**2012 - END OF YEAR REPORT**

**BERRIASIAN WORKING GROUP, ISCS**

This isonly an outline of activity within the working group. Much research activity is being considered and planned.

**Meetings**

Our spring meeting (May 2012) in Tunis was hosted by Mabrouk Boughdiri and colleagues, from the University of Bizerte, and was an opportunity to see sites on the southern side of Tethys. For the first time we also had first-hand discussion of developments in both north Africa and Argentina.

An excellent autumn meeting was held in Prague (25-29 October 2012), hosted by the Charles University and Geological Institute of the Czech Academy of Sciences. Thanks to Petr Pruner, Martin Kostak, Petr Schnabl, Stanislav Slechta and Kristyna Cizkova and their colleagues. WG members from as far away as Mexico and Novosibirsk made the long journey to Prague and we had a diverse discussion on Tethyan, Gondwanan, non-marine and boreal correlations - with twenty-five talks and posters presented.

**Forthcoming meetings: Perugia – *date fixed* May 27-29, 2013**

**Warsaw - October, 2013**

**WG Activity**

A range of activities is listed below, geographically. At present activity is focussed on better documentation and improved calibration of stratigraphically useful markers and datums in the Tithonian/Berriasian boundary interval. The group’s horizons broaden and we consider new geographical areas for multidisciplinary treatment. This means bringing integrated palaeomagnetic and/or calpionellid/nannofossil studies to some areas for the very first time, e.g north Africa, Iraq, Mexico…..

**Mexico**

Riccardo Baraggan presented the latest results at Prague on the ‘new’ J/K Apulco site, and a publication on the locality, near to the formerly described site of Mazatapec, is in press (Barragan, Lopez, Rehakova). New ammonite and calpionellid evidence was discussed at Sofia and Prague. Nannofossils are being processed, and new ammonite finds assessed.

**Spain**

Rio Argos: new work on nannofossil and calpionellids (Casellato, Rehakova, Jamrichova) has been undertaken on samples from the Jacobi Subzone collected by Philip Hoedemaeker in past years. Some of the early calpionellid results were discussed in Prague: they are rather surprising.

**Italy**

In recent months Gloria Andrieni has undertaken a revision of the calpionellid distribution and zonation at Torre de Busi which necessitates changes to zonal boundaries. This is in parallel with further elucidation of the nannofossils by Cristina Casellato and Elisabetta Erba.

**France**

Documentation of “template” sites for the jacobi and grandis subzones continues.

Le Chouet, Drome:completion of the first paper on Le Chouet (Reháková, Casellato, Halásová,Frau, Bulot, Grabowski, Sobien, Pruner,Schnabl, Čížková, Tchoumatchenco, Wimbledon) is immiment, describing the Chitinoidella – B, jacobi subzone interval, it nannofossil, calpionellid and ammonite biostratigraphy and magnetostratigraphy. More focussed publications are intended, including one to name several new ammonite taxa.

St Bertrands Spring (Les Combes), Drome: initial logging and sampling for palaeomagnetism (Pruner,Schnabl, Slechta, Grabowski),: calponellids, nannos, ammonites (Frau, Bulot, Wimbledon) focussing on the nominal P. *grandis* subzone were carried out in May 2012. Preliminary determinations of palaeomagnetism are currently in progress. The next step is a second phase of logging and micropaleoentological collecting of the lowermost Berriasian and topmost Tithonian.

**Morocco**

Mohamed Benzaggaghcollaborates with fellow researchers from the Faculty of Sciences of Casablanca on the distribution of the dinoflagellate cysts in ammonite-dated Upper Tithonian in the Rif Chain (North Morocco)

In addition, with colleagues from Paris and Orléans, he undertakes a study of lavas of Upper Jurassic-Lower Cretaceous in the Rif Chain and a first study of ophiolitic gabbros - that is, oceanic crust of Early Cretaceous age.

**Tunisia**

Beni Kleb was the subject of a first J/K palaeomagnetic sampling in March and May 2012 (by Petr Schnabl, WAPW). These samples are currently being studied (Petr Pruner talk at Prague)**.** Initial reconnaissance sampling fornannofossils was undertaken in March 2012 at Jebel Rheouis, Beni Kleb and in central Tunisia at Sidi Kralif, near Sidi Bousid

Silvia Gardin has just reported that the Sidi Kralif samples have produced the first (and rich) Berriasian nannofossils to be found locally. This step forward was discussed at Prague. Work continues on Sidi Kralif and the other two sections. Kamel Maaloui in Carthage is completing his study of the Sidi Kralif ammonites.

**Slovakia**

Further study continues on the Strapkova section, Pieniny Klippen Belt of the Western Carpathians (examined during our Slovakia meeting excursion), its micropalaeontology and magnetostratigraphy (Michalik, Grabowski, Rehakova, Lintnerova, Halasova)

In addition, a revision of results from the Brodno section is in progress.

**Czech Republic**

Czech colleagues (Prof. Vasicek and P. Skupien) plan detailed sampling of the Kotouc section in the well-known Stramberg area, where they have collected ammonites of the Jacobi Zone. Daniela Rehakova is to make a calpionellid evaluation.

A second Czech group (M. Bubik and L. Svabenicka) intend work on the section at Kurovice, where they hope to identify the J/K boundary, and there agglutinated foraminifers will also be documented.

**Bulgaria**

The SW Bulgaria sites at Berende and Kopanitsa, with their marly successions, have recently been intensively studied for ammonites and calcareous nannofossils (Ivanov, Vyara Idakieva, Stoykova ). First results integrated ammonite/nannofossil results were presented in Prague, with obvious correlations possible to both Crimea and Mediterranean Tethys

Burlya, in NW Bulgaria, a carbonate succession (visited by the WG in 2011) is undergoing new palaeomagnetic sampling on its Berriasian part (Grabowski, Schnabl, Sobien) in collaboration with Platon Tchoumatchenco and Iskra Lakova. Marin Ivanov and Vyara Idakieva have also been making fresh collections of ammonites. Iskra Lakova is studying 90 thin sections taken from the palaeomagnetic samples

**Ukraine**

Vladimir Arkad’ev has just published a substantial book on the “Mountain Crimea” Jurassic/Cretaceous, a very large accumulation of data. He and Andrey Guzhikov presented new data at Prague, plus tintinnid results by E. Platonov.

Vladimir Bakhmutov was at the Feodosia Tith./Berr. sections in October collecting new palaeomagnetic data. Preliminary results were presented by him at our Sofia meeting, and these are currently being improved and updated. New results on the nannofossils of the Feodosia sections were also presented in Prague by Eva Halasova. This data will be integrated with already collated information on lithostratigraphy, nannofossils (Casellato), forams (Daria Ivanova), calpionellids (Rehakova), ammonites (WAPW) and magnetostratigraphy, and a publication is anticipated in 2013.

**Iran**

Mohamed Bezaggagh presented important new data at Prague on typical Tethyan calpionellid biotas in the Shal and Kolur sequences of the Alborz chain of Iran.

**Caucasus**

Valery Vuks has been making a reconnaissance of prospective sections near the J/K boundary in the western Caucasus, collecting samples for micropalaeontology. He related this at the Prague meeting.

**India**

Samples collected from limestones in Kutch (by Dr Pandey) are being processed in the hope of finding microfossils

**Tibet**

Work continues, including efforts at trying to integrate past results (?Tith/?Berr.ammonites Liu et al) with more modern collecting for palynology (Dr Li) and nannofossils and ammonites (Dr Wan).

**Russian Platform and Siberia**

Important new work has been undertaken on the Nordvik section with a revision of palaeomagnetic zonation. This work (by Bragin, Kazansky, Shurygin and Dzyuba) has M17r commencing in the Chataetes chetae Zone, instead of the Hecteroceras kochi Zone

In addition, Zanin, Zamirailova and Eder have just published an interesting new paper on presumed J/K calcareous nannofossils from the Bezhanov Formation by (2012. Open Geology Journal 6, 25-31)

Vasily Mitta continues with his important work on ammonite biostratigraphy, notably on links from the Russian Platform to Tethys during the Berriasian, and happily was able to contribute to the Prague discussions.

**Kurdistan**

After a gap in research of 64 years, reconnaisance fieldwork in northern Iraq in July 2012 focussed on Tithonian/Berriasian Chia Gara limestone/marl successions in the Gara Anticline and at Banik, on the Tirkish border, but examination of accessory sequences at Sargelu and Barzanja was also carried out. Logging of the two major sections was undertaken as the first requirement.

Samples from Gara and Banik are currently under investigation by: Ibrahim Mohyaldin (geochemistry), Daniela Rehakova and Gloria Andreini (calpionellids), Kristalina Stoykova (calcareous nannofossils), and Jim Riding and Ian Harding (palynomorphs)

**Argentina**

Hector Leanza and Alberto Riccardi are considering new possibilities for J/K profile studies. And, in the University of Buenos Aires, ammonite and nannoplankton biostratigraphy are being applied to the new site of Las Loicas, where there are possibilities for geochronological results from interbedded tuffs (using TIMS, SHRIMP and Laser Ablation U/Pb on zircons). The team consists Beatriz Aguirre-Urreta, Veronica Vennari (ammonites), Andra Concheyro, Marina Lescano (nannofossils), Victor Ramos (field geology/ tectonics) and Marcio Pimentel (geochronology; Universidade Federal do Rio Grande do Soul, Brazil)

**South Primorye**

A new team undertook its first fieldwork near Vladivostok in early October 2012 (Valentina Markevich, Eugenia Bugdaeva, Viktor Nechaev, Sha Jingeng, Li Jianguo and WAPW). Preliminary fieldwork on the coast of Ussuri Bay and adjacent sections was for the purposes of testing the usefulness of published local lithostratigraphy and of trying to locate fossiliferous horizons, notably those identified by Sey and Kalacheva and Konovalov and Konovalova. In particular, the intention was to localise examples of Tethyan berriasellids in a section with multiple *Buchia* horizons. The reputedly 600m-thick predominantly sandstone Chigan Formation is affected by a number of major faults which disrupt the sequence, as well as gabbroic intrusions. Work has been initiated on recording all stratigraphically significant past fossil finds and then it will be necessary to integrate these records with new observations made in the field.

**North Primorye**

The team from Novosibirsk (B.N. Shurygin, O.S. Urman & O.S. Dzyuba) have been extending their extensive studies in Siberia and making new studies on sites in the Russian far east in the Komsomolsk area, on sequences with common *Buchia* and very rare Tethyan ammonites.

**California**

A new team has been formed for field and laboratory study for the sections of the northern Great Valley of California, as follows: Melissa Grey (Canada) *Buchia*, Jennifer Galloway (Canada) palynology, Oksana Dzyuba (Russia) belemnites, and from USA Alex Barnard (mapping/lithostratigraphy), Emile Pessagno (radiolarians) and Kathleen Surpless (radiometric dating). Nannofossils have not yet been assigned. It is some decades since the nannofossil work of Bralower at Grindstone Creek and even longer since the work of Jones on *Buchia* in the Paskenta-Grindstone area. First fieldwork is scheduled for May 2013

**Greenland**

Work continues on the east Greenland sequences. Peter Alsen and Stefan Piasecki talked at Prague about new results from sections in the Wollaston Forland and other areas, and improved palynomorph/ammonite correlation from there to other boreal regions, notably, for the first time, to the S. primitivus Zone of England. Consideration is being given to a next step of magnetostraigraphic sampling of cores on which an ammonite and palynological study has already been performed.

**United Kingdom**

Palaeomagnetic sampling of the non-marine Purbeck Formation (Tithonian- lower Valanginian) of Dorset in summer 2011 was discussed at Prague. The work (Pruner, Slechta, Schnabl) is on the putative M19-M18 interval, an interval previously sampled for magnetostatigraphy ( by Ogg et alia), but not conclusively, and with much much less resolution. 300 samples were collected by the Prague team and are in the process of study. If accurate determination of the magnetozones is successful, new palynological sampling is planned for March/April 2013.

A publication is planned on the lithostratigraphy, geochemistry and clays of the Ridgeway and Mupe Bay sections (Wimbledon, Schnyder). Preliminary palynology has already been undertaken at Ridgeway (Verreussel, Munsterman)

W.A.P. Wimbledon

Chairman, Berriasian Working Group,