International School on Foraminifera

4th Course

Urbino, 13-22 July, 2011

First Circular

Course Description

The 4th Course on Foraminifera is designed to provide an overview of the Taxonomy, Ecology, Biodiversity and Geological History of Benthic and Planktonic Foraminifera. This intensive course is intended for students interested in Micropalaeontology, Palaeoceanography, Palaecology, and Climate History. The aim is to provide a primer on the study foraminifera and examples of how foraminifera can be used as palaeoenvironmental and palaeoceanographical proxies. We review the current classification schemes of the foraminifera, discuss Ecology and Life History, review their usefulness for Biostratigraphical applications, and use case studies to investigate the geological history of the group with lab sessions.

Course Structure

Two distinct courses are planned: Benthic Foraminiferal Course (13-17 July) and Planktonic Foraminiferal Course (18-22 July).

Teaching Format

The course consists of lectures and practical classes covering the taxonomy, distribution, and ecology and paleoecology of foraminifera. Microscope lab sessions provide the opportunity for participants to learn the foraminiferal genera and species, and view Cretaceous to Neogene foraminiferal assemblages from Petroleum Exploration areas and ODP sites as well as Quaternary and modern assemblages. Course materials include numerous reprints of classic papers, distributed on CD-Rom. We will also demonstrate a pre-release version of the new "Catalogue of Agglutinated Foraminiferal Genera".

Courses Outline

12 July Tuesday Icebreaker Party

Benthic Foraminifera

Day 1 (13 July Wednesday)

Review of benthic Foraminiferal Suborders
Morphology and Classification of benthic Foraminifera
Morphogroups and functional morphology
Ecology and Distribution of benthic Foraminifera
Lab: Data bases, Taxonomy of benthic foraminiferal suborders

Day 2 (14 July Thursday)

Community Structure, Life History, and Reproduction
Oceanographic proxies, benthic foraminiferal microhabitats, and productivity/oxygenation
Benthic foraminifera and water mass properties
Lab: Modern smaller benthic foraminifera: Foraminiferal genera and assemblages
The Adriatic and the Marmara Seas

Day 3 (15 July Friday)

Caribbean shallow water benthic Foraminifera
Biostratigraphy and Paleoecology of benthic foraminifera
The ODP record, K/Pg and E/O boundaries
Lab: A review of Jurassic to Cretaceous faunas

Day 4 (16 July Saturday)

Cenozoic Paleoceanographic events and smaller benthic foraminifera
Neogene of West Africa and Gulf of Mexico: The ACEX Arctic Drilling Expedition
Lab: The Paleogene record; North Sea, Trinidad, Angola, Carpathians, Gubbio

Day 5 (17 July Sunday)

Morning field excursion to Gubbio (Contessa and Bottaccione sections)
Afternoon tourist visit to Gubbio
Social Dinner

Special Lectures:

Climatic, paleoceanographic and impacts events vs. benthic foraminifera
Upper Cretaceous DWAF in Contessa Highway Section and Romanian Eastern Carpathians

Planktonic Foraminifera

Day 6 (18 July Monday)

Introduction to Planktonic Foraminiferal Classification
Modern Planktonic Foraminifera
Taxonomy of modern planktonic foraminifera
Structure of cytoplasm, Feeding, symbionts and growth
Reproductive, seasonal, and diurnal cycles depth habitats
Origin of Planktonic Foraminifera
Biogeography of planktonic foraminifera
Faunal Provinces, Climatic Zones and Water Masses
Lab: Recent assemblages - wall structures - morphometrics

Day 7 (19 July Tuesday)

Mesozoic Planktonic Foraminifera
Biostratigraphy
Notes on Paleoceanography
Lab: Upper Jurassic to Maastrichtian

Day 8 (20 July Wednesday)

Cenozoic Planktonic Foraminifera
Biostratigraphy
Notes on Paleoceanography
Lab: Paleogene index species

Day 9 (21 July Thursday)

Neogene Planktonic Foraminifera
Miocene and Pliocene Planktonic Foraminifera
Pleistocene Planktonic Foraminifera
Biochronology and Zonal schemes
Lab: Miocene index species - Pliocene-Pleistocene index species

Day 10 (22 July Friday)

Field excursion to the Massignano GSSP for the Eocene-Oligocene boundary and the K-T boundary at Monte Conero
Social Dinner

Special Lectures:

The hyperthermal events at Contessa Highway and Road Sections
Climatic, paleoceanographic and impacts events vs. planktonic foraminifera
Quantitative Methods for Applied Microfossil Biostratigraphy
Ranking and Scaling (RASC) and Constrained Optimization (CONOP) methods (North Sea wells)

Min number of participants: 10

Final deadline May 31st, 2011

Registration fees

Early registration (application sent and payment before February 28th, 2011)
PhD/MSc Students:
1st or 2nd course £ 270
Both courses £ 430
Academic/Industrial staff :
1st or 2nd course £ 360
Both courses £ 610

Late registration (application and payment sent after February 28th, 2011)
PhD/MSc Students:
1st or 2nd course £ 310
Both courses £ 520
Academic/Industrial staff :
1st or 2nd course £ 410
Both courses £ 710

The fee includes:

- lectures and lecture notes
- icebreaker party
- refreshments
- two excursions
- social dinners (one for each course)

How to make an application

Registration must be done by submitting the application form to fabrizio.frontalini@uniurb.it or giuseppe.bancala@uniurb.it or by fax to (+39) 0722 304220.

Correspondence and Information:

Dr. Fabrizio Frontalini, Dipartimento di Scienze dell'Uomo, dell'Ambiente e della Natura
Facoltà di Scienze e Tecnologie, Università degli Studi di Urbino "Carlo Bo"
Campus Scientifico, Località Crocicchia, 61029 Urbino (Italy)
fabrizio.frontalini@uniurb.it
Tel: (+39) 0722 304254, Fax: (+39) 0722 304220, Mobile phone: (+39) 3928457666

Lectures

Prof. Michael A. Kaminski, King Fahd University of Petroleum & Minerals
Prof. Rodolfo Coccioni, DiSUAN, Urbino University
Prof. Malcolm Hart, Plymouth University
Prof. Felix M. Gradstein, Natural History Museum of Oslo
Dr. Fabrizio Frontalini, DiSUAN, Urbino University
Dr. Claudia Cetean, Institute of Geological Sciences, Polish Academy of Sciences, Krakow

Requirements

The course is primarily intended for young researchers at the PhD or MSc stages of their careers, working with foraminifera or meiofauna. Applicants will primarily be selected on the basis of the relevance of the course for their current work.

Location

The course will be held in Urbino at the "Collegio del Colle". The "Collegio del Colle" is less than 1km from the historic centre of Urbino (about 5-10 minutes walk), and is connected to the centre of the city by a shuttle service leaving from Borgo Mercatale (where the buses from Pesaro stop).

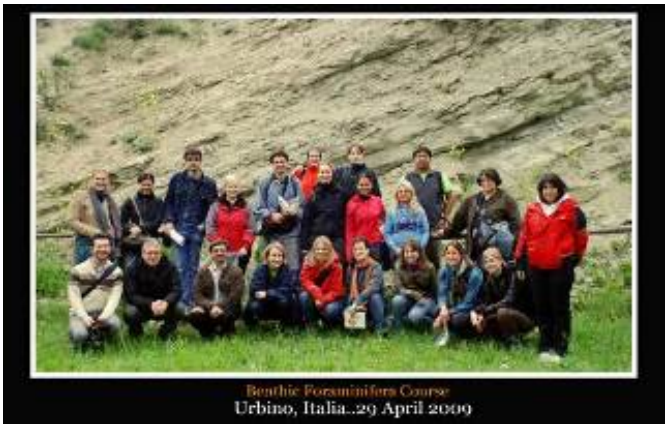
Accommodation and meal

It is possible for participants to accommodate at the "Collegio del Colle" (University Hall). All the rooms are single and have en-suite bathrooms. The rooms are furnished, clean and comfortable. The cost of the accommodation is € 18 per night including breakfast. Meals may be obtained by a rechargeable card (it will provided a personal card for all participants) at the nearby university residential block "Collegio del Tridente" (2-minute walking from Collegio del Colle) or in the "Mensa del Duca" (city centre). The cost is either € 10 for a complete meal (first course, second course, side dish, bread, fruit and water) or € 6 for a meal (main course, side dish, bread, fruit and water).

The second circular with detailed information about the course is scheduled to be distributed on early March 2011 and will be sent to people who answered the first one.

We look forward to seeing you in Urbino! **Dr. Frontalini Fabrizio**

Two years ago…..



Last year's report….

3rd International School on Foraminifera – Urbino, Italy, 7th - 16th April 2010
by Geoff Lee and Eiichi Setoyama

April this year saw the 3rd International School on Foraminifera held at the University of Urbino, Italy. Nearly fifty students attended each week from all over Europe and the rest of the world, many from places as far away as Egypt, China, Korea, Australia, Israel, the USA, the Middle East, and a good number from South American countries. In just three years the school has become very popular and places had to be limited due to over-subscription. The school was organized and hosted by Dr. Mike Kaminski of University College London, and Dr. Fabrizio Frontalini of the University of Urbino under the auspices of, and with sponsorship from, the Gzyrbowski Foundation. There were many others involved both in the presentation and the organization of the course and some notable names in foraminiferal micropalaeontology were included amongst the lecturers.

The city of Urbino is located on a hill with panoramic views in all directions, and the old city with its palace, artworks, architecture and restaurants is only a ten-minute stroll away. Accommodation for delegates was provided at a modest cost in single en-suite rooms at the university. The rooms were clean and comfortably furnished, and breakfast was included in the price. Many of the rooms have panoramic views of the surrounding countryside including some of the highest peaks in the area. There is a cafeteria style restaurant providing lunch and dinner, although the restaurants in Urbino are well worth a visit. Staying on the site encouraged students to socialize together and lasting friendships and professional relationships have been forged that can only be of benefit to the future of micropalaeontology.

The school itself is divided into two stand-alone five-day courses, one on benthics and the other on planktonics. These can be attended individually or taken together to offer a full introduction to the subject. The courses are suitable either for first-time students or for seasoned academics and industry specialists needing to refresh or update their knowledge. Students included people at all stages in their careers from bachelors to post-docs and industrial micropalaeontologists, and from disciplines as diverse as archaeology, environmental science and geochemistry, as well as micropalaeontology. Student's interests spanned the stratigraphic record and included both fossil and recent foraminifera.

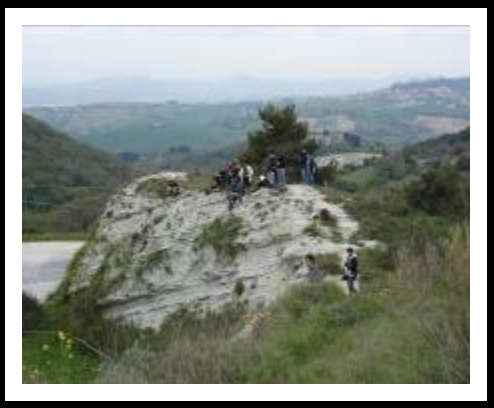
The Cenomanian-Turonian boundary at Contessa

The benthic course was structured to include lectures in the morning part of the session and practical work each afternoon. Input on agglutinated and calcareous forms was provided by Mike Kaminski with additional material from Claudia Cetean of the Polish Academy of Sciences, Fabrizio Frontalini of the University of Urbino, Justin Parker of the Goethe University in Frankfurt, and Eiichi Setoyama of the Polish Academy of Sciences. Subject matter included not just the biostratigraphy, paleoecology, classification and identification of fossil taxa, but

also the ecology and distribution of living forms. Extensive reference collections were available to support study of the numerous type slides and samples available. The material included examples from the Boreal and Tethyan realms as well as the Indian, Pacific, and Atlantic oceans and the Mediterranean. Extensive use was also made of ODP samples.

The planktonic course also contained a mixture of lecture and practical work and, in addition to input from Mike Kaminski, included sessions with Rodolfo Coccioni and Isabella Premoli Silva on the Cretaceous, and Maria Rose Petrizzo on the Palaeogene. Particularly popular was the use of a microscope fitted with a camera that showed the material under discussion to the whole class and which aided understanding of morphotypes and taxonomy.

Each course included a field trip and a social dinner. The benthic field trip included a visit to the Contessa quarry close to Gubbio where students were able to see and sample the Cenomanian-Turonian boundary and then walk all the way up through the section almost to the Miocene.



The Planktonic Course at the Eocene-Oligocene GSSP

Above the quarry on the Contessa Highway section the Cretaceous-Palaeogene boundary was exposed although, by this time, everyone was wet through due to the only day of bad weather. The boundary clay itself has long since been removed by souvenir hunters! Later a visit to the geological museum at Piobbico allowed everyone to dry off and also buy some paleontological gifts from the little shop.

In the afternoon came an opportunity to explore the old town of Gubbio and then, in the evening, the social dinner included a four course meal, wine, karaoke and dancing. Mike Kaminski and Rodolfo Coccioni's rendition of some traditional songs sprinkled with some Beatles numbers will be remembered for a long time to come.

The excursion for the planktonic course was to Conero national park close to Ancona. This time the weather was kinder and a visit to the Eocene-Oligocene GSSP was enjoyed by everyone. Close by it was possible to sample the Cretaceous-Palaeogene boundary again.

At the end of the course many students took the opportunity to see a little more of Italy before they went home. Of course, for some, the eruption of the volcano on Iceland ensured that their stay as a tourist was longer than they intended but everyone agreed that the course had been interesting, worthwhile and good value.