

نظرية الألباق التكتونية (Plate Tectonic Theory)

واثق غازي

/ /

Wathiqalmutury@Yahoo.Com

تمهيد:

أولاً: تاريخ نظرية الألباق:

()

(Continental Drift Theory) ()

(Sea Floor Spreading Theory) ()

(Thermal Convection Currents Theory) ()

(Paleomagnetism) ()

(Apparent Polar Wandering) •

(Magnetic Reversals) •

ثانياً: فكرة نظرية الألباق:

(Geosyncline)

(Plates)

()

() (Eurasian Plate) () (Pacific Plate) () :

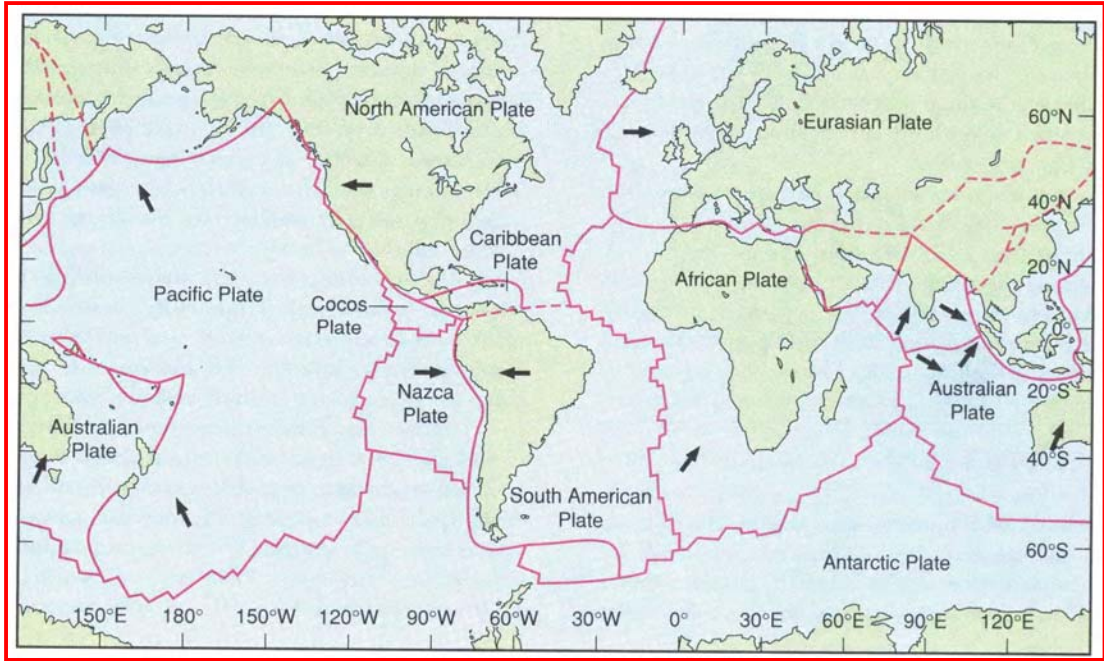
() (South American Plate) () (North American Plate)

() (Indian-Australian Plate) () (African Plate)

(Antarctic Plate)

() (Arabian Plate) () (Philippine plate) () :

(Cocos Plate) () (Nazca Plate) () (Caribbean plate)



.(Duxbury and Duxbury,1997)

:()

ثالثاً: أغلفة الأرض:

.()

.(Hamblin and Christiansen,1998)

:()
(Chemical Composition)

:()

:(Crust) •

(%)

(%)

()

(Continental crust)

:

(/ ,)

(Granitic Rocks)

(Oceanic crust)

.()

(Basalt)

()

(/)

.()

()

:(Mantle) •

(%)

(%)

(SiO₄)

(Silicate Rocks)

(/)

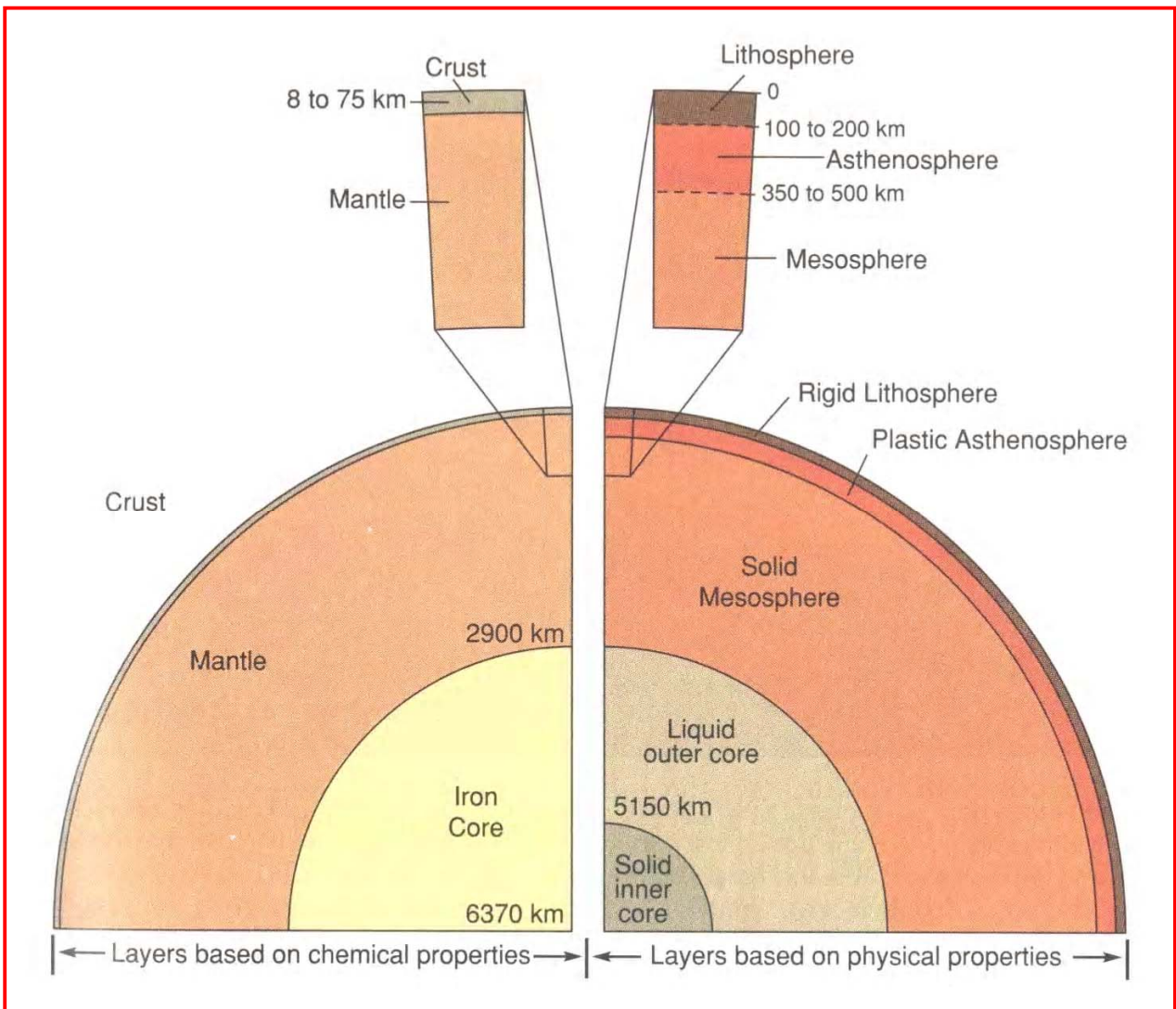
(/ ,)

(-)

:(Core) •

(%)

.(/ ,)



:()

.(Hamblin and Christiansen, 1998)

:

()

(Mechanical or Physical Properties)

(Rheology)

: ()

:(Lithosphere or Rock Sphere)

()

()

:(Asthenosphere or Weak Sphere)

()

.()

()

(LVZ)

(Low Velocity Zone)

)

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.()

(Shields)

:(Mesosphere or Middle Sphere)

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()

()

.()

()

:(Outer Core)

•

.()

()

:(Inner Core)

•

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رابعاً: أسباب حركة الأطباق الأرضية:

(Harry Hess) ()

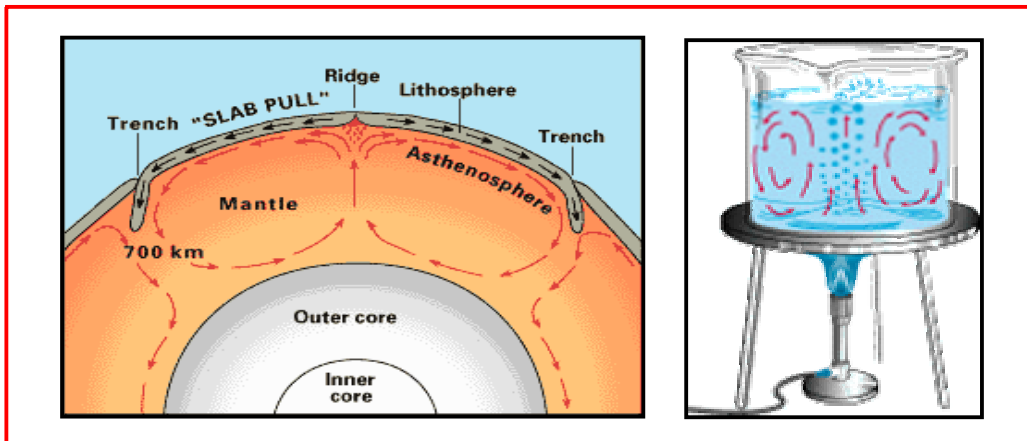
()

(Thermal Convection Currents)

(/)

(Thermal Cell)

.(Hamblin and Christiansen, 1998)



:()

.(USGS)

:

(:

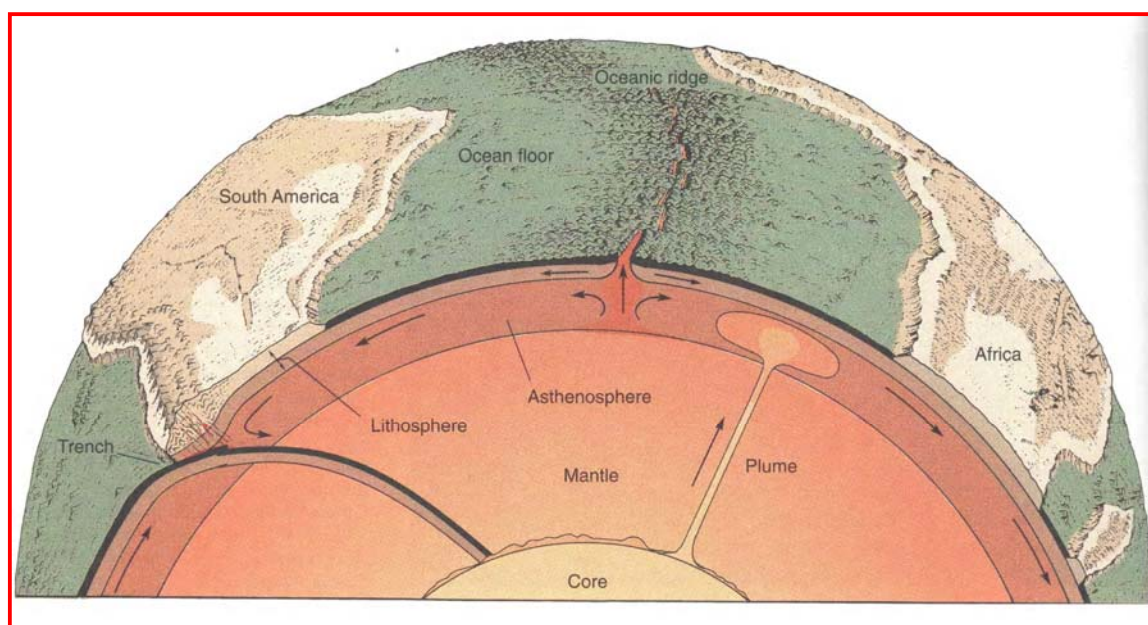
(Hamblin, 1985)

النموذج الأول:

()

النموذج الثاني:

() .



() :

(Hamblin and Christiansen, 1998) (Mantle Plumes)

(Mantle Plumes)

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(Hot Spots)

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خامساً: أنواع الحافات بين الأطباق:

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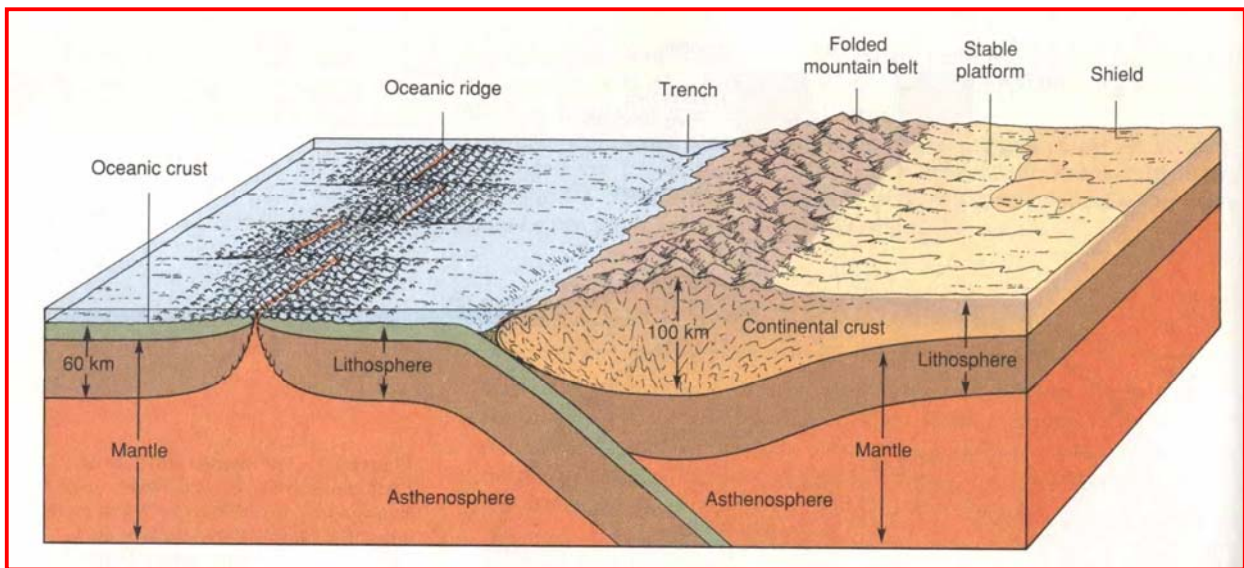
:

()

()

()

()



:()

.(Hamblin and Christiansen, 1998)

:Divergent (Constructive) Plat Boundaries ()

()

:حواجر وسط المحيط (Mid-oceanic Ridges)

()

()

()

.()



:()

.(USGS)

(Rift Valley)

()

.()

:Convergent (Destructive) Plate Boundaries () ()

:الجبال الالتوائية (Folded Mountains)

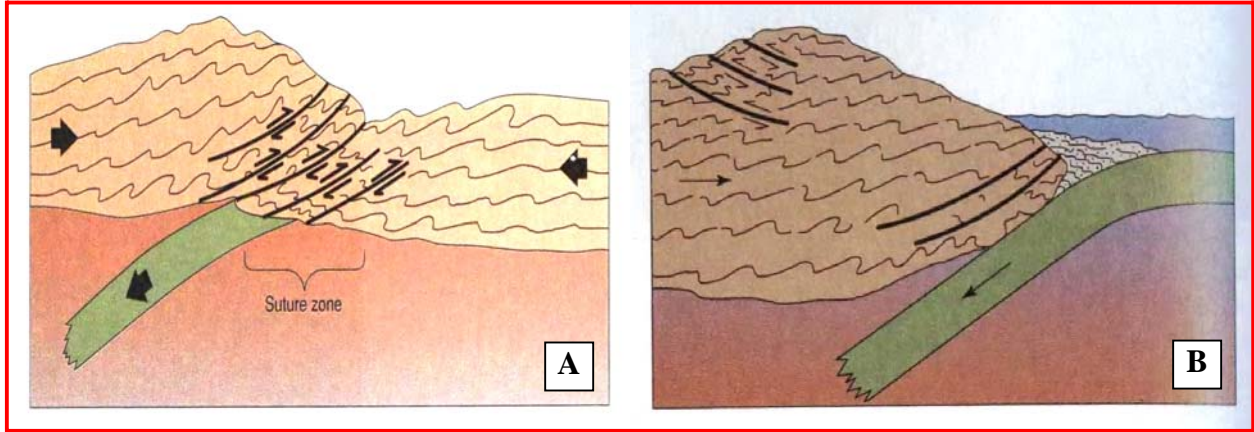
()

(A)

(B)

()

(Cordilleran)



(B) .

(A) .

:()

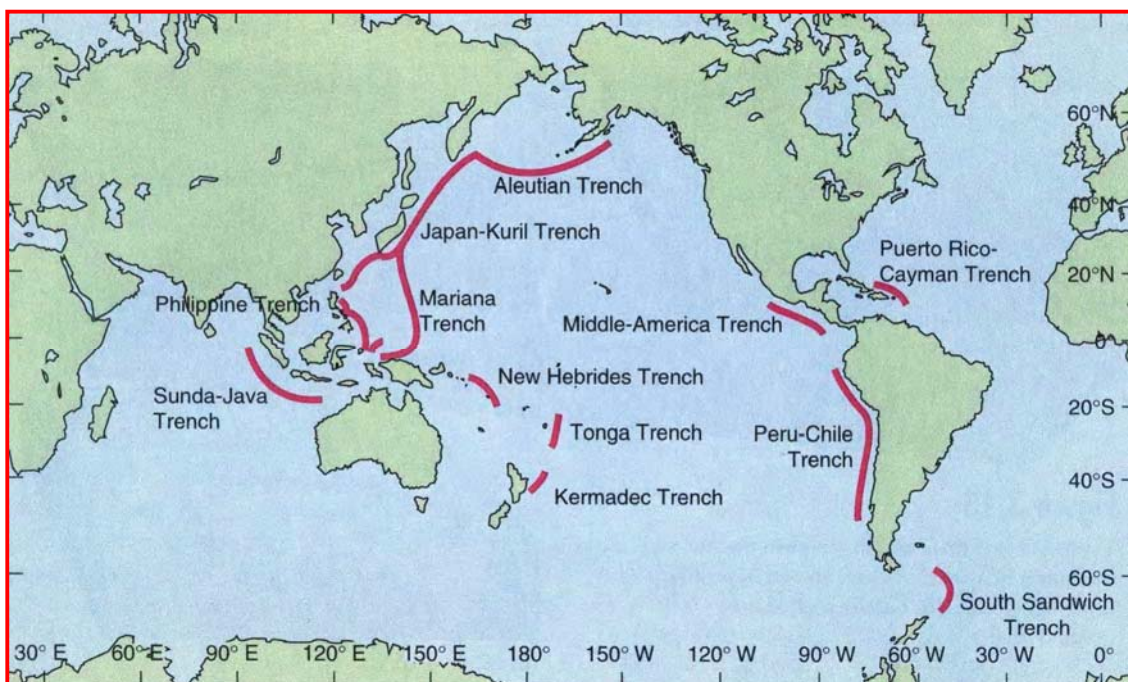
.(Montgomery,1997)

:الخنادق المحيطية العميقة (Oceanic Trenches)

(V) ()

.()

()



.(Duxbury and Duxbury,1997)

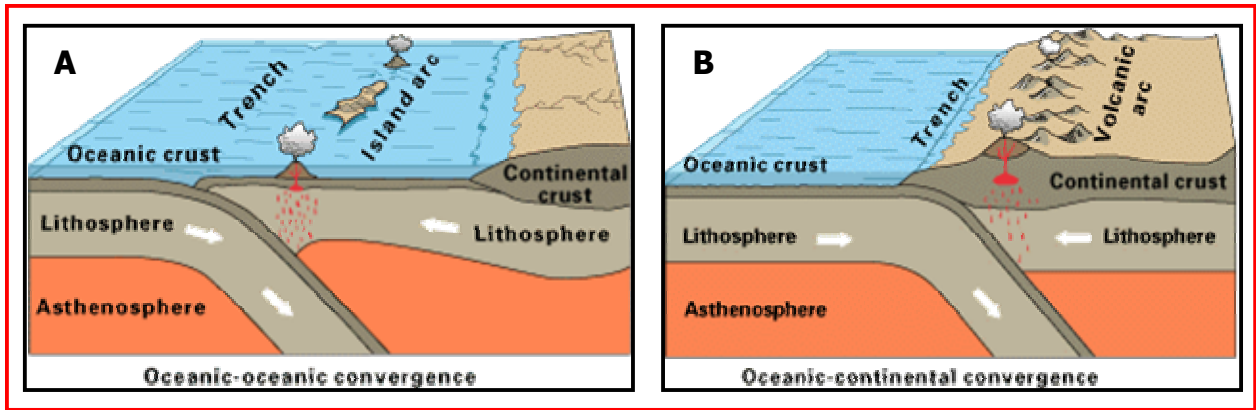
:()

الجزر القوسية (Island Arcs):

(A)

الأقواس البركانية (Volcanic Arcs):

(B)



(B)

(A)

()

(USGS)

:Transform (Conservative) Plate Boundaries () ()

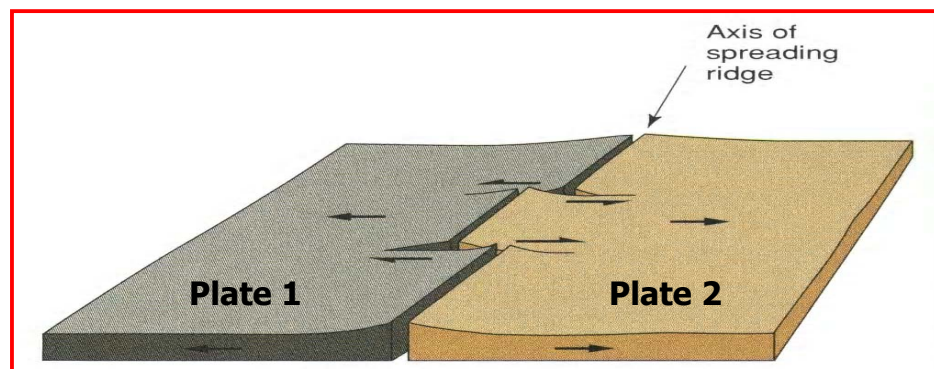
(Strike Slip Faults)

صدوع التحول المحيطية (Oceanic Transform Faults):

(Mid-Oceanic Ridges)

(Axis of Spreading Ridges)

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() :

(Montgomery, 1997).

صدوع التحول القارية (Continental Transform Faults):

(San Andreas Fault)

:

(Dead Sea Fault)

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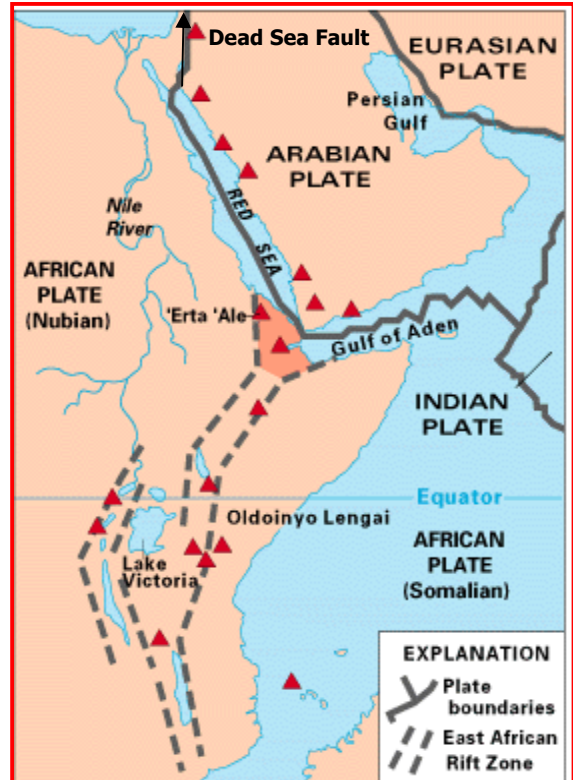
()

() .

(Wilson, 1965)



(B) .



(A) .

() :

(USGS) .

سادساً: طبيعة حركة الأطباق:

(Axis of plate rotation "Ar")

(Pole of spreading or rotation)

(Line of latitude)

(Equator of rotation)

(90°)

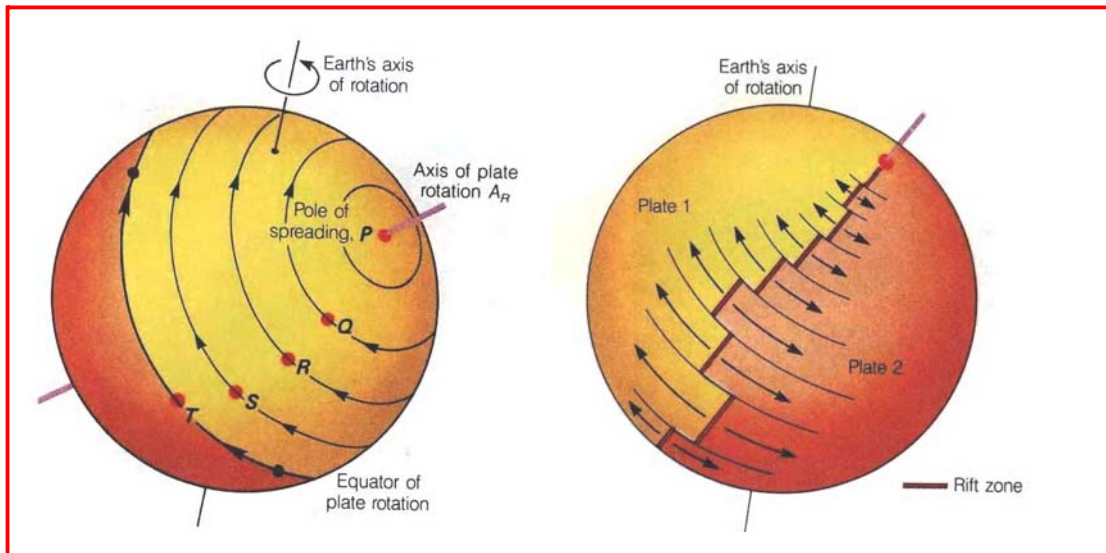
(Angular Velocity)

(A)

(Transform Faults)

(B)

(Spreading ridges)



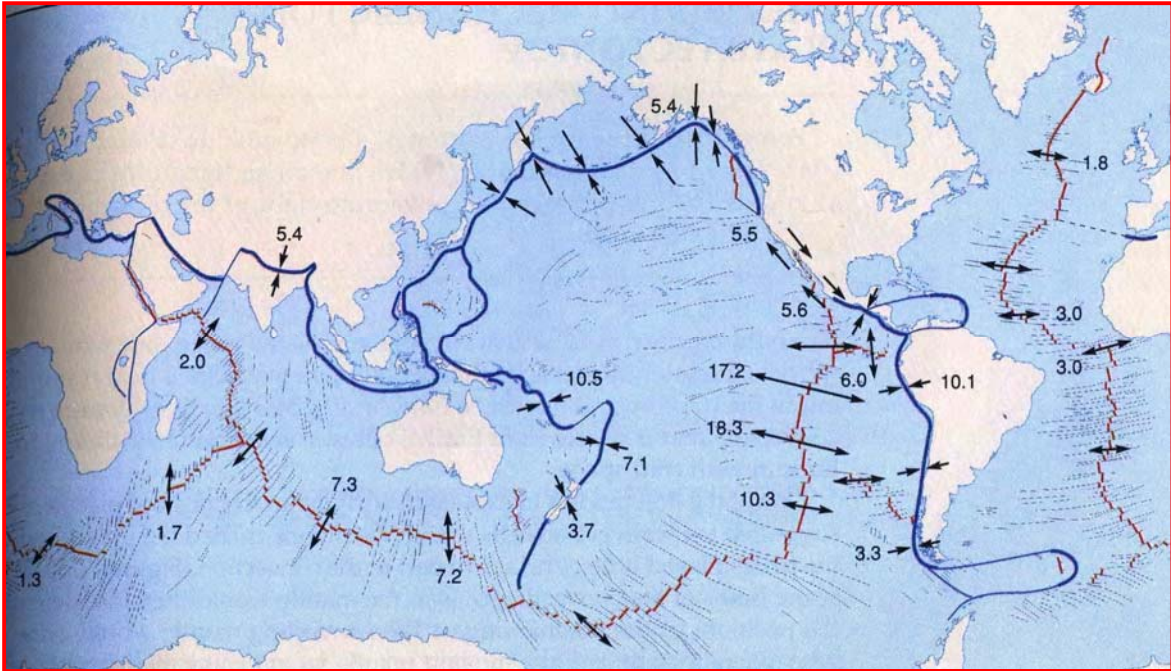
() :

(Hamblin and Christiansen,1998)

سابعاً: سرعة حركة الأطباق:

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()



:()

.(Hamblin and Christiansen,1998)

:

:

:

.(Time Scale of Magnetic Stratigraphy)

(Normal Polarity)

(Reverse Polarity)

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()

.(Radiometric Dates)

(Isochrons)

(Tree Rings)

()

:(The Satellites and Lasers)

:

المصادر:

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1. **Duxbury, Alyn C., and Alison B. Duxbury, 1997: (An Introduction to the world's Oceans). Wm. C. Brown Publishers, Fifth Edition, P.504.**
2. **Hamblin, W.K., Christiansen E.H., and 1998: (Earth's Dynamic Systems). Prentice Hall, New Jersey, Eighth Edition, P.739.**
3. **Montgomery, C.W., 1997: (Fundamentals of Geology). Wm. C. Brown Publishers, Third Edition, P. 411.**