

THE REGIONAL GEOLOGY OF IRAQ

Volume 2

TECTONISM , MAGMATISM and METAMORPHISM

Compiled by

TIBOR BUDAY (D. Sc.)

SAAD Z. JASSIM (Ph. D.)

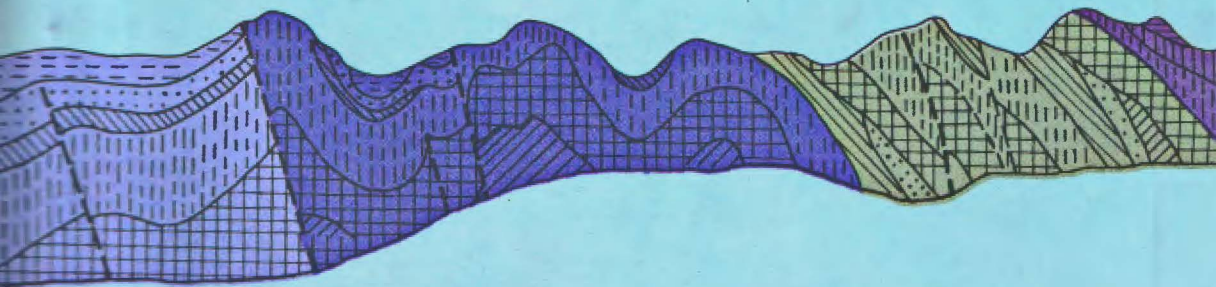
Edited by

ISMAIL I. M. KASSAB (Ph. D.)

MOHAMMED J. ABBAS (Ph. D.)



Baghdad - 1987



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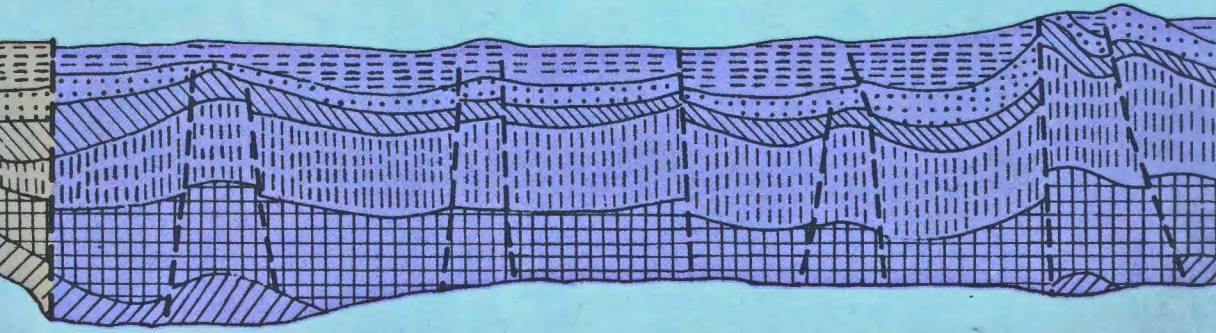
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بغداد ١٩٨٧



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The Regional Geology of Iraq Published by :

**STATE ESTABLISHMENT OF GEOLOGICAL
SURVEY AND MINERAL INVESTIGATION**

MINISTRY OF HEAVY INDUSTRIES

Printed by :

*Printing Department, S. E., Geological Survey and Mineral Investigation ,
Baghdad, Iraq.*

P. O. Box 986 Alwiya, Baghdad, Iraq.

Through the great support and encouragement of the Iraqi political leadership and the Iraqi Government, Iraq has witnessed a great expansion in the publications of Earth Sciences research. Iraqi geologists have involved in a large scale industrial and research geological investigations of various aspects.

The Geological Survey and Mineral Investigation State Establishment of Iraq has recently established its own printing and publishing department and planned to publish the results of the regional geological survey that was carried out in the years 1972 – 1983, a series of maps (1 : 1 000,000) have already been published (Economic Geological map of Iraq, Tectonic map of Iraq and the Geological map of Iraq), other maps are in the process of preparation in the Cartographic Department (Metallogenic, Hydro-geochemical, Geophysical, and Geomorphological maps). In addition the Geological Survey and Mineral Investigation S. E. has published the Tertiary Microfacies of Iraq text-book in the year 1985.

Volume one (Stratigraphy and Paleogeography) of the Regional Geology of Iraq was published in the year 1980, the present volume (Tectonics, Magmtism and Metamorphism) is the third text-book published by this establishment. The Regional Geology of Iraq volume 2 is a comprehensive book on the geology of Iraq, it contains a huge amount of information which was gathered through the past 50 years in a tremendous number of reports, it is a reference book which contains concentrated review of the structural development, magmatism, and metamorphism of Iraq. We are confidant that it will greatly help in the geological research and industrial planning of the country.

Yass J. AL-Duri
Director General

Raad M. AL-Jumaily
Deputy Director General

EDITORIAL NOTES

The Regional Geology of Iraq, second volume " Tectonism, Magmatism and Metamorphism " is the first book which deals with such problems in a comprehensive way and surely will greatly contribute to the understanding of the geology of Iraq (and the surrounding countries) with emphasize on the tectonism, magmatism and metamorphism of the country.

The first compilation of the Regional Geology of Iraq in its two volumes was carried out in 1973 by T. Buday and his collaborators . The first volume (Stratigraphy and Paleogeography) was updated and published in 1980. The updating of the second volume dealing with the tectonics, structural development, magmatism and metamorphism of Iraq was carried out in the second half of 1981 by T. Buday and S. Z. Jassim . Additional updated information, when possible, were incorporated by the editors in the text, such as seismological and seismotectonical information about Iraq , the results of the complex geophysical interpretation of Hit – Shithatha area , and the results of the hydrogeological investigations.

The production of this book represents the collaboration of the authors and the editors. The authors prepared the manuscript and the editors critically reviewed and rearranged the whole manuscript in the light of the new ideas, thoughts, and information that were grown up to date. The editors then unified all terminology used throughout the book , prepared the subject, author and geographic lists.

The Regional Geology of Iraq can be of great importance to all researchers, students, scientists and industrial people interested in the geology of Iraq and the surrounding countries.

The book pinpointed many problems, which need further research such as:

1. Problems of the basement depth and characteristics using deep seismic investigations and drilling key holes reaching the basement in order to reinterpret available geophysical data with aiming to solve the problem of the basement composition and internal structure
2. The boundary between the Platform and the Geosyncline
3. Subdivision of the transversal South Mesopotamian and Basrah Blocks.
4. The disputable character of the north-eastern boundary of the Hamrin-Makhul Subzone.
5. Extent and development of the Infracambrian trough with saline

- sedimentation in the southeast of the Mesopotamian Zone.
6. The origin of the anticlinal structures in the Foothill Zone.
 7. Precambrian – Paleozoic tectonogenic cycle.
 8. Tectonic divisions of the geosynclinal area.
 9. Continuation and character of the Northern (Ora) Thrust Zone into Turkey
 10. Composition and exact occurrence of the Devonian volcanics in Northern Iraq.
 11. Nature of the subsurface intrusive and subvolcanic activity in the western desert (in the Waleed and Nhaidain areas) and its thickness and exact depth.
 12. Clarifying the Qandil Range.
 13. Mapping of the Pustashan Volcanics Series.

And many other problems.

The editors express their appreciation to all who have contributed to the preparation of this book. Particularly grateful acknowledgements are due to Mr. Yass J. Al-Duri (Director General–Geological Survey and Mineral Investigations S. E.), Dr. Hisham A.J. Al-Hashimi, and Mr. R. Al-Jumaily (Deputy Director General) for their help and encouragement ; Mr. Jumaa AL-Wasti (Head of the Department of Cartography) for the preparation of maps and text-figures ; Mr. Muayad S. Daood (Head of the Department of Printing) for the preparation of the text for print.

Special thanks to Miss Luciya S. AL-Hariri for typing the whole manuscript , and to Mrs. Nedal AL-Attar for her cooperation in the typing

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