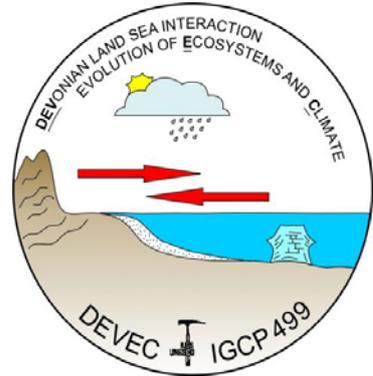


# SECOND CIRCULAR

## FIELD WORKSHOP 2008 OF THE IGCP 499-UNESCO “DEVONIAN LAND-SEA INTERACTION: EVOLUTION OF ECOSYSTEMS AND CLIMATE” (DEVEC)

Tripoli, Libya

April, 23–30, 2008



### LEADERS OF THE PROJECT

Dr. Peter Königshof (\*), Dr. Jurga Lazauskiene (\*\*), Dr. Eberhard Schindler (\*), PD Dr. Volker Wilde (\*) and Prof. Dr. M. Namik Yalçin(\*\*\*)

\*Forschungsinstitut und Naturmuseum Senckenberg, Germany, \*\* Geological Survey of Lithuania, Department of Lithostratigraphy and Tectonics, Lithuania, \*\*\* Istanbul University, Engineering Faculty, Department of Geological Engineering, Turkey



# FIELD WORKSHOP 2008 OF THE IGCP 499–UNESCO “DEVONIAN LAND–SEA INTERACTION: EVOLUTION OF ECOSYSTEMS AND CLIMATE” (DEVEC)

Tripoli, Libya, April, 23–30, 2008



The scientific sessions for the FIELD MEETING OF THE IGCP 499 “DEVONIAN LAND-SEA INTERACTION: EVOLUTION OF ECOSYSTEMS AND CLIMATES” (DEVEC), will be held in Tripoli City. The scientific session and the field meeting are scheduled to take place between April 23-30, 2008. The purpose of this workshop is to provide participants with an overview of important Devonian sections particularly in the south western part of the country. The field trip will target the exposed Palaeozoic sections in the Awaynat Wanin area in the Ghadames Basin which is one of three major Palaeozoic basins in Libya. It is located in the north western part of the country and extends west to Tunisia and Algeria.

During Palaeozoic times, the North African platform was divided into several basins and arches. The basins were slowly subsiding whereas the arches were periodically eroded during uplift or eustatic sea-level drops. The sedimentological framework of these intra-cratonic basins were controlled by very low sedimentation rates resulting from the erosion of the tectonic arches. Furthermore, the climatic conditions changed when Gondwana moved northwards, favouring the development of carbonaceous deposits during Late Devonian times.

The Devonian formations (Tadrart, Ouan Kasa, Awaynat Wanin and Tahara Formations) of western Libya predominantly consist of siliciclastic sediments which show a thickness of more than 1082 m. This succession contains Pragian (Early Devonian) to Strunian (Late Devonian) rocks and overlies Llandoveryan (Early Silurian) shales along the Caledonian unconformity (Massa, 1998). The Devonian formations of western Libya contain some of the largest oil reservoirs in North Africa (Eschard, 2003). Most of the known fields are the results of stratigraphic rather than structural traps and require detailed sedimentologic and stratigraphic studies to improve the potential for further exploration activities.

The Devonian formations in the Awaynat Wanin area are characterized by sandstones, claystones and shales. Within these formations a few discrete carbonate beds occur in the subsurface of the Ghadames Basin. Nine facies associations were identified in the field representing a broad range of depositional environments from proximal fluvial to offshore marine shelf (Ben Rahuma *et al.*, 2007).

Devonian successions in the Awaynat Wanin area are subdivided into a complex stack of six 30 to 80 m thick, unconformity-bounded, transgressive-regressive sequences. The sequences exhibit from base to top superimposed retrogradational and progradational trends. The retrogradational trend comprises a fluvial-tidal complex grading upward into shoreface and offshore shelf marine shales without any evidence of significant tidal or wave refinement. The maximum flooding surface is represented by offshore shale. The progradational trend grades upward from the offshore shale into shoreface

sandstones deeply truncated by fluvial cross-bedded sandstones of the overlying sequence (Ben Rahuma *et al.*, 2007).

The superimposed sequences are, however, often incomplete. The lower part of the section (Early Devonian) contains large amounts of fluvial and tidal sediments with subordinate shoreface and offshore marine deposits deeply truncated by fluvial incisions. The upper part (Middle to Late Devonian) of the section contains a large amount of shoreface and offshore marine deposits with rare fluvial sediments (Ben Rahuma *et al.*, 2007).

Along strike east-west regional correlation of the outcrops with the subsurface in the Ghadames Basin show little changes in the sedimentary facies except for the Frasnian-Famennian shoreface sandstones that wedge out into deep marine offshore shales. North westward, along a dip section, correlation shows an overall thinning of the sandstone units and thickening and deepening of the shaley units. Some important beds can be used as marker beds for stratigraphic correlations between the subsurface in the north and the outcrops in the south (Ben Rahuma *et al.*, 2007). The Emgayet Eifelian shales in the subsurface, which represent an important seal rock for the Early Devonian reservoirs, correlates with the lower shale unit of Awaynat Wanin I Formation in the outcrops. The Frasnian shale and limestone (Awaynat Wanin B Formation) in the subsurface correlates to the maximum flooding surface observed in the lower part of Awaynat Wanin IV Formation in the field. The latter which is recognized worldwide (Sutcliffe, 2000), is a secondary hydrocarbon source rock in the south western part of Ghadamis Basin (Belhaj, 1996; Echikh, 1998).

The field workshop will be a good opportunity to examine the outcrops from the Ghadames Basin and compare them to other sequences which have been investigated in the framework of the IGCP 499 project.

## **ORGANIZING COMMITTEE**

**Chair:** Dr. Bourima A. Belgasem, General Manager, Libyan Petroleum Institute (LPI), P.O. Box: 6431, Tripoli; Tel: (+218) 21 480022-26; Fax: (+218) 21 4830031; [www.lpilibya.org](http://www.lpilibya.org); [info@lpilibya.org](mailto:info@lpilibya.org).

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**Technical program coordinators of the Field Trip:** Mr. Milad Ben-Rahuma, Libyan Petroleum Institute (LPI), Geology Department, Tripoli, Libya; [mmbenrahuma@hotmail.com](mailto:mmbenrahuma@hotmail.com)

Dr. Jean-Noël Proust, Head of Sedimentology Department, Geosciences Rennes, University of Rennes, France; [Jean-Noel.Proust@univ-rennes1.fr](mailto:Jean-Noel.Proust@univ-rennes1.fr)

**Treasurer & social events coordinator:** Mukhtar Al Ansari, Fezzan Tours, Alejmaa Alarabi Bank, Tripoli–Libya, Branch Dat Il-Imad Complex Tower, Tower N0.1, Ground Floor Tripoli-Libya. SWIFT BIC: EJABLYLX, ACCOUNT NO.: 2905, COMPANY: FEZZAN OIL SERVICES

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## **SCIENTIFIC COMMITTEE**

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Dr. Dr. Jean-Noël Proust, Head of sedimentology Department, Geosciences Rennes, University of Rennes, University of Rennes 1, France; [Jean-Noel.Proust@univ-rennes1.fr](mailto:Jean-Noel.Proust@univ-rennes1.fr)

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Dr. Ali. D. El-Mehdawi, AGOCO, Geology Department; [amehdawi@yahoo.com](mailto:amehdawi@yahoo.com)

Mr. Milad Ben-Rahuma, Libyan Petroleum Institute, Geology Department;  
[mmbenrahuma@hotmail.com](mailto:mmbenrahuma@hotmail.com)

## **SPONSORS**

Libyan Petroleum Institute (LPI), Libya

Forschungsinstitut und Naturmuseum Senckenberg, Germany

UNESCO/IUGS

## **THE VENUE**

The technical sessions of the workshop will be held in the Libyan Petroleum Institute (LPI) Halls, Km7, Gergarish Road, Tripoli, Libya on 23<sup>rd</sup> April, 2008. Tripoli's international airport is only 30 minutes from the city centre and about 40 minutes to the meeting place. All necessary presentation facilities will be provided, such as overhead transparency projector, 35-mm slide projector and data show (using PowerPoint).

## **REGISTRATION FEES**

Conference only: LYD 350

Conference & Excursion: LYD 1550

## **PAYMENT**

Alejmaa Alarabi Bank,  
Branch Dat Il-Imad Complex Tower,  
Tower N0.1, Ground Floor  
Tripoli-Libya,

SWIFT BIC: EJABLYLX,

ACCOUNT NO.: 2905,

COMPANY: FEZZAN OIL SERVIC

\* Please after payment send a message to the coordinator Dr. Ali El Mehdawi, [amehdawi@yahoo.com](mailto:amehdawi@yahoo.com) and Mr. Mukhtar Al Ansari (treasure) confirming your money transfer: by fax 00218 21 33 43 209, [info@fezzantours.com](mailto:info@fezzantours.com).

## **TRAVEL AND ACCOMMODATION**

The registration fee for participants includes: attendance to the scientific sessions only or scientific sessions and field trip with lunches, volume or CD of short papers, ice breaking party and coffee or tea breaks twice.

For those paying full fee (1550 LYD) will be eligible for accommodation, travel during their stay period from April 23-30, 2008 and participation in the social programme. The accommodation in Tripoli will be at the 4 star Addear Hotel in double or single rooms; Tel: (+218) 21 334 3021/2; Fax: (+218) 444 4653. Transportation from Tripoli airport to the hotel will be provided for those arriving on international flights on Tuesday, April 22, 2008 (please send your booking confirmation to the

coordinators). Transportation services will be also provided from the hotel to the meeting place and vice versa.

## **DEADLINES**

Final Registration	February 28, 2008
Final Payment	March 15, 2008
Abstracts	February 28, 2008
Full Text	March 30, 2008

## **INSTRUCTION TO PRESENTERS**

**Conference Language:** English

### **Oral Presentation**

The technical Committee of the workshop will consider all abstracts submitted to the organizing Committee before the end of February 2008. Authors will be notified immediately after this date.

The paper should be in a format of an extended abstract and is limited to 4 pages (A4) in length and should consist of text and figures

The title should be in capital letters and centred. After three lines, type the authors(s) name and affiliation. In the case of multi-author abstracts indicate the speaker with an asterisk, otherwise the corresponding author will be deemed to be the speaker. Leave three lines before starting the text. Please proofread your abstract carefully as the content of the abstract are your responsibility.

Each participant will be able to contribute one or two oral or poster presentation. Contribution in excess of expected number may be accepted as poster by the organizing committee.

Oral presentations are scheduled for 20 minutes (15 + 5) each including time for discussion and/or questions.

### **Poster Presentation**

The poster should consist of a single sheet and display space should not exceed 100 cm wide x 120 cm high.

## **PROVISIONAL PROGRAMME**

### **April 22, Tuesday**

- Arrival and registration.

### **April 23, Wednesday**

- Reception of participants at the Libyan Petroleum Institute (LPI), Tripoli.
- Registration.
- Morning scientific sessions.
- Lunch
- Afternoon scientific sessions and posters presentation.

### **April 24, Thursday to April 28, Tuesday**

- Field Excursion.

### April 29, Tuesday

- Social programme, visit to Leptis Magna.

### April 30, Wednesday

- Departure.

## **FIELD EXCURSION ITINERARY**

The field trip to the Awaynat Wanin Area of southern Ghadamis Basin, west of Libya, will be guided by Milad M. Ben Rahuma and Jean-Noel Proust, with a focus on the Devonian succession. In the course of five days participants will have the opportunity to examine the vertical and lateral facies change and sequence stratigraphic architecture of the Devonian succession in excellent exposures.



Field trip organisers will provide participants with complete logistical service through a professional company. This will include transport by 4x4 vehicles (one car for three participants), camp accommodation facilities (single tents, sleeping bags, blankets, mattress, etc), and provide healthy cold and hot meals during breakfast, lunch and dinner. Satellite Telephone and GPS for desert navigation and security will be provided. The camp will be powered by an electrical generator.

The itinerary of the field excursion will be as follows:

### Day one: April 24, 2008

1. Participants meeting at the hotel front door in Tripoli around from 7.30 to 8 a.m. Departure at 8 a.m. and drive 300 km's south on paved roads to Al-Qaryat village north of Al-Hamada area.
2. Desert drive south ( $\pm 240$  kms) through Al-Hamada to Awaynat Wanin area, making one stop for lunch.
3. Expected arrival at Awaynat Wanin between 19:00 to 20:00 p.m. where we will have our first camp.

### Day two: April 25, 2008

#### *The Lower Devonian sediments (Pragian-Emsian)*

- Stop 1.** Starting at the first sequence boundary between the Upper Ordovician and the Lower Devonian section and where the Silurian section is missing.
- Stop 2.** Examination of a complete section of the Tadrart Fm. (Pragian).



**Stop 3.** Uppermost Ordovician Memouniat Fm. is overlain by a thin Lower Silurian Tanezzuft Fm section and the Lower Devonian, Tadrart Fm.

**Lunch**

**Stop 4.** Uppermost part of the Tadrart Fm at the boundary with the lower section of Ouan Kasa Fm. (Emsian).

**Stop 5.** Upper Ouan Kasa Fm. (Emsian to Early Eifelian) and transition into the Awaynat Wanin I (Eifelian).

*Back to the base camp for an overnight stay.*

**Day three: April 26, 2008**

*The Middle to Upper Devonian (Eifelian-Givetian-Frasnian)*

**Stop 1.** Complete section through the Awaynat Wanin I Fm. and lower part of Awaynat Wanin II Fm. (Eifelian).

**Stop 2.** Full section of the Awaynat Wanin II Fm. (Givetian).

**Stop 3.** The channelized systems of the Awaynat Wanin II Fm. (Givetian).

*Back to the camp for an overnight stay.*

**Lunch**

**Stop 4.** Full section through the Awaynat Wanin III Fm and transition with the early Frasnian unconformity (Frasnian).

**Stop 5.** The thick shale succession through the Awaynat Wanin III and IV. Observation of the large concretions that underlain the major maximum flooding surface (Frasnian – Early Famennian).

*Back to the camp for an overnight stay.*

**Day Four: April 27, 2008**

*The Upper Devonian (Famennian)*

**Stop 1.** The Awaynat Wanin III and IV formations.

**Stop 2.** The complete section through the Tahara Fm (Strunian).



**Lunch**

**Stop 3.** Overview panorama of the Devonian rocks from the top of Al Hamada Plateau during which we will conclude and summarize the observations we have made during the trip.

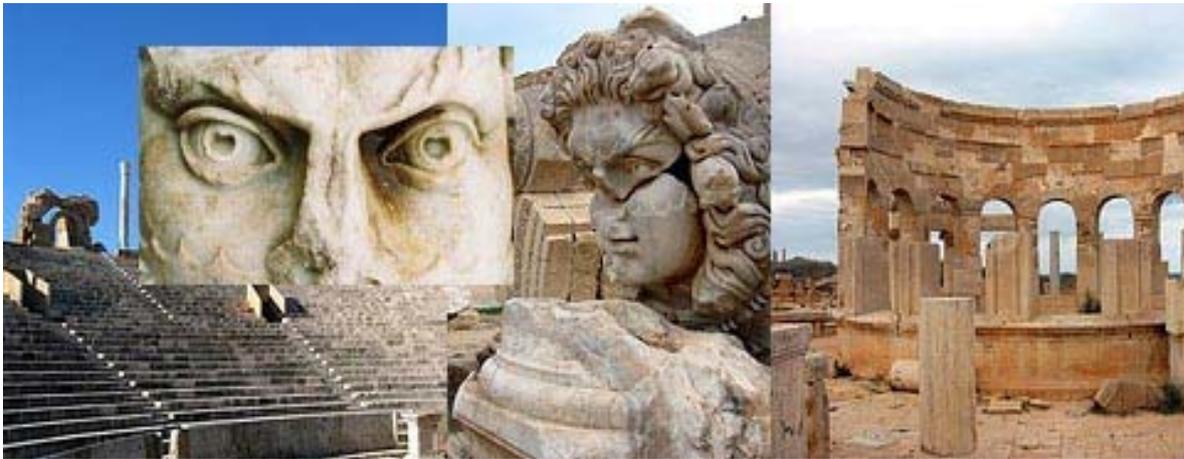
*Back to the camp for an overnight stay.*

**Day Five: April 28, 2008**

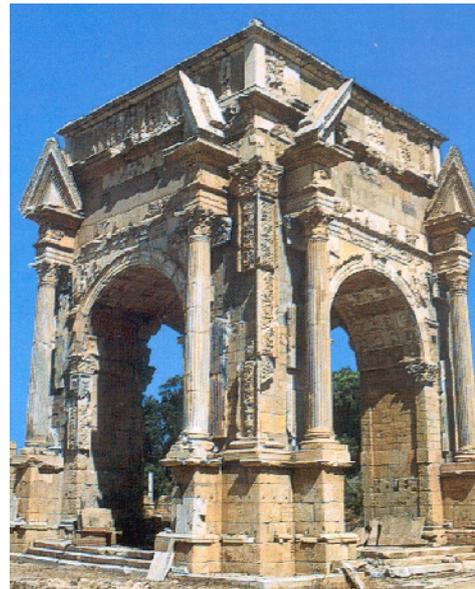
*Drive back to Tripoli through Al Hamada desert by car.*

## SOCIAL PROGRAMME

The last day of the program (Tuesday, April 29, 2008) will be spent in the great archaeological site of Leptis Magna.



**Leptis Magna**, or Lepcis Magna as it is sometimes spelled, was a prominent city of the Roman Empire. Its ruins are located east of Tripoli in Libya. The city appears to have been founded by Phoenician colonists sometime around 1100 BC, although it didn't achieve prominence until Carthage became a major power in the Mediterranean Sea in the 4th century BC. It nominally remained part of Carthage's dominions until the end of the Third Punic War in 146 BC, and then became part of the Roman Empire, although from about 200 BC onward it was for all intents and purposes an independent city. It remained as such until the reign of the Roman emperor Tiberius, when Leptis Magna and the surrounding area were formally incorporated into the empire as part of the province of Africa. It soon became one of the leading cities of the Roman Empire and a major trading post. Leptis achieved its greatest prominence beginning in 193, when a native son, Lucius Septimius Severus, became emperor. He favoured his hometown above all other provincial cities, and the buildings and wealth he lavished on it made Leptis Magna the third most-important city in Africa, rivalling Carthage and Alexandria. In 205, he and the imperial family visited the city and received great honours. During the Crisis of the Third Century, when trade declined precipitously, Leptis Magna's importance also fell into a decline, and by the middle of the fourth century, large parts of the city had been abandoned. It enjoyed a minor renaissance beginning in the reign of the emperor Theodosius I. In 439, Leptis Magna and the rest of the cities of Tripolitania fell under the control of the Vandals when their king, Gaiseric, captured Carthage from the Romans and made it his capital. Unfortunately for the future of Leptis Magna, Gaiseric ordered the city's walls demolished so as to dissuade its people from rebelling against Vandal rule. But the people of Leptis and the Vandals both paid a heavy price for this in 523, when a group of Berber raiders ransacked the city. Belisarius recaptured Leptis Magna in the name of Rome 10 years later, and in 534 he destroyed the kingdom of the Vandals. Leptis became a provincial capital of the Eastern Roman Empire, but never recovered from the destruction wreaked upon it by the Berbers. By the time the Saracens overran Tripolitania in the 650s, the city was abandoned except for a Byzantine garrison force. Today, the site of Leptis Magna is the site of some of the most impressive ruins of the Roman period.



## ABOUT LIBYA

Libya...the land of civilizations and history that has its roots in the Garamantes culture, which actually goes back as far as 5000 BC. There is not one of the civilizations that flourished in the Mediterranean which did not leave its mark on Libya.

There is hardly a square inch of the Great Jamahiriya that is not rich in finds or remains of the past. First came the Phoenicians, then the Greeks, Carthaginians, Romans, Vandals and Byzantines. Desert, is a word that cannot fully describe the feeling of space in the vast desert; or the myriad forms of plant and animals life that have put down roots there. An infinite variety of landscapes, where areas of stony ground alternate with huge expanses of rock worn smooth by the wind, salt deserts and dried-up lakes, and enormous sand dunes that can reach a height of over one thousand feet.. There where the gazelles roam freely and the camels still render their indispensable service to man, and where sleeping out in the open becomes an unforgettable experience beneath a sky of diamonds. Enough to say that Libya is the gateway to the Arab Mughrab, and the Link between Europe and Africa.



It also connects the desert to the sea and is a country which has succeeded in remaining a virgin land. Libya is capable of offering tourists with a passion for archaeology and love of adventure, first class hotel accommodation, impressive historical remains, unique landscapes, nature in all its glory, and striking contrasts. Libya is all this and more. A world that has to be discovered, so near to the heart of Europe and rest of Africa. A new world that inspired the Greek historian Herodotus to say “The new comes from Libya”.



Libya is a very safe country to travel in and it enjoys a great deal of security and stability. Libyan people are known for being friendly, courteous and hospitable to foreigners. Traveling in the Libyan Desert presents a rewarding challenge to adventurers, yet it is always safer and more interesting to travel with expert tour operators and proper arrangements supported by desert guides, service escorts, drivers, cooks, etc...



## CLIMATE

The weather on Tripoli in April is generally spring time and the temperature is mild. The weather in the field area is expect to be mild, but we may face some wind during this period and the temperature will vary between 15°C at night to 30°C at day time. Sun glass and hat are recommended during this time to protect your self from the sun shine.

## VISA & OFFICIAL INVITATION

In order to visit Libya you require a Visa and your passport must be valid for at least 6 months. You should apply for a Visa at your local Libyan Embassy in proper time. Please note that a Visa application can take up to 2 months.

**I**n connection with the Libyan Petroleum Institute (LPI), we offer the option of visa upon arrival. In order to ensure that we have these visas ready for your visit we must receive the following information two weeks ahead of time.

1. You have to translate your passport details into Arabic in one of your passport pages. This is according the Libyan Government reinstatement since November 11, 2007 the requirement that passports must contain an Arabic translation of the holder's details
2. Fill in the information required in the attached sheet, and
3. Send it with a coloured copy of your passport after translation to Dr. Ali El-Mehdawi ([amehdawi@yahoo.com](mailto:amehdawi@yahoo.com)) as an attached file.
4. An invitation letter will be sent to every body as well.

# REGISTRATION FORM

**Name & Title:** .....

**Institution/Company:** .....

**Address:** .....

.....

**Post Code, Town:** ..... **State:** .....

**Telephone:** ..... **Fax:** .....

**E-mail:** .....

**Oral Presentation/Poster: Author(s), Title:**

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**Please** complete this form and return it before February 28, 2008 to one of the following addresses:

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# VISA INFORMATION REQUIRED FOR ENTRY INTO LIBYA

FULL NAME: .....

DATE OF BIRTH: .....

PLACE OF BIRTH: .....

NATIONALITY: .....

PREVIOUS NATIONALITY (IF ANY): .....

PASSPORT NUMBER: .....

DATE OF ISSUE: .....

EXPIRY DATE: .....

PLACE OF ISSUE: .....

RELIGION: .....

FATHER'S NAME: .....

MOTHER'S NAME: .....

SEX: .....

HOME ADDRESS: .....

MARITAL STATUS: .....

PROFESSION: .....

DATE OF LAST ENTRY INTO LIBYA & DEPARTURE DATE:  
.....

PURPOSE OF PREVIOUS VIST TO LIBYA & NAME OF THE  
ORGANIZATION/COMPANY VISITED: .....

PURPOSE OF PRESENT VISIT: .....

**EMAIL ADDRESS:** .....