Tectonic Analysis of Iraq

Basement and Sedimentary cover

There is no direct information on either of basement composition, its internal structure, morphology of its surface, and the deeper layer of covers. Because the basement dose not cropped out in Iraq, and no boreholes has penetrated the whole sedimentary cover. Our conclusions on the basement are mainly based on geophysical information. The internal structure of the basement affects the mobility and the morphology of the basement and thus the paleogeography and structure of the cover too.

The morphology of the surface of the basement is determined by the lithology, structural and orogenic development of the basement.

Tectonically Iraq divided into three main parts. These was based on the basement composition:

1- Stable Shelf
2- Unstable Shelf
   - Mesopotamian Zone
   - Foot hill Zone
   - High folded Zone
3- Geosyncline
   - Imbricated Zone
   - Thrust Zone

Exercise:

By using the following maps answer these questions:

1- By combination (Fig. 1) and (Fig. 3) try to make the topographic map of basement.
2- Draw down the profile AA' and BB' indication tectonical Zone on it by using (Fig.1&2).
3- By using (Fig. 3, 4), and the map which drawed in Ex. 1, answer these questions:
   a- Which block between the individual blocks of Iraqi surface was affected by the basement movement.
   b- Which block of basement was moved upward or downward and later effected on the Cretaceous stratigraphy without any effect on the resent surface.
4- Compare between (Fig. 4, 5) so write down your discussion about the uplifting and subsiding of any block after deposition of Paleogen deposits.
5- What is the possible reason of decreasing and disappearance of structural and topographical complex towards the south western direction of Iraq.
6- Explain why the direction of tectonical block and structure (folding) lying in (E-W) direction in Duhock area and in (SE-NW) in Erbil and Sulaymaniah.

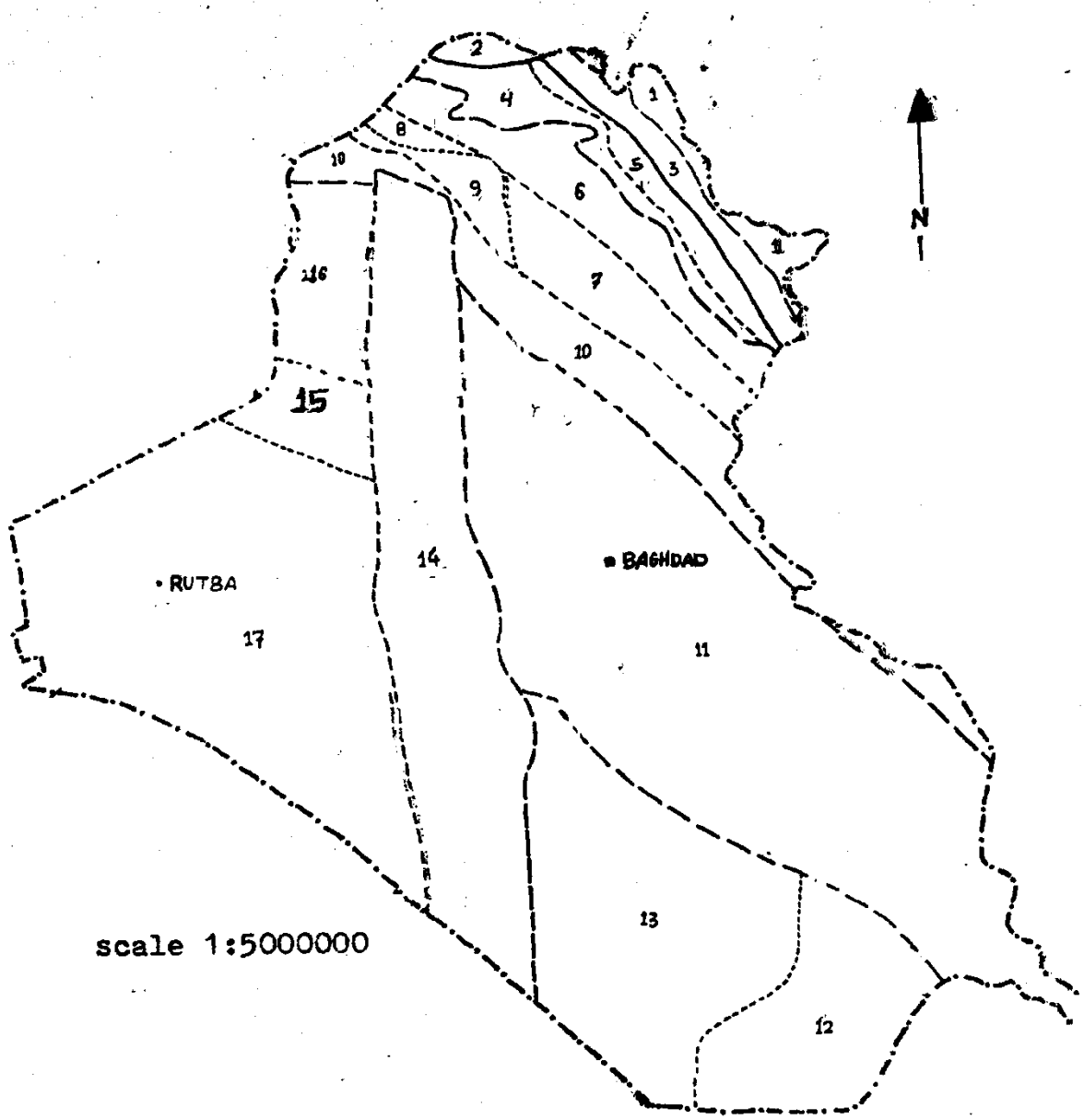

FIG. 2 - MAIN STRUCTURAL ZONES OF IRAQ

LEGEND

1: Zagroz Thrust Zone] EUGEOSYNCLINE
2: Northern Thrust Zone] MIOGEOSYNCLINE
3: Imbricated Zone

4: Amadiya - Shaqlawa Subzone
5: Qamchuqa - Ranya Subzone
6: Chemchemal Subzone
7: Kirkuk Subzone
8: Qalian Subzone (Gussir Block)
9: Qalian Subzone (Mosul Block)
10: Makhul Subzone
11: Mesopotamian Zone
12: Busaya Block] Shabicha Subzone
13: Salman Block]
14: Abu Jir Subzone
15: Ana Block
16: Abu Rassian Block

HIGH FOLDE ZONE
FOOTHILL ZONE
BLOCK FAULTED ZONE

UNSTABLE SHALF
STABLE SHALF

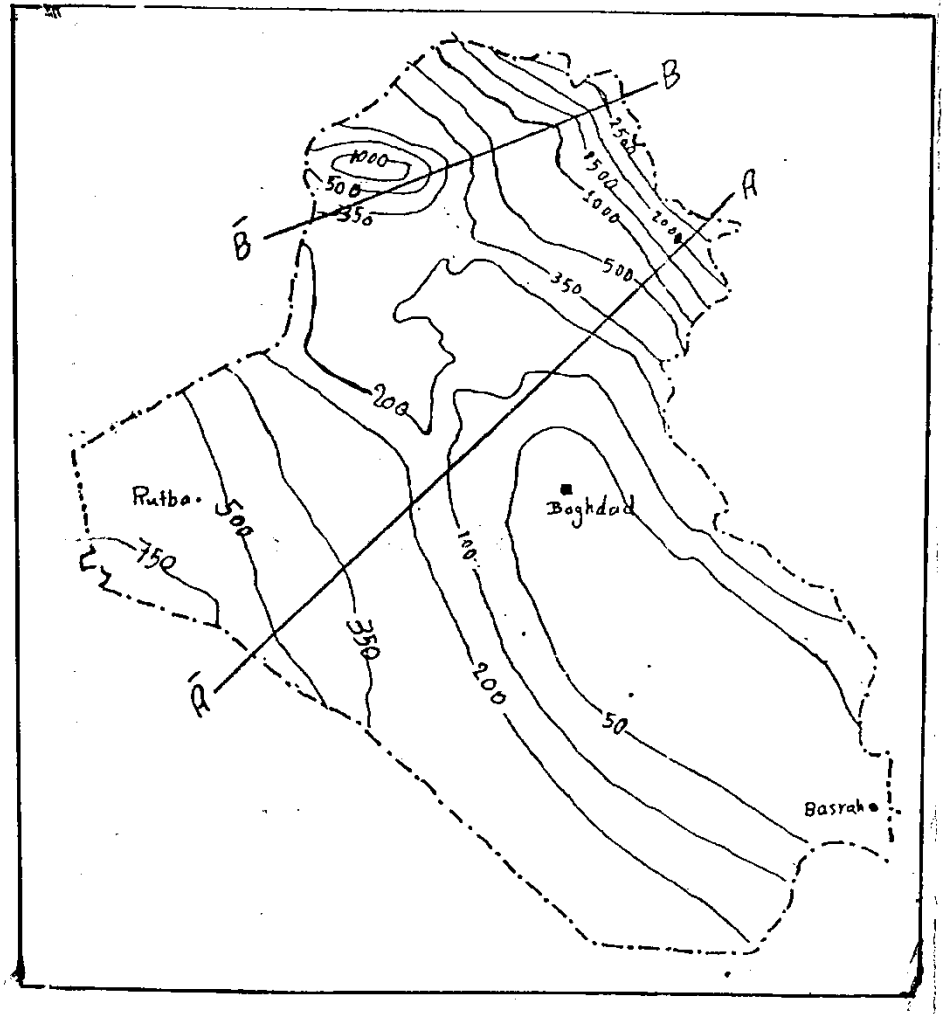

Fig. (1) Topographic map of Iraq
(elev. in meter from the S.L.)

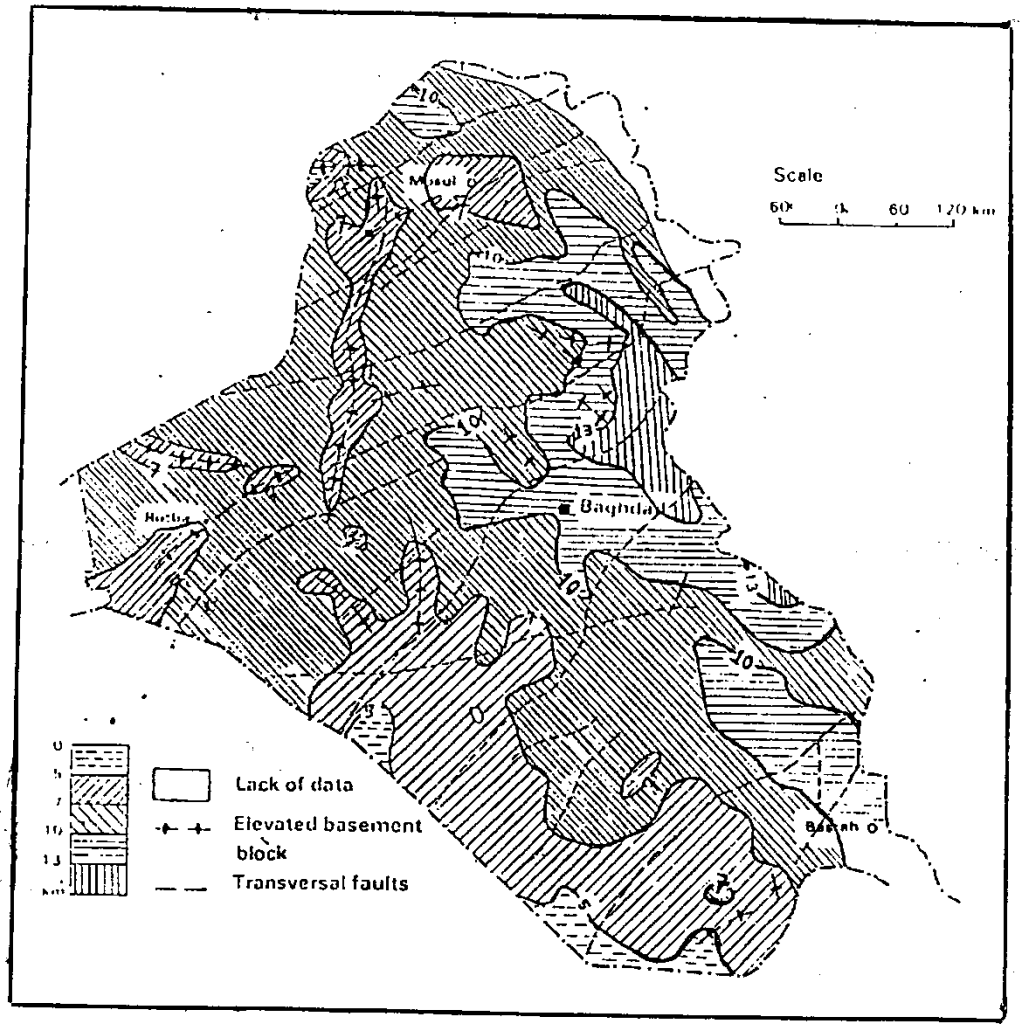

Fig. (3) Depth of the basement from the surface in (Km.), or thickness of sedimentary cover above the sea level.

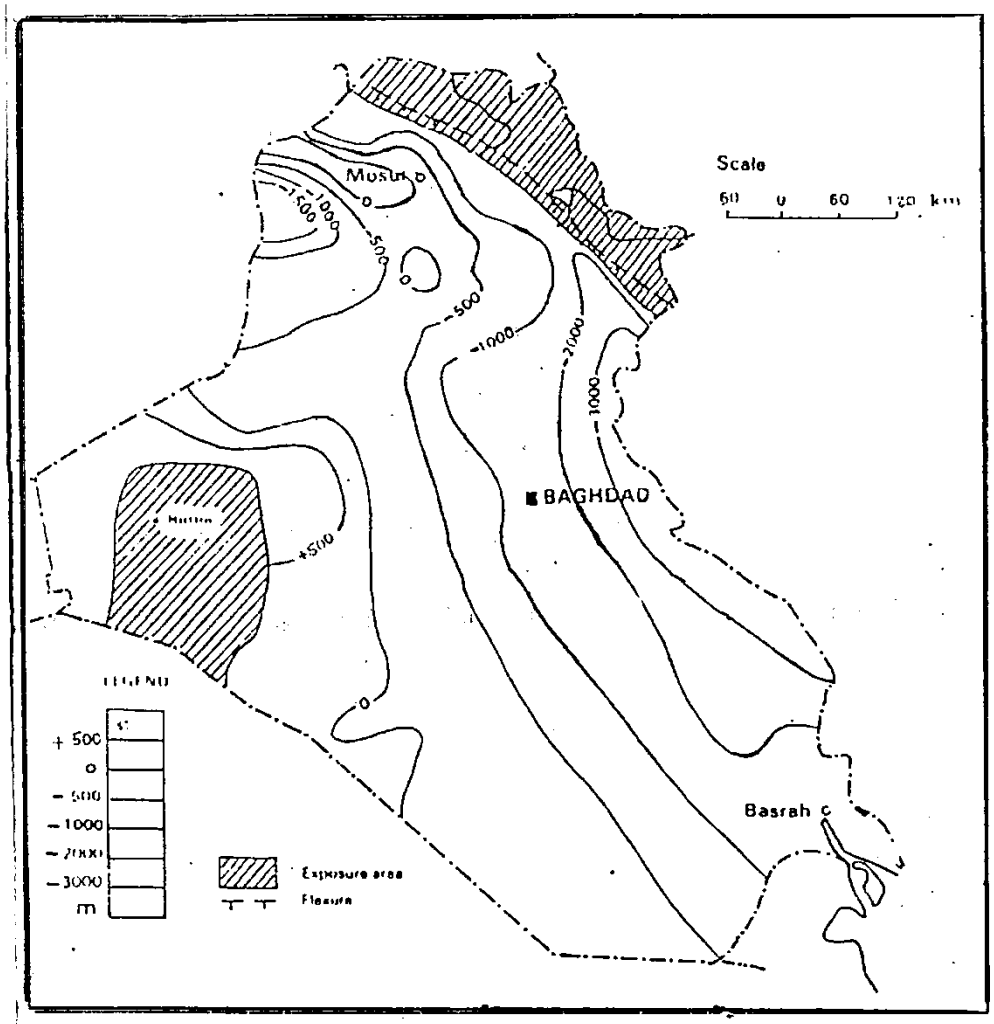

Fig. (4) Structural map on top of the Cretaceous System.

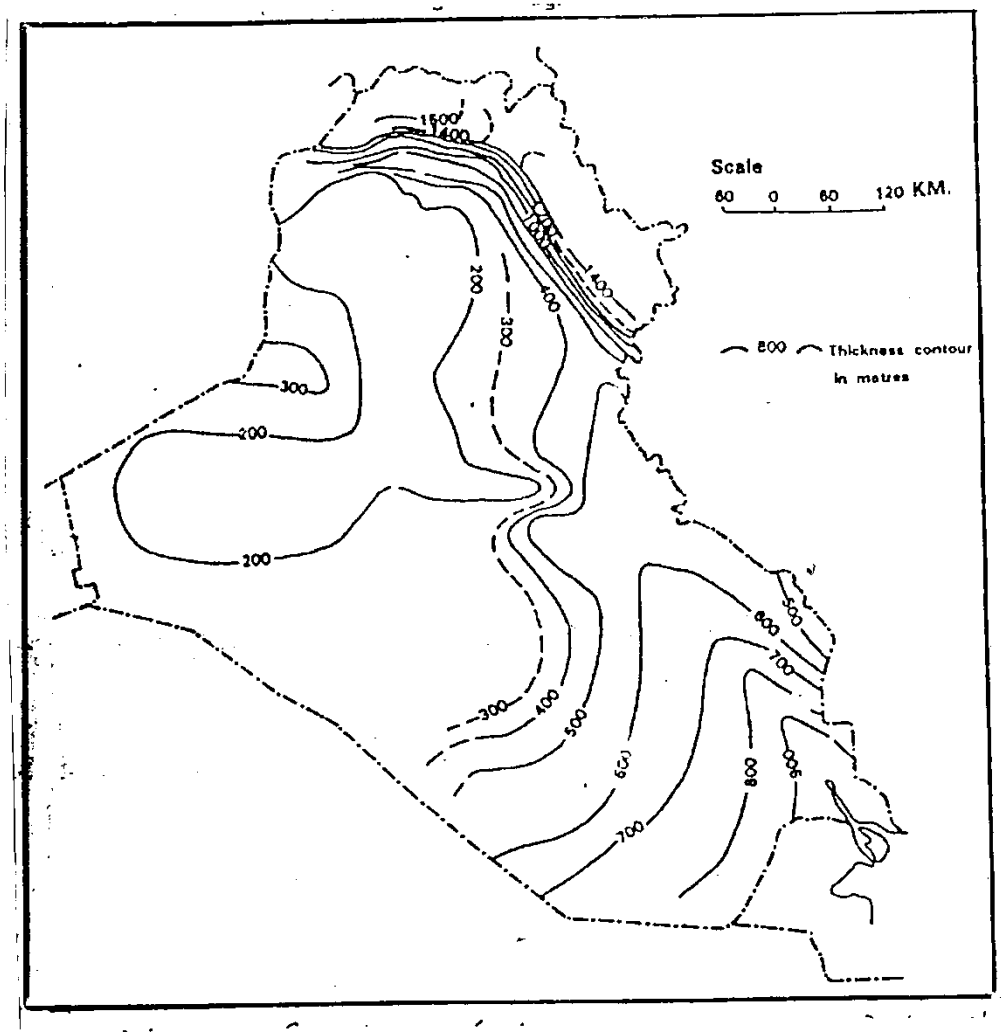

Fig. (5) Isopach map of Paleogene in Iraq.
Thickness of Paleogen (Paleocene, Eocene, and Oligocene) deposits in Iraq.