Pan-European Correlation of the Triassic
11th International Field Workshop

NW Gondwana margin of the Neo-Tethys (Negev, southern Israel)

February 12–16, 2014

Third Circular

Invitation:

We invite you to the Triassic succession workshop in southern Israel (Negev, Makhtesh Ramon, Makhtesh Areif). The Triassic succession is outcropped in the region which is considered to be a future UNESCO Geo-park, named "Makhteshim Country". This is not only because of the abundantly interesting geological sites, but also due to its archaeological and ecological value.

Scientific rationale:

The Triassic succession has accumulated on the Mesozoic passive margin of north Gondwana during the early stages of the Neo-Tethyan opening, a connection severed only by rifting in the Miocene. The local section was deposited on an epicontinental marginal marine belt, commencing with a siliciclastic delta and ranging to offshore carbonates. The Triassic successions display short-term intervals of rapid rift-related subsidence interrupting long-term subsidence beneath a passive margin edifice, a geological history in common with most North Atlantic and Mediterranean continental shelves, but that is completely exposed in a stunning desert landscape. Late Cretaceous and Miocene regional compression is only a distant echo of dramatic events along the Alpine belt, and excellent outcrops are at the core of mildly folded anticlinal crests breached by cirque-like erosional valleys ("crater" or "makhtesh"). Outcrops bear endemic cephalopods and other molluscan faunas representative of the southern Tethyan 'Sepharadic' faunal province, along with unique vertebrate remains. Clastic/carbonate and carbonate/evaporite cycles record shifts in global climate, Gondwanan monsoons, sea level, and local rifting events, as this region wandered across 15° of Triassic latitude.

Organizing committee:

Dr. Dorit Korngreen, Geological Survey of Israel (GSI), Jerusalem: dorik@gsi.gov.il

Dr. Or Bialik, Ben Gurion University (BGU) and Weizmann Inst of Science: orbia@bgu.ac.il

Prof. Chaim Benjamini, Department of Geological and Environmental Sciences, Ben Gurion University (BGU), Beer Sheva: chaim@bgu.ac.il

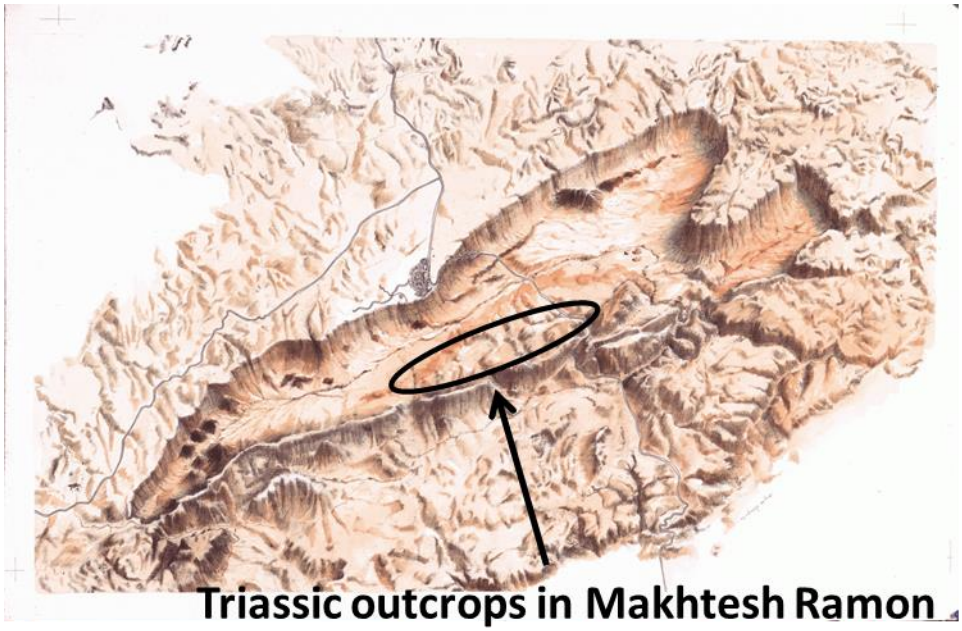
Dr. Rivka Rabinovich, Institute of Earth Sciences, The Hebrew University (HUJI), Jerusalem: rivkar@mail.huji.ac.il

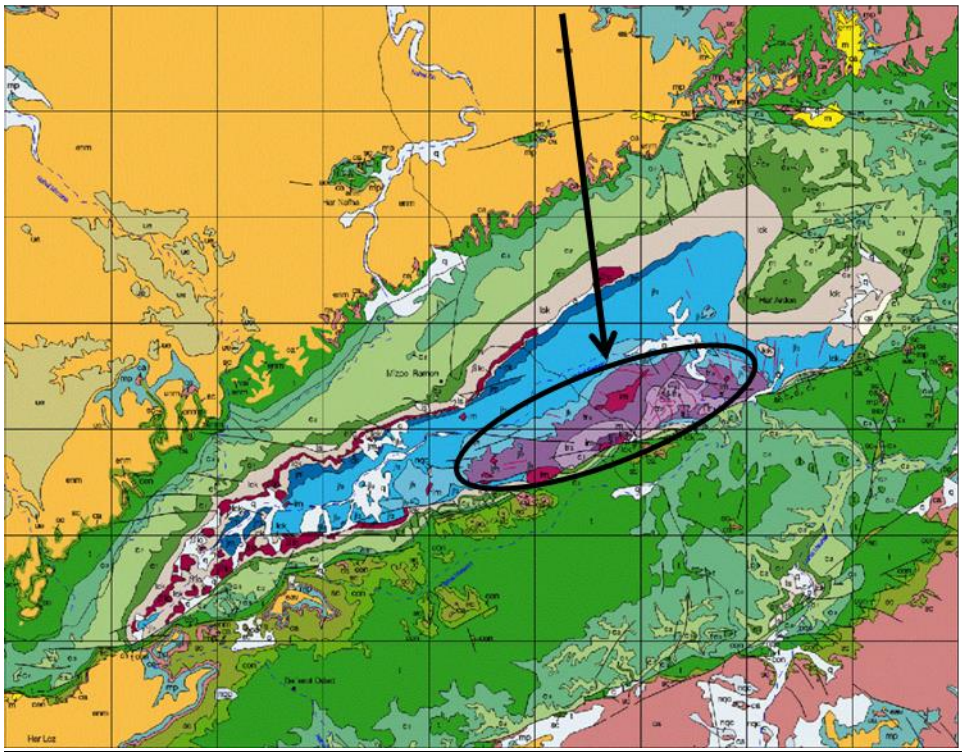
Coordinator:

Prof. Dr. Gerhard H. Bachmann, Martin-Luther-Universitaet Halle-Wittenberg Institut fuer Geowissenschaften Von-Seckendorff

Guest participant and keynote speaker:

Prof. Olivier Rieppel, Curator of Evolutionary Biology, Department of Geology, the Field Museum, Chicago.





Program outline and venue

12.02.2014 (Wednesday) **Arrival, evening – Beer Sheva**

Arrival at Beer-Sheva – from Ben-Gurion airport to the Central railway station (CRS) of Beer-Sheva; please use the train only. During day time (up to 23.55), two trains are going to beer-sheva every hour; the travel is with one connection in Tel-Aviv Hagana station (it's the next first station after been aboard), and the train beer-sheva is always on the same platform. During the night a direct train goes every hour (but it takes longer).

The cost is about 30 NS (about 6€ or 7$);

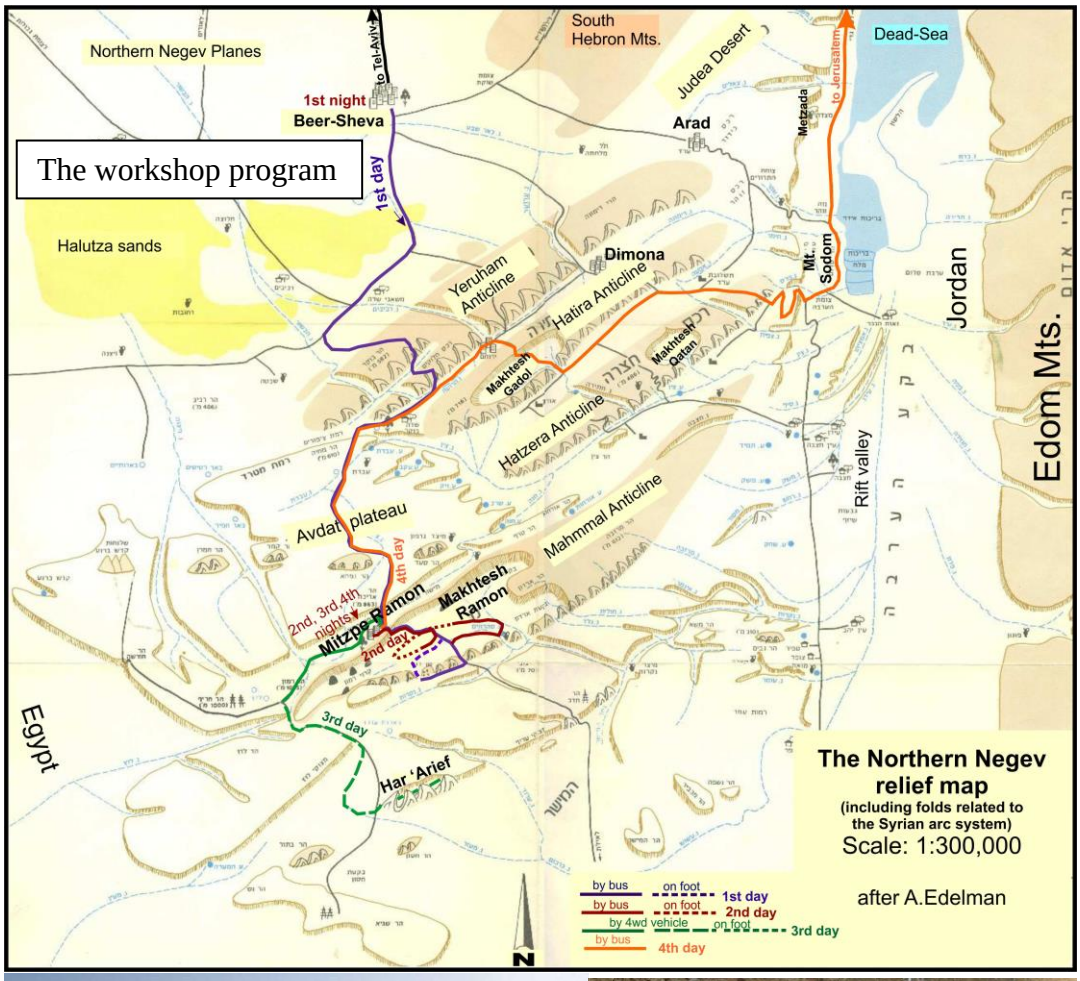
Arrival at the hotel from the CRS, by walking or by a taxi (recommended) 10 minutes walking, 5 minutes by cab.

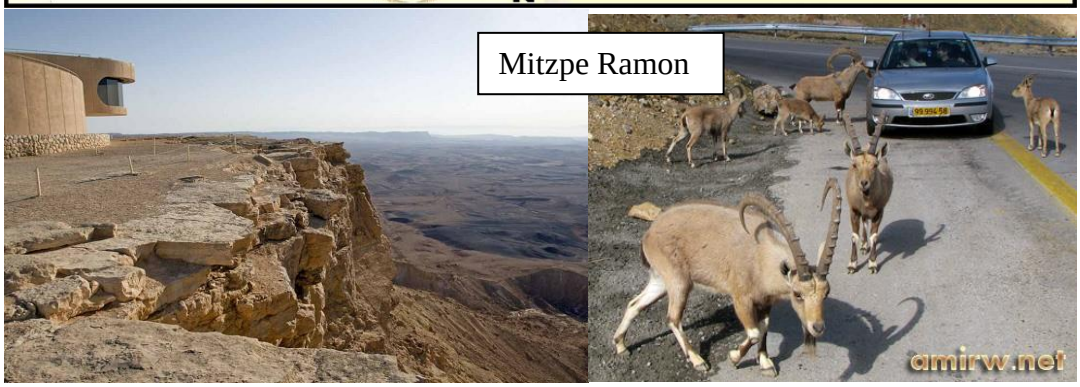
Overnight: Hotel Leonardo, Beer Sheva: http://www.fattal-hotels.com/beer-sheva-hotels/leonardo-negev
Free Wi-Fi in the coffee shop only. Rooms are available from 15.00.

Welcoming reception (19.00); Short talks:

-- **Stratigraphic Geology of the Negev, southern Israel** (C. Benjamini, BGU)

-- **Structural development of the Ramon and 'Areif lineaments** (Y. Avni, GSI)





13.02.2014 (Thursday) **First day – Makhtesh Ramon, western outcrops**

Stratigraphic traverse from the Anisian to the the Carnian, Gevanim Valley.

~ 3 km on foot, desert trails.

Guides: C. Benjamini, A. Melijson, O. Bialik, D. Korngreen

Continental and marine siliciclastics in the Pelsonian, source of vertebrate finds. Shale/limestone couplets in the Illyrian; Illyrian/Fassanian boundary. Fassanian to early Carnian eustatic cycles: Dark limestone, ammonite marls; regressive microbialites, oolites, bioherms, foraminiferal limestones; transgressive shales and evaporites .

Evening short presentation:

-- **An overview on the P-T and the Triassic in Israel** (D. Korngreen, GSI)

-- **Lithofacies and cyclicity of evaporite basins on the rifted margin of the Levant in the Late Triassic, -- Makhtesh Ramon, southern Israel** (O. Bialik, BGU)

Overnight: Ramon suites hotel Mitzpe Ramon: http://www.ramonhotel.com/English/
Free Wi-Fi in the rooms.

14.02.2014 (Friday) **Second day– Makhtesh Ramon, western and eastern Triassic outcrops; Jurassic sites in the Ramon Geo-park.**
Stratigraphic traverse from the early carnian to the Triassic-Jurassic transition

Carnian pluvial event – evaporite-free 'small' marine cycles, terminated by oscillatory dolomite/shale cycles, exposure features. Carnian main evaporite –cycles of salina gypsum, dolomite, shale; tectonic overprint. Late Carnian prograding stromatolite bioherms. Stratigraphic traverse of Ardon Valley, Ein Saharonim. Lateral variability in small evaporite basins in half-grabens; cyclicity in the Late Triassic. Anhydrite/dolomite cycles responding to sea level change; local climate responding to ~3rd order cycles; high order distal Gondwanan climate cycles overprinted on sea-level and local climate cyclicity. Karst and pedogenesis at Triassic/Jurassic unconformity.

~ 3 km on foot, desert trails. Traveling by bus in the eastern part of the Makhtesh.
Guides: O. Bialik, D. Korngreen, C. Benjamini


Evening short presentation:

-- **Faunal Aspects and Provincialism of the Middle and early Late Triassic Gondwana-Tethys Shelf –** (A. Marquez Aliaga and F. Hirsch)

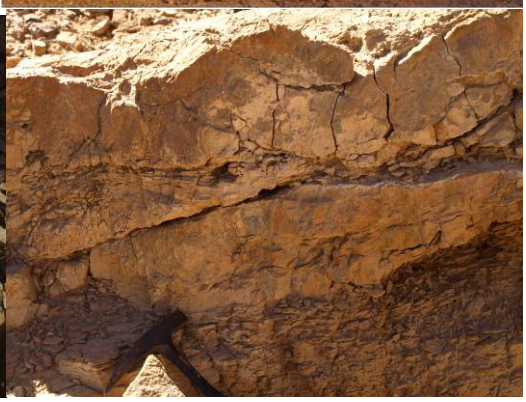
Overnight: Ramon suites hotel Mitzpe Ramon: http://www.ramonhotel.com/English/
Free Wi-Fi in the rooms.

15.02.2014 (Saturday) **Third day – Mt 'Areif area ('Areif Graben - 'Areif Fault)**

4WD and ~ 6 km on foot, desert trails.

Guides: D. Korngreen, M. Vainboim-Hefetz, O. Bialik, C. Benjamini



Pelsonian carbonate/marl cycles; ichnofossils and shell beds (Ra'af Fm); marginal marine, intertidal, deltaic siliciclasts (Gevanim Fm, lower part). Possibility of ascent to top of 'Areif Mt. (~ 240 m climb).

Overnight: Ramon suites hotel Mitzpe Ramon: http://www.ramonhotel.com/English/
Free Wi-Fi in the rooms.

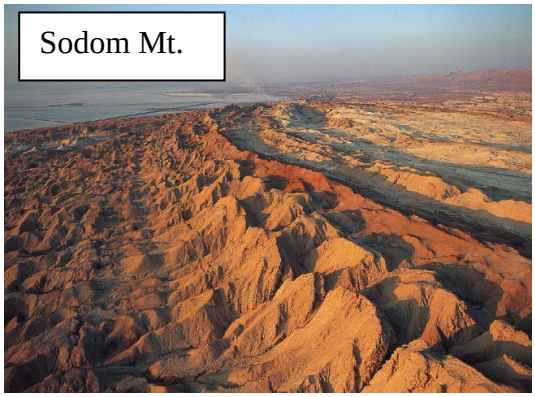
16.02.2014 (Sunday) **Fourth day – Travel to Jerusalem via Dead Sea Rift**

Guides: Y. Avni, C. Benjamini

Via the Makhtesh Gadol on Yeruham anticline, to the 'Arava valley observation, and through the Dead Sea Rift. Neogene to Recent tectonic activity forming the Dead Sea basin;

The Lisan Formation – continuous lacustrine record across last glaciation;
Sodom diapir - Miocene extreme evaporite (halite) – evaporite mesostructures, salt mirror.
Recent analogues to evaporite mesostructures; collapse features on Dead Sea shore

Lunch-break in Ein-Gedi inn including dipping/floating in the Dead Sea; after-showers are available; please don't forget your bathing suits.



Arrival in Jerusalem, Hebrew University:
-- Visit to paleontological archive of invertebrate and vertebrate fossils from the Triassic of Israel in the National Natural History Collections: http://www.nnhc.huji.ac.il
-- Guest presentations by **O. Rieppel:**
The Triassic marine reptiles from the Negev, Israel, in the light of new discoveries from China.
'Snakes with limbs' from 'Ein Yabrud (Cretaceous, Palestinian territories).
-- Closing dinner

17.02.2014 (Monday) **Fifth day** (Optional, by request) Tourism in Jerusalem; opportunity for additional viewing of fossil archives.

From Jerusalem to the airport – will be organized after your arrival, according to your planes, flight schedules etc.

Temperature: the average temperature at winter time is 12-14°C at noon time; reduce to 7°C and below at night. A jacket, sun glasses and a hat are recommended.

Reminder:

* The outcrops are supervised under the "National Parks and Nature Reserves Authorities of Israel", and therefore it is compulsory that any sampling or hammer uses on rocks need to be authorized.
* Bring your bathing suit (and a bath towel).

Registration: Please use the following link:
http://english.igs.org.il/a/igs.org.il/english/calendar/international-triassic-field-workshop

If you've paid by Bank Transfer, please enter into the "Online by credit card:" link, and register your name, address, telephone etc., but for all the fields of the credit card details, enter 00.

Registration ends on November 30, 2013.

We are looking forward to seeing you!