

Curriculum Vitae

Mohamed Youssef Ali, Associate Professor, Department of Geology and Geophysics,
King Saud University, Saudi Arabia Phone: (+966- 556545897) | E-Mail:
mymohamed@ksu.edu.sa, myousefgeology@gmail.com



Personal information

Name: Mohamed Youssef Ali

Date of Birth: 19/ 10/ 1966

Place of Birth: Qena - Egypt

Nationality: Egyptian

Education

- 2001 – 2003** Doctor of Natural Sciences (Dr.rer.nat.): Stratigraphy and Paleontology with “Gut”, Rhur Universität Bochum, Germany.
- 1991 – 1995** Master of Science (M.S. Geology: Paleontology and Stratigraphy), South Valley University, Qena, Egypt.
- 1984 – 1988** Bachelor of Science (B.S. Geology) with Distinct grade, Assiut University, Qena, Egypt.

Employment

- 2012 – now:** (current) Associate professor, Department of Geology and Geophysics, Faculty of Science, King Saud University University, Saudi Arabia.
- 2016 – now:** (permanent) Full professor, Department of Geology, Faculty of Science, South Valley University, Qena, Egypt.
- 2010 – 2015:** Associate Professor, Department of Geology, Faculty of Science, South Valley University, Qnena, Egypt.
- 2005 – 2010:** Assistant Professor, Department of Geology, Faculty of Science, South Valley University, Qena, Egypt.
- 1996 – 2004:** Lecturer, Department of Geology, Faculty of Science, South Valley University, Qena, Egypt.

Relevant experiences

Research experiences:

- Studying the Biostratigraphy of the calcareous nannofossils, planktonic foraminifera.
- Studying the impact of the Cretaceous/Paleogene boundary catastrophic event on the two foraminiferal group (planktonic and benthonic foraminifera).
- studying the paleoenvironmental change at the Danian/Selandian boundary.

- Studying the impact of the Paleocene Eocene Thermal Maximum event (PETM) on the marine microfloras and microfaunas includes:
 - * Calcareous nannofossils turnover.
 - * Planktonic foraminifera turnover.
 - * Benthonic foraminifera extinction event (BFEE).
 - * Sea floor oxygenation.
 - * Paleoproductivity
- Studying the Jurassic foraminifera.
- Studying distribution of recent foraminifera and its environmental interpretation in the Egyptian Red Sea Coast.
- studying Geochemical analysis of the recent foraminifera and sediments of the coastal areas.

Teaching experiences:

- General Geology.
- Introduction to Paleontology.
- Invertebrate palaeontology.
- Micropaleontology.
- Stratigraphy.
- Historical geology
- Biostratigraphy and Paleoecology.
- Geology of Egypt.
- Field training

Training Courses and Workshops

- Various computer courses, Qena, Cairo, Egypt, 1994, 1995, 1996.
- Workshop of Mud logging, Sperry Sun logging service company, Cairo, Egypt, 1995.
- Workshop of electronic microscope (SM and TM), Cairo University, Cairo, Egypt, 1998.
- International school in planktonic foraminifera, 2° course (Paleocene) Perugia University, Perugia, Italy, 2003.
- Workshop on E-content, offered by Microsoft, 2006.
- TOT course in the national Faculty and Leadership Development centre.
- TOT course in Pathways to Higher Education Project in South Valley University.
- TOT course of ICTP, South Valley University.

International Travel and Residence for Research/Study

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| 2001-2003 | (26 Months) Ph. D. student in Institut fur Geologie, Mineralogie und Geophysik, Ruhr- Universitat Bochum, Germany, under the supervision of Prof. Dr. Joerg Mutterlose |
| 2003 | (10 days) in Perugia University, Perugia, Italy. Under the supervision of Prof. Dr. Isabella Premoli- Silva. |

- 2007 (3 Months) Post Doctor fellowship, Departement Geografie-Geologie, GEO-Instituut, K. U. Leuven, Belgium, with Prof. Dr. Robert Speijer.
- 2008 (3 Months) Post Doctor fellowship, Institut fur Geologie, Mineralogie und Geophysik, Ruhr-Universitat Bochum, Germany, under the supervision of Prof. Dr. Joerg Mutterlose

Field trips

Field trips in Egypt:

- Field trip to the Eastern Desert (Qift - Quseir Road, Red Sea Coast, Qena-Safaga Road), 1988.
- Field trip to the Red Sea Coast (Quseir, Safaga, Esh El Mellaha areas), 1994
- Field trip to the Western Desert (Kharga, Baris, Dakhla, Farafra Oases), 1997
- Field trip to the South Western Desert (Kurkur, Dungul Oases), 1998, 1999.
- Field trip to the Eastern Desert (Wadi Qena), 1999.
- Field trip to the Southwestern Nile Valley (Gabal El Borga, Wadi Abu Ghurra), 1999,2000.
- Field trip to the Dababiya section (GSSP) for the Paleocene-Eocene boundary Nile Valley, 35 km south of Luxor, 2004.
- Field trip to the Taramsa section, G. El Serai section, Nile Valley, 2004.
- Field trip to the Quseir area (El Beida, G. Atshan and G. Anz sections), safaga area (Wasif section), 2005.
- Field trip to the Central Egypt areas (Wadi Qena, Quseir, Dababiya, Oweina, west Aswan) with team from K. U. Leuven university and Erlangen University, 2006.
- Field trip to the Dababiya section (GSSP) for the Paleocene-Eocene boundary Nile Valley, 35 km south of Luxor, with the undergraduate student, 2006.
- Field trip to the Dababiya section (GSSP) for the Paleocene-Eocene boundary Nile Valley, 35 km south of Luxor, with the undergraduate student, 2009.
- guiding two field trips to the (GSSP) for the Paleocene-Eocene boundary Nile Valley, 35 km south of Luxor, The fifth international conference of the geology of Tethys, 2010.

Field trips in foreign countries (Europe):

- Field trip to the type section of Maastrichtian, Maastricht, Nietherland, 2002.
- Field trip to the Cretaceous succession in Nietherland, 2002.
- Field trip to the Cretaceous sections in Belgium, 2002.
- Field trip to the lower to middle Devonian “Couvin sections”, Belgium, 2007.

Field trips in Saudi Arabia:

- Field trip to the Gabal Abkeel, Wadi Hanifa, 2012.
- Field trip to Khasham El Gedia section, south of Riyadh, 2012.
- Field trip to Red Sea coast, Jeddah, Red Sea, 2012.

- Field trip to Sedier section, North West of Riyadhah, 2013.
- Field trip to Al-Boybiat section, Nort west of Riyadh. 2014
- Field trip to Drhuma section south of Riyadh, 2014.
- Field trip to Dammam coast, Arabian Gulf, 2014.
- Field trip to Arabian Gulf (Ras AL Ghar, Al Gobeil, Ras Abo Ali, Ras Tanoura), 2014.

Responsibilities

Past Responsibilities (South Valley University)

- Teaching.
- Supervision the field trips in the department.
- Focal Point of the South Valley University with the FP7 (Seventh Framework Programme).
- Coordinator of the Department in the QAAC (Quality Assurance Accreditation Center).
- Coordinator of the Department in the FLDP (Faculty and Leadership Development Project).
- Trainer in the ICTP (Information and Communication Technology Project).
- Trainer in the Pathways to Higher Education Project in South Valley University.
- Trainer in the Information and Communication centre in South Valley University.
- Trainer in the ICDL (International Computer Driving License) centre in South Valley University.
- Executive manager of the E-Learning Center in South Valley University.

Present Responsibilities (King Saud University)

- Teaching.
- Supervision the field trips in the department.
- Supervision of Master students.
- Member in Development and Quality committee.
- Member in Plans and Programs Committee.
- Member in Graduated affairs committee.
- Coordinator of Master Program in Accreditation committee.

List of publications

Books:

- 1-El-Sorogy, A., Al-Sabrouty, M, Youssef, M. (2015): Invertebrate paleontology. King saud University. ISBN: 978-603-507-366-0.
- 2-Youssef, M., Al-Sabrouty, M., El-Sorogy, A. (2015). Micropaleontology. King Saud University. ISBN: 978-603-507-339-4.

Published Ph. D. Thesis:

Youssef, M. (2003): Micropaleontological and stratigraphical analyses of the Late Cretaceous/Early Tertiary succession of the Southern Nile Valley (Egypt), Ruhr-Universität Bochum, Germany. Published online, find it under the following link:

http://www.netahtml/Hss/Di_ss/MohamedMohamedYoussefAl_i/di_ss.Pdf

- Micropaleontological and stratigraphical analyses of the Late Cretaceous/Early Tertiary succession of the Southern Nile Valley (Egypt). LAP LAMBERT Academic Publishing AG & Co. KG
 - ISBN-No: 978-3-8383-2209-4
 - No. #2259
 - Title: Micropaleontological and stratigraphical analyses of K/P succession.

Electronic course:

“Micropaleontology” Ecourse _2_E_95665” Elearning deanship, King Saud University.

Journal articles:

1- Aref, M., **Youssef, M. (2000):** Biostratigraphy of the Late Cretaceus – Early Tertiary Succession along the Sinn El Kaddab-Wadi Abu Ghurra stretch, Southwestern Nile Valley, Egypt. Egyptian J. of Geology, **44**.

2-Aref, M., **Youssef, M.**, Philobbs, E. **(2003):** Benthonic foraminiferal paleobathymetry and sea-level change across the Maastrichtian-Early Eocene succession in southwestern Nile Valley, Egypt. The Third international Conference on the Geology of Africa, Assiut-Egypt December 7-9.

3-Youssef, M., Mutterlose, J. **(2004):** The calcareous nannofossil turnover across the Paleocene-Eocene Thermal Maximum Event (PETM) in the southwestern Nile Valley, Egypt, N.Jb. Geol. Paleont. Abh 234(1-3): 291-309.

4-Aref, M., Youssef, M. (2004): The benthic foraminifera perturbation across the Paleocene-Eocene Thermal Maximum event (PETM) from Southwestern Nile Valley, Egypt. N.Jb. Geol. Paleont. Abh 234(1-3): 261-269.

5-Madkour, H., Youssef, M. (2005): Bioaccumulation of heavy metals in the benthic foraminiferal tests from the coastal lagoons, Red Sea, Egypt. Egyptian Journal of paleontology, 5: 93-105.

6-Madkour, H., Youssef, M. (2009): Heavy metals in the benthic foraminifera from the coastal lagoons, Red Sea, Egypt: indicators of anthropogenic impact on environment (case study). Environmental Geology, 58:543–553. DOI 10.1007/s00254-008-1529-0.

7-Bornemann, A., Sprong, J., Schulte, P., Steurbaut, E., Youssef, M., Speijer, P. (2009): Latest Danian carbon isotope anomaly and associated environmental change in the Southern Tethys (Nile Basin, Egypt). Journal of the Geological Society, London, Vol. 166, 1135–1142. doi: 10.1144/0016-76492008-104.

8-Youssef, M. (2009) High resolution calcareous nannofossils biostratigraphy and paleoecology of the Danian- Selandian transition in Sothern Eastern Desert, Egypt. Marine Micropaleontology 72: 111–128

9-Youssef, M. (2009): Paleoenvironmental change at the Paleocene/Eocene transition in Red Sea Coast, foraminiferal records. Proceeding of the 6th international conference on the geology of Africa, 24-29 October 2009, Assiut, Egypt.

10-Sprong, J., Youssef, M., Bronemann, A., Schulte, P., Steurbaut, E., Stassen, P., Kouwenhoven, J. & Speijer, R. P., **(2011):** A multi-proxy record of the Latest Danian Event at Gebel Qreiya, Eastern Desert, Egypt, Journal of Micropalaeontology, **30:** 167–182.

11-Ardestani, M., Youssef, M., Vahidinia, M. **(2011).** Biostratigraphy and foraminiferal bioevents of the Abderaz Formation (Middle Turonian-Lower Campanian) in Kopeh-Dagh sedimentary basin, northeastern Iran. Egyptian journal of paleontology.

12-Madkour, H. A., Youssef, M. (2011): Distribution and diversity of benthic Foraminifera from the coastal lagoons along the Egyptian Red Sea. Egyptian Journal of Aquatic Research, 2011, **37(1)**, 41-58

13-Sprong, J., Kouwenhoven, T., Bornemann, A., Schulte, P., Stassen, P., Steurbaut , E. Youssef, M., Speijer, R. P. **(2012):** Characterization of the Latest Danian Event by means of benthic foraminiferal assemblages along a depth transect at the southern Tethyan margin (Nile Basin, Egypt), Marine Micropaleontology 86-87 (2012) 15–31.

14-Youssef, M., Taha, S. **(2013).** Biostratigraphy and Paleoenvironment of Paleocene/Eocene (P/E) interval of some geological sections in central Egypt. Arabian Journal of Geosciences. Volume 6, Issue 11 (2013), Page 4279-4298.

15-Mohammad Vahidinia, Youssef, M. Meysam Shafiee Ardestani, Abbas Sadeghi, Docho Dochev. **(2014).** Integrated biostratigraphy and stage boundaries of the Abderaz Formation in four sections east of the Kopeh-Dagh sedimentary basin in northeast Iran. Journal of African Earth Sciences. 90: 87–104.

16-Youssef, M. (2014). Paleoenvironmental changes in the Paleocene sequence of Dinegil area, south western Desert (Egypt): Foraminifera and calcareous nannofossils record. Egyptian Journal of Paleontology, Vol. 14, p. 39-63.

- 17-Youssef, M.**, El-Sorogy, A., Al Sabrouty, M., Al-Otaibi, N. (2014). Invertebrate shells as pollution bio-indicators, Gebel El-Zeit area, Gulf of Suez, Egypt. Indian Journal of Geo-Marine Sciences, 43(08), 1465-1474.
- 18-**El- Sorogy, A., **Youssef, M.**, Al-Sabrouty, M., Al-Otaibi, N. (2014). Facies pattern and molluscan fauna of the Late pleistocene raised coral reef of rabigh area, red sea coast, saudi arabia. Indian Journal of Geo-Marine Sciences, 43(08), 1571-1580.
- 19-**Hefny, M., **Youssef, M.** (2015). Biostratigraphy and stage boundaries of the Upper Cretaceous-Early Paleogene successions in Southern Galala area and South Galala sub-basin development, North Eastern Desert, Egypt. Historical biology. Vol. 27, No. 1, 68-89.
- 20-Youssef M.**, El Sorogy, A. (2015): Paleoecology of Benthic Foraminifera in Coral Reefs Recorded in the Jurassic Tuwaiq Mountain Formation of the Khashm Al-Qaddiyah Area, Central Saudi Arabia. Journal of earth science. Vol. 26, No. 2, p. 224–235.
- 21-Youssef, M. (2015)**: Evaluation of foraminifera and calcareous nannofossils changes across the Late Paleocene/Early Eocene transition at Nag El-Quda section, Upper Nile Valley, Egypt. Geosciences journal. Volume 19, Issue 4, 641-654.
- 22-** El-Asmar, H., Assal, E., El-Sorogy, A., **Youssef, M.** (2015): Facies analysis and depositional environments of the Upper Jurassic Jubaila Formation, Central Saudi Arabia. Journal of African earth Sciences. 110 (2015) 34–51.
- 23- Youssef, M.**, El-Sorogy, A., Al-Kahtany, Kh., Al-Otaibi, N. (2015): Environmental assessment of coastal surface sediments Tarut Island, Arabian Gulf (Saudi Arabia). Marine Pollution Bulletin. 96(1-2):424-33.
- 24-** AlKahtany, Kh., **Youssef, M.**, El-Sorogy, A. (2015): Geochemical and foraminiferal analyses of the bottom sediments of Dammam coast, Arabian Gulf, Saudi Arabia. Arabian Journal of Geosciences. Volume 8, Issue 12, pp 11121-11133.
- 25- Youssef, M. (2015)**: Heavy metals contamination and distribution of benthic foraminifera from the Red Sea coastal area, Jeddah, Saudi Arabia. Oceanologia, 57, 236-250.
- 26- El-Sorogy, A., Youssef, M., (2015)**: Assessment of heavy metal contamination in intertidal gastropod and bivalve shells from central Arabian Gulf coastline, Saudi Arabia. Journal of African earth Sciences. 111: 41-53.

- 27- Youssef, M.**, Hefny, M. (2015): Depositional environments and high resolution sequence stratigraphy of Late Cretaceous-Early Tertiary succession, North Eastern Desert, Egypt. Swiss journal of geosciences. 108:345–359.
- 28-El-Sorogy, A., Youssef, M.**, Al-Kahtany, Kh., Al-Otaiby, N. (2016): Assessment of Arsenic in coastal sediments, seawaters and molluscs of Tarut Island, Arabian Gulf, Saudi Arabia. Journal of African earth Sciences. 113, 65-72.
- 29- Youssef, M. (2016)**: Calcareous nannofossils and paleoenvironments of the Paleocene/Eocene thermal maximum (PETM) interval in central Egypt. Journal of African earth Sciences. 114, 203-219.
- 30- El-Sorogy, A., Youssef, M.**, Al-Kahtany, Kh., Al-Otaibi, N. (2016): Intertidal Mollusks as Pollution indicators, Tarut coast, Arabian Gulf, Saudi Arabia. Pakistan journal of zoology. 48(3), 611-623.
- 31- AlKahtany, Kh., El-Sorogy, A., Youssef, M. (2016)**: Stratigraphy and depositional environments of the Upper Cretaceous Aruma Formation, Central Saudi Arabia. Arabian Journal of Geosciences. 9:330 DOI 10.1007/s12517-016-2361-6.
- 32-Youssef, M.**, Hefny, M., El-Sorogy, A. (2016): Bio- and microfacies analysis and depositional sequences of Bir Dakhl, North Eastern Desert, Egypt. Journal of geological society of India. 87 (5), 610-622 .
- 33- Youssef, M.**, El-Sorogy, A. (2016): Environmental assessment of heavy metal contamination in bottom sediments of Al-Kharrar lagoon, Rabigh, Red Sea, Saudi Arabia. Arabian Journal of Geosciences. 9:474 DOI 10.1007/s12517-016-2498-3.
- 34- Youssef, M.**, El-Sorogy, A., Al-Kahtany, Kh. (2016). Distribution of Mercury in molluscs, seawaters and coastal sediments of Tarut Island, Arabian Gulf, Saudi Arabia. Journal of African earth Sciences. 124: 365-370.
- 35- El-Sorogy, A., Ismail, A., Youssef, M. (2016)** Facies development and paleoenvironment of the Hajajah Limestone Member, Aruma Formation, central Saudi Arabia. Journal of African Earth Sciences. 124:355-364.
- 36-El-Sorogy, A., Youssef, M.** and Al-Kahtany, Kh. (2016). Integrated assessment of the Tarut Island coast, Arabian Gulf, Saudi Arabia. Environmental Earth Sciences, 75: 1336.

Conferences contribution:

- 1-** Aref, M., **Youssef, M. (1996):** Benthonic Foraminifera and Biostratigraphy of the Late Cretaceous -Early Tertiary Succession along the Red Sea Coastal Area, Egypt. 3th Int. Conf. Geology of the Arab World, Cairo Univ., 539-573.
- 2-** Aref, M., **Youssef, M.**, Philobbs, E. **(2003):** Benthonic foraminiferal paleobathymetry and sea-level change across the Maastrichtian-Early Eocene succession in southwestern Nile Valley, Egypt. The Third international Conference on the Geology of Africa, Assiut-Egypt December 7-9.
- 3- Youssef, M. (2008).** Calcareous nannofossils from the Paleocene-Eocene Thermal Maximum of Central Egypt. Proceeding of the Fourth International Conference on the Geology of the Tethys (17-20 November, 2008, Cairo University).
- 4- Youssef, M. (2009):** Paleoenvironmental change at the Paleocene/Eocene transition in Red Sea Coast, foraminiferal records. Proceeding of the 6th international conference on the geology of Africa, 24-29 October 2009, Assiut, Egypt.
- 5-Youssef, M. & Mutterlose, J. (2003):** The calcareous nannofossil turnover across the Paleocene-Eocene Thermal Maximum event (PETM) in the southwestern Nile Valley Egypt. Abstract, ISPS, Symposium on the Paleogene, Leuven, Belgium, 25-30 August 2003.
- 6- Youssef, M., Aref, M. Mutterlse, J. (2003):** The benthic foraminifera perturbation across the Paleocene-Eocene Thermal Maximum event (PETM) from Southwestern Nile Valley, Egypt. Abstract, ISPS, Symposium on the Paleogene, Leuven, Belgium, 25-30 August 2003.
- 7- Youssef, M. (2004):** Paleoproductivity and sea floor oxygenation across the biosphere in the Paleocene-Eocene transition. Meeting on Climate and Biota of the Early Paleogene (CBEP2004), February 8-12, 2004 Luxor, Egypt.
- 8- Sprong, J., Guasti, E., Fornaciarie, E., Youssef, M., Schulte, P., Speijer, R. (2006):** Paleoenvironmental and sea level change of the Nile Valley Basin (Egypt) at the Danian/Selandian transition. Meeting on Climate and Biota of the Early Paleogene (CBEP2006) Bilbao, N Spain, and June 2006.
- 9- Sprong, J. , Schulte, P., Speijer, R.P., Steurbaut, E. and Youssef, M. (2007):** Gebel Qreiya (Nile Valley, Egypt) in the Middle Palaeocene: a micropalaeontological and

sedimentological reconstruction. the Foraminifera and Nannofossil Groups joint Spring Meeting 2007 of The Micropalaeontological Society, Thursday 7th - Friday 8th June, 2007, Université d'Angers, France.

10- Youssef, M. (2007): High resolution calcareous nannofossils biostratigraphy and paleoecology of the Danian-Selandian transition in Wadi Qena, central Eastern Desert, Egypt. In Geology of Africa International Conference, November, 2007, Assiut, Egypt.

11- Schulte, P., Schwark, L., Sprong, J., Bornemann, A., Speijer, R., Youssef, M. (2008). The mineralogical and organic geochemical expression of a potential Danian-Selandian hyperthermal event in Egypt. 26th IAS Regional meeting/SEPM-CES Sediment 2008- Bochum, Germany.

12- Sprong, J., Schulte, P., Bornemann, A., Stassen, P., Steurbaut, E., **Youssef, M.**, Speijer, R. P. **(2009)**. Were the upper Danian events beds a precursor of the PETM: a comparison at the Qreiya section (Egypt).

13- Youssef, M. (2009): Paleoenvironmental change at the Paleocene/Eocene transition in Red Sea Coast, foraminiferal records. 6th international conference on the geology of Africa, 24-29 October 2009, Assiut, Egypt.

14- Youssef, M., Madkour, H. **(2010):** Distribution and Diversity of benthic foraminifera from the Coastal lagoons along the Egyptian Red Sea. Annual meeting of Egyptian society of Paleontology. April 2010

15- Hefny, M., Youssef, M., and Kuss, J., **(2013)** .Biostratigraphy and stage boundaries of the Upper Cretaceous-Paleogene successions in Southern Galala area and South Galala sub-basin development. The 13th Annual Meeting of the Paleontological Society of Egypt. 12 June 2013, Cairo, Egypt.

16-Hefny, M., Youssef, M., Mansour, A., **(2013)**. Bio- and microfacies analysis and depositional sequences of Bir Dakhl, North Eastern Desert, Egypt. 1st ICNHBAS conference, 21-23 September 2013, Hurghada, Egypt.

17-Hefny, M., Youssef, M., (2013). High resolution sequence stratigraphy of Late Cretaceous-Early Tertiary succession, North Eastern Desert, Egypt. 1st young researcher conference, 22-23 October, 2013, Qena, Egypt.

18- Youssef, M., Bangeta, M., **(2014)**: benthic foraminifera as bio-indicator of anthropogenic pollution in Red Sea Coastal areas, Jeddah, Saudi Arabia. Scientific meeting, Shaqra University, Shaqra, Saudi Arabia, 27.10.2014.

19- Al-Kahtany, Kh. Youssef, M., El-Sorogy, A. **(2015)**. Geochemical and foraminiferal analysis of the surface sediments of Dammam coast, Arabian Gulf, Saudi Arabia. 11th Geological Conference, Riyadh, 12-13 May, 2015.

20- Youssef M., El Sorogy, A. **(2015)**: Paleoecology of Benthic Foraminifera in Coral Reefs Recorded in the Jurassic Tuwaiq Mountain Formation of the Khashm Al-Qaddiyah Area, Central Saudi Arabia. 11th Geological Conference, Riyadh, 12-13 May, 2015.

References

- 1- Prof. Dr. Abbas Mohamed MANSOUR** , President of the South Valley University, Egypt. Email: abbas_mansour@yahoo.com
- 2- Prof. Dr. Joerg MUTTERLOSE**, Professor of Micropaleontology, Institut für Geologie, Mineralogie und Geophysik, Ruhr-Universität Bochum, Universitätsstr. 150, 44801 Bochum, Germany. Email: joerg.mutterlose@rub.de.
- 3- Prof. Dr. Robert SPEIJER**, Professor of paleontology, Departement Geografie-Geologie, GEO- Instituut, Celestijnenlaan 200E, B-3001 Leuven-Heverlee, Belgium, Email: Robert.Speijer@geo.kuleuven.be.