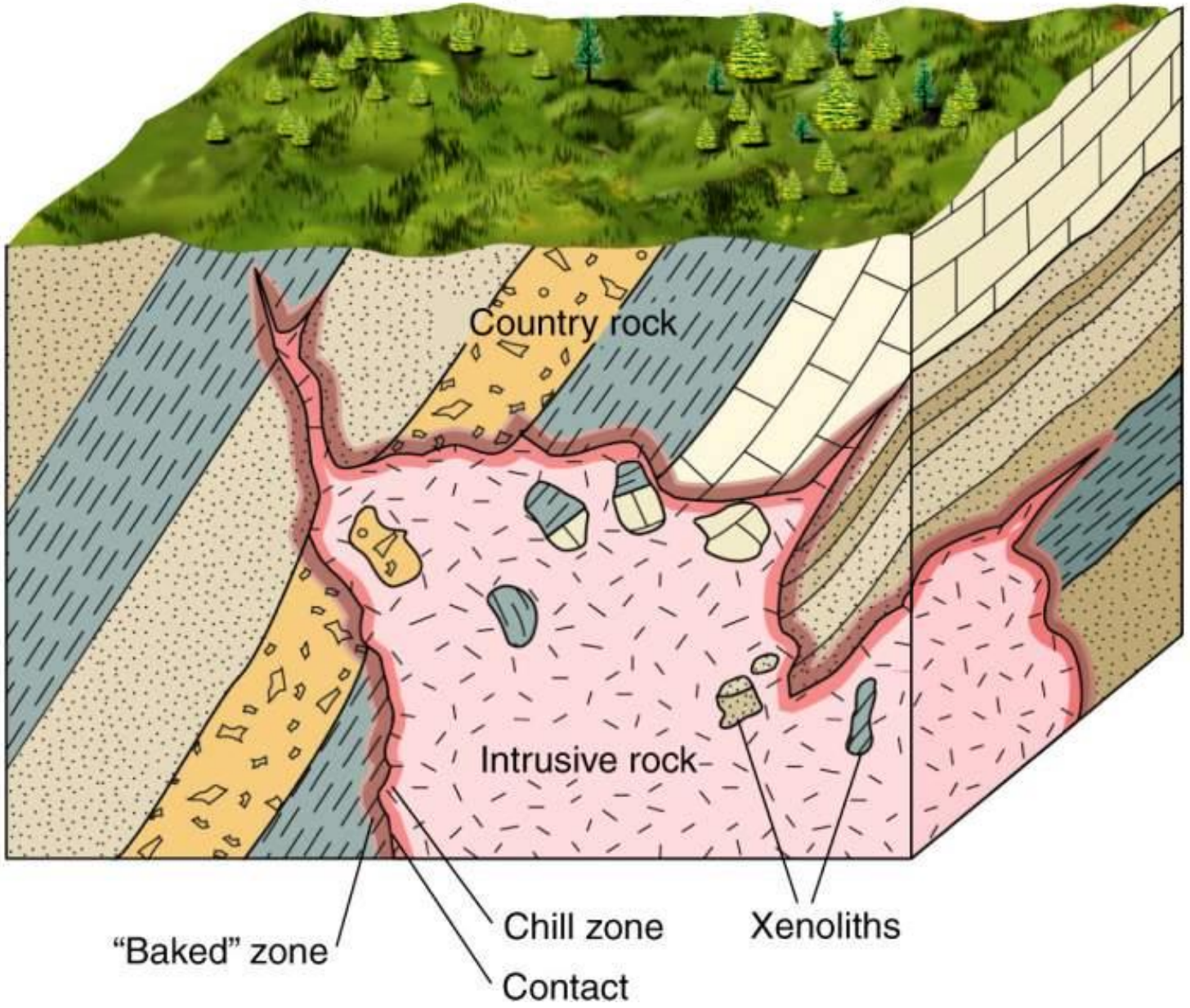
Textura e estrutura das rochas metamórficas

Tipos de metamorfismo

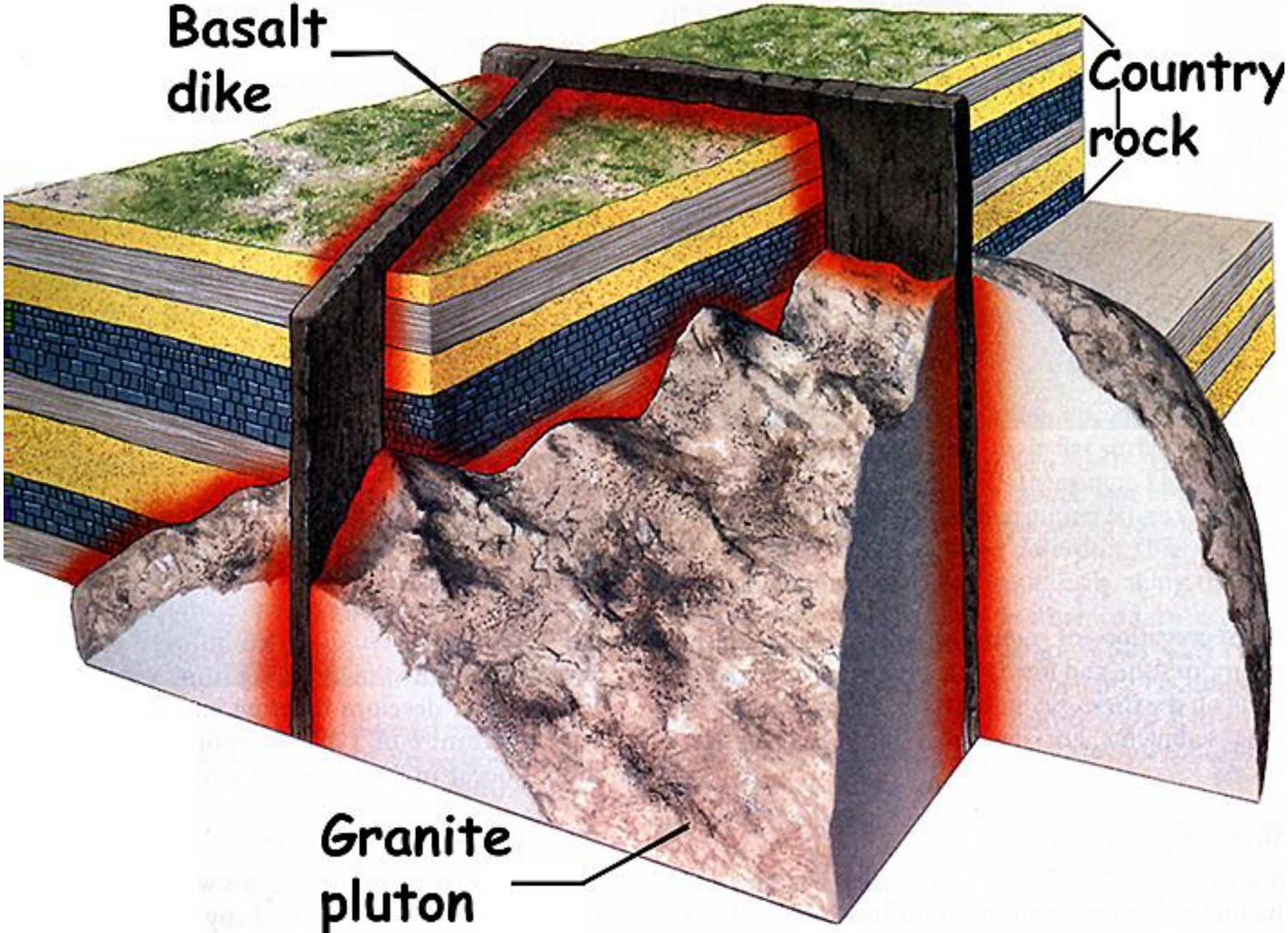
Condicións nas que se produce o metamorfismo, tres tipos principais:

METAMORFISMO DE CONTACTO
METAMORFISMO REXIONAL
METASOMATISMO

METAMORFISMO DE CONTACTO

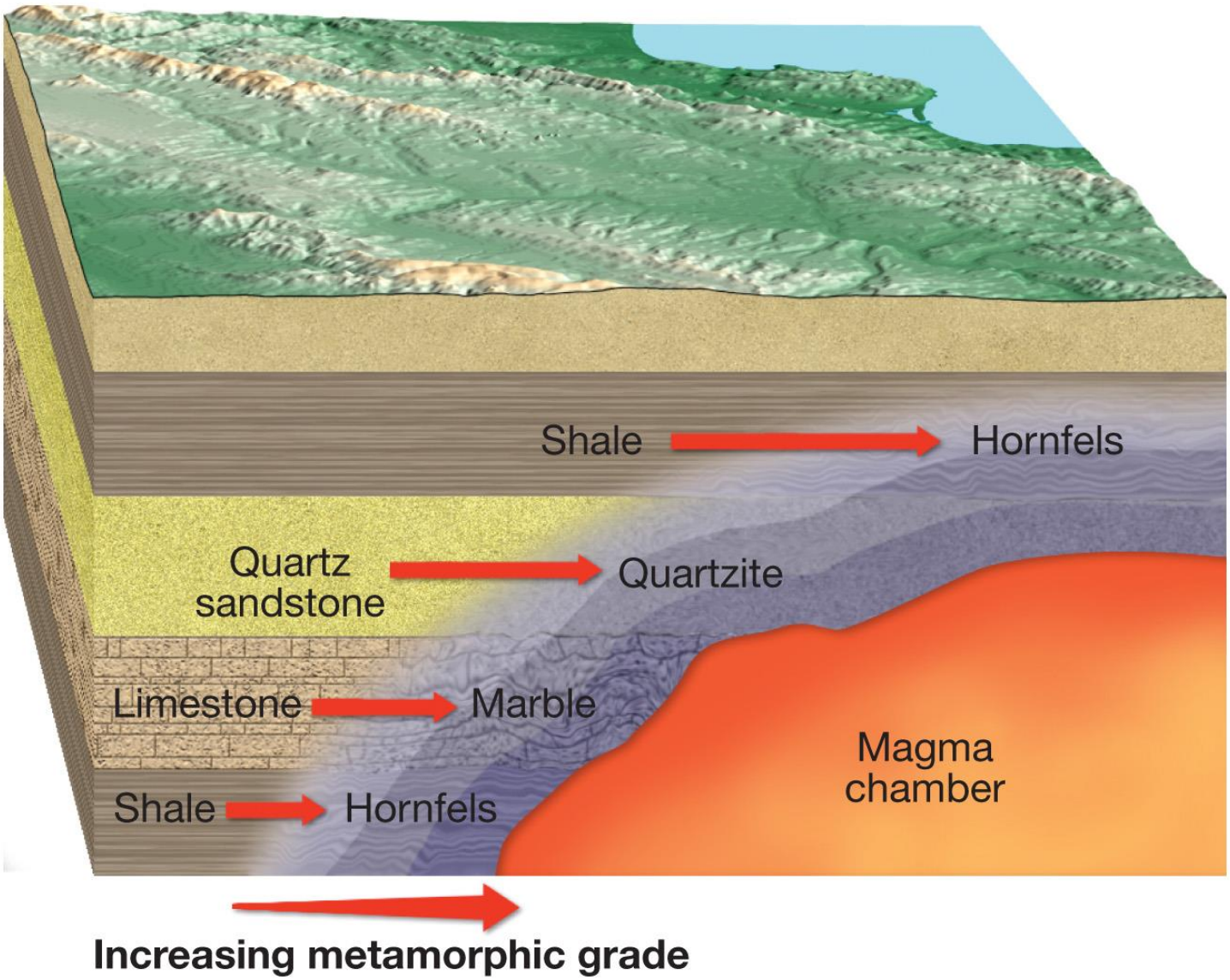


Temperatura elevada e presión litostática variable



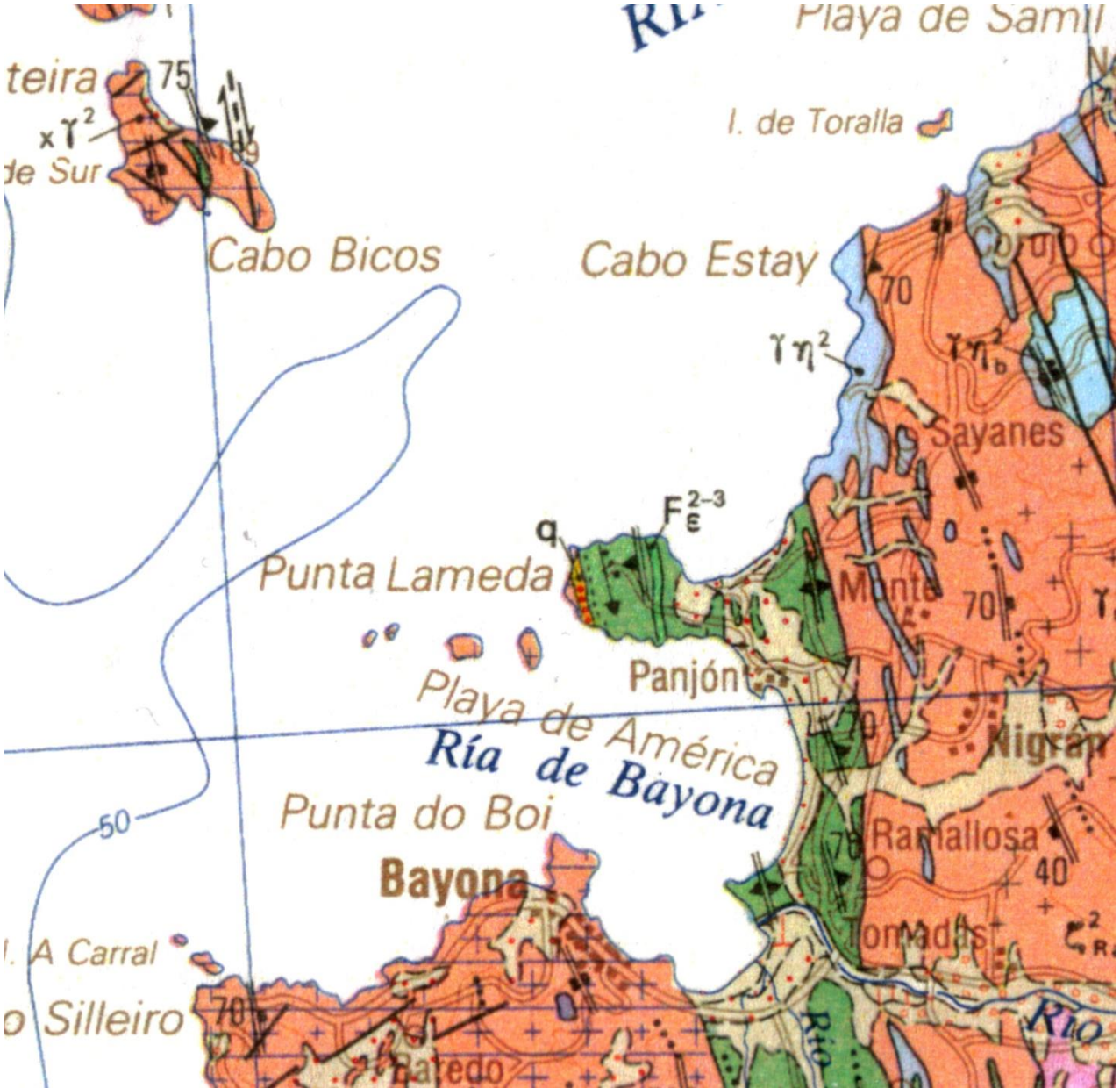
Aureola de metamorfismo de contacto:

grao decrecente a medida que nos alonxamos da intrusión



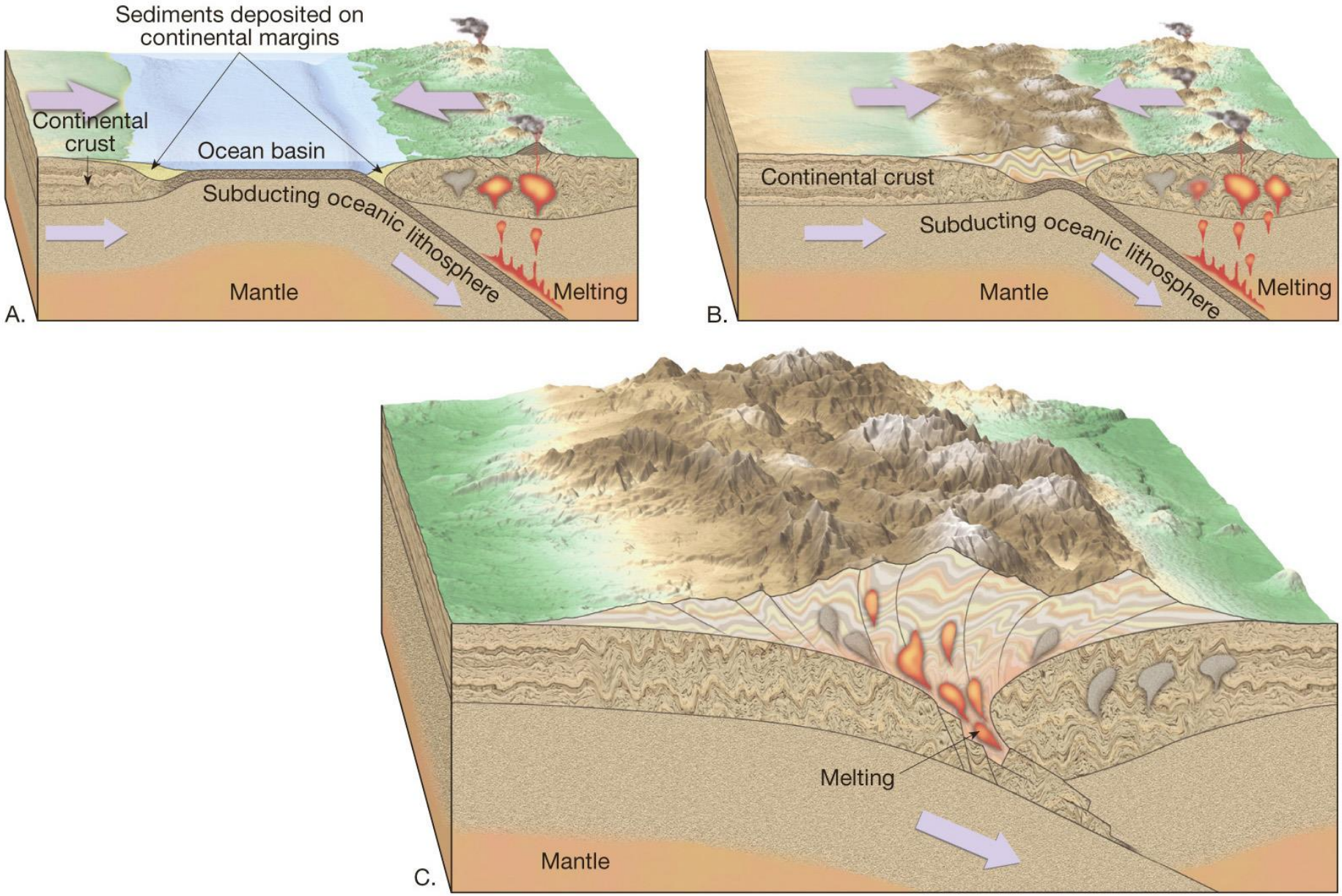

Preexisting rock
Metamorphic zone
Intrusive rock

EXEMPLO: METAMORFISMO DE CONTACTO NA PRAIA DE PATOS (NIGRAN)

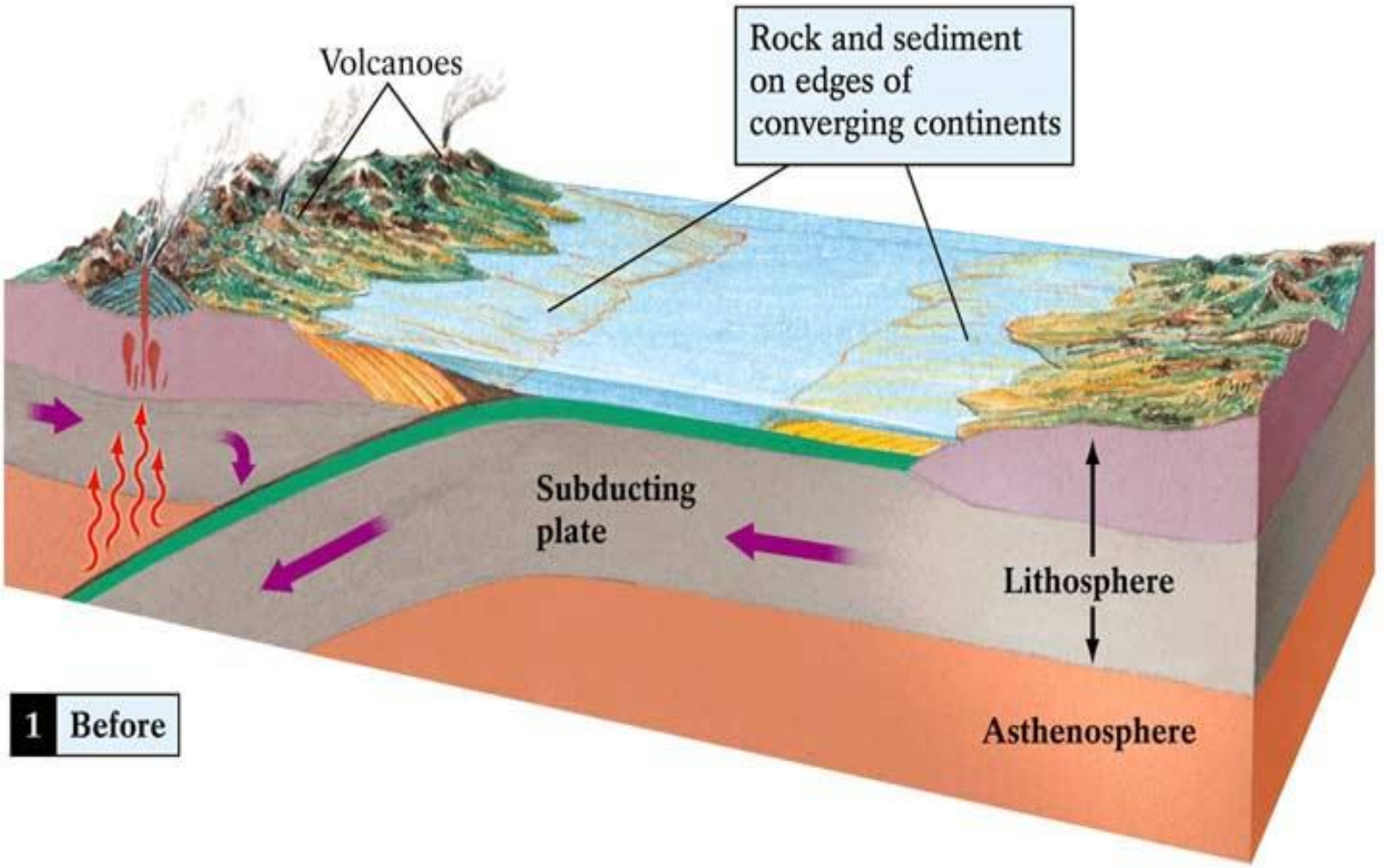


Esquisto mosqueado

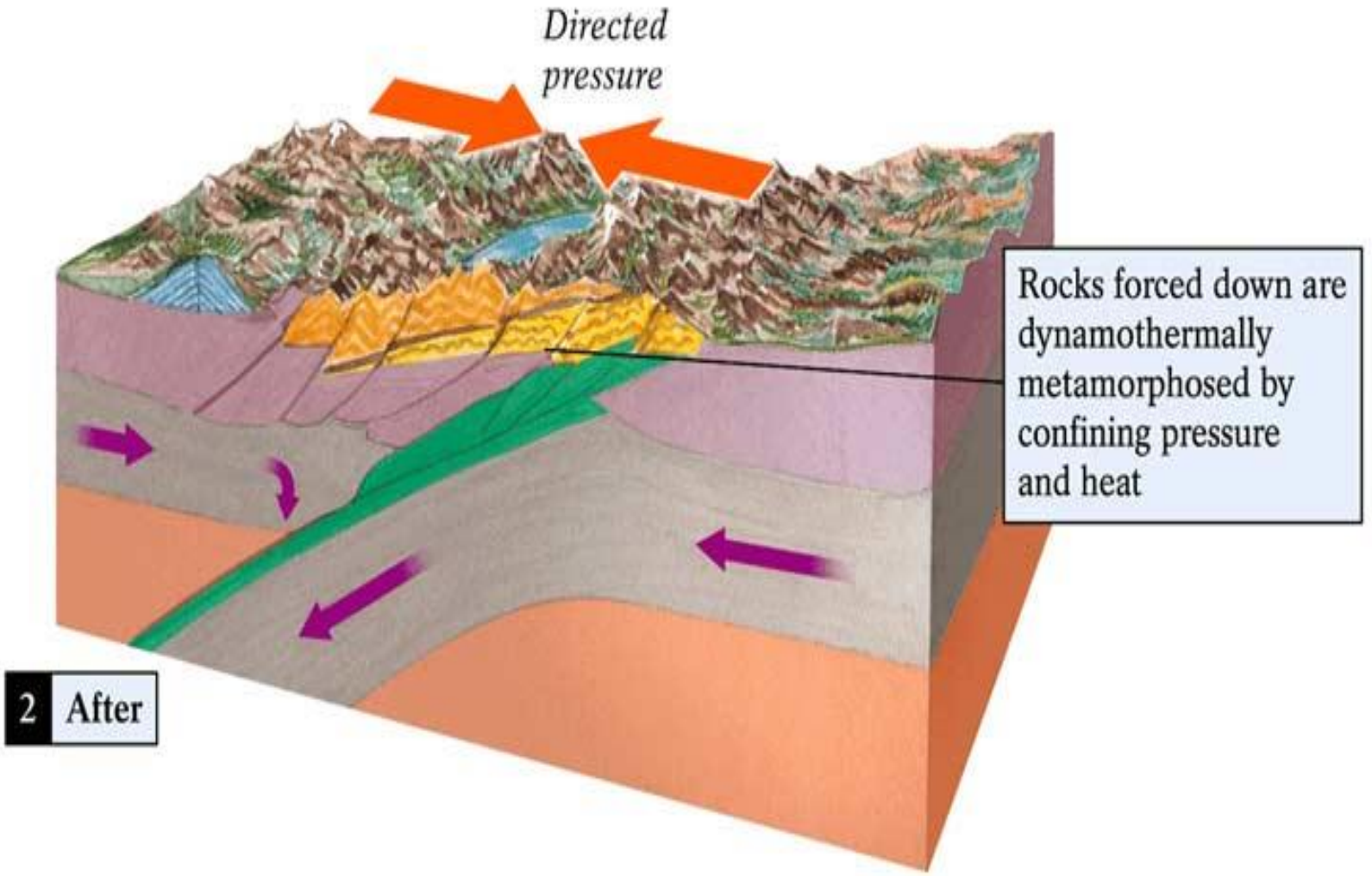
METAMORFISMO REXIONAL: ASOCIADO ÓS ORÓXENOS



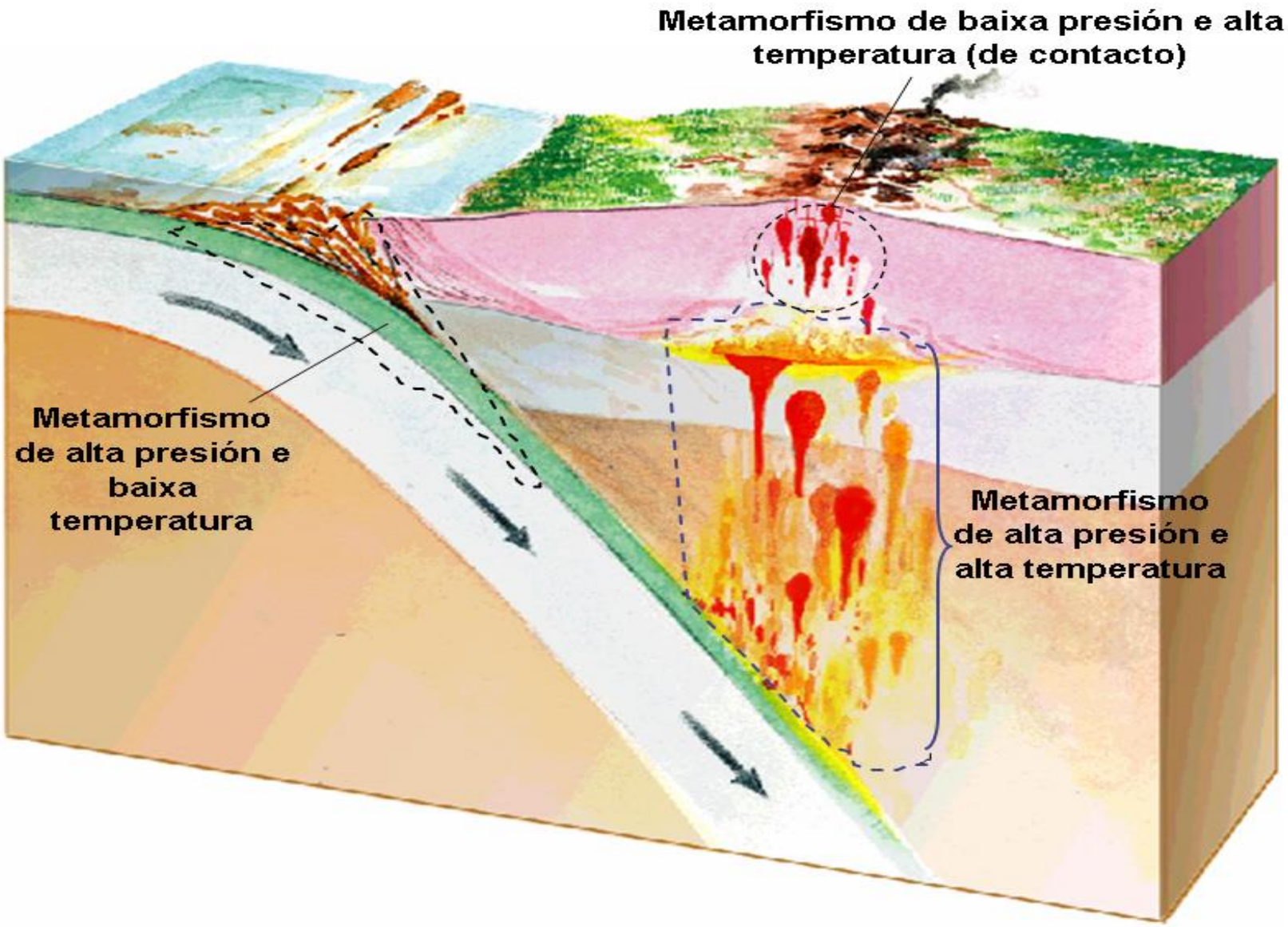
Dynamothermal Metamorphism, Before collision



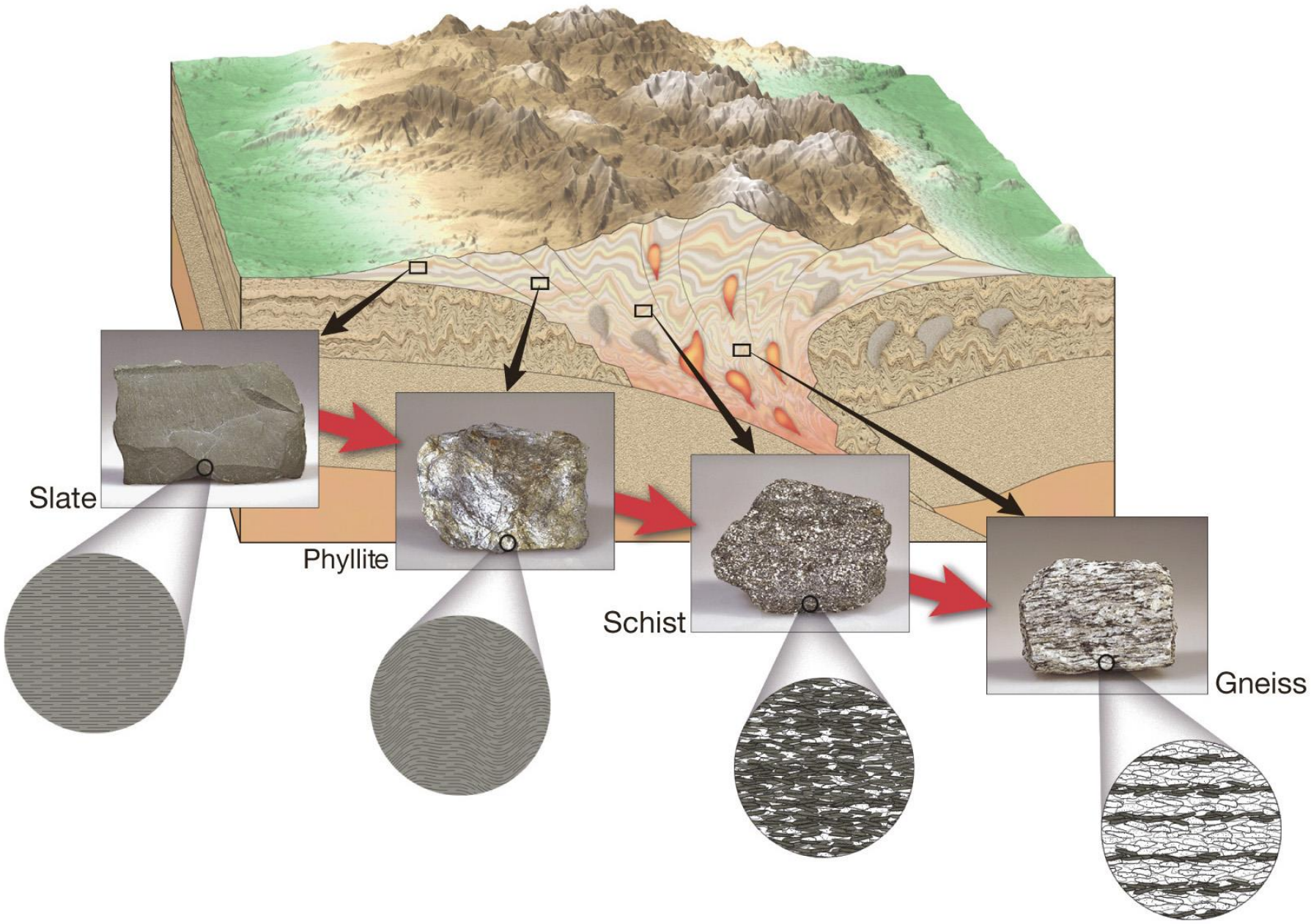
Dynamothermal Metamorphism, After continental collision



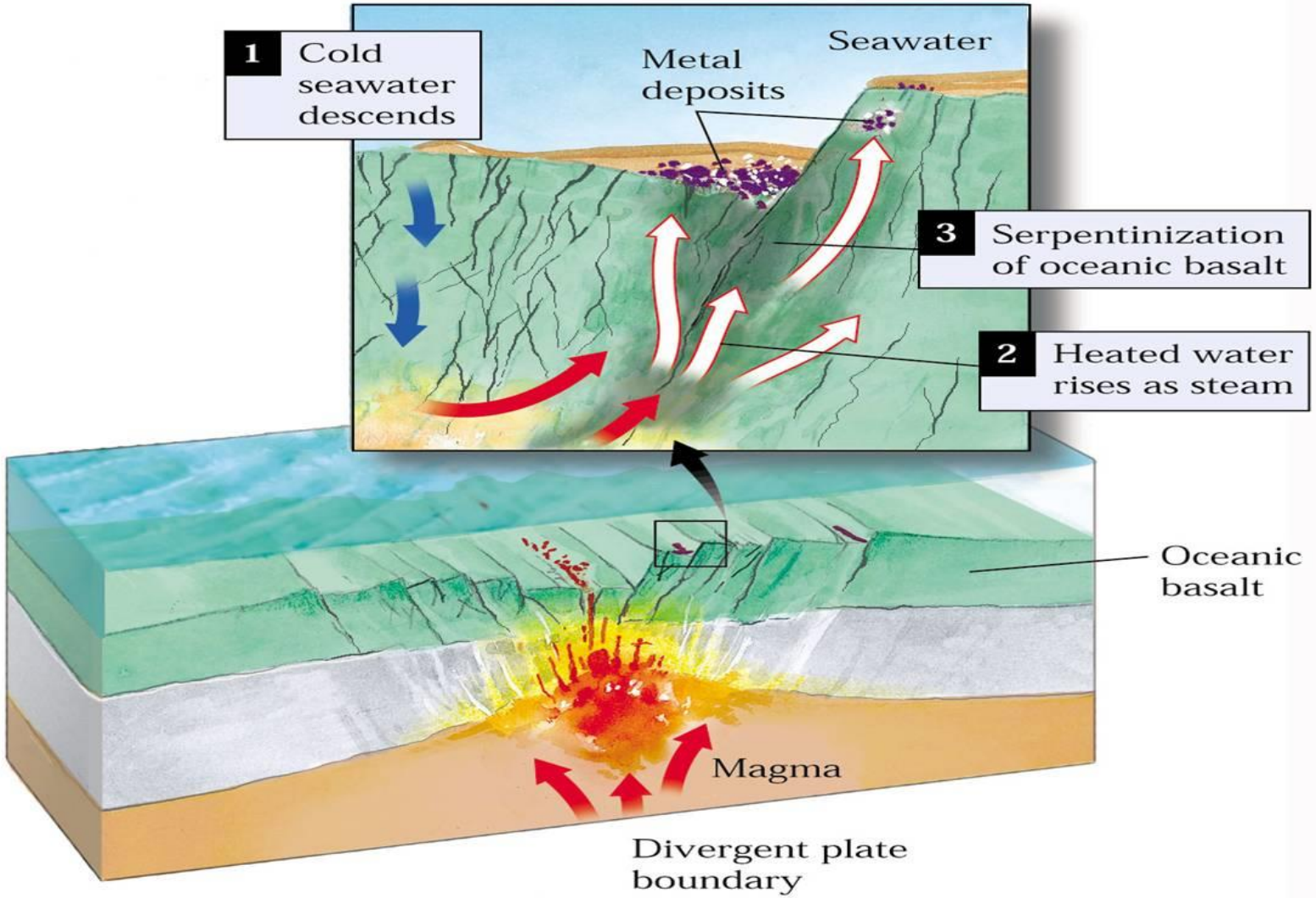
DISTINTAS ZONAS NO ORÓXENO CON CONDICIÓNS PARTICULARES DE PRESIÓN E TEMPERATURA

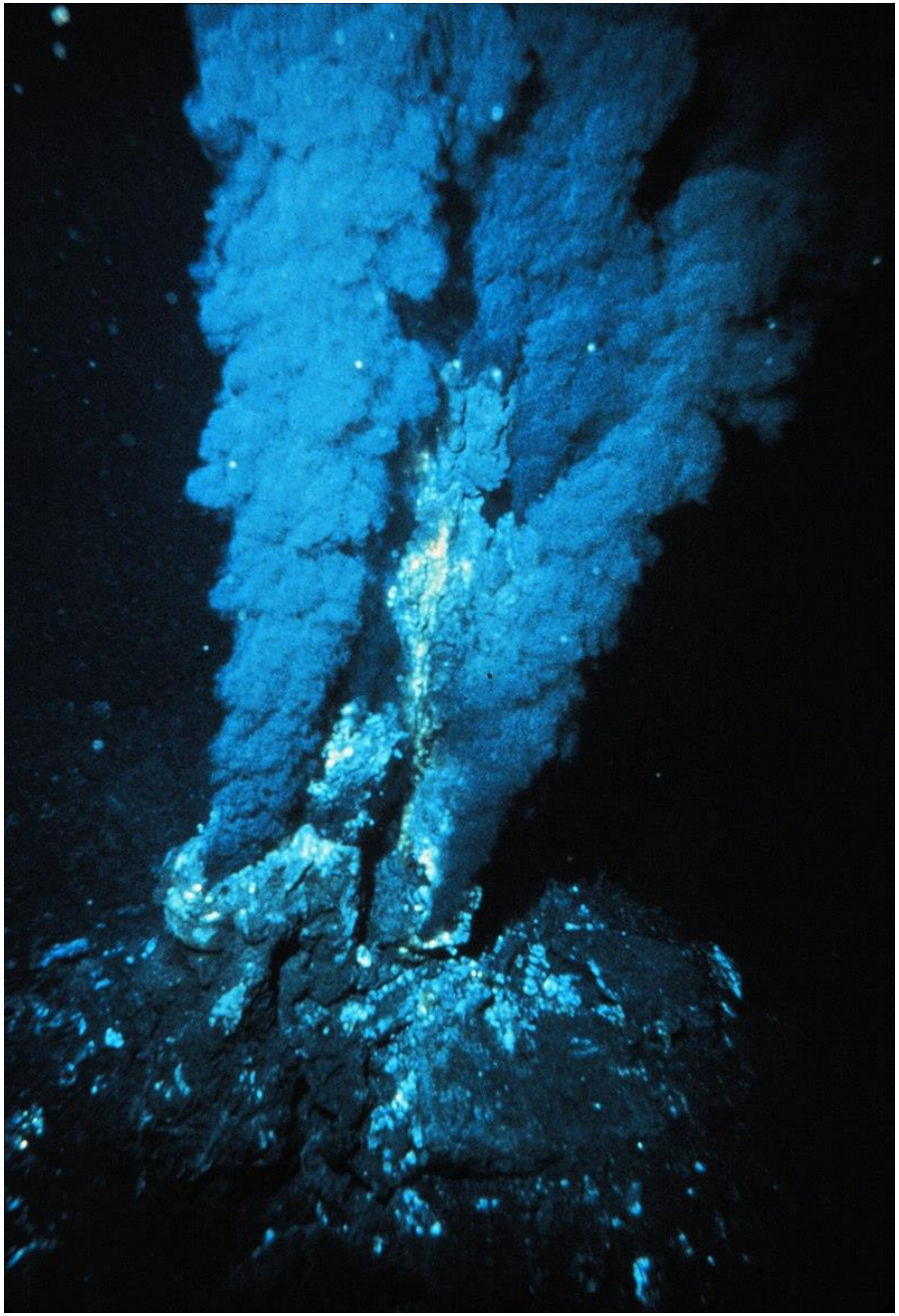


O GRAO METAMÓRFICO AUMENTA CARA O INTERIOR E PARTE CENTRAL DO ORÓXENO

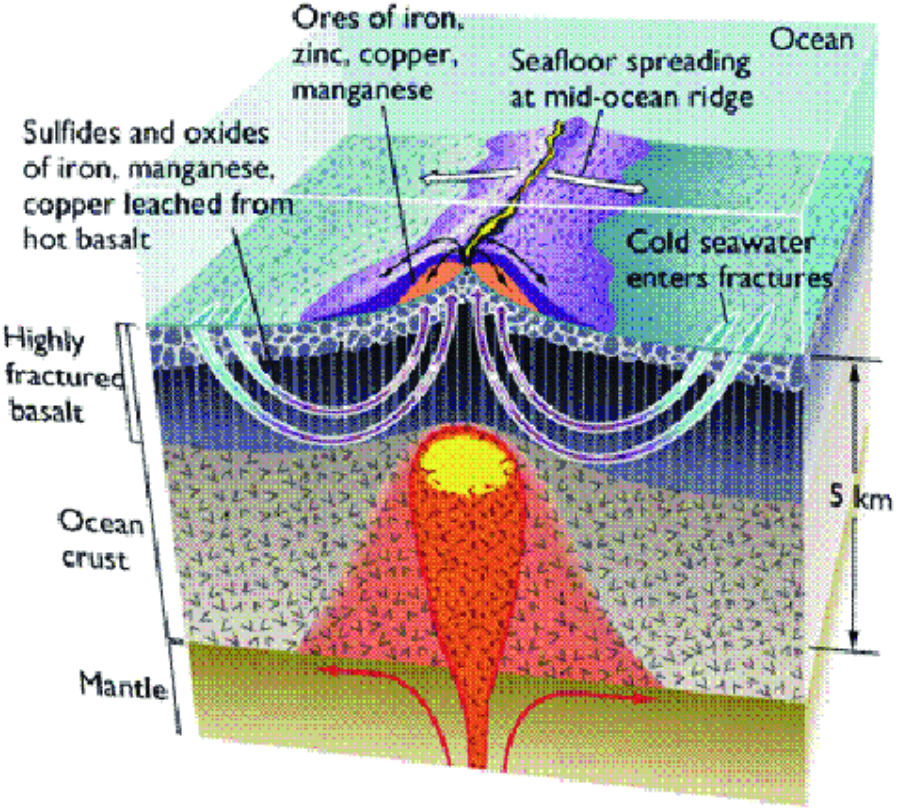


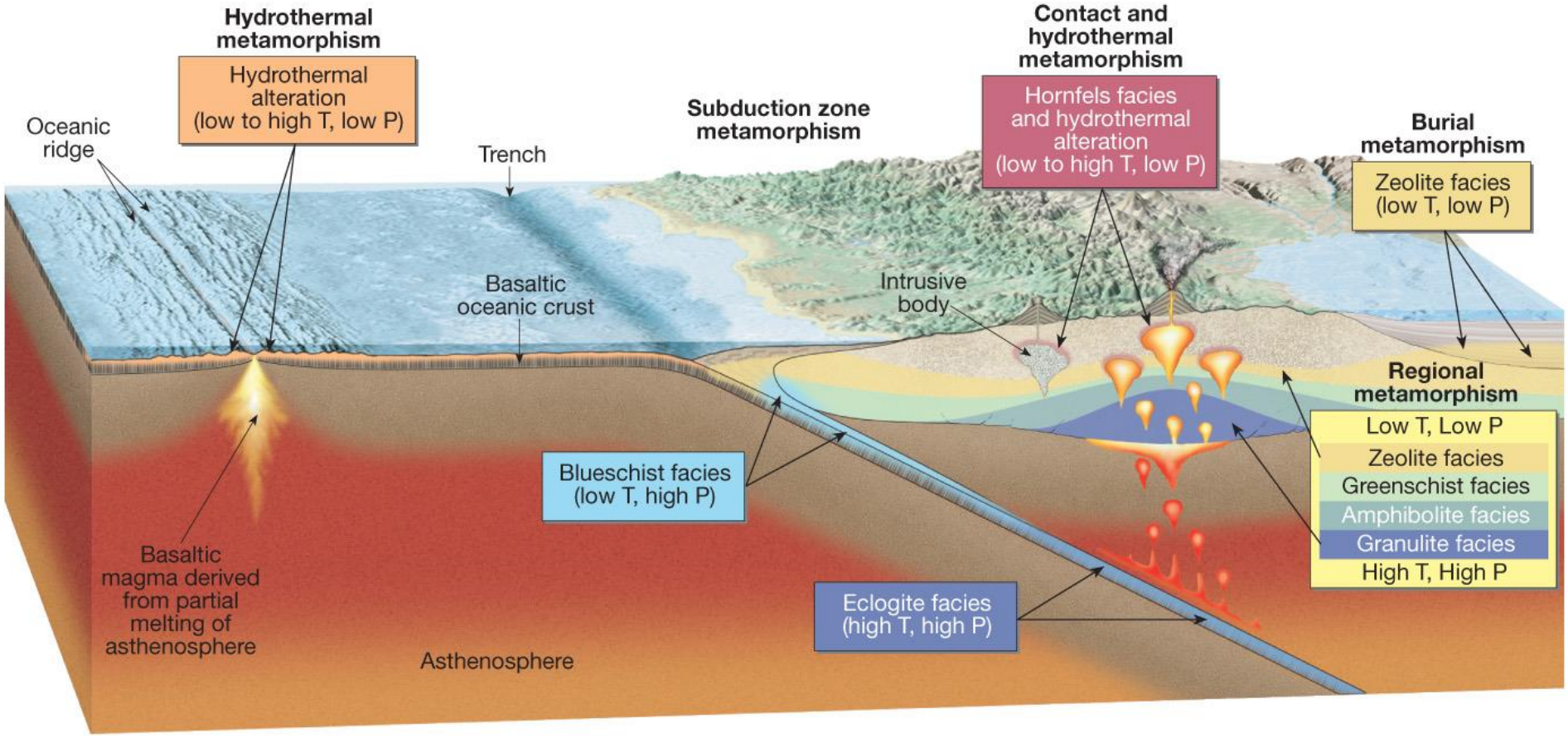
METASOMATISMO: tipo especial de metamorfismo onde a fase fluída supera o 10 %



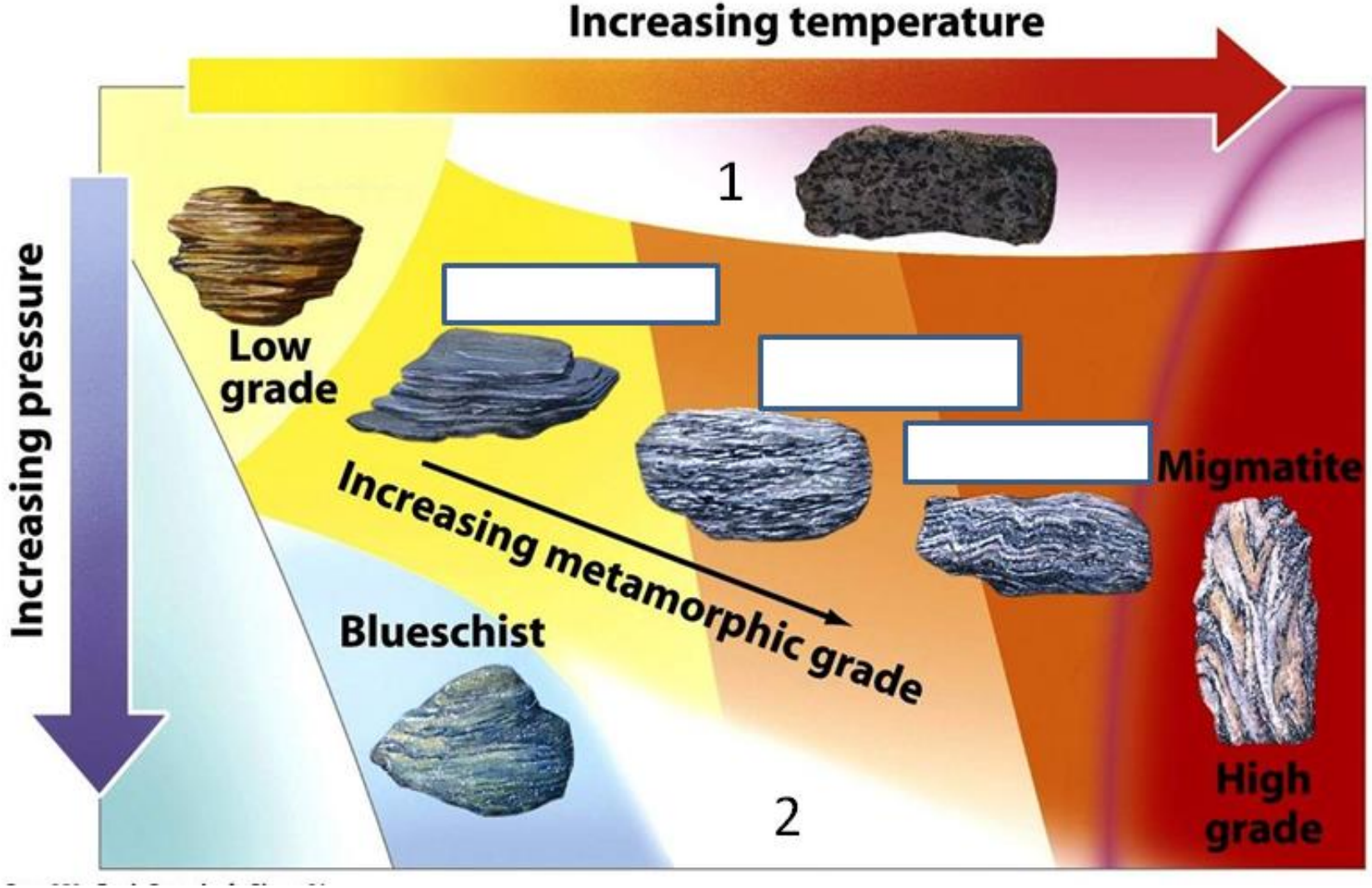


ISOQUÍMICO?

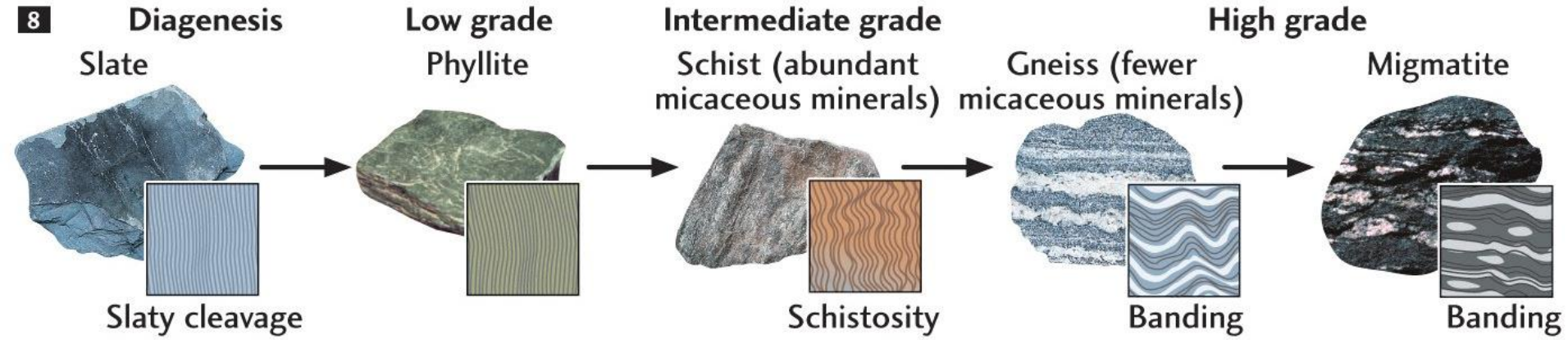

Ores of iron, zinc, copper, manganese
Ocean
Seafloor spreading at mid-ocean ridge
Sulfides and oxides of iron, manganese, copper leached from hot basalt
Cold seawater enters fractures
Highly fractured basalt
Ocean crust
Mantle
5 km

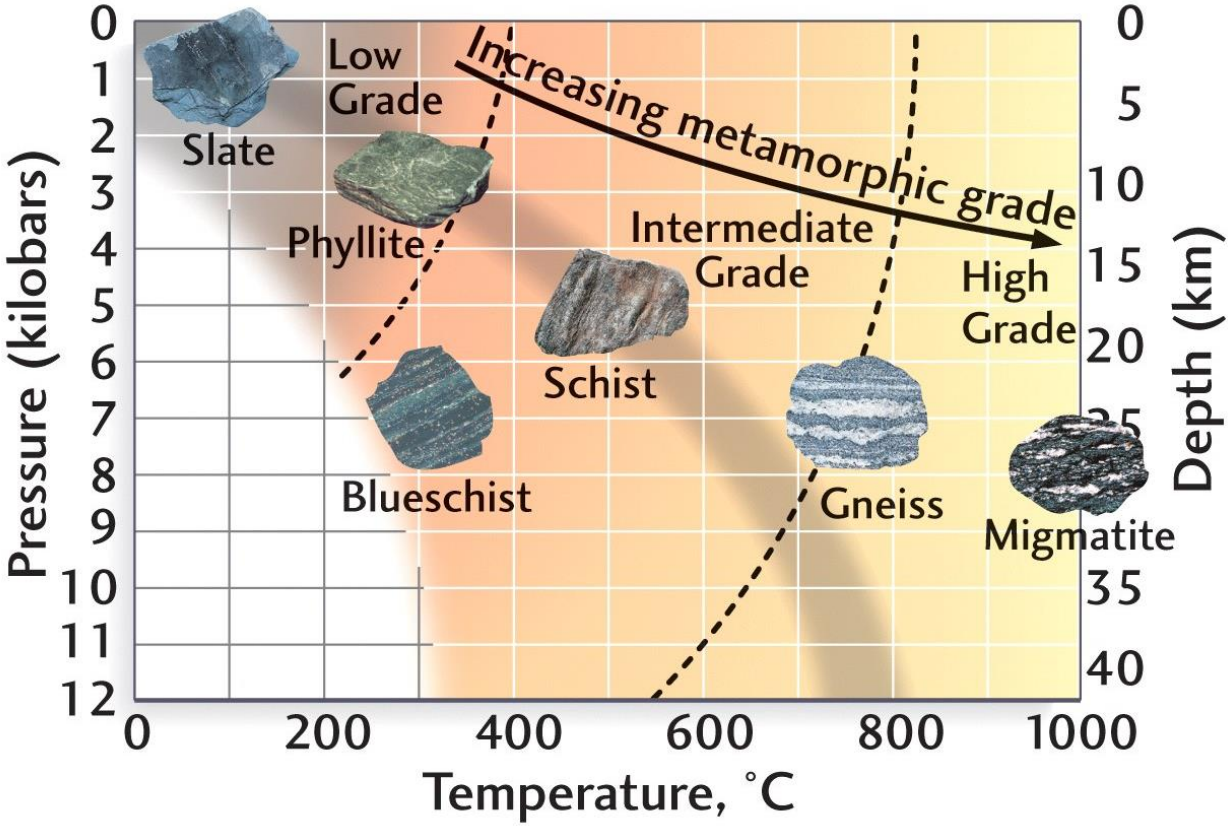


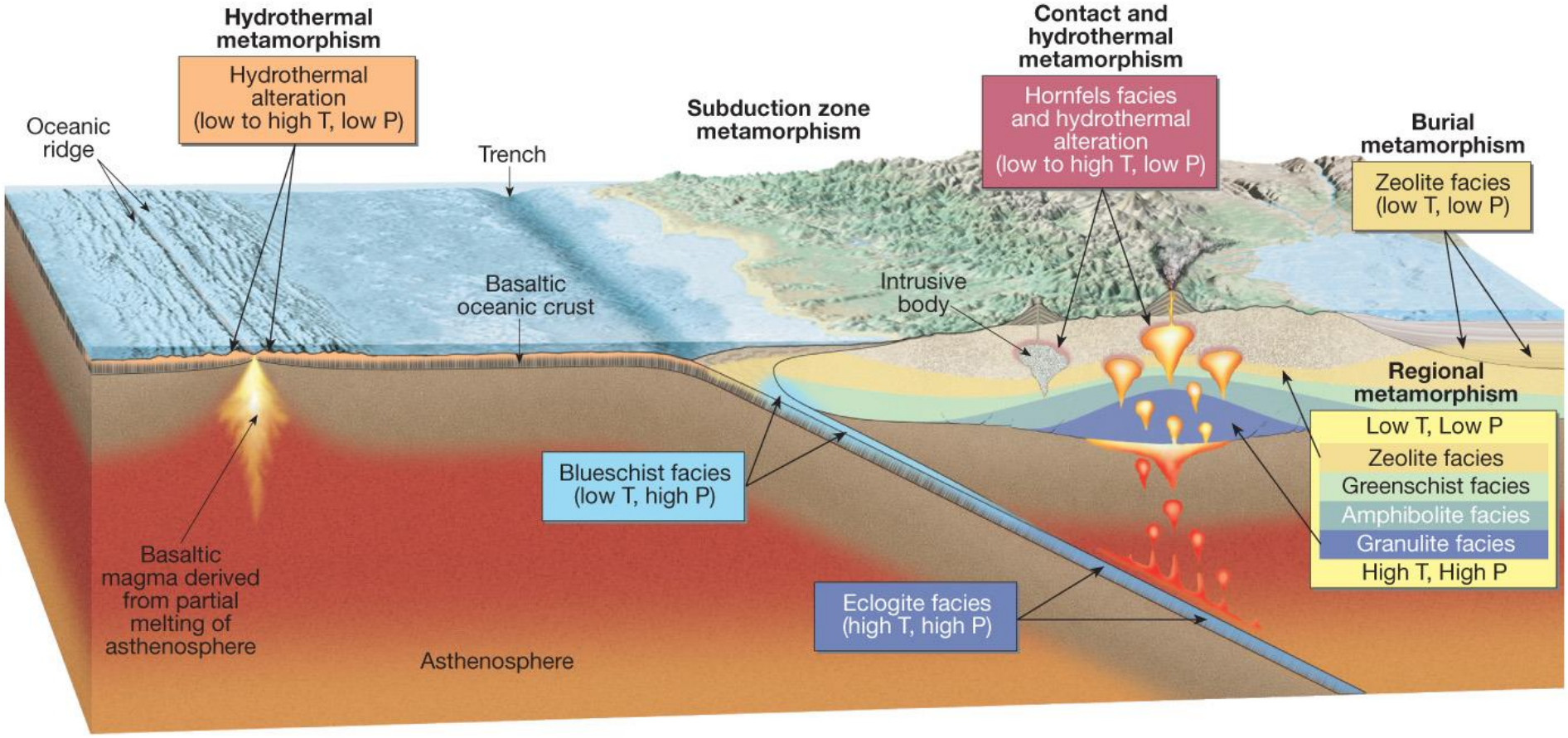
EXERCICIO 2


Increasing temperature
Increasing pressure
1
Low grade
Increasing metamorphic grade
Migmatite
Blueschist
2
High grade

GRAO METAMÓRFICO: INTENSIDADE DOS CAMBIOS



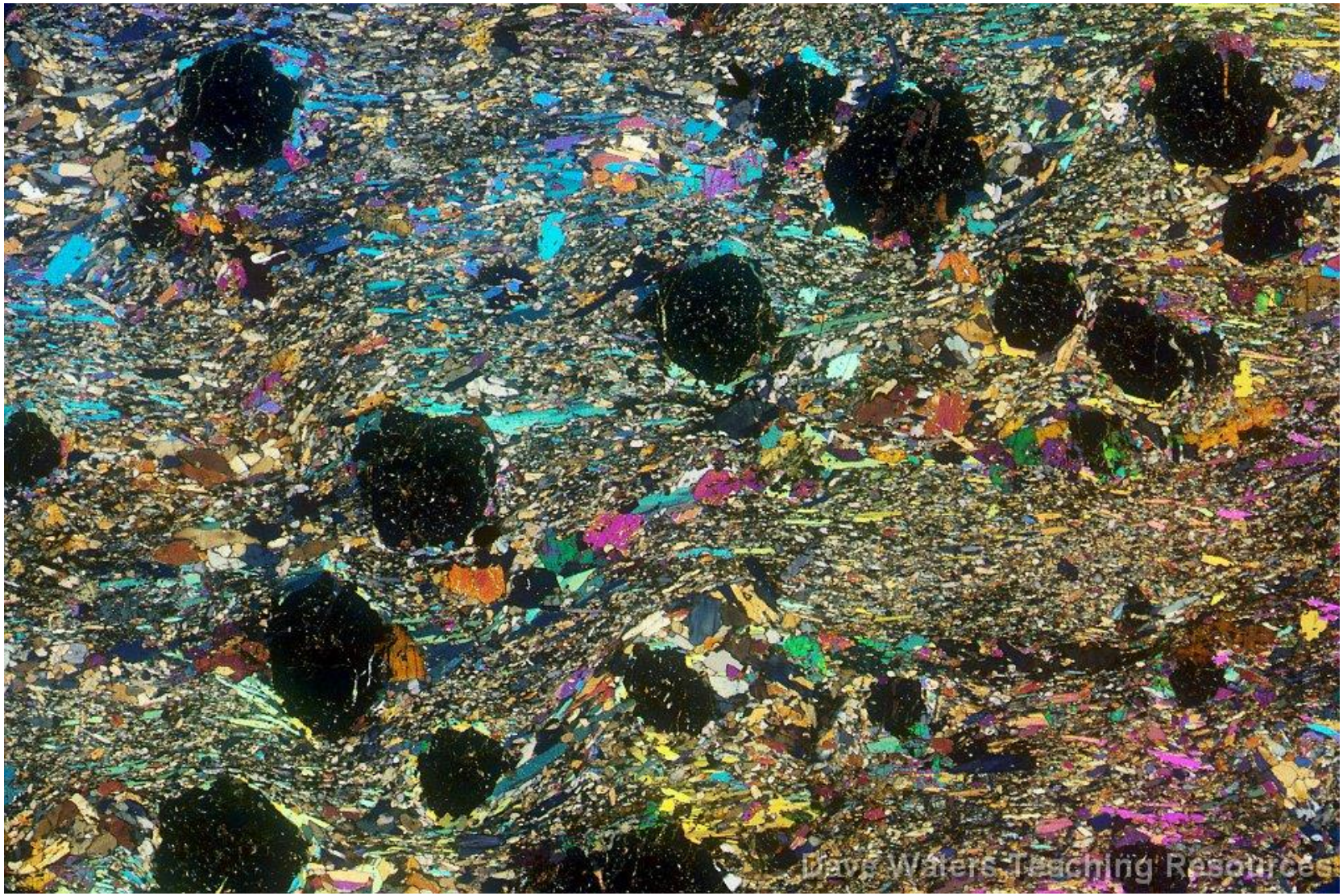




ECLOXITA

Las eclogitas registran presiones de más de 1,2 GPa (45 km de profundidad) a 400-1000 °C, a menudo a más de 600 °C. ES por tanto un metamorfismo de alta presión y temperatura media-alta.

GRANATES E PIROXENOS



TEXTURAS E ESTRUTURAS

ASPECTOS XEOMÉTRICOS:

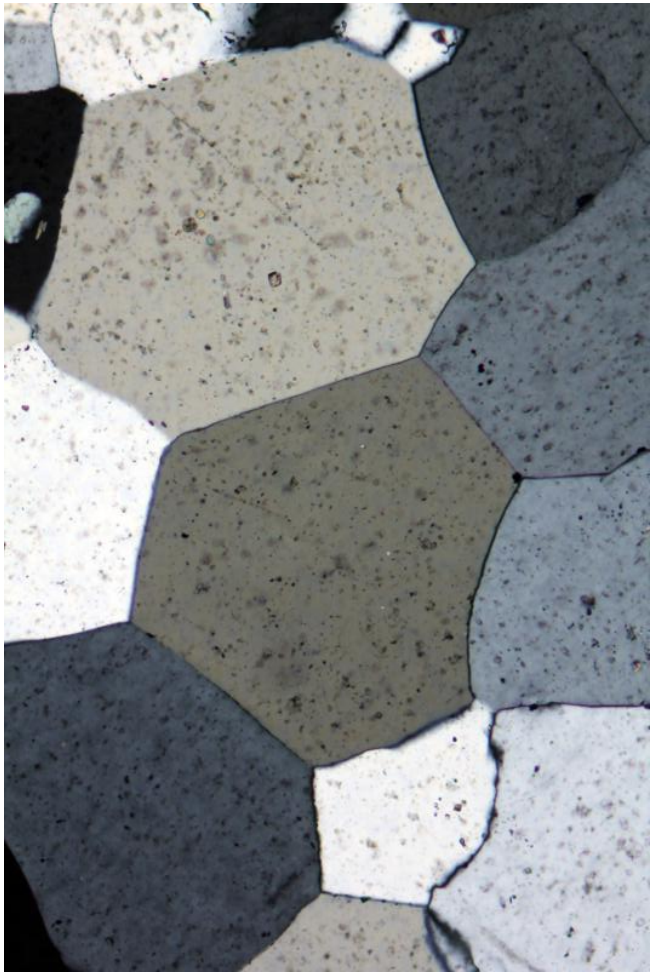
TEXTURA: Ó MICROSCOPIO

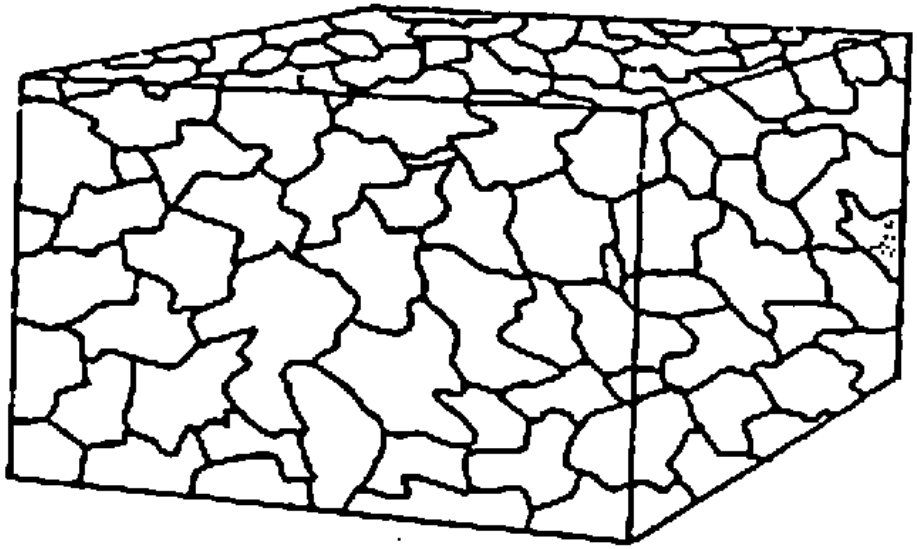
- GRANOBLÁSTICA
- LEPIDOBLÁSTICA
- PORFIDOBLÁSTICA

ESTRUTURA: A SIMPLE VISTA.

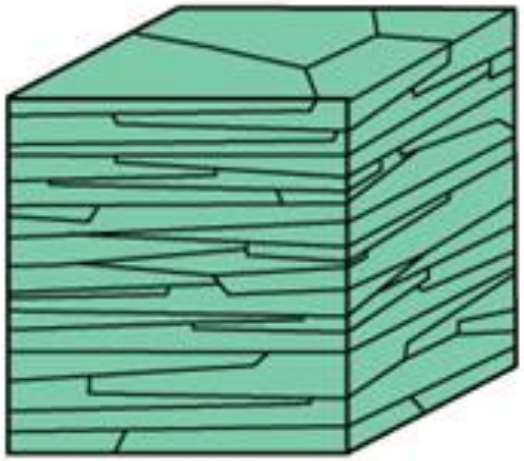
- XISTOSIDADE
- FOLIACIÓN

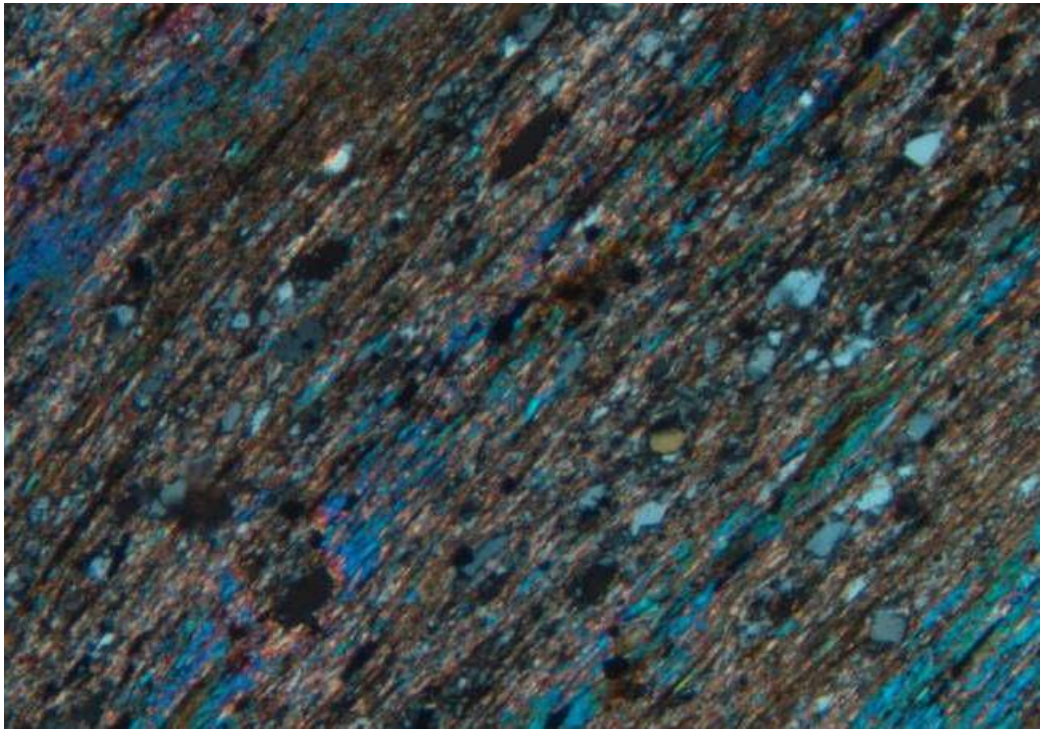
TEXTURA GRANOBLÁSTICA



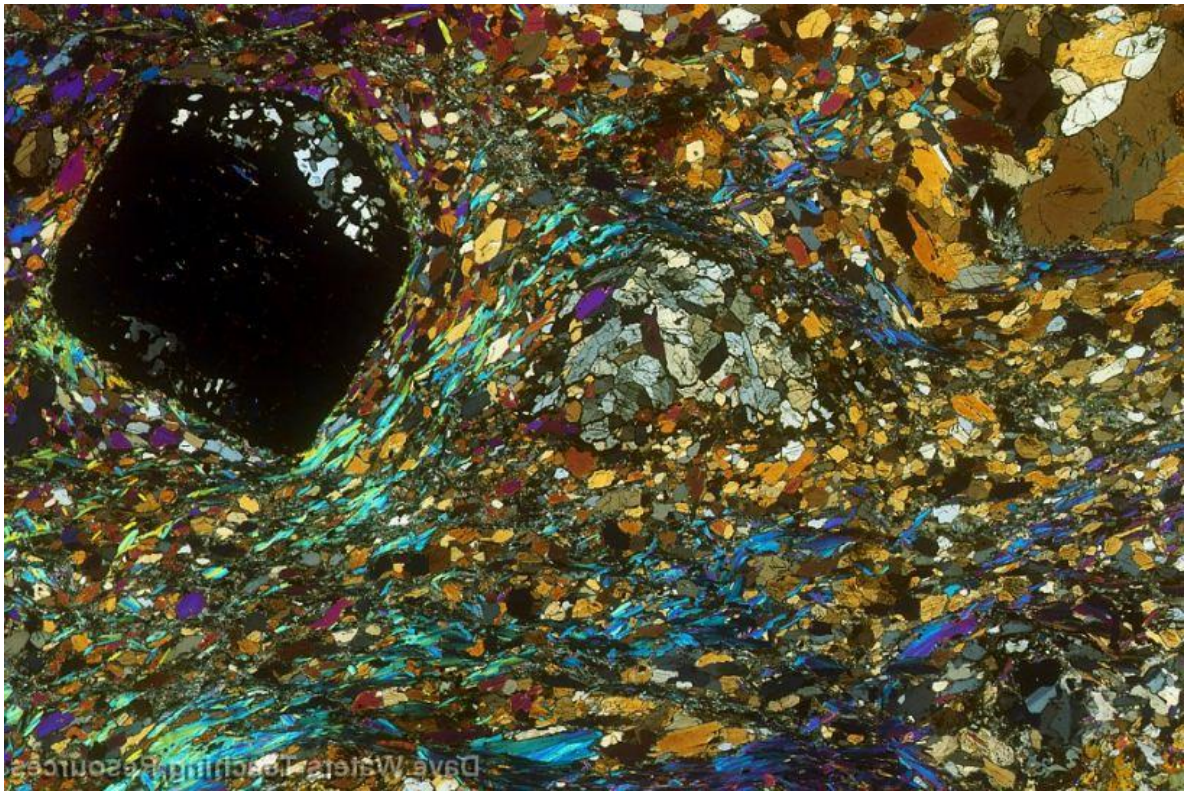


TEXTURA LEPIDOBLÁSTICA



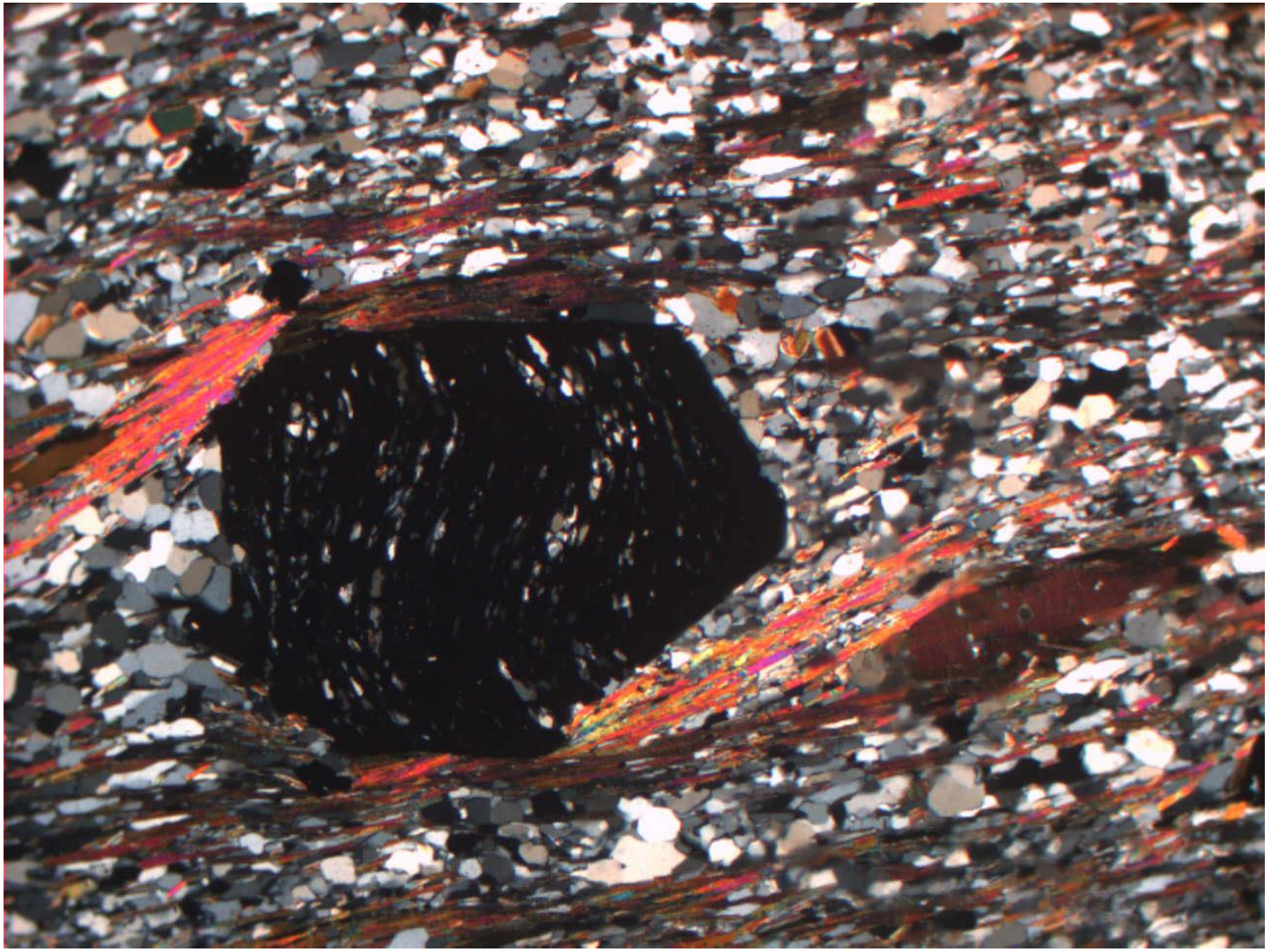


TEXTURA PORFIDOBLÁSTICA



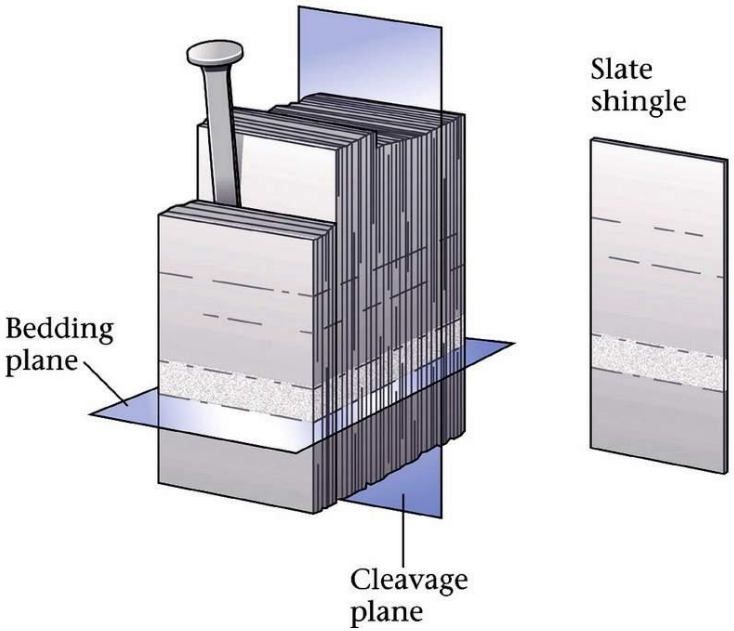
XISTO GRANATÍFERO

LÁMINA FINA



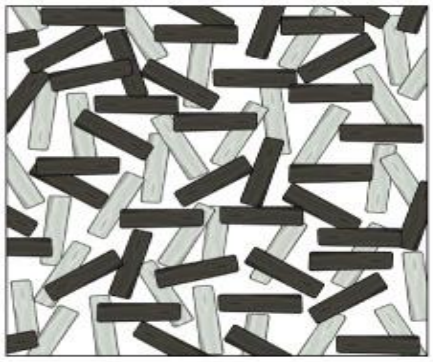
XISTOSIDADE

Tendencia a rachar en planos definidos

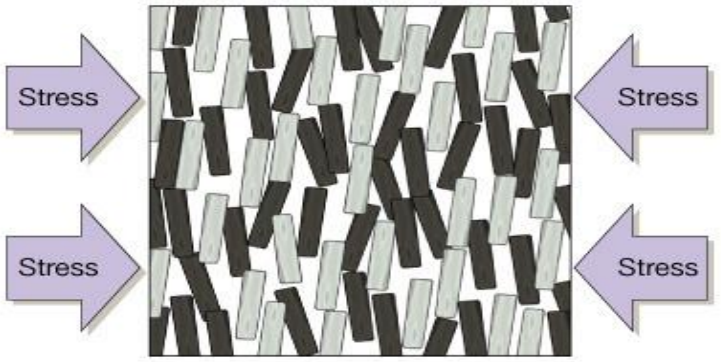


FOLIACIÓN

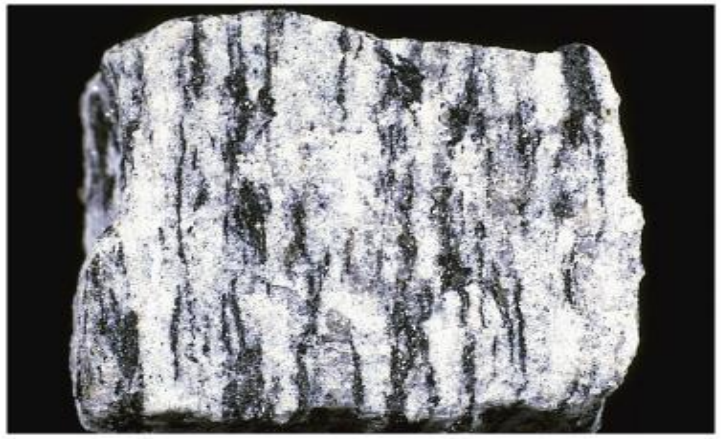
Orientación dos minerais en capas



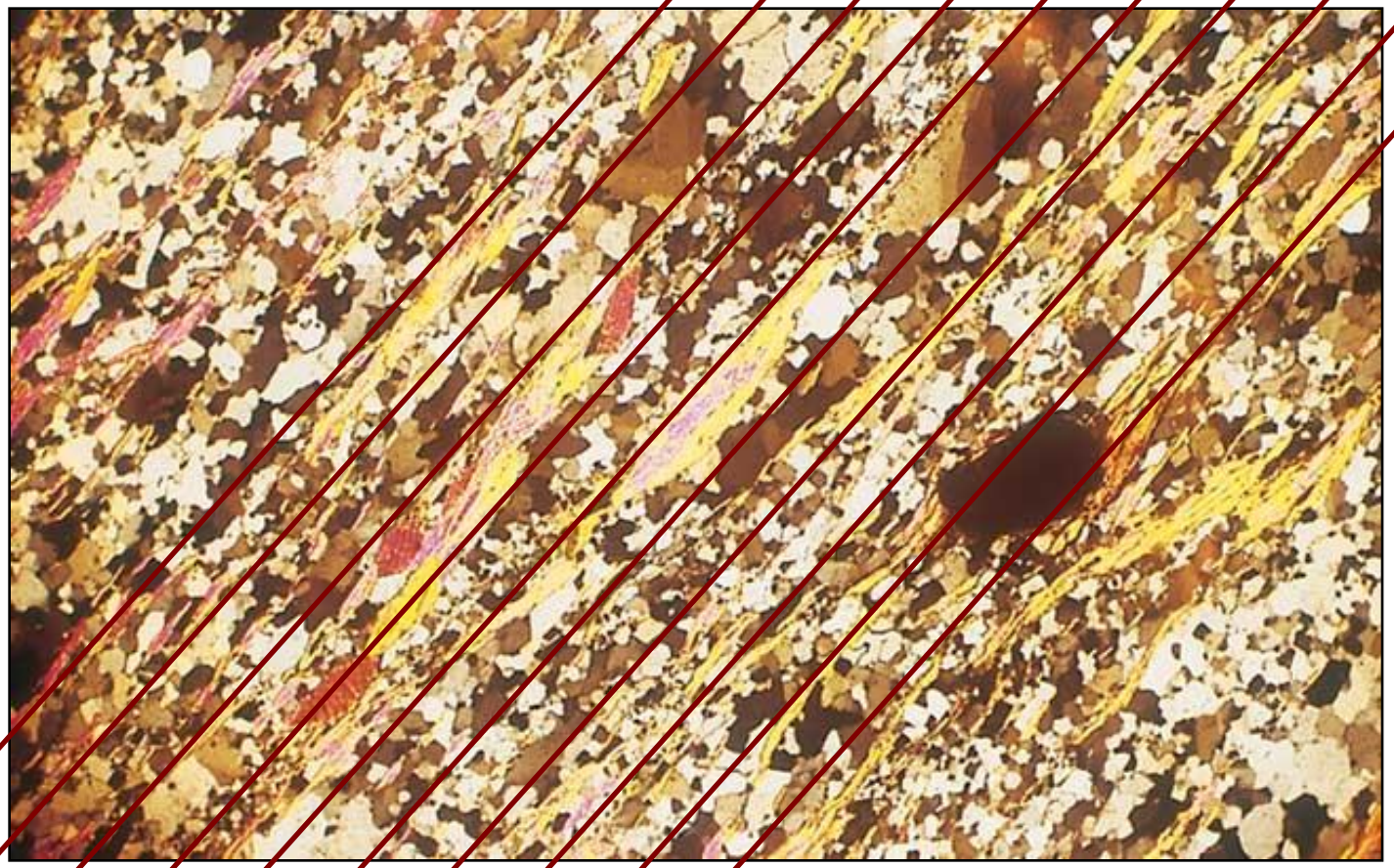
Before metamorphism



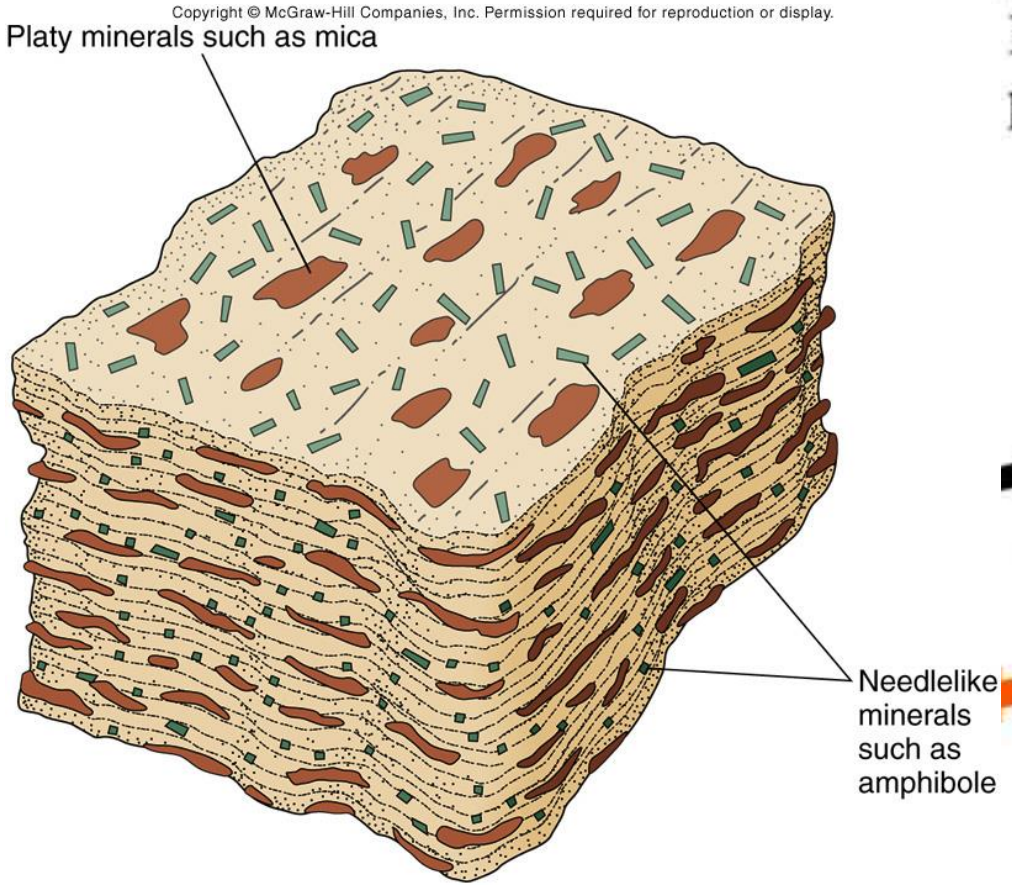
After metamorphism

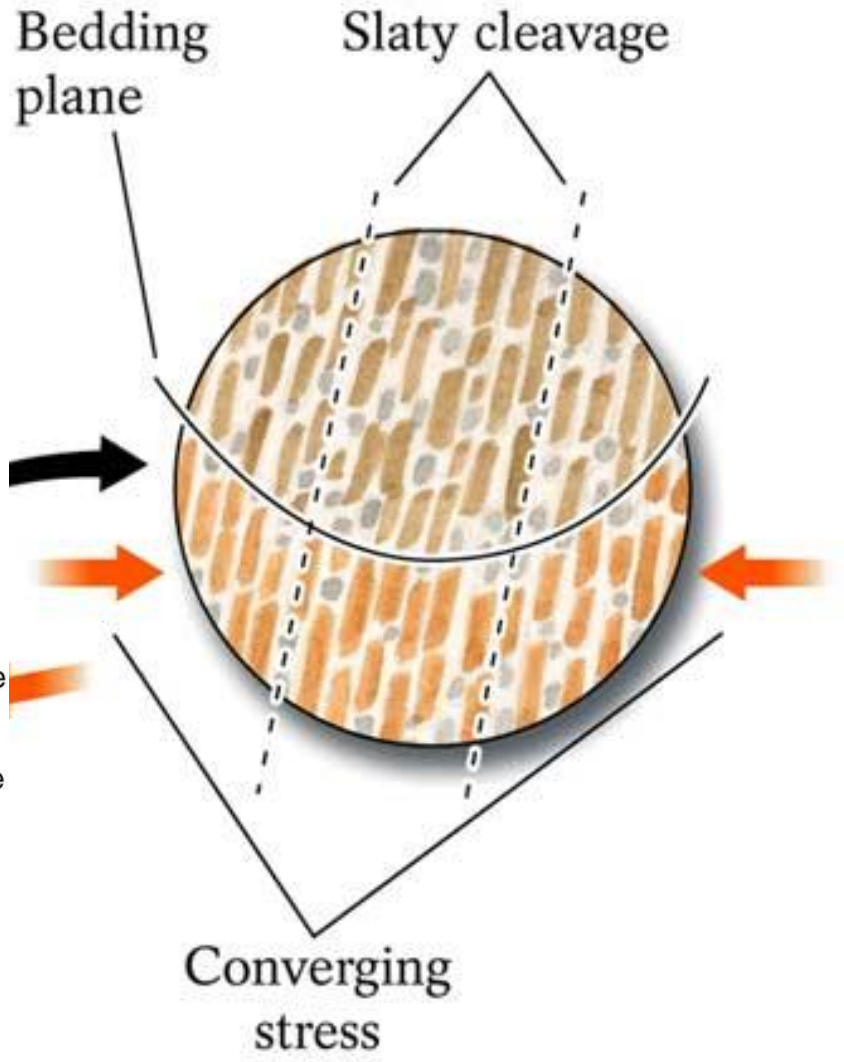


Foliation Under a Microscope



FOLIACIÓN E XISTOSIDADE COINCIDENTES





GNEIS: TEN FOLIACIÓN PERO NON ESQUISTOSIDADE

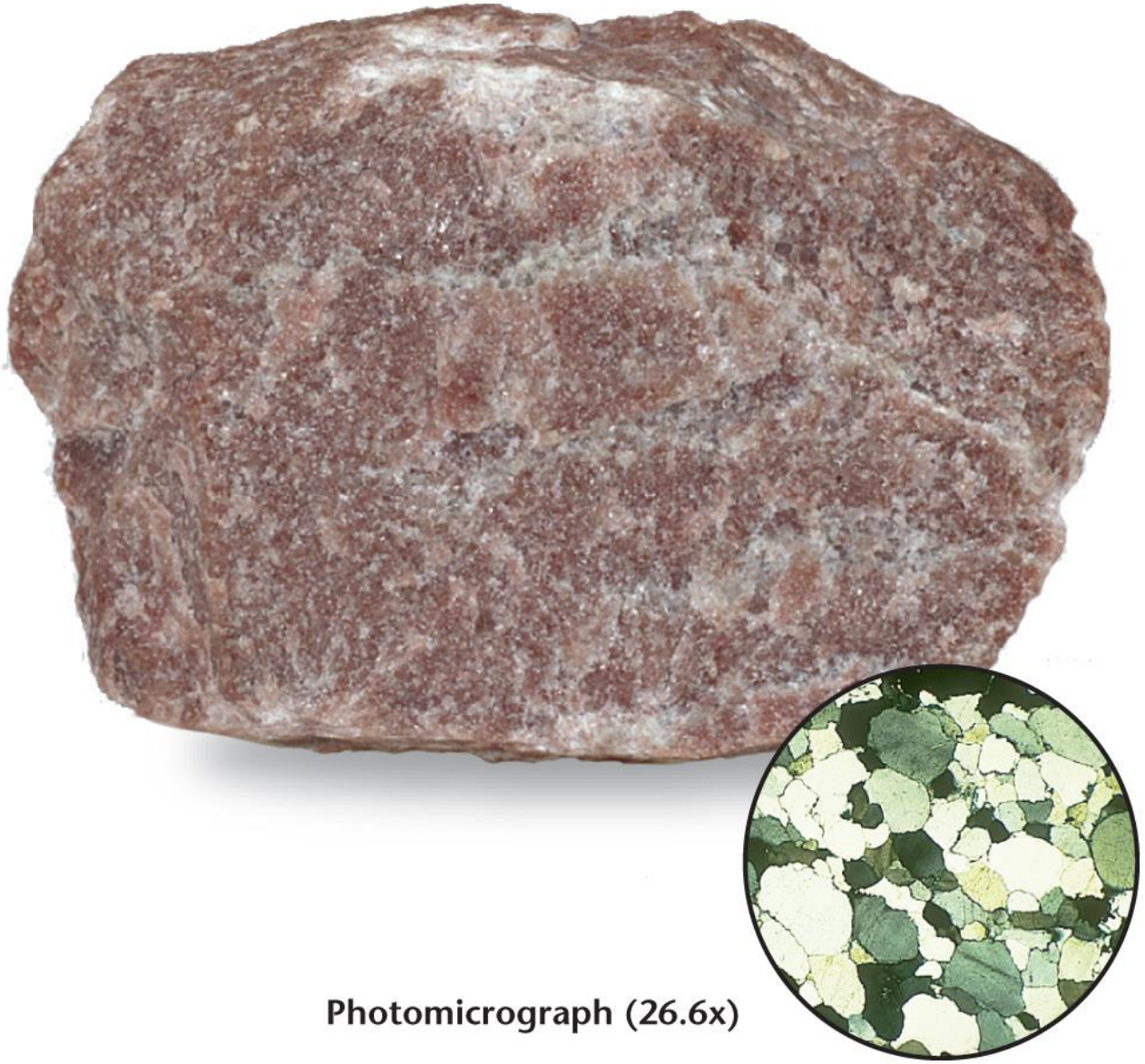
TEXTURA E ESTRUTURA NUN GNEIS

Cuarzo e feldespatos:
Granoblástica

Micas:
lepidoblástica

ESQUISTOSIDADE EN CUARCITAS SEN FOLIACIÓN.

ROCHA MASIVA: SEN ESTRUTURA



Photomicrograph (26.6x)