

# Regional Strategy for the Utilisation of the Nubian Sandstone Aquifer System

**Bibliography**

**Annex 2**



**CENTRE FOR ENVIRONMENT & DEVELOPMENT FOR THE  
ARAB REGION AND EUROPE**



**INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT**

Programme for the Development of a Regional Strategy for the Utilisation of the Nubian Sandstone Aquifer System

---

## **Regional Strategy for the Utilisation of The Nubian Sandstone Aquifer System**

Annex 2

### **Bibliography**



CENTRE FOR ENVIRONMENT & DEVELOPMENT FOR THE ARAB  
REGION AND EUROPE



INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

# Preface

Throughout history, access to water has been essential to social and economic development and stability of cultures and civilizations. Water is an indispensable commodity of life. Groundwater is considered as one of the principal fresh water resources. Under the thrust of the ever-increasing population in the world, there happens to be a notable deficiency in the fresh water supplies. This state of affairs urged individuals, communities, authorities and international agencies to search for groundwater in an attempt to keep pace with the continually increasing demand for water.

The countries of Northeast Africa, Egypt, Libya, Chad and Sudan share The Nubian Sandstone Aquifer System (NSAS), which represents a huge fresh water reserve. The four countries have expressed their interest to share their experiences and to develop this regional Aquifer System.

With this in mind The Centre for Environment and Development for the Arab Region and Europe (CEDARE) developed a programme for The Development of The Nubian Sandstone Aquifer System. The Programme was then funded by the International Fund for Agricultural Development (IFAD) and executed by CEDARE.

The results of the study presented in this report have produced a Regional Strategy for the utilization of this huge common resource, which hopefully will facilitate consultation between the concerned countries and create a sense of sharing a common resource in order to exploit it rationally.

This detailed study has been conducted by a team of experts guided by Dr. Mohamed Bakhbaki NSAS Regional Coordinator.

May I avail myself to this opportunity to thank the collaborating national institutions for their efforts and cooperation. Last but not least I wish to express, on behalf of the governments concerned, and on behalf of CEDARE, our deep appreciation and gratitude to IFAD for financing the project.

**Dr. Kamal A. SABET**  
Executive Director

# Acknowledgments

The “Programme for the Development of a Regional Strategy for the Utilisation of the Nubian Sandstone Aquifer System (NSAS)” is funded by the International Fund for Agricultural Development (IFAD). The execution of the Programme is the primary responsibility of CEDARE. The NSAS Programme team wish to extend their thanks and appreciation to IFAD who has funded this programme and made this publication and the associated study possible. They wish also to express their gratitude to CEDARE for hosting the Programme and making its implementation come true. The guidance and support of Dr. Kamal Sabet, Executive Director of CEDARE is highly appreciated.

The NSAS Programme wish also to convey its gratefulness to the consultants of the Programme whose valuable inputs are highly appreciated, namely Dr. Abdou Shata, Senior Geology Consultant, Mr. Philippe Pallas, Dr. G. Pizzi and Eng. Saleh Nour.

The Programme acknowledges the involvement and the effective contribution of the National Institutions of the four concerned countries whose cooperation, interaction and provision of information throughout the implementation of the Programme was of ultimate benefit and utmost importance towards the forwarding and accomplishment of this study. Special vote of thanks are to the National Coordinators; Dr. Moussa Terap – Chad, Dr. Fatma Attia – Egypt, Dr. Omar Salem – Libya and Dr. Idris M. Idris – Sudan. Appreciation is extended to all the members of the Steering Committee and the Regional Technical Review Committee for their constructive input and time.

Special recognition to Ms. Sahar Ezz El Arab, Secretary of the Programme for typing the report.

## **NSAS Programme Staff**

Dr. Mohammed Bakhabakhi  
Eng. Amr AbdelMeguid  
Eng. Omar Elbadawy

Hydrogeologist (Regional Coordinator)  
Water Resources Engineer  
GIS Specialist

## Forward

This study on the development of a regional strategy for the utilization of the Nubian Sandstone Aquifer System has been prepared by Dr. Mohamed Bakhbakhi (CEDARE Regional Programme Coordinator), the Programme's team of consultants, Professor Dr. A. Shata, Mr. Phillippe Pallas, Dr. G. Pizzi and Engineer Saleh Nour and the staff of The Programme Engineer Amr Abdel-Meguid and Engineer Omar Elbadawy.

In the preparation of this study numerous reports, studies, documents, briefs and write up have been consulted. Below is a partial list of these reports:

- 1) The final reports of the "special research Project in Arid areas period 1984 – 1987" and on "Hydrogeological investigations in the Nubian Aquifer System", Eastern Sahara prepared by Klitzsch et al, 1987, as well as research on modeling of the Nubian Aquifer System by Heintl and Binkman (Published in 1989), the hydrogeological investigation carried out by Heintl and Thorweihe in Northern Sudan, 1983 and S.W. Egypt, 1993. (annex 1),
- 2) Bretschneider, H., Heintl, M., Brinkmann, P.J., Hollander, R. (1987) Groundwater Model for the Nubian Aquifer System. Technical University of Berlin.
- 3) The many technical reports prepared by the Technical University of Berlin and ACSAD upon request of OSS,
- 4) P.J. Brinkman, M. Heintl, R. Hollander and G. Reich, 1987. Retrospective simulation of groundwater flow and transport in the Nubian Aquifer System, Berliner Geowiss. Abh (A) 75.2, 465-516 Berlin.
- 5) JVQ, Joint Venture Qattara (1978): study Qattara-Depression, special volume: Regional geology and Hydrogeology, unpublished report of Lahmeyer GmbH, Salzgitter consult GmbH, Deutsche Projekt Union GmbH.
- 6) Pallas P. (1978) water resources of the socialist People's Libyan Arab Jamahiriya. 2<sup>nd</sup> Symposium of geology of Libya-Tripoli.
- 7) El Ramly, I. (1983), Water Resources Study of Zone V (Al Kufrah and Sirt Basins) unpublished report, Socialist People's Libyan Arab Jamahiriya, Secretariate of Agricultural Reclamation and Land development, water and Soil Department.
- 8) The technical reports prepared by the National institutions and regional organizations (annex 1),

- 9) Ali Hissene Mahmoud (1986) geologie Und Hydrogeologie des Erdis-bechen, NE-Tschad. Berliner Geowiss. Reihe A/B 76, Berlin.
- 10) EZZAT, M.A. (1974): Groundwater series in the Arab Republic of Egypt; Exploitation of groundwater in ElWadi El-Gadid Project Area. Part I to IV, General Desert Development Authority/ Ministry of Irrigation Cairo.

The results achieved during our study are included in a final report made up of four volumes and two annexes.

**This is Annex 2 of a 4 volumes and 2 annexes report**

**Volume 1: Executive summary**

**Volume 2: Hydrogeology**

**Volume 3 Groundwater Model**

**Volume 4: Administration**

**Annex 1 Information System**

**Annex 2: Bibliography**

*Note: The denomination used and the boundaries shown on any map or graphical appendices to this document do not imply, on the part of IFAD, CEDARE or any other party associated with the preparation of this document, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.*

## List of Abbreviations

|                           |   |
|---------------------------|---|
| <b>ACSAD</b>              | Arab Center for Studies of Arid zones & Dry Lands                     |
| <b>Bm<sup>3</sup>/y</b>   | Billion cubic meters per year (10 <sup>9</sup> m <sup>3</sup> /y)     |
| <b>CEDARE</b>             | Centre for Environment and Development For the Arab Region and Europe |
| <b>EIA</b>                | Environmental Impact Assessment                                       |
| <b>GIS</b>                | Geographic Information System   |
| <b>GWA</b>                | General Water Authority, Libya  |
| <b>IFAD</b>               | International Fund for Agricultural Development, Rome                 |
| <b>IDB</b>                | Islamic Development Bank  |
| <b>m.b.g.l</b>            | meters below ground level   |
| <b>m.a.s.l</b>            | meters above mean sea level   |
| <b>m.b.s.l</b>            | meters below mean sea level   |
| <b>MSL</b>                | mean sea level  |
| <b>mg/l</b>               | milligrams per liter  |
| <b>g/l</b>                | grams per liter   |
| <b>Mm<sup>3</sup>/y</b>   | Million cubic meters per year   |
| <b>Mm<sup>3</sup>/day</b> | Million cubic meters per day  |
| <b>GMS</b>                | Ground water Modeling System  |
| <b>AQUQA3D</b>            | Ground water Modeling Software  |
| <b>NSAS</b>               | Nubian Sandstone Aquifer System                                       |
| <b>NAS</b>                | Nubian Aquifer System   |
| <b>PNAS</b>               | Post Nubian Aquifer System  |
| <b>RC</b>                 | Regional Coordinator  |
| <b>RIGW</b>               | Research Institute for Groundwater – Egypt                            |
| <b>RPSC</b>               | Regional Programme Steering Committee                                 |
| <b>RTRC</b>               | Regional Technical Review Committee                                   |
| <b>SSO</b>                | Sahara & Sahel Observatory  |
| <b>TDS</b>                | Total Dissolved Solids  |
| <b>TUB</b>                | Technical University of Berlin  |
| <b>UNEP</b>               | United Nations Environmental Programme                                |
| <b>UNDP</b>               | United Nations Development Programme                                  |
| <b>U.S.G.S</b>            | United State Geological Survey  |
| <b>mcm</b>                | Million Cubic meters  |
| <b>PPM</b>                | Parts per Million   |
| <b>GL</b>                 | Ground Level  |

# BIBLIOGRAPHY

- Abdel Salam, Y.(1966) : The Groundwater Geology of the Gezira, University of Khartoum.
- Abd El-Samie, A.G. (1934): Report on the survey and classification of the Kharga Oasis  
Soils Bull. Soc. Geogr. D'Egypt, 34, 53-73 Cairo.
- Abufila, T. M. (1984) : A Three-dimensional Model to Evaluate the Water Resources of the  
Kufra and Sarir Basins, Libya, M.S. These, Ohio University. Athens Ohio USA.
- Abu Zeid M. (1991), water resources assessment for Egypt Rigwa/ Iwaco (Editors), Round  
Table meeting (RTM-91) Cairo, Egypt.
- ACSAD: Arab Center for the Studies of Arid Zone and Dry Land(1991) : Geographic  
Information System: General Principals and Application, ACSAD: 86 p.
- ACSAD: Arab Center for the Studies of Arid Zone and Dry Land(1995) : Proceedings of the  
workshop on the Integrated management of the non-renewable resources of the great  
basins of the Arab region, ACSAD Damascus.
- ACSAD: Arab Center for the Studies of Arid Zone and Dry Land, UNESCO: United Nations  
Educational Scientific, and Cultural (1988) : Hydrogeological maps of the Arab  
region scales: 1:5000.000 - 1:1000.000, Benghazi and Darfour., ACSAD Damascus.
- Adamson, D.A., Williams, M. A.(1980) : Structural geology, tectonics and control of  
drainage in the Nile basin, Williams, M.A.J. & Faure, H. (eds.) : The Sahara and the  
Nile, p. 225 – 352, Rotterdam.
- AGIP Name Company (1979) : Well A1-NC 43: Final Report: Subsurface Geology Division,  
AGIP Nami Company, Tripoli, Libya, P. 12.
- AGIP Name Company (1982) : Well B1-NC 43: Final Report, Subsurface Geology Division,  
AGIP Nami Company, Tripoli, Libya, P. 15.
- Agricultural Development Council(1972) : Final Report by the Sub-Committee for  
Agricultural Development in Area of Al Kufra, Al Sarir and Jalu, Agricultural  
Development Council, Tripoli, Libya, 81 p.
- Ahmad, M. U. (1975): A Digital Model Study of Kufra Well Fields, Agricultural  
Development Council, Tripoli, Libya, 20 p., 4 Figs.
- Ahmad, M.U. & Eddib, A.A. (1975): The Development of Water Resources in Libyan,  
Sahara (Kufra Production Project), Proc. 2<sup>nd</sup> World Congr. International Water  
Resource, Associations, New Delhi, Dec. 75
- Ahmad, M. U. (1977): Digital Computer Models for Designing Well Fields in the Libyan  
Sahara. Proceedings of the International Conf. On Computer Applications in  
Developing, Asian Institute of Technology.
- Ahmad, M. U..(1977) : Water Resources of Sarir Well Field I, II .in Libyan Sahara. Proc. 2<sup>nd</sup>  
World Congr. Int. Wat. Resource, SDWR: Secretariat Dams and Water Resources,  
V.3, pp 1-10., 3 app. 1 map.



- Ahmad, M. U.(1977) : Water Resources of the Sarir Well Field, Libya: Unpublished Report, SDWR: Secretariat Dams and Water Resources, 8 p., 1 map, 8 fig, Tripoli, Libya.
- Ahmad, M. U.(1978) : A Study of Recharge of Kufra Basin III: Unpublished Report, SDWR: Secretariat Dams and Water Resources, 4 pages, 3 maps, 2 app, Tripoli, Libya.
- Ahmad, M. U.(1978) : A Study of Recharge of Kufra Basin: Unpublished Report, SDWR: Secretariat Dams and Water Resources, 8 pages, 1 table, 3 fig.
- Ahmad, M. U.(1978) : A Water Well Design for the Jalu Settlement Project: Unpublished Report, SDWR: Secretariat Dams and Water Resources, 3 p, Tripoli, Libya.
- Ahmad, M. U.(1978) : Discovery of an Ancient Underground Channel in the North Sarir Well Field, Symposium about Investigation, Exploitation and Economy of the Underground Water.
- Ahmad, M. U.(1978) : Water Resources of the Sarir Well Fields, Water Resources Association, Vol. 4, p. 1816 – 1831.
- Ahmad, M. U. (1979) : Preliminary Pumping lift predictions of the Kufra Well Fields, Ohio University, Athens Ohio, USA, 2 p., 2 Tab., 7 sheet.
- Ahmad, M. U. (1979) : 300 Well Plan for Sarir Production Project: Unpublished Report, Agricultural Development Council, Tripoli, Libya, 15 p.
- Ahmad, M. U.(1979) : A 461 Well Plan for Sarir Production Project, ADC., Tripoli Libya.
- Ahmad, M. U.(1979) : A Designe for the Tazerbo Well Field: Open File Report, Council of Land Reclamation and Resettlement, Tripoli, Libya, p. 202.
- Ahmad, M. U.(1979) : A Design for Tazirbu Well Field: Report with Three Separate Appendices, Council of Land Reclamation and Resettlement, 27 p., 8 fig., app. I, Steady State Models, Ten Computer Outputs.
- Ahmad, M. U.(1979) : Sarir Transportation Scheme (Quantitative Model): Unpublished Report, SDWR: Secretariat Dams and Water Resources, Tripoli, Libya, p. 110.
- Ahmad, M. U.(1979) : Sarir Transportation Scheme A Hydrogeology of Sarir Transportation Scheme: Unpublished Report : Secretariat Dams and Water Resources, Tripoli, Libya.
- Ahmad, M. U.(1979) : Sarir Transportation Scheme: Unpublished Report, SDWR: Secretariat Dams and Water Resources, 4 pages, 8 tables, 1 plate, 3 computer outputs.
- Ahmad, M. U.(1979) : A Quantitative Model for Kufra and Sarir Basins: (Model I): Unpublished Report : Secretariat Dams and Water Resources, Tripoli, Libya.

- Ahmad, M. U.(1980) : A Quantitative Model for Kufra and Sarir Basins, Libya I, II, III. : Secretariat Dams and Water Resources, 4 p. 8 computer outputs, II: 3 p., 2 computer outputs,(III: 24 p., 7 fig. 6 app.)
- Ahmad, M. U.(1980) : Sarir Well Field IV: Unpublished Report, SDWR: Secretariat Dams and Water Resources, 17 figures, 4 tables, 5 computer outputs.
- Ahmad, M. U.(1981) : The Role of Sahara in Food Production, Water International, vol. 6, p. 126 – 129.
- Ahmad, M. U.(1980) : Water Quality model of Sarir wellfield, , 5 p., 4 figs., 1 map., and Computer output.
- Ahmad, M. U.(1983) : A Quantitative Model to predict a Safe Yield for Well Fields in Kufra and Sarir Basins: Groundwater, vol. 21, no. 1, p. 56 – 66.
- Ahmad, M. U.(1984) : New Sarir and Tazerbo Well Field Simulation and Recommendations. Open File Report, Secretariat of Agriculture Reclamation and Land Development, Tripoli, Libya, 8 p.
- Al-Abeidi, Eskangi A., Ramadan(1972) : Final Report by the sub-Committee for Agricultural Dev. In Areas of Al Kufrah, Al Sarir and Jalu., Sub-Committee for Agricultural Dev. In Areas of Al Kufrah, Al Sarir and Jalu, 81 p.
- Alaily, F., Blume, H. -P.(1983) : Bodengesellschaften der Vollwuste, Mtlg. D. Dtsch. Bodenkundl. Ges, vol. 38, p. 443 – 450.
- Al-Bakhbakhi, M., Pallas , P.(1976) : Report on the Water Problems in Sarir Area: Unpublished Report : Secretariat Dams and Water Resources, Tripoli, Libya, 10 p.
- Al-Bakry, R., Rajo, T.S., Al-kaseh, H.(1979) : Water Resources in Maradah Region: Unpublished Report, GWA, .Tripoli, Libya.
- Ali Hessene Mahmoud (1986), Geologie Und Hydrogeologie des Erdis-bchen, NE-Tchad. Berliner Geowiss. Reihe A/B 76, Berlin.
- Allen, J.R.L.(1983) : The Classification of Cross-stratified Units with notes on their Origin, Sedimentology, vol. 2, p. 93 – 114.
- Almasy, L.E.(1937) : Unbekannte Sahara, Brockhaus Verlag, 214 p.
- Ambroggi, R.P.(1966) : Water Under the Sahara, Scientific American, Vol. 214, No. 5, p. 21 – 29, New York.
- Amer A., Nour, S., Meshriki (1981): A ficite element Model for the Nubian Aquifer System in Egypt. Proc. Int. Conf. on water resources Management in Egypt, 327-361, Cairo.
- Arad, A. (1919), Hydrogeological inter-relationship between the Judea Group and the Nubian Sandstone Aquifers in Sindi and Negev.

- Attia, Fatma (1991), Technical evaluation of Groundwater Development schemes in upper Egypt, RIGWA/ IWACO (Editor) Round Table meeting (RTM-91) Cairo, Egypt.
- Awad, G.H. & Ghobrial, M.G. (1965): Zonal Stratigraphy of the Kharga Oasis. – UAR, Geol. Surveys, Paper 34, 78P., Cairo.
- Bagnold, R.A. (1939): An Expedition to the Gifl Kebir and Uweinat, Geogr. J., 93, London.
- Bagnold, R.A., Sandford, K.S. & Shaw, W.B.K. (1933): A further journey through the Libyan Desert – Geogr. J. 82, London.
- Ball, J., Hassanein, A. M., Hume, W. F., Moon, F. W.(1924) : Through Kufra to Darfur, Geography Journal, vol. 64/4, p. 273 - 291, 353 – 393.
- Ball, J. (1927): Problems of the Libyan Desert, Geogr. J., 70, 21-38, 105-128, 209-224 London.
- Ball, J. (1927) : Kharga Oasis, its Topography and Geology, Survey Department, Cairo, Egypt.
- Ball, J. (1928): Remarks on “lost” Oases of the Libyan Desert. – Geogr. J., 72, London.
- Ball, J. (1933): The Qattara Depression of the Libyan Desert and the possibility of its Utilization for Power Production. Geogr. J., 82, London.
- Ball, J. (1939): Contributions to the Geography of Egypt. 308 p., Government press, Cairo, bullaq.
- Barber, W. (1977): Groundwater Pilot Scheme in the New Valley/ Egypt, Groundwater Resources. – AG: DP/Egy/71/561, Technical Report 2, UNDP/FAO, 125 p., Rome.
- Barber, W.M. & Carr, D.P. (1976): Groundwater Pilot Scheme in the New Valley/ Egypt, Groundwater Model of the Kharga – Dakhla Area. – Agon/Egy, Working Document No. 7, UNDP/ FAO, 108 p., Rome.
- Barron, T.(1907) : The topography and geology of the Peninsula of Sinai (western portion), Survey Department, 241 p.
- Barth, A., Meinhold, K.D.(1979) : Mineral Prospecting in the Bayuda Desert. - Sudanese German Exploration Project, Technical Report,, Bundesanstalt fur Geowissenschaften und Rohstoffe.
- Barthel, K.W., Buttcher, R.(1978) : Abu Ballas Formation (Tithonian/Berriasian; Southwestern Desert, Egypt) a significant lithostratigraphic unit of the of the former “Nubian Series”, Mitt. Staatsslg. Palaont. Hist. Geol., p.153 – 166.
- Barthel, K.W., Herrmann-Degen, W.(1981) : Late Cretaceous and Early Tertiary Stratigraphy

in Great Sand Sea and its SE Margins (Farafra and Dakhla Oases), SW Desert, Egypt., Mitt. Staatsslg. Palaont. Hist. Geol.

Barton, C.M.(1977) : Geotechnical Analysis of Rock Structure and Fabric in C.S.A. Mine, Cobar, New South Wales. - Applied Geomechanics, Technical Paper 24, Commonwealth Sc, Commonwealth Scientific and Industrial Research Organisation.

Batanouny, K.H.(1975) : Water Resources and Plant Life in the Egyptian Desert. In : Vansteenkiste, G.C. (ed.) : Modeling and Simulation of Water Resources System, N. Holland Publ. Co.

Batu, Vedat(1998) : Aquifer Hydroulics: A comperhensive guide to hydrogeologic data analysis, John Wiley.

Baver, L.D, Gardner, W.H.(1972) : Soil Physics - 4<sup>th</sup> ed., John Wiley.

Beacher, G.B., Lanney, N.A., Einstein, H.H.(1977) : Statistical Description of Rock Properties and Sampling. - Proc. 18<sup>th</sup> US Symp. on Rock Mech., Symposim on Rock Mech, p. 5C1-1 - 5C1-8.

Beadnell, H.S.L.(1909) : An Egyptian Oasis: An Account of the Oasis of Kharga in the Libyan Desert. With Special Reference to its History, Physical Geography, and Water Supply, John Murray.

Beadnell, H.J.L.(1909) : An Egyptian Oasis: An Account of the Oasis of Kharga in Liban Desert, with special reference to it's History: Physical Geology and Water Supply.

Beadnell, H.S.L.(1910) : The sand dunes of the Libyan Desert, Geography Journal, vol. 35, p. 379 – 395.

Beadnell, H.J.L.(1931) : Zerzura, Geography Journal, vol. 77, p. 245 – 250.

Beadnell, H.J.L.(1933) : Remarks on the prehistoric geography and underground waters of the Kharga Oasis, Geography Journal, vol. 81, p. 128 – 134.

Beall, A.O., Squyres, C.H.(1980) : Modern frontier exploration strategy, a case history from Upper Egypt, Oil & Gas Journal, vol. 7, Apr.p. 106 – 110.

Behrens, J., Burkhardt, H., Erbas, K., Lorenz, J.C., Fiedler-Vollmer, R.(1984) : Geophysical investigations in the arid region of SW Egypt and NW Sudan, Berliner Geowiss Abh., vol. 50, p. 441- 557.

Belitz, K., Steven, P. Phillips, Goldberg, P.(1993) : Numerical simulation of groundwater flow in the central part of the western San Joaquin Valley, California, U.S.G.S., p. 1- 69.

Bellair, P.(1948) : Contribution a l'etude de l'hydrogeologie de la cuvette Fezzanaise. – Mission scientifique du Fezzan (1944 - 1945) II, Brockhaus Verlag, p. 5 – 114.

- Beller Consult, AciAqua (1982) : Toshka Multipurpose Reservoir Project - Prefeasibility Study, unpublished report to GTZ & ARE, Ministry of Water Resources and Irrigation (Egypt).
- Bellini, E.I.(1976) : Geology of the Kufra Basin, Southeast Libya. Unpublished Report, AGIP Nami Company, Tripoli, Libya, P. 9.
- Bellini, E.I., Messa, D.(1980) : A Stratigraphic Contributions to the Paleozoic of the Southern Basins of Libya, The Geology of Libya, vol. 1, Al fatch University, Tripoli, Libya p. 3 – 56.
- Bellini, E.I., Giori, O., Benelli, F.(1991) : Geology of Al Kufrah basin, Libya., Symposium on the Geology of Libya, Al fatch University, Tripoli, Libya, vol. 6, p. 2155 - 2184.
- Benelli, F., Wright, E.P., Edmunds, W.M., Kitching, R.(1982) : Hydrogeology of the Kufra and Sirt Basins, Eastern Libya, Journal of Engineering Geology, vol.15, no. 2, p. 83 – 103.
- Benfield, A.C.(1972) : Post-Oligocene Sediments Jalu Region, Sirt Basin, Libya, Institute of Geological Sciences, 13 p. 12 maps, 2 cross sections, 1 Tab.
- Benfield, A.C., Wright, E.P., Edmunds, W.M., Kitching, R.(1974) : Jalu-Tazerbo Project: Phase I. Final Report, Kufra - Sarir Authority., 91 p., plus 2 app.
- Benfield, A.C., Wright, E.P.(1980) : Post-Eocene sedimentation in the Eastern Sirte Basin, Libya, Symposium on the Geology of Libya, vol. 2, p. 463 – 500.
- Benfield, A.C., Wright, E.P., Edmunds, W.M., Kitching, R.(1982) : Hydrogeology of the Kufra and Sirte basins, Eastern Libya, Journal of Quarterly Engineering Geology, vol. 15, p. 83 - 103 .
- Berigari, M.S.(1977) : A Strategy for Improving the Agricultural Project of Sarir., ARC/SPLAJ, Secretariate of Agriculture, 4 p.
- Berigari, M.S.(1978) : The Status So-Mn, Fe, Zn and Cu in Sarir Project., Agriculture Reseach Center, Secretariate of Agriculture, Tripoli, Libya.
- Berkowitz, B.(1993) : Groundwater modeling, Technical Report in Hydrology and Water. Berliner Geowiss Abh., vol. 75.3, p. 801- 832.
- Berner, R.A.(1975) : The role of magnestium in the crystal growth of calcite and aragonite from sea water, Geochimica et Cosmochimica Acta, vol. 39, p. 489 – 504.
- Bertrands, J., Baudet, J., Crochon, A.(1974) : Importance des aerosols naturels en Afrique de l'Ouest, Journal of Reseach Atmosphere., vol. 8, p. 846 – 860.
- BGR: Bundesanstalt fur Geowissenschaften und Rohstoffe(1976) : Water Resources and Soil Potential Development in the New Valley/Egypt. - Mission Report, Vol. II ,

- unpublished report, Geographisches Institute Des Univeritat Wurzburg.
- BGR: Bundesanstalt fur Geowissenschaften und Rohstoffe(1979) : Groundwater Resources in Khartoum Province. Sudanese German Exploration Project, Part. II, vol. A, unpublished report, BGR: Bundesanstalt fur Geowissenschaften und Rohstoffe.
- Bhattacharyya, D.P., VAN Houten, F. B.(1979) : Late Cretaceous Nubia Formation at Aswan, Southeastern Desert, Egypt., *Annals of the Geological Survey of Egypt*, vol. 9, p. 408 – 419.
- Bhattacharyya, D.P., Lorenz, J.C.(1983) : Different depositional settings of the Nubian Lithofacies in Libya and southern Egypt”, *International Association of Sedimentology bulletin*, vol. 6, p. 435 – 448.
- Bisewski, H.(1982) : Zur Geologie des Dakhla-Beckens (Sudwest-Agypten) – Sedimentologie und Geochemie der Nubischen Gruppe, *Berliner Geowiss Abh.*, vol. 40, p. 1 - 86.
- Bock, H. (1980): Das Fundamentale Kluftsystm, *Z. dtsh. Geol. Ges*, vol. 131,p. 621 – 650.
- Bonifica-Geoexport(1987) : Hydrogeological Studies and Investigations in Northern Sudan. - 18 vol.: Report to National Water Corporation, Sudan Government.
- Borelli, M., Karanjac, J., Kosec, B.(1968) : Bases for the Analogue Model of Kharga and Dakhla Oases” Report Submitted by Industro Project to the General Desert Development Organization (GDDDO), Industro Project Company.
- Bornkamm, R.(1986) : Flora and vegetation of some small oases in S-Egypt, *Phytocoenologia*, vol.14, p. 275 – 284.
- Bottcher, R.(1982) : Die Abu Ballas Formation (Lingula Shale) (Apt?) der Nubischen Gruppe Sudwest - Agyptens. Eine Beschreibung der Formation unter besonderer. Berucksichti, *Berliner Geowiss Abh.*, vol. 39, p. 145.
- Bottcher, R.(1985) : Environmental model of the shallow marine Abu Ballas Formation (Aptian, Nubia Group) in Southwestern Egypt.- *N. Jb., Geol. Palaont. Abh*, vol. 69, (3), p. 261- 263.
- Blindow, N., Ergenzinger, P., Pahls, H., Scholz, H., Thyssen, F.(1987) : Continuous profiling of subsurface structures and groundwater surface by EMR methods in Southern Egypt.
- Blume, H. -P., Petermann, T., Vahrson, W. -G.(1985) : Klimabezogene Deutung rezenter und reliktscher Eigenschaften von Wustenboden, *Geomethodica*, vol. 10, p. 91 – 121.
- Blume, H. -P., Vahrson, W. -G., Meshref, H.(1985) : Dynamics of water , temperatures and salts in typical aridic soils. - *Catena* (in prep.), *Geomethodica*.

- Bouton, A.(1973) : Comparison Between Stainless Steel and Fibreglass for the Equipment (casing and screens) of wells in the Kufra-Sarir Project, GWA, 2 p.
- Bretschneider, H., Heintz, M., Brinkmann, P. J., Hollander, R., Reich, G.(1987): Groundwater Model for the Nubian Aquifer System.- Supplementary Report on the Calibration and Prediction of the Draw-down due to Additional Extraction, GPCE: General Petroleum Co. of Egypt.
- BRGM: Bureau Research Geology Ministries(1981) : Geological Map of the Sudan 1: 2 000 000., BRGM: Bureau Research Geology Ministries.
- Brinkman P.J., M. Heintz, R. Hollander and G. Reich, (1987), Retrospective simulation of groundwater, flow and transport in the Nubian Aquifer System, Berliner Geowiss. Abh (A) 75.2, 465-519 Berlin.
- Brones, F., Marting, V.E.(1961) : The Effect of Restricted Fluid Entry on Well Productivity, Journal of Petroleum Technology., Vol. 13, No. 2, p. 172 - 174.
- Brooks, R.H., Corey, A.T.(1964) : Hydraulic properties of porous media, Colorado State University.
- Brown, E.T.(1981) : Rock Characterization, Testing and Monitoring, ISRM, 211 p.
- Brown and Root (1992) : Biostratigraphy of Cuttings and Core Samples from PZ-518 C-D well, Tazerbo area, Kufra Basin, Libya. Report No. 4764 Ib Project No. Ib/15422.,
- Brown and Root (1992) : PZ-618 C-D well, Tazerbo Area, Kufra Basin. Biostratigraphy of Cuttings and Core Samples from interval 3m, 848 m TD. Report No. 4781/IB, Great Man Made River Project, Tripoli, Libya.
- Brutsaert, W. H.(1982) : Evaporation into the atmosphere, Dordrech, p. 299.
- Budyko, M.I., Korzun, V. I., Sokolov, A. A.(1977) : Atlas of the World Water Balance, UNESCO.
- Burdon, D.J., Pavlov, M. J.(1959) : Proposed Predevelopment Investigations Prior to large Scale Groundwater Development In the Western Desert of the Egyptian Region, U.A.R.”.
- Burdon, D.J.(1977) : Flow of Fossil Groundwater, Journal of Quarterly Engineering Geology, Vol. 10, p. 96 – 124.
- Burdon, D.J.(1977) : Groundwater resources of Saudi Arabia. 67 pp. In: Arab League Educational, Cultural and Scientific Organization ALECSO, Arab League, Tunis, Sci. Monograph No. 2.
- Burdon, D.J.(1975) : Mechanisms for movement of fossil groundwater. Third Inter. Cong.

On Underground Water, Palermo, Nov. 1975.

- Burdon, D.J.(1980) : Infiltration Conditions of a Major Sandstone Aquifer around Ghat, Libya.- In: Salem, M.J. & Busrewil M.T. (eds.) : The Geology of Libya, Vol. II, 2<sup>d</sup>, Academic Press, Vol. II, p.595 – 609.
- Burkhardt, H., Brasse, H., Fiedler-Vollmer, R., Kalkbrenner, M., Radic, T., Schulz-Ohlberg, J.(1987) : Geophysical Investigations of Local Tectonic Problems in SW Egypt and NW Sudan, Berliner Geowiss Abh., vol., 75.3, p. 927 – 967.
- Burollet, P.F.(1963) : Geological Reconnaissance in the Southeast of the Kufra Basin, IFP: Institut Francais du Petrole, Vol. XVIII, No. 11, p. 1537 – 1545.
- Burollet, P.F.(1969) : Sedimentological remarks on Lower Palaeozoic sandstones of South Libya. 91-101. In: Geology archaeology and prehistory of the South-West Fezzan, Libya, Petroleum Exploration Society.
- Burollet, P.F., Manderscheid, G., Magnier, Ph.(1971) : Tectonics of Africa. UNESCO Section on NE Africa,, UNESCO.
- Butzer, K.W.(1960) : Environment and human ecology in Egypt during Predynastic and Early Dynastic times, Bull de la Soci. De Geog. D’Egypte.
- Butzer, K.W., Hansen, C.L.(1968) : Desert and river in Nubia: Geomorphology and Prehistoric Environments at the Aswan Reservoir, University of Wisconsin, 583 p. Madison.
- Butzer, K.W., Richardson, J. L., Washbourn-Kaman, C.(1972) : Radiocarbon dating of East African lake levels, Science, vol. 185, p.1069 – 1076
- Butzer, K.W.(1974) : Pleistocene Paleoclimates of the Kurkur Oasis, Egypt, Canadian Geography, vol. 8,3, p. 125 – 141.
- Butzer, K.W.(1980) : climatic changes in the arid ZONES OF Africa during early to mid-Holocene Time. In: Royal Meteorological Society, Proceedings of the International symposium on world climate for 8000 to 000 BC.
- Butzer, K.W. (1980) : Pleistocene history of the Nile Valley in Egypt and lower Nubian. - In : Williams, M.A.S, & Faunem H. (eds., 1980) : The Sahara and the Nile.- 253-280, Rotterdam.
- Camps, G.(1974) : Les Civilisations prehistoriques de l’Afrique du Nord et du Sahara, 373 p.
- Caponera, D. A.(1992) : Principles of water law and administration, FAO, Rome.
- Castany, G.(1974) : Etude par les isotopes du milieu du regime des eaux



souterraines dans les aquiferes de grandes dimensions.- In: Isotope Techniques in Groundwater Hyd., IAEA: International Atomic Energy Agency, Vol. 1, p. 243 – 258.

Caton-Thompson, G.(1952) : Kharga Oasis in Prehistory, Athlone Press, 213 p.

Caton-Thompson, G., Gardner, E.W.(1932) : The Prehistoric Geography of Kharga Oasis, Geography Journal, vol. 80, p. 369 – 409.

CEC: Commission of the European Communities(1980) : EC directive relating to the quality of water intended for human consumption. 80/778/EEC.

CEDARE: (1994) : Regional programme for the developmenmt and utilization of the Nubian sandstone aquifer, project document, CEDARE: Cairo, Egypt, 104 P.

CEDARE: (1994) : National Status Reports of Egypt, Sudan and Libya on the “Development and Utilization of the Nubian Sandstone Aquifer” CEDARE – IFAD – reports 1994, Cairo, 99, 100 and 41 pages respectively.

CEDARE: (1994) : Synthesis reports on the regional programme for the development and utilization of the Nubian sandstone aquifers 1<sup>st</sup> Synthesis report, CEDARE: Cairo, Egypt, 65 p.

Chilton, P.J., Lawrence, A. R., STUART, M.E.(1995) : The impact of tropical agriculture on groundwater quality. In H. Nash and G.J.H. McCall (ed.) Groundwater quality, Chapman and Hall, p.113 – 122.

Chow, J.S., Wilson, J.O.(1981) : A Qualitative Review of Nubian Sandstone Regional Aquifer Behaviour, International Conference On Water Resources Management, p. 363 – 382, Cairo.

Chow, V.T.(1952) : On the Determination of Transmissivity and Storage Coefficients From Pumping Test Data, American Geophysics Union Trans, p. 397 – 404.

Chow, V.T.(1964) : Handbook of Applied Hydrology: A Compendium of Water Resources Technology, Mcgrawhill.

Christmann, D., Sonntag, C.(1985) : Laboratory and field experiments of infiltration and evaporation of soil water by means of deuterium and oxygen-18. - Proc. Final Meeting joint IAES/GS, IAEA: International Atomic Energy Agency, p. 145 – 160.

Christmann, D.(1986) : Ermittlung der Grundwasser-Verdunstung in ostsaharischen Senkengebieten mit Hilfe der stabilen Isotope Deuterium und Sauerstoff, University of Heidelberg.

Clapp, R.B., Hornberger, G.M.(1978) : Empirical Equations for some Soil Hydraulic Properties, Proceedings of American Society for Civil Engineerings, vol.14 (4), p. 601 – 604.

- Clarke, P.E.(1962) : Evaluation and Control of Water Well Corrosion Problems in Kharga and Dakhla Oases, Western Desert, Egypt. U.S. Geological Survey Open File Report.
- Clarke, P.E.(1963) : Approval of Corrosion Characteristics of Western Desert Well Waters, Egypt” U.S.G.S., Open File Report.
- Clayton, P.A.(1933) : The Western Side of The Gilf Kebir, *Geography Journal*, vol. 81, p. 254 – 259.
- Chilton, P.J., Lawrence, A. R., STUART, M.E.(1995) : The impact of tropical agriculture on groundwater quality. In H. Nash and G.J.H. McCall (ed.) *Groundwater quality*, Chapman and Hall, p.113 – 122.
- Chow, J.S., Wilson, J.O.(1981) : A Qualitative Review of Nubian Sandstone Regional Aquifer Behavior”, *International Conference On Water Resources Management*, p. 363-382.
- Cline, Walter(1950) : The Teda of Tibesti, Broker and Kawar in the Eastern Sahara; *Gen Ser. In Anthropology (Menasha, Wisc.)*, *Anthropology*, No. 12, 52 p.
- Cocheme, J., Franquin, F.(1967) : A study of the agroclimate of the semi-arid area south of the Sahara in West Africa, UNESCO.
- Committee for Evaluation of Sarir Project (1977) : Water Problem in Sarir Area, Committee for Evaluation of Sarir Project, Ministry of Agriculture, Tripoli, Libya, 32 p.
- Conant, L.C., Goudarzi, G.H.(1967) : Stratigraphic and Tectonic Framework of Libya, *American Association of Petroleum Geologists Bulliten*, Vol. 51, p. 719 – 730.
- Conrad, G., Marce, A., Olive, P.(1975) : Mise en evidence, par le tritium, de la recharge actuelle des nappes libres de la zone aride Saharienne (Algerie), *Journal of Hydrology*, vol. 27, p. 207 – 224.
- Cook, J. M(1980) : Methods for the chemical analysis of groundwaters, Rep. 80/5, Institute of Geological Sciences. United Kingdom.
- Cook, P.G., Edmunds, W.M., Gaye, C. B.(1992) : Estimating palaeo-recharge and palaeoclimate from unsaturated zone profiles, *Proceedings of American Society for Civil Engineerings*, vol. 28, 2721 – 2731.
- Cox, A., D oell, R. R., Dalrymple, G.B.(1963) : Geomagnetic polarityepochs and Pleistocene geochronology, *Nature*, vol.198, p.1049 – 1051.
- Crowley, K. D.(1983) : Large-scale bed configurations (macro forms), Platte River Basin, Colorado and Nebraska: primary structures and formative processes, *American Geological Society*, vol. 94, p. 117 – 133.
- Dachroth, W., Sonntag, C.(1983) : Grunwasserneubildung und Isotopendatierung in

- Sudwestafrika/Namibia-, Z. dtsh. Geol. Ges., vol. 134, 1013 – 1041.
- Dalloni, M.(1934) : Mission Au Tibesti. In: Memoires de l'academie des sciences, Academie des Sciences, vol. 61, p.1 – 372.
- Davis, S. N. De Wiest, R.J.M.(1967) : Hydrogeology, John Wiley, 463 p., New York, London Sydney (wiley).
- Degens, E.T., Magaz, S.(1961) : New Valley Project, California Institute of Technology.
- Degens, E.T., Shata, A., Munnich, K. O., Kentsh, G.(1962) : The Geology, Origin and Age of the Groundwater Supplies in Some Desert Areas of U.A.R, Desert Research Institute Bulletin, vol. 12, (2).
- Delleur(1999) : The Handbook of Groundwater Engineering, CRC.
- Denaeyer, M. E., Grossard(1925) : Mission de Delimitation de l'Afrique Equatoriale Francaise et du Soudan Anglo-Egyptien, Emile Larose.
- Desio, A.(1935) : Missione Scientifica della Reale Accademica d'Italia a Cufra (1931-ix) v.1, Studi geologica Sulla Cirenaica, Deserto Libico Sulla Tripolitania sul F.
- Desio, A.(1939) : Studi Morfologici Libia Orientale. Missione Scient. R., Accad. D'Italia a Cufra, Vol. II, p. 216.
- Desio, A.(1942) : Tibesti Nord-Orientale, Society of Geography Italian, vol. 8, p. 232.
- Deutsche Experten-Kommission(1960) : Bericht der deutschen Experten-Kommission uber das Kaattara-Projekt auf Grund der Besichtigungen und Erhebungen im Marz und April 1960. unpubl., Egypt Government, 190 p.
- Dincer, T., Al-Mugrub, A., Zimmermann, V.(1974) : Study of the infiltration and recharge through the sand dunes in arid zones with special reference to the stable isotopes and thermonuclear tritium.-, Journal of Hydr ology, vol. 23, p. 79 – 109.
- Dincer, T.(1980) : Use of Environmental Istopes in Arid-zone Hydrology, IAEA: International Atomic Energy Agency, vol. II, p. 21-30.
- Dominik, W.(1985) : Stratigraphie und Sedimentologie (Geochemie, Schwermineralanalyse) der Oberkreide von Bahariya und ihre Korrelation zum Dakhla Becken (Western Desert), Berliner Geowiss Abh., vol. 62, p. 173.
- Domomok, W.(1985) : Stratigraphie und Sedimentologie (Geochemie, Schwermineralanalyse) der Oberkreide von Bahariya und ihre korrelation zum Dakhla-Becken (Western Desert,, Berliner Geowiss Abh., vol. 62, p. 173.
- Du Bief, J.,(1953) : Essai sur l'hydrographie superficielle en Sahara. Vol.1. Direction du service de la Colonisation et de l'Hydraulique, Direction des Etudes Scientifiq, Direction des Etudes Scientifiques.

- Du Bief, J.,(1963) : Le climat du Sahara, Mem. Institute Research of Sahar, vol. 2, p. 274.
- DVWK: Deutscher Verband für Wasserwirtschaft und Kulturbau(1982) : Auswertung hydrochemischer Daten, DVWK: Deutscher Verband für Wasserwirtschaft und Kulturbau, vol. 54, p. 193.
- Eagleson, P. S.(1978) : Climate, Soil, and Vegetation, 3. A, simplified model of soil moisture movement in the liquid phase, Proceedings of American Society for Civil Engineerings, vol. 14, p. 722 - 730.
- ECG: Engineering Consulting Group(1975) : Hydroagricultural Development: Interim Report, Secretariate of Dams and Water Resources, Tripoli, Libya, 43 p.
- ECG: Engineering Consulting Group(1977) : Hydroagricultural Development of the Sirte and Sarir area.Phase I Final Report. I-Water Production, II-Water Production, III-Soils, IV-Agriculture, 57 maps, Secretariate of Dams and Water Resources, Tripoli, Libya.
- Eddib, Ali A., Ahmad, M. U.(1975) : The Development of Water Resources in Libyan Sahara.Proceedings Second World Congress. International Water Resources Association, V.III, p 1 – 10.
- Eddib, Ali A.(1973) : A Quantitative Study of Groundwater In the Kufra Basin: M.S. Thesis, Ohio University, Athens, Ohio, U.S.A., P. 345.
- Edmunds, W.M. and Wright, E.P. (1979) : Groundwater recharge and paleoclimate in the Sirte and Kufra basins. Libya, Jour. Hydrol, 40, pp. 215-241, Amesterdam.
- Edmunds, W.M., Walton, N. R. G.(1980) : A geochemical and isotopic approach to recharge evaluation in semiarid zones: past and present: Proc. Advisory Group Meeting on Arid-zone Hydrology, IAEA: International Atomic Energy Agency, p. 47 – 68.
- Edmunds, W.M.(1980) : The Hydrochemical Characterization of Ground Waters in the Sirt Basin Using Strontium and Other Elements. - In : Salem, M.J.The 2<sup>nd</sup> symposium Geology of Libya, Academic Press, p., London 703 – 714.
- Edmunds, W.M., Darling, W.G., Kinniburgh, D. G.(1988) : Solute profile techniques for recharge estimation in arid and semi-arid terrain. In I. Simmers (ed.) on Estimation of natural groundwater recharge, P. 139 – 157.
- Edmunds, W.M., Darling, W.G., Mahgoub S., Kinniburgh, D. G.(1992) : Sources of recharge at Abu Delaig, Journal of Hydrology, p. 131:1-24.
- Edmunds, W.M., Gaye, C. B., Fontes, J-Ch.(1992) : A record of climatic and environmental change contained in interstitial waters from the unsaturated zone of northern Senegal, IAEA: International Atomic Energy Agency, P. 533 – 549.
- Edmunds, W.M., Gaye, C. B.(1994) : Estimating the spatial variability of recharge using chloride, Journal of Hydrology, vol. 153, p. 47 – 59.

- Edmunds, W.M.(1994) : Characterisation of Groundwaters in the semi-arid and arid zones using minor elements, In H. Nash and G.J.H. McCall (ed. ) Groundwater quality, Chapman and Hall, p. 19 – 30.
- Edmunds, W.M., Gaye, C. B.(1996) : Groundwater recharge estimation using chloride, stable isotopes and tritium profiles in the sands of northwestern Senegal, Senegal Environment Geology, vol. 27, p. 246 – 251.
- Edward, N.W.(1962) : Fossil Plant from the Nubian Sandstone of Eastern Darfur, Fed. Society Land quarterly Journal, Vol. 87.
- El-Assiouti, M.M., Abou-Seida, M., Dorrah, H.T.(1979) : Towards an Optimal Operation Policy for the High Aswan Dam. Cairo University, Massachusetts Institute of Technology, Cairo.
- El-Barkouky, A. N.(1979) : Preliminary Investigation of groundwater and soil Resources in East Owienat area, Western Desert, Egypt.” General Petroleum Company, Cairo,
- El-Baruni, S. S.(1984) : Hydraulic Properties in the Tazerbo Wellfield: M.Sc. Thesis, University College, 66 p.
- El-Baruni, S. S., El-Futasi, R. H.(1992) : Evaluation of Hydraulic Properties of the Main Aquifer in Sarir Wellfield of Great Man-made River Project. Unpublished Report, General Water Authority, Tripoli, Libya.
- El-Baruni, S. S.(1994) : Earth Fissures caused by groundwater withdrawals in Sarir South Agricultural Project Area, Libya, Applied Hydrogeology, Vol. 2, No.1, p. 45 – 52.
- El-Batroukh, S. I., Zentani, A.S.(1978) : The Geological Interpretation of A Gravity Map of Northern Part of Maradah Graben (Sirte Basin Libya). In 2<sup>nd</sup> Symp. Geol. Libya. Geology Department, Faculty of Science, University of Libya, p. 965 – 978.
- El-Baz, F., Maxwell, T.A.(1982) : Desert landforms of southwest Egypt. - NASA Contr. Rep., NASA, p. 3611, 3720.
- El-Bishlawi, S.(1970) : Formation Water Salinities of the Cretaceous and Jurassic Sands. Amoco Oil Co. UAR, Report No. 124, Cairo, Egypt.
- El-Ramly, I.M.(1978) : A Note on the Present Groundwater Conditions in Tazirbu Oasis. Unpublished Report. Secretariat Dams and Water Resources, Tripoli, Libya.
- El-Ramly, I.M.(1978) : A Brief Account on Groundwater Conditions for South of Jebel Oweinat Locality and Maaten Assarra Locality. Unpublished Report(English and in Arabic)., Secretariat Dams and Water Resources, Tripoli, Libya, 8 p.: 4 figs.
- El-Ramly, I.M.(1978) : Programme for Hydrogeological Investigations in Kufra and Sarir Basins (Zone V Studies). Unpublished Report : Secretariat Dams and Water Resources, Tripoli, Libya.

- El-Ramly, I.M.(1978) : A Manual (visual) Landsat Interpretation for the Landforms and Hydroagricultural Studies in Kufra Basin (Image of Scale 1 : 250,000 - false color comp, Secretariat Dams and Water Resources Tripoli, Libya.
- El-Ramly, I.M.(1978) : A Detailed Programme for the Resident Hydrogeologist for Groundwater Management in Kufra Production and Settlement Projects. Unpublished Report: Secretariat Dams and Water Resources, Tripoli, Libya.
- El-Ramly, I.M.(1978) : An Account on the Hydro-agricultural Problems in Maradah Agricultural Project. Note on the Present Groundwater Conditions in Tazirbu Oasis. Unpublished Rep : Secretariat Dams and Water Resources, Tripoli, Libya.
- El-Ramly, I.M., Kurdiyeh, Ali(1978) : Technical Specifications for Buried Channels Delineation and Investigations in the Qasr As Sahabi-As Sarir Region: A Detailed Hydrogeological Study : Secretariat Dams and Water Resources, Tripoli, Libya..
- El-Ramly, I.M.(1978) : A Feasibility Study on Water Resources Conditions in Maradah Oasis Locality and Enviorns. Unpublished Report : Secretariat Dams and Water Resources, Tripoli, Libya. 23 p., 4 maps.
- El-Ramly, I.M.(1978) : New Light on Kufra Groundwater Basin Development and Mangement. Open File Report, Soil and Water Department : Secretariat Dams and Water Resources, Tripoli, Libya. 11 p.
- El-Ramly, I.M.(1978) : Pleistocene Lake. Open File Report, Soil and Water Department, Tripoli, Libya, SDWR: Secretariat Dams and Water Resources, 16 p.
- El-Ramly, I.M.(1979) : Regional Radio-Isotope Studies Programme for zone V, Unpublished Report : Secretariat Dams and Water Resources, Tripoli, Libya. 15 p., 1 map.
- El-Ramly, I.M.(1979) : A Proposal for the Establishment of a Groundwater Basin Control Section for Monitoring the Groundwater Development Activities in Al-Jamahiriya. Unpub., Report Secretariat Dams and Water Resources, Tripoli, Libya.
- El-Ramly, I.M.(1979) : Final Report on Piezometric Network Evaluation In Socialist People's Libyan Arab Jamahiriya. Submitted by The Technical Committee, Prt I, 68 p., 12 maps, 99 Tables and 598 chats for the 5 zones, Secretariat Dams and Water Resources, Tripoli, Libya.
- El-Ramly, I.M.(1979) : Comments on Final Report by ECFA (Japan) for Sirt and Sarir Water Transport Project, (vol. I and II). Unpublished Report, Secretariat Dams and Water Resources, Tripoli, Libya.
- El-Ramly, I.M.(1980) : Technical Data for Sarir and Tazirbu proposed Water Conveyance Schemes. Unpublished Report, Secretariat of Agri. Reclam. And Land Develop., Tripoli, Libya.

- El-Ramly, I.M.(1980) : Al Kufra Pleistocene Lake, its Evolution and Role in the Present Day Land Reclamation. In Salem, M.J. and Busrewil, M.T. (eds.) *Geology of Libya.*, Academic Press, p. 659 – 670.
- El-Ramly, I.M.(1980) : Water Resources Possibilities in zone v., Unpublished Report, Secretariat of Agric. Reclam. And Land Dev., Tripoli (in Arabic), Libya, 55p., 3 maps.
- El-Ramly, I.M.(1980) : Review and Comments on Prof. Moid Ahmed's Report Entitled "A Quantitative Model of the Kufra Sarir Basin, Libya (No. 3 dated June 1980)". Unpublished, Secretariat of Agriculture Reclamation and Land Development, Tripoli, Libya.
- El-Ramly, I.M.(1983) : Water Resources Study of Zone V (Kufra and Sirte Basins). Socialist People Libyan Arab Jamahiriya. Technical report of the Secretariat of Agricultural Reclamation and Land Development, Unpublished Report, WSD., Tripoli., Ministry of Agriculture (Libya), pp. 136 + appendices..
- El-Ramly, I.M., Fadel, M(1980) : A Technical Note on the Present Status for the Fresh Water Extraction by the Oil Companies in Eastern Jamahiriya for Oil Wells Injection Purposes, Secretariat of Agriculture Reclamation and Land Development, Tripoli, Libya.
- El-Ramly, I.M., Fadel, M(1980) : Groundwater Resources Development in Al Kufrah and Sirt Basins for the Creation of new Urban Centres: Unpublished Report, Secretariat of Agriculture Reclamation and Land Development, Tripoli, Libya..
- El-Shazly, M.M.(1960) : Contribution to the study of heavy minerals in the Nubian Sandstone section of the New Valley project area, El Kharga Oasis", Desert Research Institute Bulletin, Cairo, Egypt.
- El-Shazly, M.M., El-Shazly, E.M., Abdel Hady, M. A., El-Kassas, I. A., Salama, R. B., El Amin, N. B.(1976) : Geology of Kharga -Dakhla Oasis Area, Western Desert, Egypt, from landsat, Nasa Landsat G- 27930, Remote Sensing Center, Academy of Scientific Research And Technology, 1 Satellite Images.
- El-Zouki, A., Alian, A.(1991) : Application of Neutron Activation Methods for Trace Element Analysis in the Nubian Sandstone of Southern Libya. 3<sup>d</sup> Symp. on the Geology of Libya, Vol.5, p. 1745 – 1755.
- Embabi, N.S.(1969) : The Semi-Playa Deposits of Kharga Depression, the Western Desert, Egypt, Bulliten of Society of Geography of Egypt, no. 41/42, p. 73 – 88.
- Eriksson, E.(1961) : Natural reservoirs and their characteristics. - *Geofisica International*, J. of Geophys. Union of Mexico, No. 1, Universidad Nacional Autonoma de Mexic, Universidad Nacional Autonoma de Mexico.

- Euroconsult-Pacer(1983) : Regional Development Plan for New Valley: Final report, Ministry of Development (Egypt).
- Euroconsult-Pacer(1983) : Regional Development Plan for New Valley, Report to Ministry of Development: Annex F, Ministry of Development (Egypt).
- Evans, D.D., Thames, J. L.(1981) : Water in desert ecosystems: in: Evans, D.D. & Thames : Water in desert ecosystems, p. 219 – 234.
- Evans, D.D., Sammis, T.W., Cable, D.R.(1981) : Actual evapotranspiration under desert conditions. - in: Evans, D.D. & Thames : Water in desert ecosystems, p.195 – 218.
- Everdingen, R.O. Van(1962) : The Deeper Groundwater in Libya, Bulliten of International Association for Scientific Hydrology, No. 3, p. 33 – 39.
- Ezzat, M.A.(1959) : Preliminary Study for the Exploration of the Underground Water in Kharga and Dakhla Oasis”, Report to General Desert Development Organization, Cairo, Egypt.
- Ezzat, M.A.(1959) : Origin of the Underground Water In the Lybian Desert and Preliminary Evaluation of its Amount”, Report submitted to General Desert Development Organization, Cairo, Egypt.
- Ezzat, M.A.(1962) : Preliminary Report on the Hydrology of the New Valley. Western Desert, Egypt, With Special Emphasis on Kharga Oasis”, Prepared for General Desert Development Organization and US Aid, Cairo, Egypt, 181p.
- Ezzat, M.A.(1964) : New Valley Project, Groundwater Conditions”, Report to General Desert Development Organization, Cairo, Egypt.
- Ezzat, M.A.(1964) : New Valley Project, the annual Groundwater Research Program”, Arab Engineering Conference, Baghdad, Decemebr, 1964.
- Ezzat, M.A.(1964) : Hydrogeology of the New Valley Project, Western Desert, Egypt, With Special Reference On Kharga Oasis”, Unpublished Master’s dissertation, Department of Mining Geology, Faculty of Engineering, Cairo University.
- Ezzat, M.A., El-Badry, H. M, Ibrahim, M. M.(1968) : Hydrogeology of the Wadi El Gedid Project, Western Desert, U.A.R., With Special Reference to the Kharga Oasis”, Bul. Of the Faculty of Engineering, Faculty of Engineering, Cairo University, p. 477 - 500, 8 Figures.
- Ezzat, M.A. (1974), Groundwater series in the Arab Republic of Egypt; Exploitation of Groundwater in El-Wadi El-Gadid Project Area. Part I to IV, General Desert Development Authority/Ministry of Irrigation, Cairo
- Ezzat, M.A., Abdul-Atta, A. A.,(1974) : Exploitation of Groundwater in the El Wadi El Gadid Area (New Valley) Project Area. Published in; Groundwater in UAR series,



Egypt Government, 121 p.

Ezzat, M.A., Abdul-Atta, A. A.,(1974) : Regional Hydrogeological Conditions, El Wadi El Gadid Project Area. Part-1 of Groundwater Series in the Arab Republic of Egypt, Ministry of Agricultur, Ministry of Agriculture and Land Reclamation (Egypt), 121 p.

Ezzat, M.A.(1974) : Groundwater Series in the Arab Republic of Egypt; Exploitation of Groundwater in El- Wadi El Gedid Project Area.- Part I to IV, General Desert Developm, Ministry of Water Resources and Irrigation (Egypt).

Ezzat, M.A.(1975) : Groundwater Series in the Arab Republic of Egypt - Exploitation of Groundwater in Dakhla and Kharga Oasis”,, Ministry of Water Resources and Irrigation (Egypt).

Ezzat, M.A.(1975) : Regional Groundwater Models. Groundwater Pilot Scheme in New Valley, Egypt. FAO, DP/EGY/71/561, Working Document 2, FAO: Food and Agriculture Organization.

Ezzat, M.A.(1975) : El Wadi El Gedid Project, Dakhla - Kharga - Model”’, Unpublished report, Cairo.,

Ezzat, M.A.(1976) : Regional Groundwater Model”’, El-Wadi El-Gedid Project. Working Doc. No.2, UNDP/FAO report, AGON:EGY 71/56 Unpublished report, UNDP.

Ezzat, M.A.(1977) : The Groundwater Model of the South Qattara Area, Western Desert of Egypt: Unpublished Report General Petroleum Co. of Egypt.

Fahmy, S., Durrant, F.(1979) : Upper Nile Water Resources Development Projects In: Proc. Int. Conf. On Water Resources Management in Egypt, Cairo.

Faillat, J. P., Rambaud, A.(1991) : Deforestation and leaching of nitrogen as nitrates in underground water in intertropical zones: The example of Cote d’Ivoire, Environment, Geology and Water Science, vol.17, p.133 – 140.

FAO: Food and Agriculture organization of the United Nations(1979) : International groundwater resources law. FAO legislative study 40, FAO: Food and Agriculture Organization, 67 p.

FAO: Food and Agriculture organization of the United Nations(1991) : Treaties concerning the non-navigational uses of international water courses, Asia, FAO legislative study 55.

FAO: Food and Agriculture organization of the United Nations(1991) : Treaties concerning the non-navigational uses of international water courses, Europe, FAO legislative study 50. Stefano Burchi, FAO: Food and Agriculture Organization, 523 p.

FAO: Food and Agriculture organization of the United Nations(1977) : Groundwater Pilot Scheme, New Valley: Technical Report 2., FAO, Rome.

- Farag, M. H., Lloyd, J. W.(1978) : Fossil Ground-Water Gradients In Arid Regional Sedimentary Basins, Groundwater, vol. 16, No. 6, p. 388– 393.
- Faure, H., Servant, M.(1970) : Evolution Recente d'un Bassin Continental: Le Tchad: Programme D'étude. - Cahiers O.R.S.T.O.M., Serie Geologie, Vol. II, no.1, p. 5 – 8, Paris.
- Feltz, H.R.(1963) : Evaluation of Facilities and Investigational Programs for the Assessment of Water Quality, Western Desert, Egypt, U.A.R.”, Egypt Government.
- Finnmap Oy, Speerplan(1984) : El Khalij Region, Regional Plan, Final Report No. KF1, Secretariat of Utilities, Tripoli, Libya.
- Fisk, E.P., Pennington, W.D.(1970) : Groundwater Geology and Hydrology of the Kufra Oasis, Libyan Arab Republic: A Report presented by the Agricultural Department, Occidental of Libya, 54 p.
- Fisk, E.P., Pennington, W.D.(1976) : Groundwater Geology and Hydrology of the Kufra Region, Libyan Arab Republic, The Libyan Journal of Science, Vol. 68, p. 34 – 54, Tripoli
- Flohn, H.(1964) : Investigations on the tropical easterly jet, Bonner Meteorol. Abh, vol.4, p. 83.
- Flohn, H.(1966) : Warum ist die Sahara trocken?, Z. f. Meteor, vol.17, p. 316 – 320.
- Flohn, H., Wittenberg, H.(1980) : Die Verdunstung als Wasserwirtschaftliche Schlüsselgrosse zum Qattara- Projekt., Wasser und Boden, vol. 8, p. 352 – 358.
- Flohn, H.(1980) : Modelle der Klimaentwicklung im 21. Jahrhundert. - in: Herausgeber Oeschger, Messerli, Svilar (edit.): “Das Klima”, 1 - 17, Springer Verlag., p. 1 – 17.
- Fontes, J. C., Gonfiantini, R., Roche, M.-A.(1970) : Deuterium et oxygene- 18 dans les eaux du Lac Tchad.- In: Isotope Hydrology, IAEA: International Atomic Energy Agency, p. 387- 404, Vienna.
- Fontes, J. C., Gasse, F., Rognon, P.(1974) : Variations hydrologiques et extension des lacs holocenes du desert Danakil, Palaeogeography. Palaeoclimatology. Palaeoecology, vol.15, p. 109 – 148.
- Fontes, J. C., Gonfiantini, R., Sauzay, G.(1974) : Etude isotopique de la nappe du Continental Intercalaire et de ses relations avec les autres nappes du Sahara.- In: Isotope Techniques in Groundwater, IAEA: International Atomic Energy Agency, Vol. 1, p. 224 – 242.
- Fontes, J-Ch., Travi, Y., Gac, J-Y., Fritz, B.(1987) : Reconnaissance chimique et isotopique des eaux de pluie au Senegal., Geodynamique, vol. 2, p.43 – 53.

- Forkasiewicz, J.(1982) : Bassin sedimentaire nubien (Egypte, Libye, Soudan), BRGM: Bureau Research Geology Ministries, no. 2, p.149 – 175, Paris.
- Fortak, H., Langguth, H.R.(1967) : Zur hydrochemischen Kennzeichnung von Grundwassern und Grundwassertypen mittels Kennzahlen, International Association Of Hydrologists Mem., vol. 7, p. 89 – 96.
- Foster and Associates(1975) : General Report For the First year Geophysical Well Logging Program at Sarir and Kufra, Libyan Arab Republic. A Report submitted to the Executive Auth, Executive Authority of Kufra and Sarir.
- Foster and Associates(1975) : Sarir Project well No.FE-3/p, EW-3/P, FW-1/P, GE-1/P, GE-1/P, GW-1/P, GW- 3/P, FW-6/P, EE-3/P, EE-2/P, FW-2/P EE-4/P, FE-4/P, FW-4/P, FE-2/P, FE-1/P AN, Executive Authority of Kufra and Sarir, 17 log.
- Freeze, A.R., Cherry, J. A. (1979): Groundwater, Prentice Hall, Inc., 604 p.
- Fuad, Jamal, Faraj, Majbiri (1977): Observations on the Behaviour of some summer crops grown at Sarir Production Project, Regional Agriculture Research Centre, Libya.
- Fuad, Jamal, Amer, Shakir (1978): Research Programme at Sarir Production Project, 1978 – 1979 season., Field Crops - Soil., Regional Agriculture Research Centre, Libya, 13 p.
- Fursich, F.T.(1981) : Invertebrate trace fossils from the Upper Jurassic of Portugal, Com. Serv. Geol., vol.67, (2), p.153 – 168.
- Gabert, G.(1961) : Some results of Groundwater Investigations in the Republic of Sudan, Symp. of Athens, I.A.S.H. Publication No. 56., IAHS Publications.
- Gabriel, B.(1977) : Zum ökologischen Wandel in Neolithikum der östlichen Zentralsahara, Berl. Geogr. Abhandlungen, vol. 27, p. 111.
- Gabriel, B., Kropelin, S.(1983) : Jungquartäre limnische Akkumulationsphasen im NW-Sudan, Z. dtsh. Geol. Ges., vol. 48, p. 131 – 143.
- Gabriel, B., Kropelin, S.(1984) : Holocene lake deposits in Northwest-Sudan, Palaeoecology of Africa, vol. 16, p. 295 – 299.
- Gabriel, B., Kropelin, S.(1984) : Holocene lake deposits in North Jungquartäre limnische Akkumulationsphasen im NW-Sudan, Z. dtsh. Geol. Ges., vol. 48,p. 131 – 143.
- Gabriel, B., Kropelin, S., Czesla, E., Ritchie, J. C.(1985) : Parabeldünen und Klima in neolithischer Zeit im Nordsudan, Geowissenschaften in unserer Zeit, vol. 4, p.105 – 112.
- Gabriel, B., Kropelin, S.(1986) : Habitats dunaires Neolithiques au Soudan septentrional et

- implications paleoclimatiques.- INQUA-ASEQUA Symp. Intern., Changements globaux en Afrique, Coll. Travaux et Documents, vol. 197, p.157 – 160.
- Gad, S. M. A., Fawzy, M., Shaaban, M.H.H. Habib, Rafaat, A., Naem, R.(1971): Hydrogeology and Geochemistry of Bahariya Oasis. General Desert Development Authority, Groundwater Dep. Kharga, New Valley.
- Gaod, A.M.(1975) : Report on Kufra Production Project. Submitted to Arab Engineering Union - 13<sup>th</sup> Conference (Tunis: 17-21 March 1975).
- Gaod, A.M., Ahmad, M. U.(1977) : Water Development in Libyan Sahara: Proceedings of UN Water Conference, in Mordel Plata, Argentina, 1816 – 1831.
- Gardner, E.W.(1932) : Some Problems of the Pleistocene Hydrography of Kharga Oasis, Egypt, Geology Magazine, vol. LXIXIX, p. 386 – 421, London.
- Caton-Thompson, G., Gardner, E.W.(1932) : The Prehistoric Geography of Kharga Oasis, Geography Journal, vol. 80, London.
- Gasse, F.(1980) : Late quaternary changes in lake levels and diatom assemblages on the south-eastern margin of the Sahara, Palaeoecology of Africa, Vol. 12, p. 333 – 350.
- Gaye, C. B.(1990) : Etude isotopique et geochimique du mode de recharge par les pluies et De decharge evaporatoire des aquiferes libres sous climat semi-aride au Senegal., Dakar University.
- GDK: Groundwater Department Khaarga(1971) : Hydrogeology and Geochemistry of Bahariya Oasis: Report to General Desert Development Authority, GDDO: General Desert Development Organization, 130 p.
- Gefli (1972): Soil and Water Resources Survey of Hydroagricultural Development Eastern Zone with Geological Maps. Unpublished Report, Kufra - Sarir Authority., Tripoli, Libya.
- Gefli (1973): Proposals for Agricultural Studies Kufra- Sarir Unpublished Report, Kufra – Sarir Authority., Tripoli, Libya. 58 p.
- Gefli(1976) : Soil Resources Survey; Jalo-Ojla. Scale 1:50,000., Gefli.
- Gefli(1977) : Detailed Soil Survey; Jalo-Ojla. Scale 1:10,000., Gefli.
- Gefli(1978) : Jalo-Ojla. Settlement Project. Final Report on Water Resources. Unpublished Rep., Agricultural Development Council, Tripoli, Libya.
- GPC: General Petroleum Company of Egypt(1979) : Preliminary Investigation of Groundwater and Soil Resources in East-Uweinat Area, Western Desert, Egypt; Unpublished report., GPC: Cairo, Egypt.
- GPC: General Petroleum Company of Egypt(1984) : Assessment of Groundwater Resources Evaluation of the Nubian Aquifer - East Uweinat Area, South-West Desert ,Egypt. Report to Government of Egypt., GPCE: General Petroleum Co. of Egypt.
- GPC: General Petroleum Company of Egypt(1984) : Hydro-Agricultural Study Project,

- East Oweinat Region, Western Desert, Egypt, Groundwater Resources, Final Report: Hydrogeological Conditions, Vol. 3, GPCE: General Petroleum Co. of Egypt.
- GPC: General Petroleum Company of Egypt(1985) : Extraction data for Deep and Shallow wells for Siwa - Bahariya, Farafra, Dakhla and Kharga Oasis and Piezometric levels of observation wells. Unpubli, GPCE: General Petroleum Co. of Egypt.
- GPC: General Petroleum Company of Egypt(1986) : Foreseen Plans, Western Desert, Egypt. Unpublished map, GPCE: General Petroleum Co. of Egypt, Van.
- Genuchten, M.(1980) : A closed form equation for predicting the hydraulic conductivity of unsaturated soils, Journal of American Society of Soil Science, vol. 44, p. 892 – 898.
- Geoistrzivanja(1965) : Supply and Installation of 23 Piezometers Within the High Aswan Dam Reservoir Area”, Report to Ministry of the High Dam, by Geoistrzivanja, Zagreb, Y, Geoistrzivanja.
- Geoistrzivanja (1967): Dakhla, Farafra and South Bahariya Areas, New Valley Project, Photogeological Interpretation”, report to General Desert Development Organization, Geoistrzivanja.
- German Consult (1973): Land Classification - Kufra Settlement Project. Scale 1:5,000., German Consult.
- GWG: German Water Group (1977): Hydrogeological Study on Groundwater Resources in the Kufra Area. Final Report, GWG: German Water Group, 7 Vols.
- Geshler, G.M. (1976): Present and Future Trends in Water Resources Development in Arab States, UNESCO Paper to CASTRAB, UNESCO: United Nations Educational Scientific, and Cultural Organization.
- Geyh, M. A.(1970) : Isotopenphysikalische Untersuchungen an Kalksinter, ihre Bedeutung für die  $^{14}\text{C}$ - Altersbestimmung von Grundwasser und die Erforschung des Palaoklimas, Geol. Jb., vol. 88, p. 149 – 158.
- Geyh, M. A.(1971) : Die Anwendung der  $^{14}\text{C}$ -Methode, Clausthaler Tektonische Hefte, vol. 11, p.118.
- Geyh, M. A., Jakel, D.(1974) : Late Glacial and Holocene Climatic of the Sahara Desert Derived from a Statistical Treatment of  $^{14}\text{C}$  Dates. Palaeogeography, Palaeoclimatology, Palaeogeography. Palaeoclimatology. Palaeoecology, vol. 15, p. 205 – 208.
- Geyh, M. A., Jakel, D.(1977) : The Climate of the Sahara During the Late Pleistocene on the Basis of Available Radiocarbon Date. Natural Resources and Development, Institute for Scientific Cooperation.
- Geyh, M.A (1978), Interpretation of environmental isotope data of groundwater, Arid and

- Semi-Arid Zones. Prog. IAEA Advisory Group Meeting on the Application of Isotope Techniques to Arid Zone, Hydrology, Vienna Nov. 1978
- Geyh, M. A., Wirth, K.(1980) :  $^{14}\text{C}$  ages of confined groundwater from the Gwandu Aquifer, Sokoto Basin, Northern Nigeria, *Journal of Hydrology*, vol. 48, p. 281 – 288.
- Geyh, M. A., Jakel, D.(1982) :  $^{14}\text{C}$ -Daten aus dem Gebiet der Sahara, hervorgegangen aus Arbeiten der Forschungsstation Bardai und des Niedersächsischen Landesmuseums für Bodenforschung, *Berliner Geowiss Abh.*, vol. 32, p. 143 – 166.
- Geyh, M. A.(1983) : Physikalische und Chemische Datierungsmethoden in der Quartarforschung, *Clausthaler Tektonische Hefte*, vol. 19, p. 163.
- Ghobrial, M.G., Hermina, M. H., Issawi, B.(1961) : *The Geology of the Dakhla Area*, Egyptian Government.
- Ghobrial, M.G.(1976) : *The Structural Geology of the Kharga Oasis*, *Geol. Surv. And Min. Research Dept. Cairo, Paper No. 43.*,
- Gischler, C. E.(1976) : Present and future trends in water resources development in Arab countries: UNESCO report, UNESCO: United Nations Educational Scientific, and Cultural Organization.
- Gischler, C. E.(1979) : *Water Resources in the Arab Middle East and North Africa: Based on a UNESCO Working Document*, UNESCO: United Nations Educational Scientific, and Cultural Organization, Working Document No. SC-76/CASTARAB/3 UNESCO 1976. p. 37 – 45.
- GMBH Agrar and Hydrotechnik(1965) : *Hydrogeological Investigations Upon Water Supply for (i) Agedabia, (ii) Gialo Augila, (iii) Maradah*, AGIP Nami Company.
- GMBH Agrar and Hydrotechnik(1966) : *Hydrogeological, Hydrological and Geoelectrical Study in the Agedabia Area and in other Areas near Agedabiya*, GMBH Agrar and Hydrotechnik.
- Goudarzi, G.H.(1970) : *Geology and Mineral Resources of Libya - A Reconnaissance Geological Survey*: U.S.G.S. Professional Paper, 660, 140 p.
- Goudarzi, G.H.(1980) : *Structure - Libya*. In: Salem, M.J., and Busrewil, M.T. (eds.) *Geology of Libya*, Academic Press, p. 879 – 892.
- Goudie, A.S.(1973) : *Duricrusts in Tropical and Subtropical Landscapes*, Clarendon Press, 174 p.
- Grandic, S., Kosec, B.(1968) : *Geological Characteristics of Sedimentary Complex of the Nubian Formation*, Report to Egyptian General Desert Development Organization, Egyptian General Desert Development Organization.

- Gray, D. M.(1973) : Handbook on Principle of Hydrology, Water Information Center, 660 p.
- Griffiths, J. F., Landsberg, H. E.(1972) : Climates of Africa. - world Survey of Climatology, Elsevier Scientific Publishing Company, vol. 10 langguth, H.R., Voigt, R.(1980) :
- Griffiths, J. F., Soliman, K.H.(1972) : Climate of Africa: The Northern Desert, In: Griffiths, J.F. (ed.), Elsevier Publishing Co., p. 75 – 132.
- Grolier, M.(1994) : National status reports of Egypt, Sudan and Libya on the “Development and Utilization of the Nubian Sandstone aquifer” CEDARE: Centre for Environment and Development for the Arab Region and Europe, 99, 100 and 41 p.
- Groundwater Research Institute(1987) : Geology and Geomorphology of the Egyptian component area of the Transnational Nubian Sandstone project, Groundwater Research Institute.
- Gurney, R. J., Hall, D. K.(1983) : Satellite derived surface energy balance estimates in the Alaskan Sub-Arctic, Journal of Climate and Appl. Meteorology, vol. 22, 1, p. 115 – 125.
- GWG: German Water Group(1977) : Hydr ogeological Study of Groundwater Resources in the Kufra Area- German Water Engineering GmbH, Government of Libya, 5 vol.
- Haberland, W., Pachur, H. J.(1980) : Ober Deflationsformen in der Zentralen Sahara, Berl. Geogr. Studien, vol. 7, p. 309 - 322.
- Habermehl, M. A.(1983) : Hydrogeology and Hydrochemistry of the Great Artesian Basin, Australia.in: Proceedings of International Conference On Groundwater and Man, p. 83 – 98.
- Hadam: High Aswan Dam Authority(1982) : Toshka Multipurpose Reservoir Project.- Prefeasibility Study, Final Report: unpublished report: of Beller Consult Ltd., ACI-Aqua Project Consult Ltd., Hadam: High and Aswan Dam Authority.
- Hagedorn, H. K.(1971) : Untersuchungen uber Relieftypen arider Raume an Beispielen aus dem Tibesti-Gebirge und seiner Umgebung. - Zeitschrift fur Geomorphologie, Supplementband 11, Berlin, Stuttgart.
- Hagedorn, H. K.(1986) : Geomorphological evidence for a climatic change in the south-central sahara. - In: INQUA-ASEQUA Symp. Internat., Changements globaux en Afrique durant, INQUA-ASEQUA Symp. Internat., Changements globaux en Afrique durant le Quaternai, vol.197, p. 183 – 185.
- Haltenorth, T., Diller, H.(1977) : Säugetiere Afrikas und Madagaskas, BLV, 403 p.
- Harshbarger, J. W.(1967) : Review of Hydrogeological Features of the Nubian Sandstone and Suggestions for Analog Model of the Kharga Depression, Report to G.D.D.O., GDDO: General Desert Development Organization.
- Hartge, K.H.(1966) : Ein Haubenpermeameter, Z. f. Kulturtechnik und Flurbereinigung, vol.

7, p.155 – 163.

Hartge, K.H., Becher, H. H.(1971) : Stechzylinder und Wandreibung, Z. f. Kulturtechnik und Flurbereinigung, vol.12, p. 339 – 347.

Hassan, F.(1967) : A new Carboniferous occurrence in the Abu Durba, Sinai, Egypt In: 6<sup>th</sup> Arab Petrol. Congr., , p. 2 – 8.

Haynes, C. V.(1978) : The Nubian Desert, a Product of Climatic Changes. In: GREELEY & BLACK, D. (eds.): Abstracts for the Planetary Geology Field Conference, on Aeolian processes.

Haynes, C. V., Mehringer, P. J., El-Zaghloul, S. A.(1979) : Pluvial Lakes of North-Western Sudan, Geography Journal, vol.145, p. 437 – 445.

Haynes, C. V.(1980) : Geological evidence of pluvial climate in the El Nabta area of the Western Desert, Egypt.- in : Wendorf, F. & Schild, R. : Prehistory, Academic Press.

Haynes, C. V., Haas, H.(1980) : Radiocarbon evidence for holocene recharge of groundwater, Western Desert, Egypt.-, Radiocarbon, vol. 22, (3), p. 705 – 717.

Haynes, C. V.(1982) : Quarternary geochronology of the Western Desert .- Presented at the first thematic conference “Remote Sensing of Arid and Semi-Arid Lands” in Cairo, Conference on Remote Sensing of Arid and Semi-Arid Lands, p. 297 – 311.

Haynes, C. V.(1985) : Quarternary Studies, Western Desert Egypt and Sudan : 1979 -1983 Field Seasons: .- Nat. Geographic Soc. Reports, National Geographic Society (USA), Vol. 15, 16, p. 269 – 341.

Hea, James P.(1971) : Petrography of the Paleozoic-Mesozoic Sandstones of The Southern Sirt Basin, Libya. In: Symp. Geol. Libya (ed. C. Gray). Faculty of Science, University of Libya, p. 107 - 125.

Heaton, T. H. E., Talma, A. S., Vogel, J. C.(1983) : Origin and history of nitrate in confined groundwater in the western Kalahari, Journal of Hydrology, vol, 62, p. 243 – 262.

Heaton, T. H. E.(1984) : Sources of the nitrate in phreatic groundwater in the western Kalahari, Journal of Hydrology, vol. 67, 249 – 259.

Hecht, F., Furst, M., Klitzsch, E.(1964) : Zur Geologie von Libyen, Geol. Rdsch., vol. 53, p. 413 – 470.

Heckendorff, W. D.(1977) : Untersuchungen zum Klima des Tibesti Gebirages, Ber. D. Inst. F. Met. U. Klimar, vol. 17, p. 347.

Hefny, K.(1977) : Ground Water potentialities in ARE, Paper for the UN Water Conference, United Nations.



- Hefny, K. (1991), Planning for Groundwater Development of Nubian Sandstone Aquifer for sustainable Agriculture. RIGWA/IWACO (editors), Round Table meeting (RTM-91) Cairo, Egypt.
- Heinl, M., Hollander, R.(1984) : Some Aspects of a New Groundwater Model for the Nubian Aquifer System, Berliner Geowiss Abh., vol. 50, p. 221 – 231.
- Heinl, M., Brinkmann, P. J.(1986) : Numerical Ground Water Model. - in : Thorweihe, U. (ed.) : Impact of Climatic Variations on East Saharian Groundwaters - Modeling of large scale Flow, Berliner Geowiss Abh., vol. 72, p. 135 – 155.
- Heinl, M., Brinkmann, P. J., Hollander, R., Reich, G.(1987) : Retrospective Simulation of Groundwater Flow and Transport in the Nubian Aquifer System, Berliner Geowiss Abh., vol. 75.2, p. 465 – 516.
- Heinl, M., Brinkmann, P. J., Thorweihe, V.(1987) : The Nubian Groundwater System in North East Africa. In: ENGELN, G.B. & JONES, G.P. (eds.): Development in Groundwater flow Systems Analysis, IAHS Publications, vol. 163, p. 333 – 351.
- Heinl, M., Brinkmann, P. J., Thorweihe, V.(1988) : Grundwasserströmung im Nubischen Aquifers system, Nordost Afrika, - Mitt. D. Inst. F. Wasserbau. U. Wasserwirtsch. D. TU. Berlin, Mitt. D. Inst. F. Wasserbau, p. 110-133..
- Heinl, M., Brinkmann, P. J.(1989) : A Groundwater Model for the Nubian Aquifer System, IAHS Publications, vol. 34/4, 425 – 447.
- Heinl, M., Thorweihe, V.(1993) : Groundwater balance of the sedimentary aquifer in Darfur - Upper Nile area, Sudan. In: Thorweihe, U. & Schandelmeier, H. (eds.): Geoscientific Researc,
- Heinl, M., Thorweihe, V.(1993) : Groundwater Resources and Management in SW- Egypt.- In: Meissner, B. & Wycisk, P. (eds.): Geopotential and Ecology - Analysis of Desert Region, Catena,
- Hellmann, G., Meinardus, W.(1901) : Der grobe Staubfall vom 9. -12. Marz 1901 in Nordafrika, Sud- und Mitteleuropa. - Veroff. Konigl. Preub. Meteorol, Geol. Palaont. Abh, vol. 2, p. 93.
- Hellmann, G.(1916) : Uber die ayptischen Witterungsangaben im Kalender von Claudius Ptolemaeus. - Sitzungsberichte der koniglich preussischen Akademie der Wissenschaften,, Akademie der Wissenschaften, p. 332 – 341.
- Hellstrom, B.(1940) : The Subterranean Water in the Libyan Desert, Geofisika Annaler, 21, p. 206 – 239, Stockholm.
- Hellwig, D. H. R.(1973) : Evaporation of Water from Sand - 1: Experimental Setup and Climatic Influences; 2: Diurnal Variations; 3: Loss of Water ?; 4: Influence of Depth, Journal of Hydrology, vol. 18, p. 93 - 108, 109 - 118, 305 - 316, 317 – 327.

- Hendriks, F., Luger, P., Kallenbach, H., Schroeder, J.(1984) : Stratigraphical and Sedimentological Framework of the Kharga - Sinn el-Kaddab Stretch (Western and Southern Part of the Upper Nile Basin), Berliner Geowiss Abh., vol. 50, p. 117 – 151.
- Hendriks, F.(1986) : The Maghrabi Formation of the El-Kharga area (SW-Egypt). Deposits from a mixed estuarine and atidal flat environment of Cenomanian age, Journal of African Earth Sciences, vol. 5, p. 481 – 289.
- Hendriks, F., Kallenbach, H.(1986) : The offshore to backshore environments of the Abu Ballas Formation of the SE Dakhla Basin (Western Desert, Egypt), Geol. Rdsch., vol. 76, (2), p. 445 – 460.
- Hendriks, F.(1987) : Die Entwicklungsgeschichte des SW-Agyptischen Sedimentations – raumes in der Kreide und im Alttertiar.- Unpublished Thesis, TU Berlin, , 167 p.
- Hermina, M. H.(1967) : The Geology of the North-Western Approaches of Kharga”, Egypt Government, Paper No. 44.
- Habermehl, M. A., Fahrmeier, L.(1984) : Multivariate statistische Verfahren, Walter de Gruyter, 796 p.
- Haynes, C. V., Ritchie, J. C., Eyles, C. H.(1985) : Sediment and pollen evidence for an early to mid Holocene humid period in the eastern Sahara, Nature, vol. 314, p. 352 – 355.
- Hefny, K., Amer, A., Farid, M.S.(1979) : Hydrological Aspects of Nile Delta Aquifer.- Proc. Int. Conf. On Water Resources Management in Egypt, Cairo., International Conference On Water Resources Management.
- Herrmann-Degen, W., Klitzsch, E., Groschke, M.(1987) : Paleozoics and Pre-Campanian Cretaceous Strata at Wadi Qena. - In: R. Said & H.C. Squyres (eds.), The Geology of Egypt, 2<sup>nd</sup> edition, in press.,
- Higazy, R. A., Shaath, S. K.(1960) : Remarks on the Age and Origin of Groundwater In The Western Desert With Special Reference to El Kharga Oasis”, Geology Society Bulletin, vol. 23, p. 177 – 180.
- Hill, D.(1984) : Diffusion coefficients of nitrate, chloride, sulphate and water in cracked and uncracked Chalk, Journal of Soil Science, vol. 35, p. 27 – 33.
- Hillel, D.(1971) : Soil and Water, Academic Press.
- Hillel, D.(1980) : Applications of soil physics, 385 p.
- Himida, I. H.(1965) : Artesian Water of The Nubian Sandstones in The Libyan Desert of U.A.R.”, Geology and Prosection Journal, No. 6.
- Himida, I. H.(1966) : A Quantitative Study of Artesian Water Exploitation Resources In Kharga and Dakhla Oases, Western Desert of Egypt, Desert Research Institute Bulletin.

- Himida, I. H.(1968) : A Quantitative Study of Artesian Water Exploration Resources In Kharga and Dakhla Oasis, Western Desert”in: Bulletin of the Desert Research Institute,, Desert Research Institute Bulletin, vol. XVINo. 2, p. 31- 57 .
- Himida, I. H.(1969) : Remarks On The Absolute Age Determination of The Artesian Water on the Oasis”, T.XVII, No. 2, pp. 53-63, 1967, Issued 1969.,
- Himida, I. H.(1972) : The Nubian Artesian Basin, its Regional Hydrogeological Aspects and Paleohydrological Reconstruction.- IAHS Publ. 97, IAHS Publications.
- Himida, I. H.(1996) : The major groundwater basin in North East Africa “ nubian Artesian Basin” Major Nubian Aquifer System. A report submitted to ACSAD, ACSAD: Arab Center for the Studies of Arid Area and Dry Land.
- Hissene, A.(1986) : Geologie und Hydrogeologie des Erdis-Beckens (NE - Tschad, Sudliches Kufra Becken), Berliner Geowiss Abh., vol. 76, p. 66, Berlin.
- Hornberger, G.M., Remson, I., Molz, F. J.(1971) : Numerical methods in subsurface hydrology with an introduction to finite element method. Wiley-Interscience, 390 p.
- Hornung, U., Messing, W.(1984) : Prose Medien, Methoden und Simulation, , 160 p.
- Hossam, Abdel Samie, A. G.(1954) : Report on the Survey and Classification of Kharga Oases Soils, Geographical Society of Egypt Journal, vol. 34, p. 53 – 73.
- Hovermann, J.(1984) : Uber letzteiszeitliche Pedimente im sudlichen Zentralafrika.- Vortrag Tagung « Terrestrische und marine Palaoklimatologie » des Nationalen Klimaprogramm,
- Hsu, K. J., Ryan, W. B. F., CITA, M. B.(1973) : Late Miocene Desiccation of the Mediterranean, Nature, vol. 242, p. 240 – 244.
- Hudson, J. A., Priest, S. D.(1979) : Discontinuities and Rock Mass Geometry .- Int. J. Rock. Mech. Min. Sci. (Geomechanical abstracts, Pergamon Press, vol. 16,p. 339 – 362.
- Hume, W. F.(1915) : The nitrate shales of Egypt, Mem. Institute Research of Sahar, vol. 8:146-169.
- Hunter, R. B., Romney, E. M., Wallace, A.(1982) : Nitrate disdribution in Majave desert soils, Soil Science, vol. 134, p. 22 – 29.
- Hunting Geology and Geophysics(1970) : Water Survey and Development Project in Darfur Province - Sudan.
- Hunting Geology and Geophysics(1974) : Geology of the Jabal Al Awaynat Area, Libyan Arab Republic. Unpublished Report of Industrial Research Centre, Tripoli, SPLAJ.
- IAEA: International Atomic Energy Agency(1979) : Isotope Data No. 1-6, world survey of isotope concentrations in precipitations (1960-1975). - Technical Reports Ser. No. 96.

- IAEA: International Atomic Energy Agency, No 96 , 117, 129, 147, 165, 192.
- Ibrahim F. N.(1984): Ecological Imbalance in the Republic of the Sudan, with Reference to Desertification in Darfur, Institute of Geoscience, University of Bayreuth Germany.
- Industroproject (1968): Basis for the Analogue Model of Kharga and Dakhla Oases, Dep. For Exploration of Mineral Resources, unpublished report to Egyptian General Desert Development Organization, Zagreb.
- Institute of Geological Sciences(1979) : Phase 1 Appendixes. Kufra Agric. Co., Interim Report. 56 p., App. 1. 10. p., App.2. 12 p., App. 3. 11p., App.4. 12 p., App. 5. 12 p., App.6. 10 p., A, Institute of Geological Sciences.
- Institute of Geological Sciences(1973) : Jalu-Tazerbo Project: Phase 1 Area (Maps). Kufra Agric. Co., 1 Draw., 11 fig., 1C., 2C., 3C., 4C., 16 Transp., (Sc. 1 : 500,000)., Institute of Geological Sciences.
- Institut Geographique National(1974) : Carte Internationale du Monde; 1 : 1000.000 Largeau, NE-34, Institut Geographique National.
- Ishag, A. H.(1964) : Potential Recharge to Groundwater Aquifers in Kordofan Province Sudan: Ms Thesis Univ. of Ariz. USA., University of Arizona.
- Iskander. W.(1994) : Development of the Nubian Aquifer in Egypt, Libya and Sudan. Report Submitted to CEDARE - Cairo., CEDARE: Centre for Environment and Development for the Arab Region and Europe.
- Iskander. W.(1990) : Master Plan for the Development of the Nubian Aquifer for Combating Desertification in North-East Africa. Tech0- Report Submitted to UNEP, UNEP: United Nations Environment Programme.
- Iskander. W.(1988) : The Nubian Sandstone Regional Aquifer in N.E. Africa. An over view of the Largest aquifer in the World. Tech. Report Submitted to UNCTAD, UNCTAD: United Nations Commission of Trade and Development.
- Iskander. W.(1987) : Regional Coordination Machinery, Transnational Project on Major Regional Aquifer in N.E. Africa - Proceedings of the UN Tech. Workshop, UN: United Nations.
- Iskander. W.(1987) : Establishment of Green shelter belts to protect the Irrigated Agricultural Lands in the Northern Region, Sudan - A Master Plan for Combating Desertif., UNEP: United Nations Environment Programme.
- Iskander. W.(1987) : Establishment of Green Oasis in the Western Desert - Sudan. Abstract Submitted to Seminar on Integrated Control of Land Desertification Lanzhou, Seminar on Integrated Control of Land Desertification.
- Iskander. W.(1986) : Utilization of Ground-water in Combating Desertification in Dongola Area, Northern Region, Sudan; Paper Submitted to International Workshop on Sand

## Transportation and Desertification in Arid Lands.

- Iskander. W.(1986) : Strategy Plan of Using Water Resources in the Rehabilitation and Development of Darfur Region Sudan. Report Submitted to UNDP: United Nations Development Program.
- Iskander. W.(1988) : The Nubian Sandstone Regional Aquifer in N.E. Africa. An over view of the Largest aquifer in the World. Tech. Report Submitted to UNTCD: United Nations Commision of Trade and Development.
- Issar, A., Bein, A., Karbueke, T., Gat, J. R.(1972) : On the ancient water of the upper Nubian Sandstone Aquifer in Central Sinai and southern Israel, *Journal of Hydrology*, vol. 17, p. 353 – 374, Netherlands.
- Issawi, B., Said, R., Kerdany, M.(1964) : Contributions to the Pre history of Nubia, No.1, Preliminary Results of a Geological Expedition to Lower Nubia and to Kurkur and Dungal Oasis, Egypt”, Museum of New Mexico Press.
- Issawi, B.(1971) : Geology of Darb el Arbain, Western Desert, Egypt, *Annals of the Geological Survey of Egypt*, vol.1, p. 53 – 92.
- Issawi, B.(1972) : Review of Upper Cretaceous-Lower Tertiary Stratigraphy in Central and Southern Egypt, *Bulletin of American Petroleum Geology*, vol. 56, 8, p. 1448 – 1463.
- Issawi, B.(1973) : Nubian Sandstone: Type Section”, *American Association of Petroleum Geologists Bulliten*, vol. 57, 4, 741 – 745.
- Issawi, B., Haynes, V.(1978) : Journey to the Gilf Kebir and Uweinat, Southwest Egypt, *Geography Journal*, vol. 146, Part 1, p. 51 – 93.
- Issawi, B.(1978) : Quaternary Geology of Bir Sahara, Western Desert, Egypt, *Annals of the Geological Survey of Egypt*, vol. 8, 295 – 304.
- Issawi, B. et. al. (1999), *The Phanerozoic geology of Egypt*. Special Publication No. 76 by the Egyptian Geological Survey, 462p.
- Itier, B., Seguin, B.(1983) : Using midday surface temperature to estimate daily evaporation from satellite thermal IR data, *Internationa Journal on Remote Sensing*, vol. 4(2), p. 371 – 383.
- Jackson, R. D., Reginato, R. J., IDSO, S. B.(1977) : Wheat canopy temperature : a practical tool for evaluating water requirements, *Water Resources Research*, vol. 13, p. 651 – 656.
- Jacob, C. E.(1964) : Drawdown Test to Determine Screen Loss and Effective Radius of an Artesian Well, to be Published in *Proc. Amer. Soc. Civil Engrs.*, *Proceedings of International Conference On Groundwater and Man*.

- Jarroud, O.(1980) : Groundwater Evaluation in Wadi Zamzam, NW Libya. - In: Salem, M.J. & Busrewil M.T. (eds.): The Geology of Libya, Vol. II, 2<sup>nd</sup> symp. on the Geology of L, Academic Press, p. 715 – 752.
- Jeffrey, R., Eddib, Ali(1976) : Preliminary Investigation of Rebiana, Bzema, and Tazerbo. Open File Report, Kufra and Sarir Authority, Libya, p.18.
- Jeffrey, R.(1977) : Soil Types at Tazerbo Oasis Libya Using Large Scale Landsat Photograph. Unpublished Report, Kufra - Sarir Authority., p. 5.
- Jelobajev, A. A., Bogomolev, G. V.(1976) : Groundwater Pilot Scheme in the New Valley/Egypt, Hydrogeology of Kharga Oasis.- AG:DP/EGY/71/561, Working Document 4, UNDP/FAO, FAO: Food and Agriculture Organization, 74 p., Rome.
- Jenkins, D. A. L.(1967) : Subsurface Water of the Mesozoic Sandstones of Concessions 65, 80 and 81. A Study of the Fluid Mechanics and Chemical Data. Unpublished Report,, British Petroleum Co., Ltd.
- John, W., Mohamed H. Farag(1979) : Fossil Groundwater Gradients in Arid Regional Sedimentary Basins. Hydrogeology Section, Department of Geological Sciences, University of Birmingham, p.10.
- Johnson, E. E. Inc.(1975) : 451. @Johnson, E.E. Inc. (1975) Groundwater and Wells. Johnson Division, Vdp Inc., St. Paul, Minnesota, U.S.A., p. 440.
- Johnson, R. C.(1975) : Simulation of the Behaviour of the Kufra Well Fields, Ohio University, Athens, Ohio, USA.
- John Murray, BGR: Bundesanstalt fur Geowissenschaften und Rohstoffe(1979) : Sudanese German Exploration Project: Technical Report, part II, Groundwater Resources in Khartoum Province, Unpublished report,
- Joint Venture Qattara, 1979, “Study Qattara Depression”, Vol. III Part 1: Topography, Regional Geology and Hydrogeology. Lahmeyer International, Salzgitter Consult and Deutsche Project Union, GMBH, German Federal Republic.
- Jones, J. R.(1964) : Groundwater Maps of Libya. U.S.Geological Survey Department, in Cooperation with the Government of Libya.Open file Report, Government of Libya, , 24 pages plus 6 figs.
- Jones, J. R.(1969) : Groundwater in Libya. A Summary of Hydrogeology of the Southern Mediterranean littoral of the North Central; Sahara, L.A.R., U.S.G.S. Open file Report, U.S.G.S., 546 p.
- Jones, J. R.(1971) : Groundwater Provinces of Libyan Arab Republic. In: Symposium on the Geology of Libya. (ed. C. Gray), Faculty of Science, University of Libya, p. 449 –

457.

- Jones, M. T.(1986) : Hydrogeology and Water resources of Al Kufra, Tazerbo and Sarir Areas. Unpublished Report, Water and Soil Department, Kufra - Sarir Authority, Tripoli, Libya.
- Jux, U.(1983) : Zusammensetzung and Ursprung von Wustenglasern aus der GroBen Sandsee Agyptens, Z. Geol. Ges., vol. 134, p. 521 – 553.
- Jux, U., Kora, M.(1986) : On the early Carboniferous macrofauna from the Um Bogma Formation, Sinai, Geol. Palaont. Abh, vol. 2, p. 85 – 98.
- JVQ: Joint Ventura Qattara(1978) : Study Quattara-Depression, Special Volume: Regional; Geology and Hydrogeology, unpublished report of Lahmeyer International GmbH, Salzgitter Consult G, GMBH Agrar and Hydrotechnik.
- Kadi, Sadek(1973) : Nubian Sandstone in the Libyan Desert, , 16 p., 4 figs.
- Kamel, H.(1983) : Observations on Geology of East Owienat Area, South Western Desert, Egypt.” Paper submitted to APEX annual meeting, Cairo., APEX annual meeting.
- Kamal El-Dine Hussein(1928) : L’exploration du Desert Libyque, La Geographie, vol. 50, p.171-183, 320 – 336.
- Kanter, H.(1967) : Libyen - Eine geographisch - medizinische Landeskunde, medizinische Landeskunde. Incl, 17 maps.
- Kempf, E. K.(1986) : Late Quaternary Environmental Changes in the Eastern Sahara (Libyan Desert), documented by an Ostracode Diagram. - INQUA/1986 Dakar Symp. Changements, Changements globaux en Afrique, vol. 197, p. 235 – 238.
- Kennedy, W. J., Macdougall, J. D. S.(1969) : Crustacean burrows in the Weald Clay (Lower Cretaceous) of southeastern England and at their environmental significance, Palentology, vol. 12, (3), p. 459 – 471.
- Keulen, H. Van(1975) : Simulation of water use and herbage growth in arid regions. – Wageningen.,
- Kheir, O., Thorweihe, V., Hesse, K. H., Hissene, A., Schneider, M., Schrank, E(1979) : Hydrological Investigations in the Nubian Aquifer System, East Sahara”, Berliner Geowiss Abh.
- Kheir, O., Thorweihe, V., Hesse, K. H., Hissene, A., Schneider, M., Schrank, E(1987) : Hydrological Investigations in the Nubian Aquifer System, East Sahara”, Berliner Geowiss Abh., vol. 75.2, p. 397 – 464.
- Kheir, O., Thorweihe, V.(1987) : Occurrence of water interaction in the Dongola area,

- northern Sudan. - In: Matheis, G. & Schandelmeier, H. (eds.): Current Research in African Earth, African Geology, p. 427 – 430.
- Kheir, O.(1986) : Hydrogeology of the Dongola area, Northern Sudan, Berliner Geowiss Abh., vol. 74, 81 pp.
- Kheiralla, M. K.(1970) : Application of Isotopes Techniques in Ground-water Investigations in Sudan National Rural Water Corp. Open files., Sudan Government.
- Kheiralla, M. K.(1966) : A Study of the Nubian Sandstone Formation of the Nile Valley between 14°N and 17°42'N with Reference to the Ground-water Geology, University of Khartoum.
- Kentsh, G.(1962) : Geologische Überlegungen zu der Frage des artesischen Wassers in der agyptischen Wüste, Geol. Rdsch., vol. 52, 640 – 650.
- Khouri, J.(1992) : Use of Simulation on the analysis of regional aquifer system, ACSAD, Damascus.
- Khouri, J., Miller, J. C.(1994) : Groundwater vulnerability in areas of climatic extremes. Guide book on Mapping Groundwater Vulnerability, IAH Istanbul meeting memories, VOL. 16, P. 49 – 56.
- Khouri Jan, (1996): Synthesis of National reports and definition of Gaps in knowledge ACSAD, Damascus Syria.
- Kirkham, D., Powers, W. L.(1972) : Advanced Soil Physics, Wiley-Interscience.
- Klebelsberg, R. V.(1911) : Ein Beitrag zur Kenntnis des Sinai-Karbons, Z. dtsh. Geol. Ges., vol. 63, p. 594 – 603.
- Klees, F.(1984) : Lobo - A Contribution to the Prehistory of the Eastern Sand Sea and the Egyptian Oases. - Symposium "Late Prehistory of the Nile Basin and the Eastern,
- Klitzsch, E.(1966) : Bericht über starke Niederschläge in der Zentralsahara, Z. f. Geomorph. N.F, vol . 10, p. 166 – 167.
- Klitzsch, E.(1968) : Outline of the Geology of Libya.- In: Geology and Archaeology of Northern Cyrenaica, Petroleum Exploration Society, p. 71 – 78.
- Klitzsch, E.(1969) : A stratigraphic section from the type areas of Silurian and Devonian strata at western Murzuk Basin (Libya).- In: Geology, Archeology and Prehistory, Petroleum Exploration Society, p. 83 – 90.
- Klitzsch, E.(1970) : Problems of Continental Mesozoic Strata of Southwestern Libya. In Proc. Conf. African Geology (Dec. 1970) Regional Geology, University of Ibadan, p. 483 – 494.



- Klitzsch, E.(1970) : Die Strukturgeschichte der Zentralsahara.- Geol. Rdsch. 59, 459-527, Stuttgart., Geol. Rdsch., vol. 59, p. 459 – 527.
- Klitzsch, E.(1971) : The Structural Development of Part of North Africa Since Cambrian Time. In Sym. Geol. Libya. (ed. C. Gray), Faculty of Science, University of Libya, p. 253 - 262.
- Klitzsch, E.(1972) : Salinität und Herkunft des Grundwassers im mittleren Nordafrika, Geol. Jb., vol. C2, p. 251 – 260.
- Klitzsch, E., Schrank, E, Said, R.(1977) : Fossil Reserves of Ground-water in Central Sahara. Natural Resources and Development, , vol. 5.
- Klitzsch, E.(1978) : Geologische Bearbeitung Sudwest-Agyptens, Geol. Rdsch., vol. 67, No. 2, p. 509 – 520.
- Klitzsch, E.(1979) : Zur Geologie des Gilf Kebir Gebietes in der Ostsahara, Geol. Abh, vol. 30, p. 113 – 132.
- Klitzsch, E., Harms, J. C., Lejał-Nicol, A., List, F. K.(1979) : Major Subdivisions and Depositional Environments of Nubian Strata, South Western Egypt”, American Association of Petroleum Geologists Bulliten, ., Vol. 63, No. 6, p. 967 – 974.
- Klitzsch, E., Schrank, E, Said, R.(1980) : Results of Special Research Project Arid Areas, Period 1981 - 1984, Egypt - Sudan, Berliner Geowiss Abh.
- Klitzsch, E., List, F. K.(1980) : Geological Interpretation Maps of Egypt, Based On Satellite Imagery of Landsat-1,2 and 3”, National Academy of Scientific Research and Technology.
- Klitzsch, E., Schrank, E, Said, R.(1983) : Geological Research in and around Nubia Episodes, Vol. 3, p. 15 – 19.
- Klitzsch, E.(1983) : Paleozoic formations and a Carboniferous glaciation from the Gilf Kebir-Abu Ras Area in Southwestern Egypt, Journal of African Earth Sciences, vol.1, (1), p. 17 – 19.
- Klitzsch, E.(1983) : Structural Development of Southern Egypt and North Western Sudan.” Interim Report submitted to the General Petroleum Company, Technical University of Berlin.
- Klitzsch, E.(1983) : Result of the Special Research Project, Arid Areas, Period 1981-1984”. Report Submitted to the General Petroleum Company, Technical University of Berlin.
- Klitzsch, E., Lejał-Nicol, A.(1984) : Flora and fauna from strata in Southern Sudan (Nubia and surrounding areas), Berliner Geowiss Abh., vol. 50, p. 47 – 80.

- Klitzsch, E.(1984) : Northwestern Sudan and bordering areas: geological development since Cambrian time, Berliner Geowiss Abh., vol. 50, p. 23 – 45.
- Klitzsch, E.(1985) : Geological interpretation map Africa 1 : 1 000 000, Sheet NE 35. - IFH BERLIN.
- Klitzsch, E.(1986) : Plate Tectonics and Cratonal Geology in Northeast Africa (Egypt/Sudan), Geol. Rdsch., vol. 75, p. 755 – 768.
- Klitzsch, E.(1987) : The Paleozoics.- In: R. Said & H.C. Squyres (eds.), The Geology of Egypt, 2<sup>nd</sup> edition, in press.
- Klitzsch, E., Schrank, E(1987) : Research in Egypt and Sudan - Results of the Special Research Project Arid Areas, (Sonderfor - Schungsbereich “Geowissenschaftliche Proleme in ariden, Berliner Geowiss Abh., 7501-3, 967 P.
- Klitzsch, E., Schrank, E(1987) : Results of the Special Research Project, Arid Areas Period 1984-1987, Egypt, Berliner Geowiss Abh., p. 75-1, 2 and 3.
- Klitzsch, E., Wycisk, P.(1987) : Geology of the Sedimentary Basins of Northern Sudan and Bordering Areas, Berliner Geowiss Abh., vol. 75.1, p. 97 – 136.
- Klitzsch, E., Hendriks, F., Wycisk, P., Schandelmeir, H.(1987) : Structural Development Of Northeast Africa since Precambrian Times, Berliner Geowiss Abh., vol. 75.1, p. 5–24. Konf. Der International Soc. For Nubian Studies, p. 129 – 136.
- Klitzsch, E., Schrank, E(1990) : Results of the Special Research Project, Geoscientific Problems in Arid and Semi-arid Areas, Period 1987-1990, Berliner Geowiss Abh., p.120.
- Konstandi, A. B.(1959) : Facies maps for the study of the Paleozoic and Mesozoic sedimentary basins of the Egyptian region.- U.A.R., 1<sup>st</sup> Arab Petroleum Congress, Arab Petroleum Congress, Vol. II, p. 54 – 62.
- Kora, M.(1984) : The Paloezoic outcrops of Um Bogma area, Sinai, University of Mansoura, 253 p.
- Koppelberg, W., Sieber, P.(1986) : Kleinrechnerprogramm zur Gefugestatistik auf dem SCHMIDT' schen Netz.- Unpublished Computer Program, Aachen.
- Koppelberg, W.(1986) : Numerische und statistische Untersuchugen zur Durchlassigkeit geklufteter gologischer korper und ihrer Bestimmung durch Wasserdruckversche, Mitt. Ing.- u. Hydrogeol, vol. 23, p. 299.
- Kropelin, S.(1985) : Untersuchungen zum Sedimentationsmilieu von Playas im Gilf Kebir (SW-Agypten), , 194 p.
- Kropelin, S.(1987) : Palaeoclimatic evidence from early to mid-Holocene playas in the Gilf Kebir (southwest Egypt), Palaeoecology of Africa, vol. 18.

- Kruseman, G. P., Deridder, M. A.(1979) : Analysis and Evaluation of Pumping Test Data. International Institute for Land Reclamation and Improvement, Bulletin 11., Netherland.
- Kuper, R.(1981) : Untersuchngen zur Besiedlungsgeschichte der ostlichen Sahara. - in:, Beitrage zur Allgemeinen und Vergleichenden Archaologie, vol. 3, p. 215 – 275.
- Kuper, R.(1984) : The Eastern Sahara from North to South : Data and dates from the B.O.S.- Project. - Symposium on Late Prehistory of the Nile Basin and the Eastern Sahara.
- Kropelin, S., Pachur, H. J.(1990) : Late Quaternary Fluvio Lacustrine Environment of Western Nubia. Berliner Geowiss Abh (A) 120-1., Berliner Geowiss Abh., vol. 120, p. 1.
- Kufra and Sarir Authority(1976) : Final Report by the Sub-Committee for Agricultural Development in Areas of Al Kufrah, Al Sarir and Jalu, Kufra - Sarir Authority. Tripoli, Libya, 20 p.
- Kuper, R.(1986) : Wadi Howar and Laqiya - Recent Field Studied into the Early Settlement of Northern Sudan.- In: Nubische Studien, M. Krause (ed.), Tagungsakten der 5., Intern.
- La Moreaux, P. E.(1959) : Report on and Recommendations for Groundwater Investigations, New Valley Project, Western Desert, of Egypt”, Admin report, U.S.G.S.
- La Moreaux, P. E.(1966) : A Review of the New Valley Project, Western Desert of Egypt”, Report to the General Desert Development Organization, GDDO: General Desert Development Organization.
- Lagerstedt, E., Jacks, G., Sefe, F.(1994) : Lagerstedt, E., G. Jacks, and F. Sefe. (1994) Nitrate in groundwater and N-circulation in eastern Botswana, Environment, Geology and Water Science, vol. 23, p. 60 – 64.
- Lalevic, D., Lalevic, M.(1990) : Eastern Region Desert Irrigation Schemes, Sarir-Tazerbo-Kufra, Possible Development Alternative. Secretariat of Planning, SPLAJ., Kufra – Sarir Authority., 51 p., 1 tab.
- Lamb, H. H.(1971) : Climates and Circulation Regimes Developed over the Northern Hemisphere During and Since the Last Ice Age - Palaeogeography, Palaeoclimatology, Palaeoecology, vol. 10, p. 125 – 162.
- Lamb, H. H.(1975) : The Current Trend of World Climate - A Report on the Early 1970’s and a Perspective. - Climatic Res., University of East Anglia.
- Lanney, N.A., Grignani, D., El-Atrash, H.(1991) : Paleozoic and Mesozoic Subsurface Palyostratigraphy in the Al Kufra Basin, Libya. 3<sup>rd</sup> Symposium on the Geology of Libya, Sept. 1987, vol. 4, Elsevier Scientific Publishing Company.

- Lanzoni, E.(1981) : Hydrocarbon Evaluation of NC 43 Area (Kufra). AGIP Name, Libyan Branch. Exploration Division, Tripoli, Libya., p. 19.
- Lejal-Nicol, A.(1986) : Decouverte d'une flore a callipteris dans la region du Suez (Egypte).- C.R. 111e Congr. Nat. Soc. Sav. Sciences, in press.
- Lejal-Nicol, A.(1987) : Fossil Flora in Egypt. - In: R. Said & H.C. Squires (eds.), Geology of Egypt, 2<sup>nd</sup> edition, in press.
- Lejal-Nicol, A., Prasad, G., Vaudois-Mieja, N.(1986) : A Tertiary Age for Upper Nubian Sands tone Formation, Central Suda, AAPG Bulletin, vol. 70, (2), p.138 – 142.
- Linke, H. W.(1986) : Golf von Suez - Geologie und Tektonik, 138 p.
- Linsley, R. K., Kohler, M. A., Paulhus, J. L. A.(1975) : Hydrology for Engineers, Mcgrawhill, 458 p.
- Logan, J.(1964) : Estimating Transmissivity from Routine Production Tests of Water Wells, Groundwater, Vol. 2, No. 1., p. 35 – 37.
- Mabrook, B., Abdel Shafi, M. S.(1977) : Hydrological and environmental isotope studies of Bara Basin, Central Sudan. - In: Symposium on trace elements in drinking water, agriculture and human, Middle Eastern Radioisotope Centre and Goethe Institute, p. 123 – 149.
- Mainguet, M., Canon, L., Chemin, M. C.(1980) : Le Sahara : geomorphologie et paleogeomorphologie eoliennes. - In : The Sahara and the Nile, M.A.J. Williams & H. Faure, eds., p. 17 – 35.
- Mamgain, V. D.(1980) : The Pre-Mesozoic (Pre-Cambrian to Paleozoic) Stratigraphy of Libya - A Reappraisal. Industrial Research Center, Tripoli, Libya, No. 14, p. 104.
- Manabe, S., Hahn, D.G.(1977) : Simulation of the Tropical Climate of an Ice Age, Journal of Geophysical Research, vol. 82,27, p. 3889 – 3911.
- Mansour, N.(1987) : Geochemie und Tektonik der Uweinat-Aswan Schwelle.
- Mary, C. Hill(1990) : Preconditioned onjagate-Gradient 2 (PCG2), A computer Program for Solving Ground- Water Flow Equations, U.S.G.S.
- Marrett, D. J., Khattak, R. A., El-Seewi, A. A., Page, A.L.(1990) : Elevated nitrate levels in soils of the eastern Mojave desert. J. Environ. Qual. 19:658-663, Journal of Environment Quality, vol. 19, p. 658 – 663.
- Maxwell, T.A.(1980) : Geomorphology of the Gilf Kebir. - In: El-Baz, F. et al., Journey to the Gilf kebir and Uweinat, Southwest Egypt, 1978, Geography Journal, vol. 146, p. 76 – 83.

- Milad, M.M., Ahmad, M. U.(1978) : Water Resources of the Sarir Well Field, Libya. Proc. 3<sup>rd</sup> World Congr., Water Resources Association.
- Milad, M.M., Ahmad, M. U.(1978) : Water Resources of the Sarir Well Field ,1816-1831. Libya. Proc. 3<sup>rd</sup> World Congr, Water Resources Association.
- Miles, D.L., Cook, J. M(1980) : Methods for the chemical analysis of groundwaters. Rep. 80/5, Institute of Geological Sciences.
- Miles, D.L., Kinniburgh, D. G.(1993) : Extraction and chemical analysis of interstitial water from soils and rocks, Environmental Science Technology, vol. 17, p. 362 – 368.
- Murray, G. W.(1952) : The Water beneath the Egyptian Western Desert, Geography Journal, vol. 118, p. 443 – 452.
- Murray, G. W.(1952) : The Artesian Water of Egypt”, Survey Department, Ministry of Finance and Economy, Egypt Government, Paper No. 52, 20 p.
- Muskat, M.(1946) : The Flow of Homogeneous Fluids through Porous Media. - 2<sup>nd</sup> edition, Edwards Brothers, Ann Arbor, 643 p.
- Newbold, D.(1924) : A Desert Odyssey of a Thousand Miles, Sudan Notes & Rec., vol. 7, p. 43 – 92.
- Newbold, D.(1928) : An Exploration in the South Libyan Desert, Sudan Notes & Rec., vo,9, p. 103 – 194.
- Nicholson, S.E.(1980) : Saharan Climates In Historic Times. In: Williams, A.J. & Faure,H. (eds.) The Sahara and the Nile,, , p. 173 – 200.
- Nicholson, S.E.(1982) : Pleistocene and Holocene climates in Africa, Nature, vol. 296, p. 779.
- Nicolae, C.(1981) : Technical Report on Exploratory Piezometer Well No. NF-34-8-1 (SKD-22) Bishara, Kufra, Kufra - Sarir Authority., Ttipoli, Libya, p.18.
- Nour, S.E., Mishriki, M.F., Ezzat, M.A.(1977) : Groundwater Model of South Qattara Area, Western Desert of Egypt, Unpublished Report, GPCE: General Petroleum Co. of Egypt.
- Nour, S.E., Mishriki, M.F., Amer, A.(1979) : Groundwater Exploitation problems in Western Desert, International Conference On Water Resources Management, p. 359 – 379.
- Nour, S.E.,(1984) : Groundwater Resources in the East Oweinat Region, Hydrogeological Condition. - Unpublished final report of General Petroleum Company, Cairo, Egypt.
- NWC: National Water Corporation(1986) : Hydrogeological Studies and Investigations in Saleim-Khowi-Qa’ab Area. - Bonifica -Expert, Progress report, unpublished,

Khartoum., Bonifica-Expert.

Oilfield Contractors, Mohamed Ben Ali,(1972) : Kufra Agricultural Project well. Drilling reports, 96 reports.

OSS: Observatory of Sahara and Sahel(1992) : Aquifers of the Great basins; an overview and implementation programme, Workshop on Aquifers of the Major Basins, 98 p.

OSS: Observatory of Sahara and Sahel(1993) : Impact of intensive development of deep groundwater in the Great Basins of the OSS and Arab regions; Case studies from Bahrain, Jordan, New Valley Kufra and Northern Sahara, J. Khouri, OSS report, 102 p.

OSS: Observatory of Sahara and Sahel(1993) : The ecological impact of groundwater use in the Arid regions with cases from the New Valley (Egypt), Um Kadda Nubian Basin (W. Sudan), Northern Darfor, F.N. Ibrahim, OSS report, Paris, 44 p.

OSS: Observatory of Sahara and Sahel(1994) : Analysis of questionnaires filled by national experts and state of knowledge review: Libya, Egypt, Sudan, Chad, Morocco, Algeria, Tunisia, OSS report, Paris , 58 p.

OSS: Observatory of Sahara and Sahel(1995) : Aquifer of the Major Basin Consequences and impacts of their exploitation on the Environment, prepared by OSS in co-operation with GTZ- ACSAD, 24 p.

OSS: Observatory of Sahara and Sahel(1995) : Common water resources of the OSS region's countries, transboundary river basins and deep aquifers, Scale 1:10.000.000, OSS 1995, compiled by J.Margat.

OSS: Observatory of Sahara and Sahel(1995) : Les ressources en eau des pays d'OSS evolution, utilization et gestion, UNESO-OSS, 80 p.

OSS: Observatory of Sahara and Sahel(1995) : Proceedings of the workshop on the Integrated management of the non-renewable resources of the great basins of the Arab region 9-13 July, 1995, ACSAD-ALECSO, Damascus.

OSS: Observatory of Sahara and Sahel(1995) : Second workshop on aquifers of the major basins, consecrated to the Northern Sahara and Nubian Basins, report and recommendations; Cairo 25-27 October, 1994, OSS-DRC, 13 p.

OSS: Observatory of Sahara and Sahel(1995) : Water policy and legislation, synthesis of the response to questionnaires: institutional - legal aspects of groundwater management in the Nubian basin, ACSAD: Arab Center for the Studies of Arid Area and Dry Land, 80 p.

OSS: Observatory of Sahara and Sahe l(1995) : Workshop on athe aquifers of major basins, final recommendations, Cairo 22-25 November 1992., OSS, Paris.

OSS: Observatory of Sahara and Sahel(1996) : Groundwater resources of the Nubian Aquifer System. OSS- Technical report, Ulf. Thorweihe and M. Heintl, Paris, 1996, 95 p.

- Pachur, H. J.(1982) : Das Abflusssystem des Djebel Dalmar - eine Singularität, Wurzbürger Geog. Arb., vol. 56, p. 93 – 110.
- Pachur, H. J., Horst, H.(1971) : Observations on Climatic Geomorphology and Quaternary Evolution of Landforms in South Central Libya. Symposium on the Geology of Libya, Faculty of Science, Fatah University, Tripoli, Libya.
- Pachur, H. J.(1966) : Untersuchungen zur morphoskopischen Sandanalyse, Berliner Geowiss Abh., p. 4 – 39.
- Pachur, H. J.(1974) : Geomorphologische Untersuchungen im Raum der Serir Tibesti (Zentralsahara), Berliner Geowiss Abh., vol. 17, p. 62.
- Pachur, H. J.(1980) : Climatic History in the Late Quaternary in Southern Libya and the Western Libyan Desert. In: Salem, M.J., and Busrewil, M.T. (eds.) 2<sup>nd</sup> Symp. Geology of Libya, V. III, p. 781 – 788, Academic Press, London.
- Pachur, H. J., Braun, G.(1980) : The paleoclimate of the central Sahara, Libya, and the Libyan desert, Palaeoecology of Africa and the surrounding islands, Vol. 12, p. 351 – 363.
- Pachur, H. J., Braun, G.(1982) : Aspekte Palaoklimatischer Befunde in der östlichen Zentralsahara, Geomethodica, vol. 7, p. 23 – 54.
- Pachur, H. J., Roper, H. -P.(1984) : The Libyan (Western) Desert and Northern Sudan during the Late Pleistocene and Holocene, Berliner Geowiss Abh., vol. 50, p. 249 – 284.
- Pachur, H. J., Roper, H. -P.(1984) : Die Bedeutung palaoklimatischer Befunde aus den Flachbereichen der östlichen Sahara und des nördlichen Sudan, Z. f. Geomorph. N.F, vol. 50, p. 59 – 78.
- Pachur, H. J., Braun, G.(1986) : Drainage systems, lakes and ergs in the Eastern Sahara as indicators of Quaternary climatic dynamics, Berliner Geowiss Abh., vol. 72, p. 3 – 16.
- Pachur, H. J.(1987) : Vergessene Flüsse und Seen der Ostsahara. - Geowiss. In unserer Zeit, 5. Jahrg., Geowissenschaften in unserer Zeit, No. 2, p. 55 – 64.
- Pachur, H. J.(1987) : Wadi Howar, Paleoclimatic Evidence from and Extinct River System in the South - eastern Sahara - Science 237 Washington D.C., Science.
- Pallas, P., Ahmad, M. U.(1979) : Sarir Transportation Scheme: A Hydrogeology of Sarir Transportation Scheme: Unpublished Report, SDWR: Secretariat Dams and Water Resources, Tripoli, Libya, 8 p.
- Pallas, P.(1974) : Comments and Recommendations on Sarir Project Water Resources. Wellfield Layout. Unpublished Report, General Water Authority, Tripoli, Libya, 4 p., 1 fig.

- Pallas, P.(1975) : Evaluation of Agricultural Projects in L.A.R., Unpublished Report, FAO/TF-9184, FAO: Food and Agriculture Organization, 3 p.
- Pallas, P.(1976) : Water Resources of Libyan Arab Republic, Their Use and Development. Unpublished Report, General Water Authority, Tripoli, Libya, 19 p.
- Pallas, P.(1977) : Evaluation of the Groundwater Resources in Sarir-Kufra Area . Unpublished Report, SDWR: Secretariat Dams and Water Resources, Tripoli, Libya, 13 p.
- Pallas, P.(1977) : Report on the Water Problems in Kufra Area. Unpublished Report, SDWR., Tripoli., SDWR: Secretariat Dams and Water Resources, Tripoli, Libya.
- Pallas, P. (1978), Water resources of the Socialist Peoples Libyan Arab Jamahiriya. Technical report of the Secretariat of Dams and Water Resources, Tripoli, 80p.
- Pallas , P.(1979) : Agricultural Development Prospect in Kufra Basin. Unpublished Report, Secretariat of Agric. Reclam. And Land Development, Tripoli., 2 maps, 1 table.
- Pallas , P.(1980) : Water Resources of the Socialist People's Libyan Arab Jamahiriya. In; Salem, M.J. and Busrewil, M.T. (eds.) 2 nd Sym p. Geology of Libya,, Academic Press, p. 539 – 594.
- Pallas , P.(1994) : Cas des Grands Bassins D'affrique du Nord, Performance et limites des Methodes D'evaluation de ressources en eau Souterraine non-renouvelables, p. 1 – 20.
- Pallas , P., Nour, S.E., Wright, E.P.(1973) : Water Resources Investigation in Central Cyrenaica for use in Coastal Areas, GWA, 4 p., 1 map.
- Parsons(1962) : Final Report, Bahariya and Farafra Areas New Valley Project, Western Desert of Egypt", Report to Egyptian Desert Development Organization, The Ralf Parsons Engineering Company.
- Parsons(1963) : Final Report, Siwa Oasis Area, New Valley Project , Western Desert of Egypt", Report to Egyptian Desert Development Organization, The Ralf Parsons Engineering Company.
- Paver, G. L.(1954) : Report on Hydrogeological Investigations in Kharga and Dakhla Oasis, Publications de l'Institute du Desert d'Egypte, no. 4, Heliopolis., Desert Research Institute Bulletin, No. 4.
- Paver, G. L.(1954) : Report on Reconnaissance Hydrogeological Investigations in the Western Desert Coastal Zone. Publications de l'Institut du Desert d'Egypte, Desert Research Institute Bulletin, no. 5.



- Pavlov, M. J.(1959) : Groundwater of the Kharga Oasis as a Source of the Reclamation of New Lands”, Report to the General Desert Development Organization, UNESCO.
- Pavlov, M. J.(1961) : The Origin of the Groundwater Beneath the Western Desert”, Report Submitted to the General Desert Development Organization, U.A.R, UNESCO: United Nations Educational Scientific, and Cultural Organization.
- Pesce, A.(1966) : Waw En Namus. South-Central Libya and Northern Chad. A Guidebook to the Geology and Prehistory, .8<sup>th</sup> Field Conference., Petroleum Exploration Society, p. 47–51.
- Pesce, A.(1971) : Erg. Idrisi and Hamad Ibn Battutah: two “New” Geographical features of Southeastern Libya, Symposium on the Geology of Libya, p. 351- 363.
- Petit-Maire, N.(1983) : Sahara ou Sahel? Quaternaire recent du Bassin de Taoudenni (Mali), p. 473.
- Pharuk, S.(1980) : Drilling Operations in Awaynat Area, Southeast Kufra Oasis, General Drilling Company, Tripoli, Libya, p.18.
- Pike, J. G.(1970) : Evaporation of groundwater from coastal playas (sabkhas) in the Arabian Gulf, Journal of Hydrology, vol. 11(72), p. 79 – 88.
- Pindar, G. F.(1970) : A Digital Model for Aquifer Evaluation, Technique of Water Resources Investigations of the U.S. Geological Survey. Book 7, Chapter CL.
- Pirard, F.(1980) : Red Sea Governorate Regional Plan, Assessment of the Water Resources. BRGM, Orleans., BRGM: Bureau Research Geology Ministries.
- Pizzi, G., Pone, E.(1978) : Hydrogeology of the western Libya regional aquifer system. – Internal report 18, Idrotecnico, 45 p.
- Pizzi, G., Sartori, L.(1984) : Interconnected Groundwater Systems Simulation (IGROSS) ; Description of the system and a case history application., Journal of Hydrology, vol. 75, p. 255 – 285.
- Pomeyrol, R.(1968) : Nubian Sandstone, American Association of Petroleum Geologists Bulliten, vol. 52, (4), p. 589 – 600.
- Prickett, T. A., Lonquist, C. G.(1971) : Selected Digital Computer Technique for Groundwater Resources Evaluation, Illinois State Water Survey Bulletin, vol. 55, p. 62.
- Radelet, O.(1973) : Evaluation of the Agrcultural Projec ts in LAR., Agricultural Projects of Sarir Productive Project, GWA, 4 p., 2 Ann.
- Rajo, T.S.(1980) : Hydrology and Water Balance of the Binghazi Plain - In: SALEM, M.J. & BUSREWIL M.T. (eds.): The Geology of Libya, Vol. II, Academic Press, p. 595 – 609.

- Reeves, C. C.(1970) : Origin, classification and geologic history of caliche on the southern High Plains, Texas, and eastern New Mexico, *Journal of Geophysical Research*, vol. 78, p. 352 – 362.
- Reeves, C. C.(1976) : Caliche. Origin, classification, morphology and uses, , 233 p.
- Regab, E. R., Moustafa. E., Adam, O. A.(1983) : Groundwater Investigation, El Seleim and Regwa: The General Company for Research of Groundwater(1990) : Activities in Egypt and Africa, Cairo., Regwa: The General Company for Research of Groundwater.
- Reiter, E. R.(1961) : Meteorologie der Strahlströme (Jet Streams), Wien., Resources No. 38, WMO/TD, No. 540, WMO: World Meteorological Organisation, p 1 – 14.
- Riad, S., El-Etr, H. A., Mohamed, M. A.(1978) : Gravity-Tectonic Trend Analysis in Siwa – Al Jaghbug Region, NE Africa. In: Salem, M.J., and Busrewil, M.T. (eds.), Academic Press, p. 979 – 989.
- RIGW/IWACO, 1988, Hydrogeological Map of Egypt (1:2000 000), Research Institute for Groundwater Cairo, Egypt.
- RIGW/IWACO, 1998 “Environmental Management of Groundwater Resources” TN/70.00067/WQM/97/20, Research Institute for Groundwater Cairo, Egypt.
- Robinson, R. A., Stokes, R. H.(1968) : Electrolyte solutions, Butterworths.
- Rognon, P., Williams, M. A.(1977) : Late Quaternary Climatic Changes in Australia and North Africa: A Preliminary Interpretation, *Palaeogeography. Palaeoclimatology. Palaeoecology*, vol. 21, p. 285 – 327.
- Rognon, P.(1980) : Pluvial and arid phases in the Sahara: The role of nonclimatic factors, *Palaeogeography. Palaeoclimatology. Palaeoecology*, Vol. 12, p. 45 – 62.
- Rohlf, G.(1975) : Drei Monate in der Libyschen Wüste, , 340 p.
- Rohlf, G.(1976) : Expedition zur Erforschung der Libyschen Wüste. Verlag v. Theodor Fische,
- Roper, H. -P.(1985) : Calcareous crusts in Southwest Egypt. - Workshop “Limnic sedimentation as indicators of the late Pleistocene and early Holocene Climatic conditions”,, Technical University of Berlin.
- Rudolph, J.(1981) : Edelgastemperaturen und Heliumalter 14C-datierter Paläowasser,

University of Heidelberg, 55 p.

Sabry, M.(1957) : New Evidence on The Origin of The Artesian Water In The Western Desert of Egypt”, Desert Research Institute Bulletin, Sadek, Kadri(1973) : Nubian Sandstone, General Water Authority, 23 p.

Said, R., Kerdany, M.(1961) : The Geology and Micropaleontology of the Farafra Oasis, Egypt, Micropaleontology, vol. 1, (3), p. 317 – 336.

Said, R.(1962) : Geology of Egypt, Elsevier Scientific Publishing Company.

Said, R.(1971) : Explanatory notes to accompany the Geological Map of Egypt, Egyptian Geological Survey, vol. 56, 123 p.

Said, R.(1980) : The Quaternary sediments of the South Western Desert of Egypt: An overview.- In : Prehistory of the Eastern Sahara, F. Wendorf & R. Schild, Academic Press, p. 281- 284.

Said, R.(1981) : The Geologic Evolution of the River Nile, Springer Verlag, 151 p., Berlin.

Said, R.(1986) : The Future Use of the Water of the Nile, Entwick Lungs Landy Hydrographic, Arid Rume - North Africa.,

Said, R.(1990) : The Geology of Egypt”, Balkema/Rotterdam/Brookfield/Netherland, 733 p.

Salama, R. B.(1975) : Ground-water Resources of Sudan; Open Files, Rural Water Corporation.

Salama, R. B.(1978) : Groundwater Resources of Sudan, Rural Water Corporation, P. 14.

Salama, R. B.(1984) : Basins, Troughsm Graben, and Rifts in Sudan, Journal of African Earth Sciences, Vol. 3.

Salama, R. B.(1985) : Buried Troughs, Grabens and Rifts in Sudan, Journal of African Earth Sciences, vol. 3,3, p. 381- 390.

Salem, M. H.(1965) : A Hydrologic System Analyses of the Groundwater Resources of the Western Desert, U.A.R, University of Arizona, Tucson, Arizona, USA.

Salem, M. H.(1970) : Study of the Hydrologic Parameters of the Nubian Sandstone Aquifer with Reference to the Productivity of Pattern for Well Development in Kharga Oasis,, Faculty of Engineering, Cairo University.

- Salem, O. M.(1987) : Groundwater in the Socialist People's Libyan Arab Jamahiriya – Chapter in Groundwater in Africa, UN: United Nations.
- Salem, O. M.(1991) : The Great Man-Made River Project: A Partial Solution to Libya's Future Water Supply. Round Table Meeting, Planning for groundwater development, Vol. 8, p. 270 – 278.
- Salem, O. M.(1991) : Groundwater Resources of Libya, present and future requirements, GWA. Tripoli, Libya.
- Salem, O. M.(1992) : Hydrogeology of the Major Groundwater Basins in Libya, GWA, Tripoli, Libya.
- Salem, O. M.(1996) : Assessment of the Hydrogeological Conditions of the Kufra and Sarir Basins in Libya. A report submitted to ACSAD.
- Salzgitter Consult(1978) : Water Resources and Soil Potential Development in The New Valley/Egypt - Immediate Action-Oriented Measures for Improvement of Artesian and Pump-operations, Vol. 3, 3a.
- Sandford, K.S.(1935) : Geological Observations on the N-W Frontier of the Anglo-Egyptian Sudan and the Adjoining parts of the Southern Libyan Desert, Q. J. Geol. Soc. London 91,323-381.
- Sandford, K.S.(1970) : Sarir Oil Field, Libya Desert Surprise, AAPG Bulletin.
- Sarntheim, M.(1978) : Sand deserts during glacial maximum and climatic optimum, Nature, vol. 272, 43 – 46.
- Schandelmeir, H.(1983) : Composition, Structure and Crustal Development of the Basement Rims of the Dakhla-Nile and North Sudan Basins." Interime Report Submitted to the General Petroleum Company of Egypt, Technical University of Berlin.
- Schiffers, H.(1971) : Die Sahara und ihre Randgebiete, Darstellung eines Naturgrobraumes in drei Banden, Vol. I-III.
- Schnacker, M.(1986) : Hydrogeologie des Nubischen Aquifersystems am Sudrand des Dakhla-Beckens, Sudagypen/Nordsudan, Berliner Geowiss Abh., vol. 71, 66 p.
- Schneider, J. L.(1967) : Evolution du dernier lacustre et peuplements prehistoriques aux Pays-Bas du Tchad. Bull. Asequa, 14-15, 18-23, Dakar.,
- Schneider, M.(1986) : Hydrogeologie des Nubischen Aquifersystems am Sudrand des Dakhla-Beckens, Sudagypen/Nordsudan, Berliner Geowiss Abh., vol. 71, p. 1- 66.
- Schneider, M.(1985) : Hydrogeology des Nubischen Aquifersystems am Sudrand des Dakhala -Beckens, Sudagypen/ Nordsudan. -0 Dissertation, Fachbereich Bergbau und Geowissenschaften, Geowissenschaften in unserer Zeit.

- Schoute, H. R.(1976) : Groundwater Resources in the Kufra Basin, Southwest Libya. Report prepared for General Water Authority, Tripoli, 77 p.
- Schoute, H. R.(1976) : Groundwater Resources in Kufra, Kufra - Sarir Authority., Tripoli, Libya, 93 p., 7 app., 1 fig.
- Schrank, E(1983) : Scanning electron and light microscopic investigations of angiosperm pollen from the Lower Cretaceous of Egypt, *Pollen et Spores*, vol. XXV, 2, p. 213 – 242.
- Schrank, E(1984) : Paleozoic and Mesozoic palynomorphs from the Foram 1 well (Western Desert, Egypt), *N. JB. Min., Geognosie, Geol., Petrefaktenkd.*, vol. 2, p. 95 – 112.
- Schulz, E.(1978) : Problems in Applied Hydrology. Water Resources Publications, Fort Collins, Colorado USA, 551 p.
- Secretariat of Planning(1977) : Population Census. (1973), Summary Data, Census and Statistical Department, Tripoli, Libya.
- Secretariat of Planning(1978) : National Atlas of the Socialist People's Libyan Arab Jamahiriya, Survey Department.
- Secretariat of Planning(1984) : Population Census. Summary Data, Census and Statistical Department, Government of Libya.
- Secretariat of Planning(1989) : Results of the General Agricultural Census of 1987, Census and Statistical Department, Tripoli, Libya.
- Seilacher, A.(1983) : Upper Paleozoic trace fossils from the Gilf Kebir - Abu Ras area in South- western Egypt, *Journal of African Earth Sciences*, vol. 1, (1), p. 21 – 34.
- Seilacher, A.(1987) : Paleozoic trace fossils in Egypt. - In: R. Said & C.H. Squyres (eds.), *Geology of Egypt*, 2<sup>nd</sup> edition, in press.,
- Selley, Richard C.(1971) : Structural Control of Miocene Sedimentation in the Sirt Basin. *Symp. Geol. Of Libya* (ed. C. Gray), Faculty of Science, University of Libya, p. 99 – 106.
- Servant, M., Servant, S.(1973) : le Plio-quatenaire du bassin Tchad. - *Le Quaternaire*, 9<sup>h</sup> Congr. Int. Union Quat. Res., Comite national Franca is de l'Inqua, p.169 – 175.
- Servant, M.(1979) : Les variations climatiques des regions intertropicales du continent African depuis la fin du Pleistocene, *Societe Hydrotechnique de France*.
- Servant, M., Servant, S.(1980) : L'environnement Quaternaire du bassin du Tchad. - In: *The Sahara and the Nile*, M.A.S. Williams & H. Faure, eds., , p 133 – 162.

- Servant, M.(1983) : Sequences continentales variations climatiques: Evolution du bassin du Tchad au Cenozoique superieur, , p. 159, 573.
- Shaath, S. K.(1976) : Quantitative Analysis for Jalu/ Ojla Project, Libya, Ohio University, Athens, Ohio, USA, 237 p.
- Shata, A.,(1953) : New Light On The Structural Development of the Western Desert of Egypt", Bull. Desert of Egypt", , vol. 3, (1), p. 101-106.
- Shata, A.,(1959) : Geological problems related to the groundwater supply of some desert areas of Egypt, Geographical Society of Egypt Journal, vol. 32, p. 247 – 262.
- Shata, A.,(1961) : Remarks on the Regional Geological Structure of The Groundwater Reservoir of El Kharga and Dakhla Oasis, Geographical Society of Egypt Journal, vol. 34, p. 177 – 186.
- Shata, A. et al. (1962), The geology, origin and age of groundwater supplies in some desert areas of U.A.R. Bull. De l'Int. de Desert D'Egypte, pp. 61-120.
- Shata, A.,(1982) : Hydrogeology of the Great Nubian Sandstone Basin, Egypt: Desert Research Institute, E. Mataria, Cairo, Egypt, Journal of Quarterly Engineering Geology, Vol. 15, p. 127 – 133.
- Shata, A.,(1987) : Management Problems of the Major Regional Aquifer in N.E. Africa, UN Tech Workshop in Khartoum.
- Shata, A. (1995), Climatic changes and tectonic activities and the development of the Nile drainage basin in Egypt. In: the climatic fluctuations and water management by Abu Zeid and Biswas, Butter worth- Heinemann.
- Shaw, W.B.K.(1963) : An Expedition in the Southern Libyan Desert (Wadi Howa), Geography Journal, vol. 87, p. 193 – 221.
- Siegenthaler, U.(1972) : Bestimmung der Verweildauer von Grundwasser rim Boden mit radioaktiven Umweltisotopen, Gas-Wasser-Abwassere, vol. 52, p. 283 – 290.
- Sigaev, N. A.(1959) : The Main Tectonic Features of Egypt. Geol. Surv. And Min. Research Dept., Cairo. Paper No. 39.,
- Sinha, S. C.(1975) : Report on Study of Geological Logs in Kufra - Sarir Project, GWA, Tripoli, Libya, 5 p.
- Sinha, S. C., Pandey, S. M., Farghaly, M. S.(1979) : Hydrogeological Studies in East Libya (Northern Half). Unpublished Report, SDWR: Secretariat Dams and Water Resources. Tripoli, Libya.
- Snow, D. T.(1965) : A Parallel Plate Model of Fractured Permeable Media, University of

California, 30 p.

Soer, G. J. R. (1980): Estimation of regional evapotranspiration and soil moisture conditions using remotely sensed crop surface temperature, *Remote Sens. Environment*, vol. 5, p. 137 – 145.

Sogreah (1969): Investigation of Problems in the New Valley”, Report Presented to the Egyptian General Desert Department Organization, by Sogreah, Grenoble, France., Egyptian General Desert Development Organization, Cairo.

Sonntag, C., El-Shazly, E.M., Klitzsch, E.(1978) : Palaoklimatische Information im Isotopengehalt C-14 datierter North- Saharian Groundwater Formation in the Past, IAEA: International Atomic Energy Agency, Vol. II, p. 569 – 580.

Sonntag, C., Klitzsch, E., Kalinke, C.(1978) : Palaoklimatische Information im Isotopengehalt C-14 datierter Saharwasser : kontinentaleffekt in D und 18O, *Geol. Rdsch.*, vol. 67, (2), p. 413 – 424.

Sonntag, C., El-Shazly, E.M., Klitzsch, E.(1979) : Isotopic Identification of Saharian Groundwaters, *Groundwater Formation in the Past. - Ber. D. Zentralinst. F. Isotopen- und Strahlenforschung, Akad., Deutschen Demokratischen Republik*, vol. 30, p. 239 – 248.

Sonntag, C., Klitzsch, E.(1979) : Isotopic Identification of Saharian Groundwaters, *Groundwater Formation in the Past, Palaeoecology of Africa and the surrounding islands*, Vol. 12, p. 137 – 159.

Sonntag, C., Klitzsch, E., Thoma, G.(1980) : Environmental isotopes in North African groundwaters; and the Dahna sand-dune study, Saudi Arabia. - In: *Proc. of an Advisory Group Meeting on Arid-Zone, ne Hydrology 77-84*, IAEA, Vienna. 77 – 84.

Sonntag, C.(1984) : Autochthonous Groundwater, in the confined Nubian Sandstone aquifers, *Berliner Geowiss Abh.*, vol. 50, p. 217 – 220.

Sonntag, C., Schneider, M.(1985) : Hydrogeology of the Gebel Uweinat - Aswan Uplift System, Eastern Sahara. - *Papers of the Int. Congr. Hydrogeology of rocks of low permeability*, Jan. 1, *Int. Congr. Hydrogeology of rocks of low permeability*.

Sonntag, C.(1986) : A time-dependent groundwater model for the Eastern Sahara, *Berliner Geowiss Abh.*, vol. 72, p. 124 – 134.

Sonntag, C.(1986) : Ein zeitaabhängiges Modell der Palaowasser in der Ostsahara aufgrund von Isotopendaten.- *Habilitationsschrift, Fachbereich Bergbau und Geowissensch.*

Geowissenschaften in unserer Zeit.

- Sonntag, C., Klitzsch, E., Weisthofer, K., Shazly, E. M.(1976) : Grundwasser der Zentralsahara: Fossile Vorräte, Geol. Rdsch., vol. 65, 1, p. 284 – 287.
- Sonntag, C., Rudolph, J., Rath, H. K.(1984) : Noble Gases and Stable Isotopes in <sup>14</sup>C -dated Paleowaters from Central Europe and the Sahara. - Isotope Hydrology, IAEA: International Atomic Energy Agency, p. 467 – 477.
- Smith-Carington, A., Foster, S.S.D., Cripps, A.C.(1982) : Nitrate leaching to groundwater, Phil. Trans. R. Soc., vol. 296, p. 477 – 489.
- Soliman, K.H.(1977) : Foraminifères et microfossiles végétaux du « Nubia Sandstone » de subsurface de l'Oasis El Kharga, Desert de l'Ouest, Egypte. - Revue de Micropaléontologie, Revue de Micropaléontologie, vol. 20, 2, p. 114 – 124.
- Squires, C.H., Bradley, W.(1971) : Notes on the Western Desert of Egypt In: Guidebook to the Geology And Archeology of Egypt, Exploration Society Of Libya, p. 99 – 105.
- Steinhausen, D., Langer, K.(1977) : Clusteranalyse: Einführung in Methoden und Verfahren der automatischen Klassifikation, , 206 p.



- Sternberg, Y. M.(1973) : Efficiency of Partially Penetrating Wells, Groundwater, Vol. 11, No. 3.
- Street, F. A., Grove, A. T.(1976) : Environmental and Climatic Implications of Late Quaternary Lake - Level Fluctuations in Africa, Nature, vol. 261, p. 385 – 390.
- Sprent, J. I.(1987) : The ecology of the nitrogen cycle, Cambridge University Press.
- Sultan, I. Z.(1985) : Palynological studies in the Nubia Sandstone Formation, east of Aswan, southern Egypt, N. Jb. Geol. Palaont. Mh., vol. 185, (10), p. 605 – 617.
- Taylor, A. M., Roy, R.(1964) : Zeolite Studies IV: Na-P Zeolites and the Ion-Exchanged Derivatives of tetragonal Na-P, N. Jb. Geol. Palaont. Mh., vol. 49, p. 656 – 682.
- Tetzlaff, G., Wolter, K. (1982) Pleistocene and Holocene climates in Africa.- Nature, 296, 779-780.
- Theis, C. V.(1935) : The Relation Between the Lowering of Piezometric Surface and the Rate and Duration of a Well Using Groundwater Storage, American Geophysics Union Trans, vol. 2, p. 519 – 524.
- Thornthwaite, W., Mather, R.(1957) : Instructions and Tables for Computing Potential Evapotranspiration and Water Balance, Climatology, Vol. X, No.3, pp. 185 – 311.
- Thorweihe, V., Sonntag, C.(1982) : Isotopenuntersuchungen zur Bildungsgeschichte Saharischer Palaowasser, Geomethodica, vol. 7, p. 55 – 78.
- Thorweihe, V.(1982) : Hydrogeologie des Dakhla Beckens (Agypten), Berliner Geowiss Abh., vol. 38, p. 1 – 53.
- Thorweihe, V.(1984) : New aspects of hydrogeology in southern Egypt, Berliner Geowiss Abh., vol. 50, p. 209 – 216.
- Thorweihe, V.(1986) : Isotopic Identification and Mass Balance of the Nubian Aquifer System in Egypt; In: Thorweihe, U. (ed.): Impact of Climatic Variations on East Saharia, Berliner Geowiss Abh., vol. 72, p. 87 – 97.
- Thorweihe, V.(1990) : Nubian Aquifer System. In: SAID, R. & SQUYRES, C. (eds.): The Geology of Egypt. 2<sup>nd</sup> Edition, Elsevier Scientific Publishing Company, Amsterdam.
- Thorweihe, V.(1990) : Studies on Aquifer Properties the Dongola Area, Berliner Geowiss Abh., vol. 120.1.

- Thunnissen, H. A. M., Van Poelje, H. A. C.(1984) : Bepaling van de regionale gewasverdamping met behulp remote sensing in een studiegebied ten oosten van Hengelo (Gld.). - Nota 1525, Institute for Land and Water Management Research.
- Tilho, J.(1920) : The Exploration of Tibesti, Erdi, Borkou and Ennedi in 1912-1917, Geography Journal, vol. 56, p. 79 - 99, 161-183,241-267.
- Tilho, J.(1926) : Du nil aux confins du Tibesti par le centre du desert Libyque (explorations du prince Kemal el Dine). Comptes rendus des seances de l'academie des sci,
- Tihornir, Cupic(1970) : Climatic Conditions in Libya. Unpublished Report, Ministry of Agriculture, Tripoli, Libya, Ministry of Agriculture (Libya), 20 p.
- Tindall, J. A., Petrusak, R. L.(1995) : Nitrate transport and transformation processes in unsaturated porous media, Journal of Hydrology, vol. 169, p. 51- 94.
- Tipton and Kalmbach Inc.(1972) : Feasibility of the Kufra Agricultural Project. Unpublished Report, Ministry of Agric. Reform., Libya, 169 p.
- Tipton and Kalmbach Inc.(1972) : Feasibility of the Kufra Agricultural Project: 1971 Development Program. Denver, Colorado, U.S.A. Completion Report on the Kufra Agricultural Project.
- Tipton and Kalmbach Inc.(1972) : Groundwater Possibilities in Kufra. Unpublished Report, Ministry of Agric. And Agrarian Reform, Tripoli, Libya, 169 p., 82 tables.
- Tipton and Kalmbach Inc.(1973) : Kufra Agricultural Project., 72 p.
- Tipton and Kalmbach Inc.(1973) : Sarir Production Project, Agricultural Development Council, Tripoli, Libya.
- Tipton and Kalmbach Inc.(1974) : Jalu/Ojla Project. Groundwater. Unpublished Report, for Agricultural Development Council, Kufra - Sarir Authority, Tripoli, Libya.
- Todd, David K.(1959) : Groundwater Hydrology, Toppan Company, Ltd, New York.
- Torak, Lynn J.(1982) : Modifications and Corrections to the Finite-Difference Model for Simulation of Three- Dimensional Groundwater Flow. U.S. Geol. Survey, Water Resources,
- Tothill, J. D.(1995) : Hydraulic continuity in large sedimentary Basins, Journal of Hydrology, Vol. 3, N0.4, p 3 – 16.
- Tothill, J. D.(1944) : A note on Drafur from a soil conservation point of view.- In : Soil Conservation Committee's Report, Appendix XVII, Sudan Government.

- Townley, L. R., Wilson, J. L. (1980) : Description of and User's Manual for A Finite Element Aquifer Flow Model, AQUIFEM-1". Technical report, Cairo University, Massachusetts Institute of Technology.
- Trescott, C. (1975) : Documentation of Finite- Difference Model for Simulation of Three-Dimensional Groundwater Flow. Open File Report, U.S. Geol. Survey, p. 75 – 438.
- Trescott, C., Pinder, F. (1976) : Finite- Difference Model for Aquifer Simulation in Two Dimensions with Results of Numerical Experiments. Chapter C1, Book 7, U.S. Geol. Survey, p. 116.
- Turner, B. R. (1980) : Paleozoic sedimentology of the southeastern part of Al Kufrah Basin, Libya: A model for oil exproation. - In: Salem, M.J. & Busrewil, M.T. (eds.): The, Academic Press, Vol. I, p. 351 – 374.
- UN: (1985) : National Physical Perspective Plan, 1981 - 2000, Revised Study. Secretariat of Utilities, Tripoli, Libya, UN: United Nations.
- UN: (1987) : Proceedings of UN Technical Workshop on Transnational Project on Major Regional Aquifer in North, East Africa, UN.
- UN: (1988) : Project Findings and Recommendation; Transnational Project on Major Regional Aquifer in North - East Africa, UN.
- UN: (1989) : Hydrogeology and Economic Potential of the Nubian Sandstone Aquifers; Tech. Report on Transitional Project on Major Regional Aquifer in North Africa.
- UN: Fuad, Jamal, Uxley, P. A., Haggag, M. E. (1977) : Report on a Potential Summer Legume crops for Sarir Production Project, Agricultural Research Center, Libya, 7 p.
- UN: (1988) : Transnational project on the major regional aquifer in Northeast Africa: Proceedings of project workshop, UN.
- UNDP: (1989) : Hydrogeology and Economic Potential of the Nubian Sandstone Aquifers, Report prepared for the Governments of Egypt and Sudan., UNDP.
- UNEP: United Nations Environment Programme (1990) : Action Programme for Egypt, Component of Nubian Sandstone Aquifer to Combat Desertification, UNEP, Nairobi.
- UNESCO (1972) : Etude des ressources en eau du Sahara Septentrional. - Rapport final. UNESCO, 78 p.
- UNESCO (1987) : Report of the transnational project on the major aquifer in northeast Africa, proceedings of project workshop 12-14 December 1987, Khartoum, 64 p.
- UNESCO: OSS: Observatory of Sahara and Sahel (1995) : Water Resources of OSS countries. Evaluation, utilization and management. (report and map scale 1:10 million).

- Vahrson, W. -G.(1985) : Aspekte bodenphysikalischer Untersuchungen in der Libyschen Wüste - ein Beitrag zur Frage spatpleistozaner und holozaner Grundwasserbildung, Berliner Geowiss Abh.
- Vahrson, W. -G.(1986) : Some aspects of soil-physical investigations in the Western Desert of Egypt, Berliner Geowiss Abh., vol. 72, p. 43 – 54.
- VAIL, T. R.(1974) : Distribution of the Nubian Sandstone Formation in Sudan and Vicinity, American Association of Petroleum Geologists Bulliten, Vol. 58.
- VAIL, T. R.(1978) : Outline of the Geology and Mineral Deposits of the Democratic Republic of the Sudan and Adjacent Area - Overseas Geol and Mineral Resources, 49, 66 p pp., London
- VAIL, T. R.(1983) : Pan African Crustal Ascertainment in North - East Africa, Journal of African Earth Sciences, vol. 1.
- Van Genuchten, M.(1980) : A closed form equation for predicting the hydraulic conductivity of unsaturated soils. - Soil. Journal of American Society of Soil Science, vol. 44, p. 892 – 898.
- Vanney, J. R.(1967) : Ober Starkregen in Wustengebieten, Petermanns Geography Mitt. Bull, vol. 2, p. 97 – 104.
- Victor, Calangin(1982) : Technical Report on Exploratory Piezometer Well No. NF-34-11-1 (SKD-24), Sara, South Kufra Oasis, General Authority, Tripoli, Libya, p. 14.
- Victor, Calangin(1982) : Technical Report on Exploratory Piezometer Well No. NF-34-12-1 (SKD-25), Kufra Basin., General Authority, Tripoli, Libya.
- Vittimberga, P., Cardello, R.(1963) : Sedimentology and Petrography of the Paleozoic of the Kufra Basin. Rev. 1' I.F.P., Vol. XVIII, No. 11, p. 1546 – 1558.
- Wacrenier, Ph.(0058) : Notice Explicative De la Carte Geologique Provisoire Du Borkou-Ennedi-Tibesti. Direction Des Mines Et De La Geologie. Haut-Commissariat De La Republ, Afrique Equatoriale Francaise.
- Wan, Herbert F., Anderson, Mary P.(1982) : Introduction to Groundwater Modeling Finite Difference and Finite Element Methods., W.H. Freeman and Company.
- Wellings, S. R., Bell, J. P.(1980) : Movement of water and nitrate in the unsaturated zone of Upper Chalk near Winchester, Journal of Hydrology, vol. 30, p.167 – 178.
- Wendorf, F.(1965) : Contributions to the Prehistory of Nubia, Vol. I, II.
- Wendorf, F., Schild, R., Haynes, V., Gaultier, A., Kobusiewicz, M.(1976) : The Prehistory of the Egyptian Sahara, Science, Vol. 193, No. 4248, p. 103 –114.
- Wendorf, F., Schild, R.(1980) : Prehistory of the Eastern Sahara, Academic Press, 414 p.

- Werner, W.(1986) : Palökologische und biofazielle Analyse des Kimmeridge (Oberjura) von Consolcao, Mittelportugal., Zittelina, vol. 13, p. 3 – 109.
- Whiteman, A. J.(1971) : The Geology of Sudan Republic, 290 pp., Oxford (clarendon Press).
- WHO: World Health Organization(1962) : Climatological Normals (CLINO) for Climat and Climat Ship Stations for the Period 1931 - 1960.- WHO/OMM -No. 117, TP. 52.
- WHO, Geneva.Guidelines for drinking water quality, WHO: World Health Organization.
- Wickens, G. E.(1975) : Changes in the Climate and Vegetation of Sudan Since 20,000 B.P., Boissiera, vol. 24, p. 43 – 65.
- Wickens, G. E.(1976) : The Flora of Gebel Marra (Sudan Republic) and its geographical affinities., Roy. Bot. Gardens, Kew Bulletin, 5 v. , 368 p
- Williams, M. A., Hall, D. N.(1965) : Recent Expeditions to Libya from Royal Military Academy Sandhurst, Geography Journal, Vol. 131, No.14, p. 487 – 501.
- Williams, M.A.J. (1975): Late Pleistocene tropical aridity synchronous in both hemispheres? – Nature, 253 5493, 617 – 618 London.
- Winiger, M.(1972) : Die Bewölkungsverhältnisse der Zentralsaharischen Gebirge aus Wettersatellitenbildern, p. 87 – 120.
- WMO: World Meteorological Organization (1975) : Proceedings of the WMO/IAMAP Symposium, WMO.
- Wolfgang, W. Mahrholz (1965) : Geological Exploration of the Kufra Region. April - May 1965. - Geological Section Bulletin No.8., Ministry of Industry, p. 76.
- Wright, E.P., Edmunds, W.M.(1979) : Groundwater recharge and palaeoclimate in the Sirte and Kufra basins, Journal of Hydrology, vol. 40, p. 215 – 241.
- Wright, E.P.(1968) : Supplementary Report on the Hydrogeological Investigations Carried out in Concessions 65 and 80, Libya, Between 9<sup>th</sup> and 22<sup>nd</sup> December 1967. Unpublish, Institute of Geological Sciences, 13 p.
- Wright, E.P., Edmunds, W.M.(1969) : Hydrogeological Studies in Central Cyrenaica, Libya - Supplementary Distribution and Origin of Nitrates in the Groundwaters. Unpublished Rep., Institute of Geological Sciences, 9 p.
- Wright, E.P., Edmunds, W.M.(1969) : Hydrogeological Studies in Central Cyrenaica, Libya - Unpublished Report, for B.P. Co. Ltd., and N.B.H., Institute of Geological Sciences, 36 p.
- Wright, E.P., Edmunds, W.M.(1969) : Distribution and origin of nitrate in the groundwaters. Hydrogeological Studies in Central Cyrenaica, Kingdom of Libya, Government of

Libya.

- Wright, E.P. and Edmunds, W.M. (1971) : Hydrogeological Studies in Central Cyrenaica, Libya - In: Symposium on the Geology of Libya (ed. C. Gray), Faculty of Science, University of Libya, p. 459 – 481.
- Wright, E.P.(1973) : Jalu-Tazerbo Project Phase I, Interim Report. Unpublished Report for Kufra Agric. Co., Libyan Arab Republic, Institute of Geological Sciences, 56 p.
- Wright, E.P.(1973) : Jalu-Tazerbo Project Phase I, Final Report. Unpublished Report for Kufra Agric. Co., Libyan Arab Republic, Institute of Geological Sciences, 91 p., plus Appendices.
- Wright, E.P.(1975) : Jalu-Tazerbo Project: Phase 2, Final Report for Kufra and Sarir Authority, Libyan Arab Republic, Institute of Geological Sciences, 74 p., plus app.
- Wright, J. P.(1975) : Julu- Tazerbo Project, Phase 2. - Unpublished final report, Kufra - Sarir Authority., Tripoli, Libya, 74 p.
- Wright, E.P.(1981) : A Groundwater Study of the Libyan Desert of Cyrenaica (In: Lloyd (ed.): Case-Studies in Groundwater Resources Evaluation, Clarendon Press, p. 163 – 185.
- Wright, E.P. & Benfield, A.C. & Edmunds, W.M. & Kitching, R. (1982): Hydrogeology of Kufra and Sirte Basins, Eastern Libya.- Q.J. Eng. Geol., 15, 80-103, London.
- Wright, E.P.(1986) : Review of the Hydrogeology of the Kufra Basin, North Africa. In: Proceeding of workshop on hydrology organized by the Special Research Project Arid Areas at the Technical University Berlind, Berliner Geowiss Abh., vol. 72, p. 76–86.
- Wycisk, P.(1984) : Depositional environments of Mesozoic strata from northwestern Sudan, Berliner Geowiss Abh. A, vol. 50, p. 81- 97, Berline.
- Wycisk, P.(1986) : Faziesentwicklung fluviatiler und flachmariner im Bereich flacher kratonaler Becken (Oberkreide - Alttertiar, NW-Sudan).- 1. Treffen deutschspr, Sedimentologen Abstracts, p. 129 – 130.
- Wycisk, P.(1987) : Geology of Sedimentary Basins in Misaha Trough and Southern Dakhla Basin (South Egypt - Northern Sudan), Berliner Geowiss Abh., vol. 75.
- Wycisk, P.(1987) : Contributions to the subsurface geology of the Misaha Trough and the Southern Misaha Trough and the Southern Dakhla Basin (Sw-Egypt /NW-Sudan). - This,
- Yaalon, D. H., Ganor, E.(1975) : Rates of aeolian dust accretion in the Mediterranean desert fringe environments of Israel.- Ixeme Congr., Intern. De Sedimentol, p.169 – 173.
- Yair, A., Lavee, H., Goldberg, P., Bryan, R. B.(1980) : Present and Past Geomorphic Evidences in the Development of Badlands Landscape: Zin Valley, Northern Negev, Israel., Palaeoecology of Africa, vol. 12, p. 125 – 135.

Zafar, A. M.(1979) : Sarir-Sirte Project. Preliminary Report. Unpublished report, SDWR: Secretariat Dams and Water Resources.

Zaghloul, R. E. N.(1970) : On a proposed lithostratigraphic subdivision for the Late Cretaceous in the Nile Valley, U.A.R.- 7<sup>th</sup> Arab. Petr. Congr., Proceedings, Arab Petroleum Congress, Paper 64 (B3), 50 p.

Zagorac, Z.(1961) : Report on Gravimetical and Geological Surveys, Kharga and Dakhla Oasis”, Report by Geofizika, Zagreb, Yugoslavia,, General Desert Development Organization.

Zagorac, Z.(1966) : Final Report, South Kharga and Tushka Area, New Valley Project, Regional Geologic al and Geophysical Explorations and Topographical Mapping”, by Geofiz, General Desert Development Organization.

Zagorac, Z.(1966) : Final Report, Kharga Oasis Area, Geophysical and Photo-geological Re-Interpretation”, by Geofizika, Zagreb, Yugoslavia, to General Desert Development, Organization .

Zittel, K. A.(1983) : Beitrage zur Geologie und Palaontologie der Libyschen Wuste und der angrenzenden Gebiete von Agypten., Palaeontographica, vol. 30, (3/6): 1 - 2, p.147 – 237.