Annual Report* of IGCP Project No. 596

*NOTE: MAXIMUM LENGTH OF THE TEXT REPORT IS 5 (FIVE) PAGES. SINGLE SPACE, 12 POINT FONT. REPORTS EXCEEDING THIS LENGTH WILL BE RETURNED TO THE AUTHOR(S) WITH THE REQUEST OF REDUCING THE TEXT TO THE ABOVE STANDARD.

The scientific information in this report will further be used for publication on the IGCP website under the new electronic version of 'Geological Correlation' (please feel free to attach any additional information you may consider relevant to the assessment of your project).

IGCP project short title: Mid-Paleozoic climate and biodiversity

Duration: 2011-2015 (5 years)

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Signature of project leader(s):
Guidelines for Annual Report

Please use the following headlines to report the present status and scientific achievements of your project (write N/A where not applicable) and explain abbreviations you use in your report.

1. Website address(es) related to the project
   http://www.senckenberg.de/IGCP-596

2. Summary of major past achievements of the project
   The IGCP 596 webpage is established and perfectly serves as information and communication platform between leadership and participants which has become more dynamic during 2012. In the first year we have organized many special sessions and/or joint meetings in order to announce the new project. As a result of this successful promotion regular international exchange led to joint field research in different countries, particularly in developing countries such as Mongolia, Thailand, and Vietnam. Furthermore in the first year we received more than 300,000 € (2010-2014) from different funding agencies. This important point was not considered in the first evaluation for 2011 (!) and herewith we would like to draw attention on that important aspect. Beside the existing funding and the funds by UNESCO/IUGS we received additional funding of more than 50,000 US$ (see details under 7.0) in 2012 (!).

3. Achievements of the project this year only
   In relation to some queries stated within the project evaluation 2011 (1st project year) we made an online voting among the project leaders in order to include one more younger female researcher as co-leader. Proposed is Dr. Erika Kido (presently coordinator of the coral working group). Based on her achievements for the project, she has been accepted as 9th co-leader of IGCP 596.
   We intensified cooperation with other IGCP’s and organizations, such as IGCP 580, 591 and SDS. As a result of this, we organized joint meetings/workshops and also for the next year it is planned to continue this successful cooperation. During the session at the IGC 34 in Brisbane (Australia), it was possible to get in contact with representatives of the YES initiative. In order to increase the number of young scientists we provide a link between IGCP 596 and YES. The planned meetings in 2013 will therefore involve colleagues from different countries in the framework of YES and thus we need more financial support as last year. Compared to the first project year more participants contributed reports on their activities and joint research between them and other members of the different working groups (common combination: taxonomy-biostratigraphy-geochemistry). Additional members mainly from other IGCP projects such as IGCP 580 joint IGCP 596 for collaboration works.

3.1. List of countries involved in the project (please *indicate the countries active this year and make the distinction between:*

3.2. General scientific achievements and social benefits
   *Meetings are not considered as scientific achievements, they should be listed under heading 3.3.*
In terms of our general scientific schedule, we made progress in research of “climate sensitive” organisms, such as corals, bryozoans, echinoderms and many new data have been published so far focussing on palaeobiogeography, biodiversity patterns and palaeoenvironments. In the frame of the joint SDS/IGCP 596 meeting in Morocco we will compile papers on different
aspects on biodiversity patterns as announced in the original proposal and a Special volume on “Devonian climate, sea-level and evolutionary events” which will be compiled and submitted to London Geological Society in 2013. Furthermore, as a result of our activities in 2011/2012 compilation of totally 8 manuscripts for the Proceedings volume of the IGCP 596 Opening Meeting in 2011 (Journal: Bulletin of Geosciences) progressed much and will be published online soon. 2 of the papers are already online first. In the frame of various workshops and field work (see 3.3) a good number of young scientists were involved and have been educated in different disciplines, such as taxonomy and stratigraphy, sample preparation and geochemical methods. All achievements are in the line of our original proposal.

3.3. List of meetings with approximate attendance and number of countries

- IGC34, 3.8 - Session 1 and 2 - Climate change and biodiversity patterns in the Mid Paleozoic [IGCP 596, IGCP 580 and SDS], Brisbane, Australia (10.08.2012); approx. attendance: IGC34 = 6012/ Session = 40; number of countries: IGC34 = 112/ Session = 12.
- Centenary Meeting of the Paläontologische Gesellschaft – Symposium 12: Climate Change and Biodiversity Patterns in the Mid Paleozoic (IGCP 596), Museum für Naturkunde, Berlin, Germany (28.09.2012); approx. attendance: 20; number of countries: 5.
- XVIII Jornadas de la Sociedad Española de Paleontología y Simposios de los Proyectos nº 587 y 596 del PICG. Valencia y Sóller. Homenaje a Guillem Colom Casasnovas (1900-1993). Mallorca (1-6.10.2012); approx. attendance: 85; number of countries: 3.
- IGCP 580 - 4th Annual Meeting (joint meeting IGCP 580 & 596), Graz, Austria (24-30th June 2012); approx. attendance: 26; number of countries: 12.
- Joint Workshop: Rhenish Massive of Germany (July 2012, ten days); approx. attendance: 15; number of countries: 1.
- Field-Workshop: Devonian of the Carnic Alps, Italy (24-29th July 2012); approx. attendance: 6; number of countries: 3.
- Field-Workshop: Western Mongolia Devonian Working Group, Mongolia; preparation for conference in 2014 (15th August - 4th September 2012); approx. attendance: 13; number of countries: 4. The aim of this field trip was to prepare a IGCP 596 conference in 2014.
- Field-Workshop: Vietnam, preparation for conference in 2013 (25th November - 06th December 2012); approx. attendance: 4; number of countries: 2. The aim of this field trip was to prepare a workshop and excursion in the frame of the planned joint meeting of IGCP 596/WCPS to be held in October 2013.
- Workshop: NIGPAS, University of Graz and the Carnic Alps, Graz, Austria (17-22nd September 2012); approx. attendance: 13; number of countries: 4.

3.4. Educational, training or capacity building activities
An international workshop on Bio- and Chronostratigraphy was organised in the University of Valencia with 11 participants [9 of them Master or Ph.D. students] of three countries (Spain [9], Germany [1] and Colombia [1]) was organized by colleagues of the Spanish working group. The joint conference of IGCP 580 and 596 provided a good opportunity to exchange techniques in field. Methods like gamma-ray spectrometry and magnetic susceptibility (field and laboratory methods) are discussed and applied by students within the training course in the Carnic Alps [for participants see Form III].

A training course on how to handle the PB-database was given by Wolfgang Kiessling. Because more colleagues are interested in this topic, a second course is considered. During the stay in Ulaanbaatar for the field workshop in western Mongolia, different methods are introduced to Mongolian colleagues and their students (separation-techniques for echinoderm and conodont specimens from limestone).

The Vietnam field trip was organized in cooperation of Senckenberg Institute (Frankfurt, Germany) and Hanoi University (Vietnam) in order to strengthen cooperation in the framework of the IGCP 596 project and was funded by German Science Foundation. The field trip was important in order to intensify cooperation in the next years on systematics, biodiversity patterns and sedimentology and geochemistry.

3.5. Participation of scientists from developing countries, and in particular young and women scientists

The group of participants increased for 22 scientists (most of them belong to the Spanish working group, but also colleagues from Iran, Mongolia and Myanmar joined) since the last annual report (end of 2011). Similar to last year the size of female scientists is about 1/3 of the entire group. Important is that we reached more young scientists and especially Master and Ph.D. course students in 2012 who agreed to participate and join some of the IGCP 596 related conferences from next year on.

3.6. List of most important publications (including maps)

Distinguish between peer review literature and other (no abstracts)

Bibliography (listed by author in alphabetical order with the most recent work listed first)

IGCP 596 acknowledged:

peer reviewed:


3.7. Activities involving other IGCP projects, UNESCO, IUGS or others
Symposia, workshops and joint fieldwork in cooperation with colleagues of IGCP 580, IGCP 591 and members of the Subcommission on Devonian Stratigraphy (SDS) took place in 2012. Additionally several active projects related to IGCP 596 (see listing below) gave financial support for some of the meetings organized and contributed output during 2012:

- Königshof, P. (Germany): KO-1622-14-1: (2012-2013), German Science Foundation (DFG)

4. Activities planned
In the third project year the major focus will be on geochemistry and geophysics in order to document paleoenvironmental changes which had a strong influence on biodiversity globally. Additionally the entry of taxonomic datasets in the PB-database will be intensified. Works on the book project on Mid-Paleozoic biodiversity patterns with contributions from more than 30 countries (with single contributions being translated into different countries languages) progressed much during 2012 and will finish in 2013. It shall become one of the major contributions for public outreach of IGCP 596.
related to the international paleontological cooperation within the project-scope showing geosites around the world is planned. It will be provided online via diverse internet platforms (you tube, etc...) and also become part of a documentary scheduled for 2015 (end of the project).

4.1. General goals
In the frame of the project we have a special topic colleagues are working on for each year. In 2013 we will have the focus on geochemical proxies in the Mid-Palaeozoic. Therefore we have also organized joint meetings particularly with IGCP 580 in order to strengthen and improve knowledge on palaeoclimate studies based on geochemical and sedimentological proxies. Furthermore, we will continue our cooperation with Devonian and Carboniferous Subcommissions (SDS and SCS). Another focus will be a close cooperation with YES initiative.

4.2. Tentative list of specific meetings and field trips (please list the participating countries)
International Field Symposium “The Devonian and Lower Carboniferous of northern Gondwana”, International Subcommission on Devonian Stratigraphy (SDS) & IGCP 596 on “Climate Change and Biodiversity patterns in the Mid-Paleozoic”, Institut Scientifique, University Mohammed V – Agdal, Rabat (25.03-01.04.2013) contact: Ahmed El Hassani (Institut Scientifique RABAT); email: elhassani@israbat.ac.ma; webpage: http://www.unica.it/sds/; participating countries: Morocco, Germany, Russia, U.S.A., Czech Republic

Geophysical and Geochemical Techniques: A Window on the Palaeozoic World - Joint Conference IGCP 580 & IGCP 596, Calgary, Canada (27.08-01.09.2013) contact: Michael Whalen (University of Alaska Fairbanks); email: mtwhalen@gi.alaska.edu; webpage: http://www2.ulg.ac.be/geolsed/MS/01meetingindex.html; participating countries: Canada, U.S.A., Belgium, Czech Republic, Germany, Austria, Italy, Tunisia

Special Symposium IGCP 596 in connection with the XXIX Annual Meeting of the Spanish Paleontological Society, Córdoba (October, 2013) contact: Valenzuela-Ríos, J.I. (Universitat de València); email: Jose.I.Valenzuela@uv.es; participating countries: Spain, Portugal, Germany

ICGP 596 meeting/WCPS2013, Malaysia (October/November, 2013) contact: Peter Königshof (Senckenberg, Forschungsinstitut und Naturmuseum Frankfurt); email: peter.königshof@senckenberg.de; webpage: in progress; participating countries: 10-12. In cooperation with YES.

Student Workshop in Vietnam (UNESCO Geopark Ha Long Bay) and pre-excursion in conjunction with the IGCP 596/WCPS 2013 meeting (October, 2013) and student workshop in Malaysia; contact: Peter Königshof (Senckenberg, Forschungsinstitut und Naturmuseum Frankfurt); email: peter.königshof@senckenberg.de; webpage: in progress; participating countries: 3-4. In cooperation with YES.

5. Project funding requested
Based on the amount of conferences and workshops scheduled for next year a funding of 10,000,- US$ for 2013 is considered necessary in order to give support to additional project collaboration partners (e.g. YES initiative) from developing countries and especially to students that joined in 2012.

6. Request for extension, on-extended-term-status, or intention to propose successor project
N/A
7. Financial statement ($ USD only)

The IGCP Scientific Board would like to be informed how the IGCP funds were used and if additional funding was obtained from different sources.

The financial support given by the UNESCO ($5000) was used as accommodation and travel grant for colleagues from developing countries and students that attended IGCP 596 related meetings and workshops (for details on funding please see Form III).

Additional funding was acquired from different national funding sources for conference attendance of students, workshops, field trips and museum repository visits for taxonomic study: IGCP 580 - 4th Annual Meeting (joint meeting IGCP 580 & 596), Funding source: NAP0017 ($1160.78) and FWF P 23775 B17 ($1818.33).

XVIII Jornadas de la Sociedad Española de Paleontología y Simposios de los Proyectos nº 587 y 596 del PICG: Valenzuela-Ríos, J.I., Funding source: Spanish IGCP National Committee, by the University of Valencia and Spanish Ministry of Economy and Competitivity (MINECO), Grant CGL2011-24775.

Fieldwork in Vietnam: Königshof, P., Funding source: German Science Foundation: KO-1622-14-1 and Ministry of Foreign Affairs ($13,500).

Workshop in Mongolia: Waters, J.A., Funding source: U. S. National Science Foundation. ($11,999); Atwood, J.W., Funding source: University of Tennessee; Kido, E. & Suttner, T.J. FWF P 23775 B17 ($3244,35).

Funding raised by Waters, J.A.: 2012-2013 Research Opportunity Award to NSF Grant DEB-1036260 "Collaborative Research: Assembling the Echinoderm Tree of Life." ($25,175); Grant funded travel to the 2012 Goldschmidt Geochemistry Conference, Montreal; the 34th IGC in Brisbane, Australia; and one week of study at the Natural History Museum, London on Middle Paleozoic fossil echinoderms; 2012 Temminck Fellowship, NCB Naturalis, Leiden, Netherlands ($6462,35); Grant funded four weeks of research at the Naturalis Center for Biodiversity, Leiden on Middle Paleozoic fossil echinoderms.

8. Attach any information you may consider relevant

Statement to IGCP 596 evaluation 2011 (first project year) - Appendix
Single reports of different working groups – Appendix
Contribution in Episodes – Appendix

Important: pdf-files can be found under the following link (due to limited space in this report):
http://www.uni-graz.at/thomas.suttner/Suttner_Temporary.htm

Public outreach:
Blieck, A. (2012). Co-organizer of festivals for the public at large: Les printemps de la découverte: affleure de roches" with the PLUS scientific cultural centre (Dunkerque metropolitan area, N France) and the Conservatory for Natural Space of N France (April and May 2013) and 30th anniversary of an amateur association in mineralogy, archaeology and palaeontology, ADREMAP, of Grande Synthe, N France.


Furthermore, progress was made in terms of the planned book-project dealing with "geohighlights" of participating countries of the IGCP 596. Negotiations were made with the publisher Springer and in the meantime we have more than 30 contributions from 25 countries. Depending on sponsors, it is planned to publish the book in 2013.