Permophiles

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International Union of Geological Sciences

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Subcommission on Permian Stratigraphy
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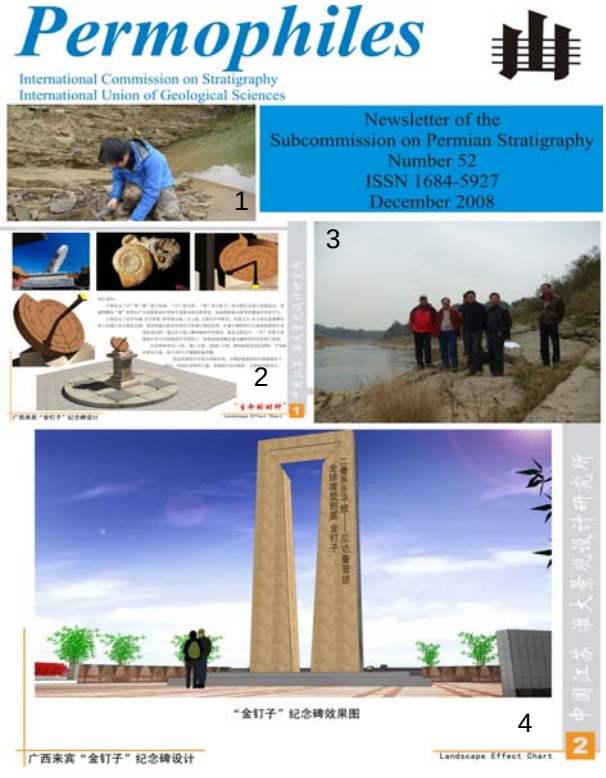
“金钉子”纪念碑效果图

Contents



Explanation of Cover: **1.** Wang Yu, a fossil amateur who is collecting fossils at the Penglaitan section and designed the two Lopingian-base GSSP monuments at Penglaitan, Laibin, Guangxi which are under construction. 2, a sundial on the small monument at the GSSP. This is an instrument that indicates local apparent solar time by the shadow cast by a central projecting pointer on a surrounding calibrated dial. The ammonoid-like sundial represents the earth history and a gold spike in the middle and its shadow (yellow line) below pointing the Lopingian-Guadalupian boundary. 3, Shuzhong (left) and Changqun Cao (middle) visited the Penglaitan section again on the 28th of December, 2008 to discuss the detailed construction scheme of the GSSP monuments with the local officials. Mr. Zhao Yunhui (second from left) is in charge of the construction of the monuments. 4, A 10-m high monument will be established on the GSSP Square on the southern bank of the Hongshui River near the Penglaitan GSSP section.

EXECUTIVE NOTES

Notes from the SPS Secretary

Shuzhong Shen

Introduction and thanks

Since Charles will join in a field excursion in Argentina in February, 2009 and the Chinese New (Ox) Year is on January 26, 2009, Charles and I did not meet together this time for Permophiles 52 in Nanjing. This issue was edited by Charles Henderson and me through e-mail communication. Charles revised the English for all contributions and I made the editing. I would thank Aymon Baud, G. Cassinis, Charles Henderson, J.J. Châteauneuf, C.R. Perotti, Andrey V. Zhuravlev for their contributions to this issue. Manuscripts/notes for this issue are less than previous issues. We would encourage our members of the Permian community to contribute your reports, comments and communications to **Permophiles**.

Previous and forthcoming SPS Meeting

Charles gives a brief report of a business meeting held in Oslo during the 33rd IGC. The planned SPS business meeting for 2009 will be held during ICOS (International Conodont Symposium) in Calgary, Alberta, Canada during July 12-18, 2009 (see announcement in Permophiles 51 and this issue). Reports from these meetings will appear in future issues of Permophiles.

Permophiles 52

This issue contains the annual report of SPS provided by Charles Henderson and a few other interesting reports. Dr. Aymon Baud provides a brief report to clarify the correlation between Locality 1 and Locality 4 at Kuh-e-Ali Bashi, Northwest Iran. Based on his recent study of the original rocks collected by Teichert and Kummel in 1969, the basal unit at Locality 1 is same as that of the topmost unit at Locality 4 in Kuh-e-Ali Bashi, NW Iran in terms of lithology and facies. Therefore, his study confirms the recent report based on a workshop by Henderson *et al*. (2008) in Permophiles 51. Dr. Andrey V. Zhuravlev reports on his new discovery of Early Permian Asselian conodonts from the borehole core in the Timan-Pechora Province, Russia. Drs. C.R. Perotti and G. Cassinis provide a report on the late Paleozoic tectonics of the southern Alps (Italy) and surrounding regions and its geodynamic implications. Dr. Aymon Baud provided a memorial for Dr. Jean Philippe Marcoux. Dr. Marcoux passed away on 17 June, 2008. He contributed a great deal to the Permian and Triassic geology and we lost a great geologist in our Permian and Triassic communities.

In addition, Drs. G. Cassinis and J.J. Châteauneuf provide an introduction for Permian and Triassic Geologists Association (AGPT). A few conference announcements are also included in this issue. These include the Fifth Symposium on Permo-Carboniferous Faunas at Hradec Králové (Czech Republic), ICOS 2009, and future activities of IGCP572. A new book introduction about Permo-Carboniferous Faunas is also included in this issue.

Future issues of Permophiles

The next issue of Permophiles is the 53rd issue of Permophiles. Charles and I plan to edit Permophiles #53 in Calgary during the ICOS, 2009. We hope our colleagues in the Permian community can contribute papers, reports, comments and communications. The deadline for submission to Issue 53 is July 10, 2009. Manuscripts and figures can be submitted via my email address (szshen@nigpas.ac.cn or shen_shuzhong@yahoo.com) as attachments or by our SPS website (http://www.nigpas.ac.cn/permian/web/index.asp). Hard copies by regular mail do not need to be sent unless requested. However, large electronic files such as plates in Photoshop or TIF format may be sent to me on discs or hard copies of good quality under my mailing address below. Alternatively, large files can also be transferred via the submitting system on our SPS website. Please follow the format on page 3 of issue 44 of Permophiles.

I wish everyone a great 2009.

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Notes from the SPS Chair

Charles M. Henderson

Permophiles 52 was prepared via email between Shuzhong Shen and I during January 2009 and I thank him for his efforts on this issue.

A workshop was held during the production of Permophiles 51 in Calgary in which Bruce Wardlaw, Shuzhong Shen, Shilong Mei and I discussed the correlation problems associated with the Late Permian of Kuh-e-Ali Bashi in Iran. A paper resulted (p. 2; Permophiles 51) in which we offered our best consensus on these problems. In that issue I invited readers in my "Notes from the SPS Chair" to comment on the scientific merits of that paper and I thank Aymon Baud for preparing such a paper. In his paper Aymon completely agrees with our conclusion. Our paper also concluded that I was working up a complete section as collected by Vladimir Davydov that would serve as a test. I can now report that the result of the analysis was the recognition of all *Clarkina* zones from *C. leveni* to the P-T boundary in a single section between locality 4 and 3 of Teichert – this is essentially the same section that Teichert and others did not finish collecting apparently. These faunas will be worked up for a future publication, but I think we can finally lay to rest the problems of correlation at these sections.

In this issue I also provide the annual report that is required each year to the International Commission on Stratigraphy (ICS). If you look at that report you will see that SPS has been very active, but that the success of that activity largely depends on the support of individuals to achieve most of our goals.

During the 33rd IGC in Oslo, I chaired a business meeting on August 8 at the Hordaland I meeting room. In attendance were

Seyed Hamid Vaziri, Zhongqiang Chen, Yukio Isozaki, Xiaochi Jin, Barry Richards, Phil Heckel and Heinz Kozur. It was a short meeting and I reported on recent progress of SPS. I also attended the annual meeting of ICS during the congress on your behalf.

The next planned SPS business meetings will be held in Argentina during a field excursion and during ICOS 2009 (International Conodont Symposium) at the University of Calgary, Alberta, Canada during July 12-18, 2009 (see announcement elsewhere in this issue). One session at this meeting will be related to advances on correlation of the Cisuralian stages. Hopefully, soon after, we can move toward some final proposals for the GSSP definitions for the base of the Sakmarian, Artinskian and Kungurian.

Shuzhong has thanked all of the contributers for this issue, but I would like to add my thanks again to Prof. Cassinis for his contributions in this issue, including a report on the history of the Permian and Triassic Geologists Association (AGPT), which have largely concentrated their efforts on the continental Permian. Some of this work overlaps with the Continental Permian Working Group of SPS led by Joerg Schneider. I would like to challenge the AGPT community to contribute more to future issues of Permophiles. It is my view, once the GSSP process is complete for the Permian stages, that the correlation of events within continental successions to the International Time Scale is perhaps the most important future task for the Permian community and SPS. Once the GSSP process is completed and fully reported within two years at the most, it might be appropriate to turn over editorship of Permophiles to someone working in the Continental Permian successions.

REPORTS

SUBCOMMISSION ON PERMIAN STRATIGRAPHY

ANNUAL REPORT 2008

1. TITLE OF CONSTITUENT BODY and NAME OF REPORTER

International Subcommission on Permian Stratigraphy (SPS)

SUBMITTED BY:
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2. OVERALL OBJECTIVES, AND FIT WITHIN IUGS SCIENCE POLICY

Subcommission Objectives: The Subcommission's primary objective is to define the series and stages of the Permian, by means of internationally agreed GSSP's, and to provide the international forum for scientific discussion and interchange on all aspects of the Permian, but specifically on refined regional correlations.

Fit within IUGS Science Policy: The objectives of the Subcommission involve two main aspects of IUGS policy:

1. The development of an internationally agreed chronostratigraphic scale with units defined by GSSP's where appropriate and related to a hierarchy of units to maximize relative time resolution within the Permian System; and
2. Establishment of frameworks and systems to encourage international collaboration in understanding the evolution of the Earth during the Permian Period.

3. ORGANIZATION

The Subcommission has an Executive consisting of a Chairman, a Vice-Chairman, and a Secretary; all three are Voting Members of the Subcommission. There are sixteen total Voting Members representing most regions of the world where Permian rocks are exposed.

The objectives of the Subcommission are pursued by both stratigraphic and thematic Working Groups that are retired upon completion of their directed task. For example, the Working Groups on the Carboniferous-Permian Boundary, on the Guadalupian stages (Middle Permian), on the base-Lopingian boundary (base-Wuchiapingian Stage), and on base-Changhsingian have been retired upon the successful establishment of their defining GSSP's and ratification by IUGS. The current working groups include the following: 1. Cisuralian stages, 2. Continental Permian, 3. Transitional biotas as gateways for global correlation, 4. Neotethys, Paleotethys, and S. China Correlations, and 5. International Lopingian Working Group.

3a. Officers for 2004-2008:

Chair: Professor Charles M. Henderson, University of Calgary
Vice-Chair: Dr. Vladimir Davydov, Boise State University
Secretary: Dr. Shuzhong Shen, Nanjing Institute of Geology and Palaeontology

3b. Officers for 2008-2012: There were no objections from the voting membership, nor from the membership at-large, and therefore the above officers will continue in their respective capacities for a second term.

Chair: Professor Charles M. Henderson, University of Calgary
Vice-Chair: Dr. Vladimir Davydov, Boise State University
Secretary: Dr. Shuzhong Shen, Nanjing Institute of Geology and Palaeontology

SPS website is located at http://www.nigpas.ac.cn/permian/web/index.asp. This site includes all back issues of *Permophiles* in downloadable PDF format (#1 in 1978 to #51 June. 2008). A link to *Permophiles*/Permian research has also been established at http://www.geo.ucalgary.ca/asrg.

4. INTERFACES WITH OTHER INTERNATIONAL PROJECTS

SPS interacts with many international projects on formal and informal levels. SPS is taking an active role on the development of integrated chronostratigraphic databases by participating with CHRONOS and PALEOSTRAT (now GeoStratSys), which are NSF

funded initiatives. Vladimir Davydov and Walter Snyder are concentrating on developing their system to include improved taxonomic dictionaries, database sharing and manipulation with PALEOSTRAT. SPS is also involved in a NSFC supported study comparing the Proterozoic-Cambrian transition with the Permian-Triassic transition.

5. CHIEF ACCOMPLISHMENTS AND PRODUCTS IN 2008

GSSPs: Progress was made on the three remaining Lower Permian (Cisuralian) stage GSSPs including base-Sakmarian, base-Artinskian, and base-Kungurian. Samples collected during an international field excursion conducted in early July 2007 (reported in *Permophiles* #49; p. 4-6) have been processed for stable isotope geochemistry, radioisotopic ages and biostratigraphy. These new geochemical results will substantially add to the GSSP proposals currently in draft stage. Earlier drafts were restricted only to the paleontological signature. The geochemical samples will provide further correlation potential for the proposed GSSPs; these materials are being analyzed at Boise State University, University of Calgary, and the Nanjing Institute of Geology and Palaeontology. The biostratigraphy samples are intended to determine reproducibility of GSSP definitions. Once complete the proposals will go forward for a vote. We hope to complete this task by the end of 2009.

Publications: The December 2007 issue of *Permophiles* (#50) was produced at Nanjing China during January 2008 and distributed as a pdf document to a mailing list of 280. The June 2008 issue (#51) was produced in July 2008 during a conodont workshop at the University of Calgary. We now have a complete series of Permophiles on our website (1978 to 2008).

Meetings: The SPS conducted two business meetings including 1) during an International Field Expedition to the Sydney Basin, January 2008, and 2) during the International Geological Congress at Oslo, Norway during August 2008. The former was reported in Permophiles 50 and the latter will be reported in *Permophiles* #52 in December 2008. We also held a workshop during July at the University of Calgary on conodont correlation problems associated with the Late Permian in Iran. The results were reported in *Permophiles* 51.

Membership: There were no changes to the membership in 2008, but as noted previously we have made several changes over the past four years. We currently have 16 voting members representing Australia (2), Canada (1), China (3), France (1), Germany (1), Italy (1), Japan (1), Russia (3), and United States (3). We also have five honourary Members.

6. CHIEF PROBLEMS ENCOUNTERED IN 2008

There were no major problems in 2008. The delayed Cisuralian excursion, which was finally conducted in July 2007 meant that we could not complete the base-Sakmarian GSSP proposal in 2007 as planned. It took some time to process samples, but geochemical data have been recently plotted against sections including the base-Sakmarian. I will push to see this task completed in 2009.

7. SUMMARY OF EXPENDITURES IN 2008:

INCOME

Donations:	$ 350.00
University of Calgary (1):	$8,350.00
NIGPAS (2):	$1,600.00
ICS (3):	$2,200.00

TOTAL: $12,500.00 (quoted in US$ using par as the conversion from Canadian$; recently this exchange has dropped substantially)

(1) University of Calgary support from NSERC grant to Charles Henderson for travel to Nanjing, to Sydney Basin Australia and partial travel costs to IGC at Oslo. Hotel, food, and logistical costs for conodont workshop.
(2) NIGPAS (Nanjing Institute of Geology and Palaeontology) support from NSF-C grant to Shuzhong Shen for travel support to Calgary, printing and website costs.
(3) Included normal $800 for expenses and one-time $1400 for travel subsidy to IGC in Oslo.

EXPENDITURES

Printing, Mailing, and Web support *Permophiles*:	$1,150.00
Travel costs to Australia	$4,000.00
Travel costs for *Permophiles* Production:	$2,950.00
Travel costs for Oslo:	$3,200.00
Logistical costs for Workshop	$1,200.00

TOTAL: $12,500.00 (quoted in US$)
BALANCE: $0.00

8. WORK PLAN, CRITICAL MILESTONES, ANTICIPATED RESULTS AND COMMUNICATIONS TO BE ACHIEVED NEXT YEAR (2009):

1. Report of isotopic results of Cisuralian samples from Russian; January 2009 in Permophiles.
2. Production of *Permophiles* #52 in China during January 2009.
3. Business meeting during International Field Expedition to Argentina; February 2009.
4. Production of *Permophiles* #53 in Calgary during July 2009.
5. Completion of base-Sakmarian GSSP proposal during July 2009.
6. Business meeting to be held during International Conodont Symposium (ICOS): July 2009.
7. Completion of base-Artinskian and base-Kungurian GSSP proposals; December 2009.

9. BUDGET AND ICS COMPONENT FOR 2009

EXPENDITURES

Travel; Argentina, China, Calgary for meetings and *Permophiles*(1) $7,000.00

Conodont workshop and GSSP preparation during ICOS $2,000.00

Permophiles and GSSP proposals printing and postage and web $1,050.00

Travel of Shen to Calgary, Henderson to Argentina, Davydov to Calgary

TOTAL 2009 BUDGET $10,050.00

Income

Support from University of Calgary (Henderson; NSERC)	$4,900.00
Support from NIGPAS (Shen; NSF-C)	$1,600.00
Support from Boise State for Davydov travel to Calgary (NSF)	$500.00
Anticipated donations for *Permophiles*	$ 250.00
Requested ICS contribution (1)	$2,800.00

0.00

TOTAL BUDGET REQUEST (ICS) $2,800.00

1) Request is for $800.00 to cover expenses for printing and postage for Permophiles, GSSP proposals, and some correspondence as well as website costs. In addition, SPS requests an extra $2,000.00 to partially subsidize travel costs for key international participants to a workshop to be held during the International Conodont Symposium at the University of Calgary (July 2009). During this workshop we will focus on finalizing the GSSP proposal for the base-Sakmarian stage. This boundary is defined by conodonts, but specialists from other disciplines that normally would not attend ICOS will also be invited.

10. REVIEW CHIEF ACCOMPLISHMENTS OVER PAST FIVE YEARS (2004-2008)

The SPS has approved the general divisions of the Permian and has now had 6 GSSP's ratified by ICS and IUGS (Asselian, Roadian, Wordian, Capitanian, Wuchiapingian, Changhsingian). Proposals for the latter two stages were published in Episodes in 2006. Support for documentation (fieldwork and publications) of the various chronostratigraphic methods for the establishment of the GSSP's has been the most outstanding and differentiating character of this Subcommission. *Permophiles* has become an internationally respected newsletter and bears an ISSN designation (1684-5927) and is deposited in the National Library of Canada; nine issues were published during the five year period. See Accomplishments in 2008 (above) for additional details.

11. OBJECTIVES AND WORK PLAN FOR NEXT 4 YEARS (2009-2012)

The primary objective was to complete the GSSP process by 2008 although delays in the field excursion to Urals have delayed this process. We currently anticipate that the last three GSSP's (Sakmarian, Artinskian, and Kungurian) should be ratified by the end of 2009. We will continue to produce two issues of *Permophiles* each year. We anticipate the following schedule:

1. A vote by SPS on the base-Sakmarian proposal will be conducted in August 2009.
2. Business meetings at Argentina Feb 2009, during ICOS at Calgary in July 2009.
3. A vote by SPS on the base-Artinskian is anticipated by late 2009.
4. A vote by SPS on the Kungurian is anticipated by late 2009.
5. Business meeting in 2010.
6. Business meeting at International Congress on Carb and Permian July 2011; Perth Australia.
7. Begin process for new SPS Chair to be in effect by IGC in Brisbane in 2012.

Once the GSSP process is completed SPS will shift focus toward three directions in 2010/2012: 1. correlations into continental deposits, 2. correlations across provincial boundaries and within the Tethys region, 3. detailed documentation of the geologic evolution of the Earth during the Permian with respect to the established chronostratigraphic framework.

12. WEBSITE STATUS AND ACTIVITIES:

SPS website is located at http://www.nigpas.ac.cn/permian/web/index.asp. This site is updated regularly and includes all back issues of *Permophiles* in downloadable PDF format (#1 in 1978 to #51 June. 2008) as well as other information about SPS activities including annual reports, membership.... Shuzhong Shen at Nanjing China maintains the site and Henderson and Shen both have administrator rights.

13. IGC ACTIVITIES:

A business meeting was held at the 33rd IGC 5-14 August 2008.

14. FOUR YEAR SUMMARY OF ACTIVIES:

GSSP's: The proposal for the base-Lopingian (base-Wuchiapingian) was ratified by ICS and IUGS in 2004. The proposal for the base-Changhsingian was voted and ratified by SPS in 2004. The proposal for the base-Changhsingian was voted and ratified by ICS/IUGS in 2005. The base-Wuchiapingian and base-Changhsingian (Upper Permian or Lopingian Series) GSSPs were published in Episodes (volume 29, No. 3&4) in 2006. Progress was made on the three remaining Lower Permian (Cisuralian) stage GSSPs including base-Sakmarian, base-Artinskian, and base-Kungurian. An international field excursion was conducted in early July 2007 (reported in *Permophiles* #49; p. 4-6) and samples for carbon isotopes, geochronology and biostratigraphy were collected and have now been processed. The geochemical samples will provide further correlation potential for the proposed GSSPs; these materials are being analyzed at Boise State University and the Nanjing Institute of Geology and Palaeontology. The biostratigraphy samples will determine reproducibility of GSSP definitions. We hope to complete this task no later than 2009.

Publications: The December 2003 issue of *Permophiles* (#43) was produced at Reston, Virginia in February 2004 and distributed to a mailing list of 280 from the University of Calgary later in the year. The June/December 2004 issue of *Permophiles* (#44) was produced at Pend Oreille, Idaho during October 2004 and was distributed in December 2004 from the University of Calgary. The June 2005 issue of *Permophiles* (#45) was produced at Nanjing China during June 2005 and distributed to a mailing list of 280. The December 2005 issue of *Permophiles* (#46) was produced at the University of Calgary during November 2005 and distributed as a pdf on our website. In addition the remaining back issues of *Permophiles* were scanned and added to our website providing a complete series of communications by Permophiles since 1978. The June 2006 issue of *Permophiles* (#47) was produced at Nanjing China during June 2006 and distributed as a pdf document to a mailing list of 280. The December 2006 issue of *Permophiles* (#48) was produced at the University of Calgary during November 2006 and distributed as a pdf on our website. We now have a complete series of Permophiles on our website (1978 to 2006). The June 2007 issue of *Permophiles* (#49) was produced at Nanjing China during June 2007 and distributed as a pdf document to a mailing list of 280. The December 2007 issue was produced in January 2008 after a field excursion to Australia. June 2008 issue (#52) was produced in Calgary in July 2008. We now have a complete series of Permophiles on our website (1978 to 2008).

Meetings: The SPS conducted its annual business meeting at the IGC meeting in Florence, Italy on August 23, 2004 with 23 people in attendance. This business meeting was preceded by a session on "The Lower Permian Cisuralian Stages" co-chaired by Boris Chuvashov and Charles Henderson. This was a successful session with six oral presentations and several posters that demonstrated clear progress in the definitions for the Cisuralian stages. Abstracts for these papers appear in

Permophiles issue #44. The SPS conducted two business meetings in 2005 including at the Triassic Chronostratigraphy and Biotic Recovery meeting in Chaohu, China on May 23, 2005 with 27 in attendance and at the Non-marine Permian Conference at Albuquerque New Mexico on Oct. 23, 2005 with 28 in attendance. This latter conference was organized by Spencer Lucas and was very successful with 68 people in attendance from 12 countries. The SPS conducted one business meeting at the 2nd International Palaeontology Congress in Beijing, China in June 2006. The SPS conducted one business meeting at the XVI International Congress on the Carboniferous and Permian in Nanjing, China in June 2007 and is reported in *Permophiles* #49. Business meetings were held in Sydney Australia (January 2008; *Permophiles* #50) and IGC in Oslo (August 2008).

Membership: During 2004 the voting membership of SPS saw considerable renewal. We have a completely new executive and six new voting members. In order to allow this renewal, a few members were asked to retire their voting status. The SPS executive has decided to name a new membership category, Honourary Members, to reflect the significant past and continuing contributions of these retiring voting members. The first Honourary Members are Professors Brian Glenister, Heinz Kozur, and Claude Spinosa. Honourary Members will receive GSSP proposals and be invited to comment on the merits of the proposal, but they will not vote on the proposal. The comments of Honourary Members will be included in subsequent versions of the proposal. Only one change in voting membership occurred in 2005. Professor Giuseppe Cassinis of Italy retired as a voting member and Dr. Marc Durand of Universite de Nancy, France was voted by the executive as a replacement. Two changes were made to voting membership in 2006. Dr. John Utting retired as a voting member and was named by the SPS Executive as a Honourary Member given his long service to SPS (past Secretary) and distinguished research record in Late Paleozoic palynology. Dr. Lucia Angiolini was nominated by the executive to fill this vacancy. This increased the membership from Europe bringing it more in line with other major regions. Secondly, we sadly lost our distinguished colleague and friend Professor Jin Yugan who died in June 2006 (see Permophiles 48 for a tribute). His was a very distinguished career in Late Paleozoic paleontology and service including as a past-Secretary and past-Chairman of SPS. He has been replaced as a voting member by Professor Yue Wang. There were no changes to the membership in 2007, but as noted in the 4 year summary we have made several changes over the past four years. In addition, the current executive will continue for a second term. We currently have 16 voting members representing Australia (2), Canada (1), China (3), France (1), Germany (1), Italy (1), Japan (1), Russia (3), and United States (3). We also have five honourary Members. No changes in 2008.

Summary (2004-2007): In 2004 a new SPS executive was named including Charles Henderson as Chair, Vladimir Davydov as Vice-Chair, and Shuzhong Shen as Secretary. In terms of the voting membership, nine of sixteen members are new during the reporting period (56% renewal). SPS also instituted a new membership category, Honourary Member, and five individuals have been so-named. SPS conducted five business meetings during the four-year period at major international meetings. Two GSSP proposals for the base-Wuchiapingian (also base-Lopingian Series) and base-Changhsingian were prepared, voted, ratified and published in Episodes during the past four years. Significant progress has been made on the last three Cisuralian GSSP proposals for the base-Sakmarian, base-Artinskian, and base-Kungurian stages. An international workshop was conducted in July 2007 to determine reproducibility and accessibility as well as collect new geochemical data. During the reporting period, *Permophiles* #43 to #51 have been produced with #52 to come later this year. In addition, a website was constructed and hosted by the Nanjing Institute of Geology and Palaeontology during the reporting period. Among other items, this website has pdf versions of all issues of *Permophiles* dating back to #1 in 1978.

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APPENDIX

Officers and Voting Members as of November 2007

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Correlation of Upper Permian localities in the Kuh-e-Ali Bashi area, NW Iran: old collections, old and new data

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Introduction

The controversial history of the Kuh-e-Ali Bashi localities was revised in Permophiles 51, (Henderson et al., 2008): the problem concerns the wrong correlations between locality 1 and locality 4 of the Kuh-e-Ali Bashi area (Fig. 1) figured and published by Teichert et al. (1973).

Old collections and old data

During October 1972, I had the opportunity to visit the area with the Professors P. Brönnimann and L. Zaninetti (Geneva University) and with the Dr. F. Bozorgnia (NIOC, Tehran). We sampled the Upper Permian and the Lower Triassic, but focused our research on the Elika Formation. The rock collection was stored at the NIOC in Tehran and the thin sections sent to the Paleontological Institute of Geneva University. Later we published a note in Paläontologisches Zeitschrift on the Elika Formation at Kuh-e-Ali Bashi (Baud *et al*. 1974).

During the late seventies, B. Kummel sent a Permian-Triassic rock collection of the Kuh-e-Ali Bashi localities to the Paleontological Institute of Geneva University for thin section analysis, with the reported sample number of Teichert *et al*. (1973). D. Altiner, a PhD student, worked on the micropaleontological content and published it in Altiner *et al*. (1980). I described the detailed lithology and the sedimentologic evolution and in figure 4 of this paper, we illustrated the profile of locality 1 of Teichert *et al*. (1973), in which the corresponding samples of locality 4 were marked by * and placed according to the Teichert *et al*. (1973) correlations. In this open marine deep-water red limestones and marls, it was not possible to discriminate the Dzhulfian from the Dorashamian foraminifer occurrences.

This Kuh-e-Ali Bashi Permian-Triassic collection, with the thin sections, was given in 1984 to the Geological Museum of Lausanne, Switzerland, and as Curator I used part of these samples for geochemical analysis and isotope studies. The Kuh-e-Ali Bashi (Julfa) C isotope profile was published in Baud *et al*. (1989), based on our own collection (Baud *et al*., 1974) and partly on the Kummel collection from locality 1. We analyzed separately the samples of the upper part of the locality 4, but never published it.

New data

After reading in Permophiles 51 the conclusions of Henderson *et al*., 2008 on reported Upper Permian conodont occurrences from northwestern Iran, I went to the Geological Museum of Lausanne to restudy the thin sections of the Kummel's Kuh-e-Ali Bashi collection. After careful examination of the thin sections from the upper part of the locality 4 of Teichert *et al*. (1973), I noted that the microfacies of samples 69SC-TL and -TM correspond closely to the microfacies of the samples 69SA-0 at the base of their locality 1 (ostracod-rich lime mudstone) and that the microfacies of samples 69SC-TU from the top of their locality 4 is very similar to the microfacies of the sample 69SA-2 (lime mudstone with spicules) of the lower part of their locality 1 (see Fig. 2).

All of these microfacies (Fig. 2) are significantly different from those of the *Paratirolites* beds (nodular lime mudstone with intraclasts and with micro-ammonoid and bivalve shells) at the top of locality 1 and those of the lower part of the Upper Julfa beds from the base of locality 4, a crinoid lime wackestone that corresponds to the crinoid limestones of Stepanov *et al*., 1969 (see Fig. 3).

Conclusions

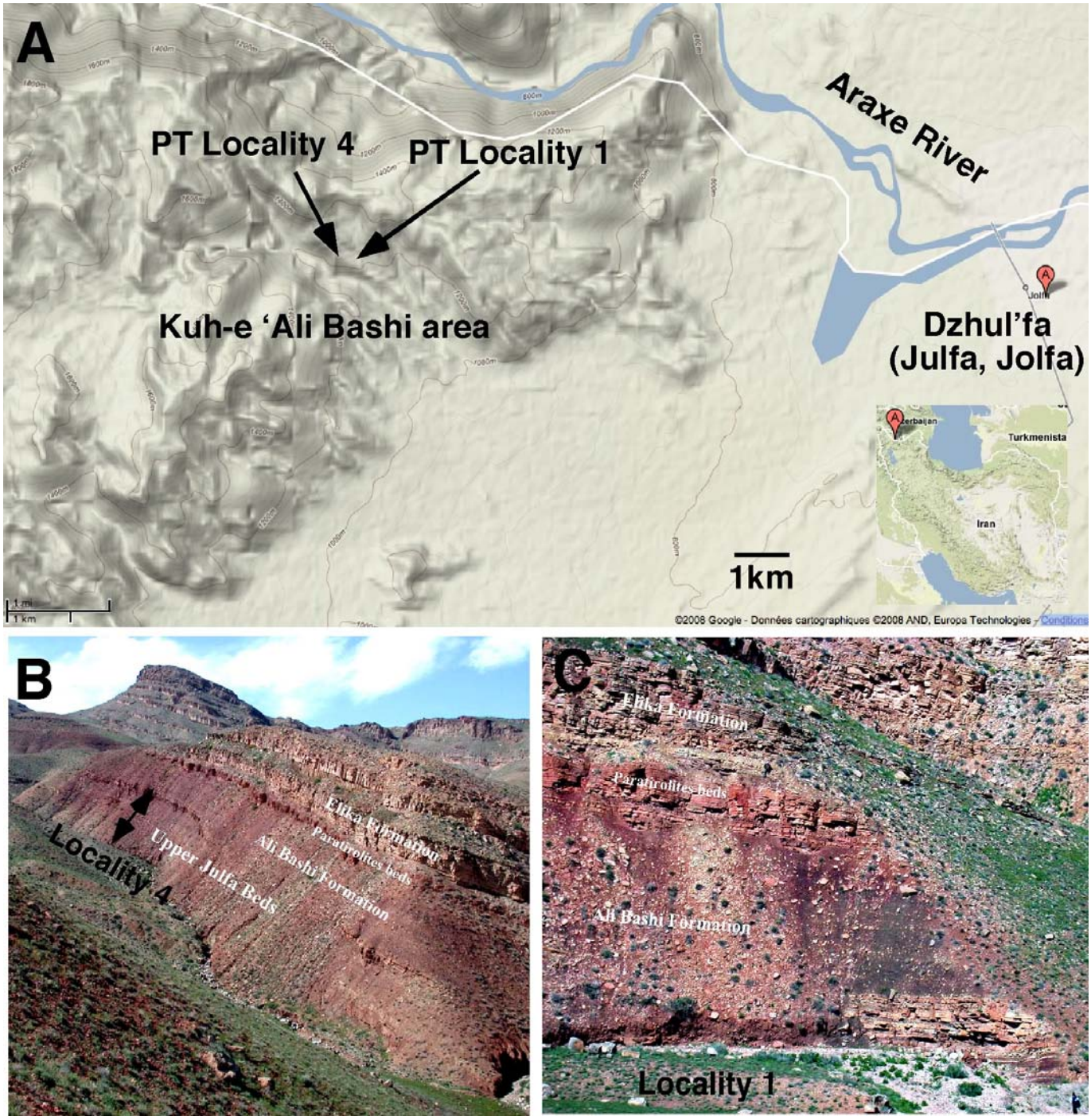

Fig. 1. A: Sketch from Google Map, showing all of the Kuh-e-Ali Bashi – Julfa region of NW Iran and the location of localities 1 and 4 of Teichert *et al*. (1973). B: View of locality 4, the base is in the gully and the top is the prominent bed overlying the upper Julfa Beds (double arrow). C: View close to locality 1, 500m downward of locality 4. B and C: photos from the author © 2002.

I totally agree with the conclusions of Henderson *et al*. (2008) that established that locality 1 strata are the continuation of locality 4 strata and not the repetition of the same lithologic unit along strike as published by Teichert *et al*. (1973). In fact, it is possible to exactly correlate the last beds of locality 4 with the first beds of locality 1. This new correlation was first considered by Sweet and Mei (1999a and b) where they showed that locality 4 strata are Wuchiapingian in age and that locality 1 strata below the Elika Formation are Changhsingian. Shen (2007) examined the *C. orientalis* conodont population from Kuh-e-Ali Bashi and from S. China and came also to the same conclusion as Sweet and Mei (1999a and b).

I visited again the Kuh-e-Ali Bashi localities in 2002 during a field workshop organized by the Geological Survey of Iran, by Professors R. Brandner, L. Krystyn and Dr. P. Mohtat-Aghai from Austria. S. Richoz, my PhD student, published a new very detailed C isotope curve from the P-T transition in this area and compared it with curves from other Iranian sections (Richoz, 2006).

In Fig. 4, the old unpublished C isotope curve of the locality 4 is drawn in correct according to newly revised stratigraphic position with the published curve of locality 1

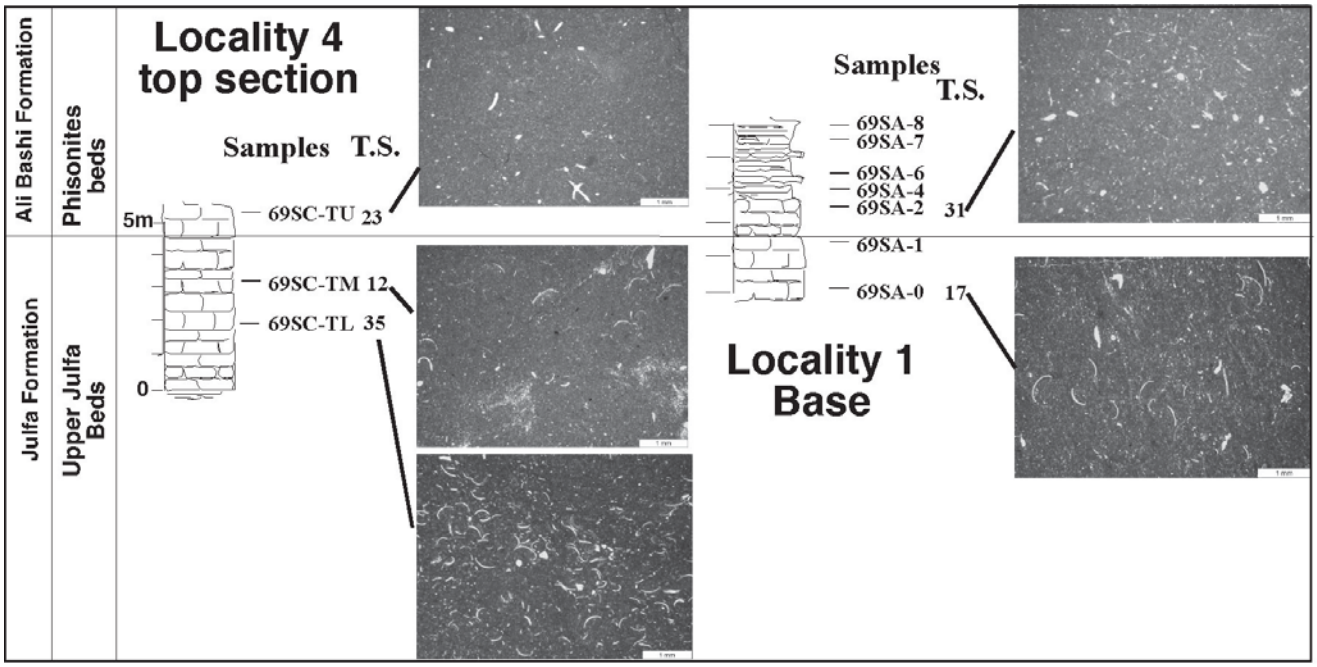

Fig. 2: Comparison of the microfacies from the upper part of locality 4 of Teichert *et al*. (1973) and from the basal part of locality 1, an ostracod lime mudstone that corresponds to the Upper Julfa beds. The microfacies of the basal part of the Ali Bashi Formation is a typical dark lime mudstone with spicules and is found at the locality 1 sample 69SA-2 and corresponds to the microfacies of the top sample of the locality 4 (69SC-TU). Scale bar=1mm

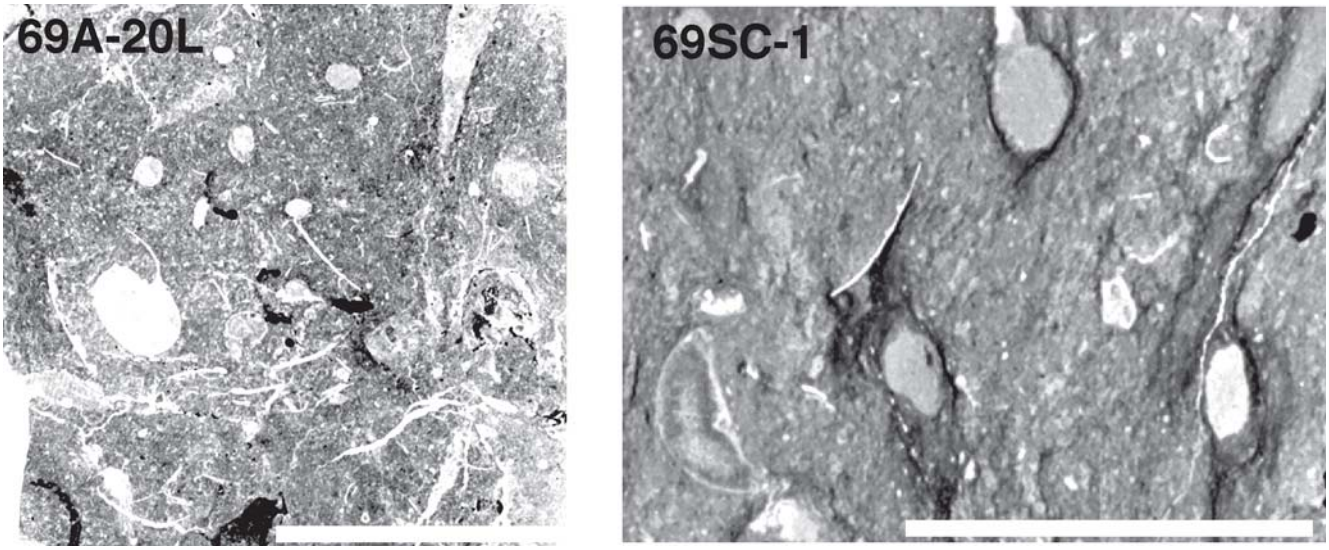

Fig. 3: 69A-20L, locality 1, microfacies of the *Paratirolites* beds, a nodular lime mudstone with intraclasts and with micro-ammonoid and bivalve shells. 69SC-1, locality 4, microfacies of the lower part of the Upper Julfa beds, a crinoid lime wackestone. Scale bar=1cm

from Baud *et al*., (1989). The Julfa beds values are close to the same age values of the nearby Zal locality C isotope curve published by Richoz, 2006 and also correspond to values given by Kakuwa and Matsumoto (2006), on Julfa beds C isotope.

The foraminifer occurrences according to Altiner *et al*. (1980, fig, 4) from locality 4 and locality 1 of Teichert *et al*. (1973), are reinterpreted and illustrated in Fig. 5 according to the newly revised correct sample positions.

In their paper, Henderson *et al*. (2008) showed the incomprehensible mistake of Teichert *et al*. (1973). The question is how could Teichert and Kummel, have miscorrelated the sections at localities 1 and 4? Both sections started with red limestones in the same gully on the north slope of a small valley and both have near their top a small cliff of red limestones. The thickness was very close, but as written by Henderson *et al*. (2008, p. 9), "they apparently did not finish the section at Locality 4, and somehow failed to show that in their notes or subsequent papers".

Henderson *et al*. (2008) showed also the fact that Kozur in Korte and Kozur (2004, p. 123) and in his other papers on the Permian of Iran, was premature to criticize Mei's conclusions in Mei in Sweet and Mei (1999a and b). Kozur largely commented on so-called

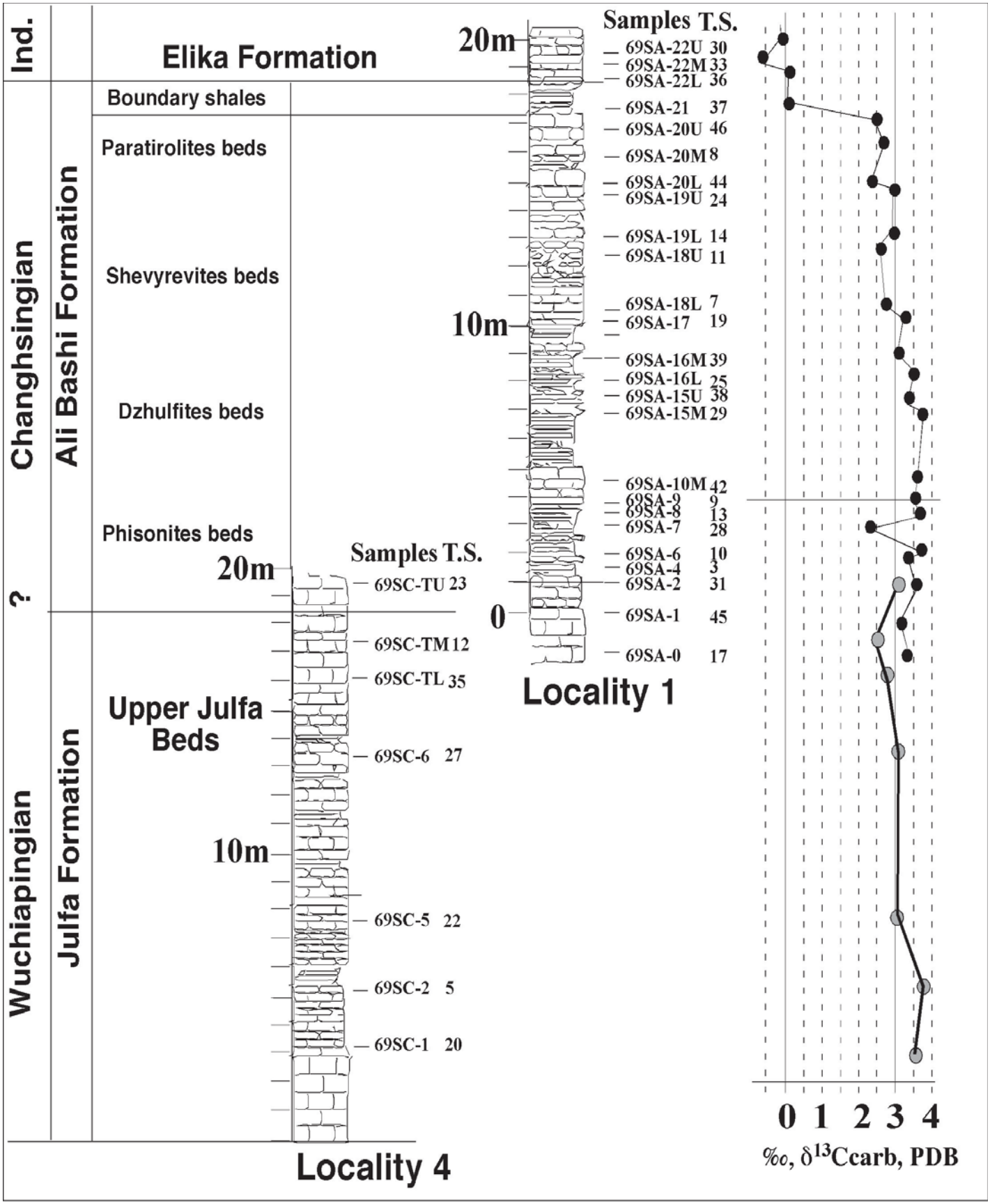

Fig. 4: Carbon isotope values and lithostratigraphy of Kuh-e-Ali Bashi localities 1 and 4 with the sample numbers of Teichert *et al*. (1973). The former, unpublished C isotope values of the locality 4 in Baud *et al*., 1989, are in grey.

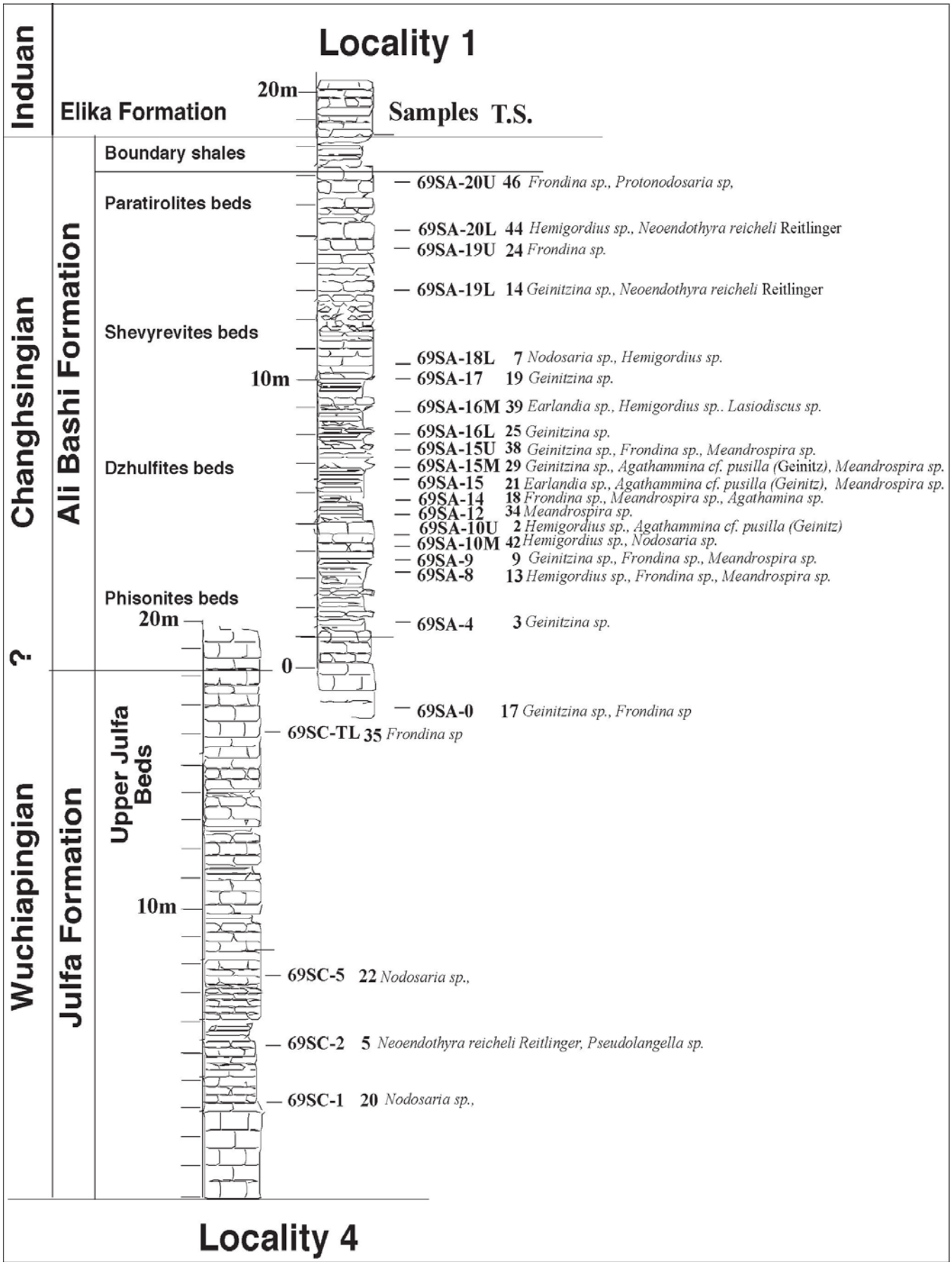

Fig. 5: Occurrence of benthic foraminifers from locality 4 and locality 1 of Teichert *et al*. (1973), according to D. Altiner, in Altiner *et al*., 1980.

errors of Mei in his locality 4 conodont determination and comparison with the same age fauna from South China, but Mei's work was scientifically correct. Shen (2007) and Henderson *et al*. (2008) demonstrated that there are two distinct homeomorphs of *Clarkina* (*C. orientalis* of Late Wuchiapingian and *C. abadehensis* of Late Changhsingian).

It is not the first time that I ask readers to consider carefully the methods and papers of Kozur as I do in Albertiana (Baud, 2008) on Kozur's new methods of correlation applied to the Induan-Olenekian Boundary.

Acknowledgements
The author is grateful to Geological Institute of Lausanne University, Switzerland, for the thin section pictures and the Geological Museum in Lausanne, for access to invaluable collections. Thanks to Charles Henderson who helped to improve the manuscript.

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Early Permian conodonts from the Olenya-10 borehole, north of Timan-Pechora Province

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Lower Permian Asselian-Sakmarian deposits are widespread in Timan-Pechora Province. They are composed of mainly carbonate facies ranging from nearshore through offshore environments (Fig. 1). The studied borehole (Olenya-10) located in the north-eastern part of the Khoreyver depression demonstrates the transgressive Lower Permian sequence overlying unconformably Middle Carboniferous sediments (Fig. 1). The boundary interval was described and sampled for conodonts (Fig. 2).

Description of the borehole core in ascending order:

Middle Carboniferous

Thin alternation of greenish-grey limy siltstone and light grey detritic limestone. Bad preservation of the core. 0.4 m thick.

Lower Permian

1. Thin-grained brown sandstone containing plant detritus. Erosional base. 0.15 m thick.

2. Greenish-grey silty limestone. Scarce glauconite and sulfides. 0.3 m thick. Fossils are represented by rare foraminifers, conodont elements, and calcareous algae.

3. Crinoid pack-wackestone transitional upward to crinoid pack-rudstone. Local silicification. Scarce glauconite and sulfides. 2.1 m thick. Fossils are represented by brachiopods, ostracods, bryozoans, scolecodonts, fish and Conularia remains, and foraminifers.

Conodonts were recovered from two samples located slightly above the erosional boundary. Conodont associations contain both reworked Late Carboniferous and subautochtonous Early Permian elements (Table 1, Fig. 3).

The presence of *Gondolelloides canadensis* Henderson and Orchard and *Streptognathodus* cf. *constrictus* Reshetkova and Chernykh in the lowermost sample suggests a Late Asselian age for the deposits marking the start of post-erosional sedimentation. These species are known in the upper part of the Asselian (*Neogondolella discedus* conodont zone) in Novaya Zemlya sections (Sobolev and Nakrem, 1996) and Western Canada (sequence 4a by Dunn and Henderson, 2001). Occurrence of *Adetognathus* sp. *B* Henderson in sample #66 confirms this correlation. This species of *Adetognathus* is known from the Middle Asselian – Sakmarian interval in Sverdrup Basin and British Columbia (Sobolev and Nakrem, 1996).

It is interesting to note that species of the genus *Gondolelloides* (*G. canadensis* and *G.nahanniensis*) are known in the Upper Carboniferous (Gzhelian, *simplex* and *bellus* con-

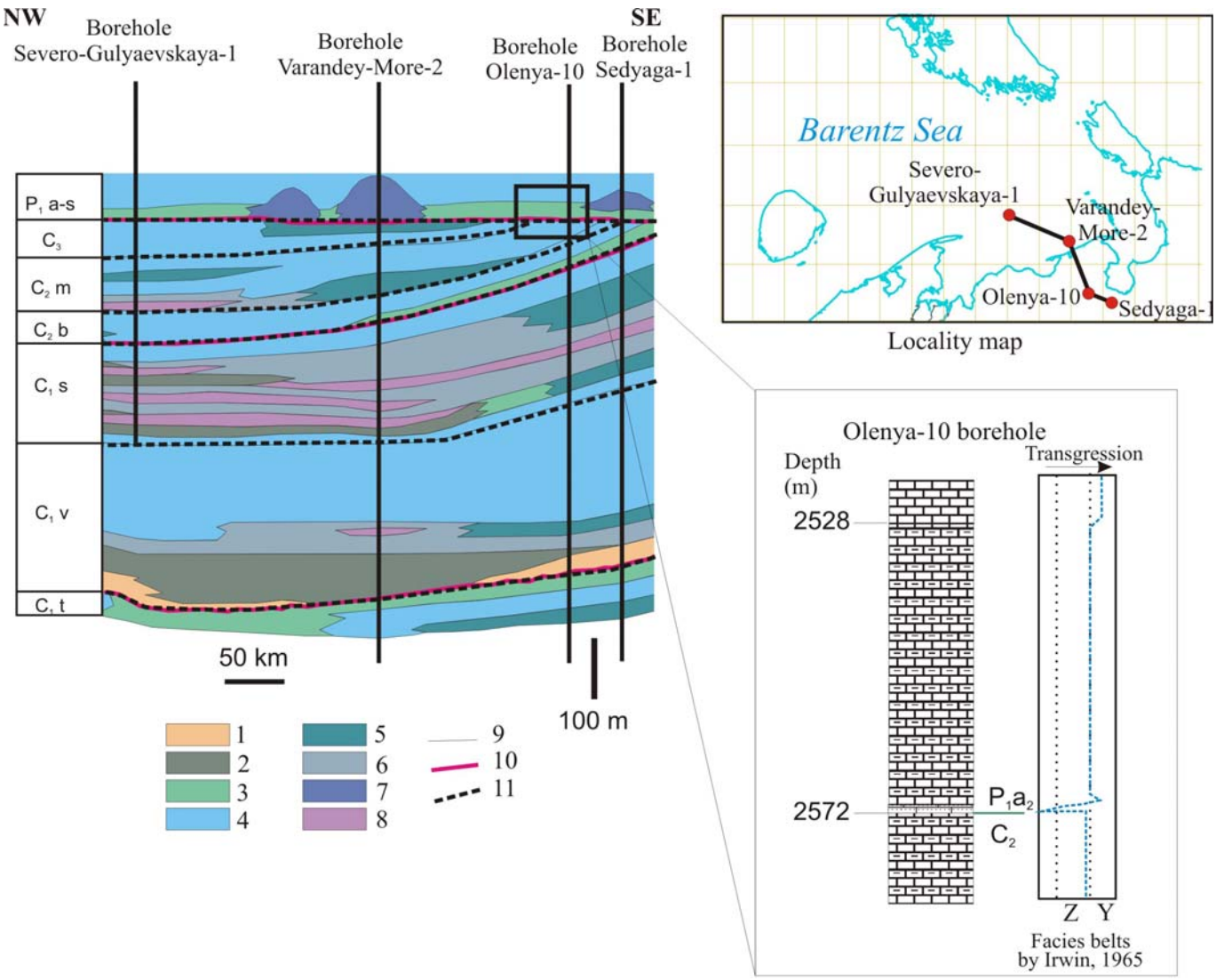

Fig. 1. Schematic stratigraphic profile leveled on base of the Lower Permian.
Legend: 1 - Sandstone and siltstone; 2 - Claystone; 3 - Marl and clayey limestone; 4 - Detrital limestone; 5 - Calcarenite and oolitic limestone; 6 - Dolostone; 7 - Bioherm; 8 - Anhydrite; 9 - Lithologic boundary; 10 - Unconformity and disconformity; 11 - Stage boundary.

odont zones) as well, in a single locality in the south Urals (Chernykh, 2005). Thus this genus is not specific for the Early Permian over the world. Probably south Urals basin was centre of origination for the genus, and in the Early Permian *Gondolelloides* spread over the Northern Cool Water Province (see also Zhuravlev, 2008).

The lowermost Permian transgressive member in the Olenya-10 borehole can be provisionally correlated with TST of the 2nd sequence of the Kolguev Island (Shishlov, 2007), Ørn Formation of the Southern Norwegian Barents Sea (Larssen *et al*., 2002), and sequence 4a of Western Canada (Dunn and Henderson, 2001).

Conodont data suggest that a stratigraphic gap, corresponding to the Upper Carboniferous and the Lower Asselian, exists in the studied section. The presence of numerous reworked conodont elements of Late Carboniferous age (see Table 1) allows the interpretation of regional erosion of Kasimovian and Gzhelian deposits during the Asselian.

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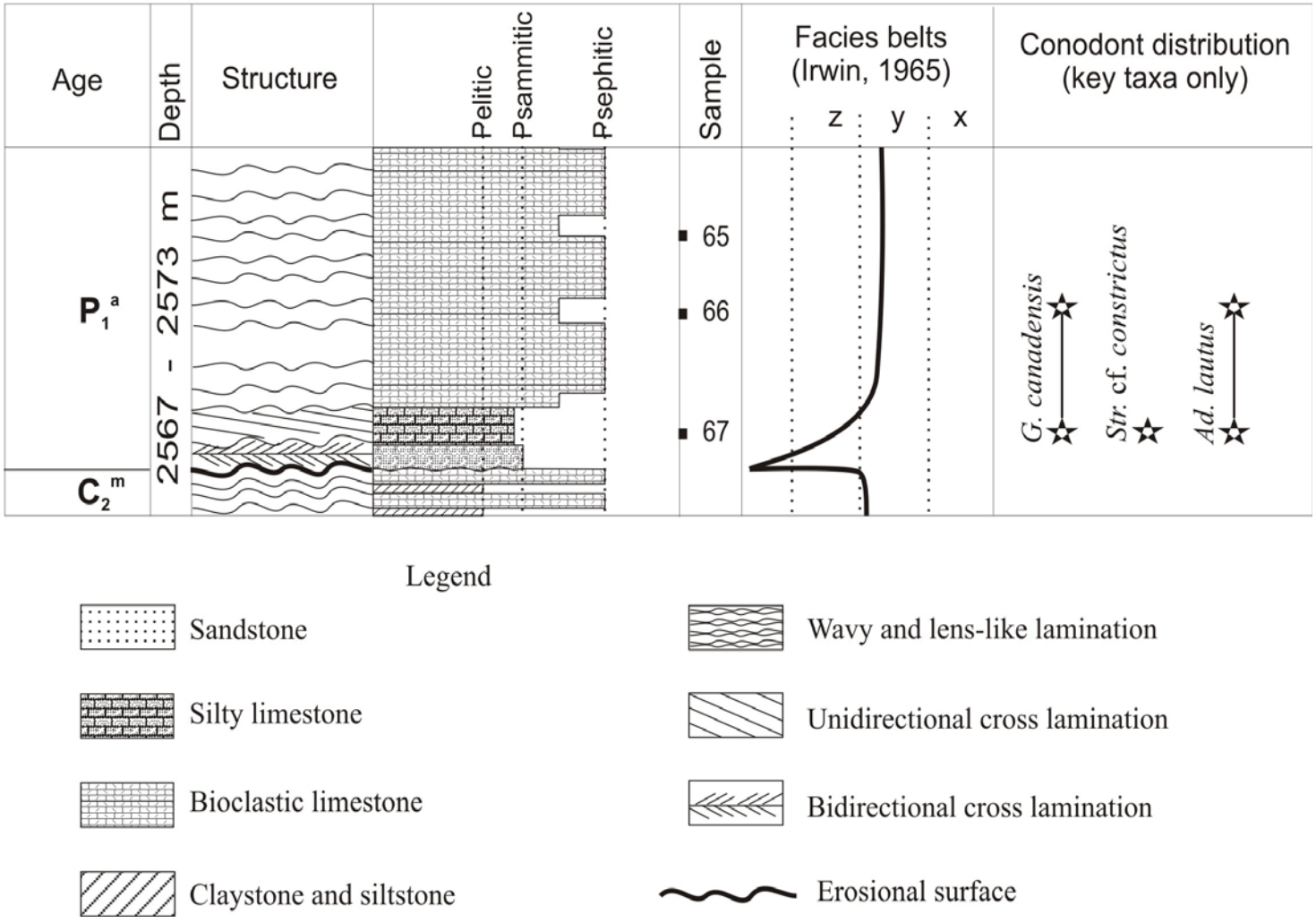

Fig. 2. Log of the Olenya-10 borehole, C/P boundary interval.

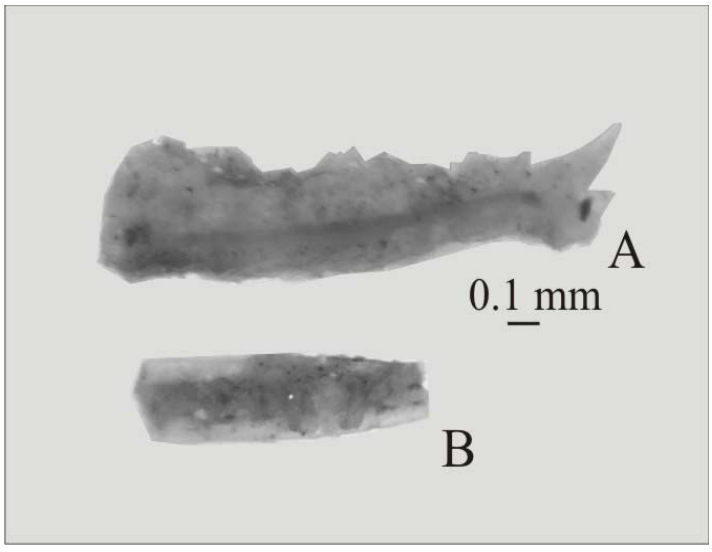

Fig. 3. Conodonts *Gondolelloides canadensis* Henderson and Orchard from the sample #66 (coll. # 27k, VNIGRI museum): A – Pa element, 27k/1; B – fragment of Pa element, 27k/2.

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Table 1 and Editor's notes are in the next two pages

Taxa	Sample #	Number of Pa elements	Stratigraphical interval (Novaya Zemlya; Sobolev, Nakrem, 1996)	Reworked	Supposed age
Adetognathus lautus	66	11	*medadultimus-discedus* l.f.		Late Asselian *discedus-discedus* l.f. zones
Adetognathus sp.B Henderson 1988		1	*cristellaris-foliosa*		
Adetognathus sp		1			
Gondolelloides canadensis		2	*discedus-foliosa*		
Streptognathodus cf. *Streptognathodus elegantulus*		1	*excelsus-wabaunsensis* ?	?	
Streptognathodus sp.		2			
Adetognathus aff. *Adetognathus lautus*	67	2	*medadultimus-discedus* l.f. ?		Late Asselian *discedus* Zone
Adetognathus lautus		4	*medadultimus-discedus* l.f.	+	
Gondolelloides canadensis		1	*discedus-foliosa*		
Neognathodus sp.		1		+	
Streptognathodus aff. *Streptognathodus firmus*		4	L. *alekseevi*	+	
Streptognathodus alekseevi		1	*alekseevi-elongatus*	+	
Streptognathodus cf. *Streptognathodus constrictus*		1	*discedus-foliosa* ?		
Streptognathodus cf. *Streptognathodus elegantulus*		1	*excelsus-wabaunsensis* ?	?	
Streptognathodus cf. *Streptognathodus tenuialves*		1			
Streptognathodus elegantulus		1	*excelsus-wabaunsensis*	?	
Streptognathodus elongatus		2	*elongatus-discedus* l.f.		
Streptognathodus simplex		2	*elongatus-wabaunsensis*	?	
Streptognathodus sp.		6			
Streptognathodus wabaunsensis		1	*wabaunsensis-discedus*		

Table 1. Conodont distribution in the borehole Olenya-10

Editors Note:

I would now correlate the species identified as *Adetognathus* sp. *B*, which I first described in my Ph.D. thesis from sections in the Canadian Arctic, with the Upper Gzhelian to Upper Asselian. According to Chernikh (2005) *Streptognathodus constrictus* is mid-Asselian. Currently I would restrict most, if not all, of the Canadian occurrences of *Gondolelloides* to the Asselian (not ranging to the Sakmarian). At least one location in Novaya Zemyla (10 in Henderson and Orchard, 1991) includes *Gondolelloides canadensis* and *Idiognathodus* sp.cf. *ellisoni* and the presence of *Idiognathodus* suggests a Late Carboniferous age. This does not preclude the interesting migration argument indicated in the article above. It would appear that the genus *Gondolelloides* is restricted to sporadic occurrences within the Upper Gzhelian to Upper Asselian interval in the Northern Cool Water Province.

Charles Henderson

Notes on the Late Paleozoic tectonics of the southern Alps (Italy) and surrounding regions: geodynamic implications

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Introduction

The transition between the Variscan orogeny and Mesozoic rifting is one of the lesser known periods of tectonic evolution in southern Europe. In particular, three main hypotheses on the Late Paleozoic geodynamic regime have been previously proposed: (a) rifting activity, continuous from the end of the main Variscan diastrophism (Late Carboniferous) up to the Jurassic crustal stretching and opening of the Tethys Ocean; (b) back-arc extension caused by the oblique subduction of Paleotethys beneath the southeastern margin of Pangea; (c) a transcurrent and/or transtensional phase developed along the southern border of the Variscan orogen between Eurasia and Gondwana. In this context, the present note attempts a better interpretation of the post-collisional tectonics of the Southern Alps and surrounding regions, aiming for more in-depth knowledge of the European geodynamic regime from the end of the Variscan orogeny to the beginning of the Alpine sedimentary Cycle.

Variscan Orogen

As far as it is known, this orogen represents the product of the Eurasia–Gondwana continental collision, which followed collision of the Laurussia and the Avalonia–Armorica microplates (Scotese and McKerrow, 1990).

A great number of paleogeographical reconstructions of the end of the Westphalian show the following: the western and central sector of the Mediterranean area is affected by a widespread zone of continental collision; another collisional zone, due to the oblique subduction of West-African and Amazzonian continental platforms below Laurussia, marks the western or southwestern sector (Alleghenian and Mauritanian chains); an ocean (Paleotethys), subduction towards the N and NW beneath the Laurussia plate, occurs E–SE of the Variscan orogen; lastly, the Ural Mts., born from the convergence and collision between Laurussia and Siberia, develop towards the E–NE. As a consequence, the Variscan orogen represents one segment of a quite widespread chain with a SW–NE trend, continuous (?) from central and northeastern America as far as northwestern Europe and a large part of Asia. The segments of this gigantic chain are progressively formed by the Ouachitas (derived from the collision of South America with the southeastern part of North America), the Appalachians and Mauritanides, the N African Atlas, the Variscan chain of central-western and eastern (the so-called "Scythian belt") areas of Europe, the Urals and the Mongolia chain. Each of these Variscan segments shows a slightly different deformation age, not fixed everywhere, but attributable to the Late Paleozoic (Carboniferous–Permian interval). In particular, the final deformation phases of the Ural and Appalachian-Mauritanian mountain systems continued up to the Late Permian, when compressional phenomena of regional significance died away in the European Variscan chain.

In all the reconstructions, the general trend of this European Variscan orogen varies from E–W to WSW–ENE (*e.g*. Matte, 2001; Ziegler *et al*., 1997).

The Late-Variscan tectonic and geodynamic setting of the Southern Alps and southern Europe

During the latest Carboniferous to Early Permian, the crustal shortening phenomena of the European collisional zone disappeared, progressively substituted by transcurrent movements parallel to the Variscan chain, along a widespread dextral shear zone that connected the Appalachians in the west with the Urals in the east; both these chains were subject to active compression and showed a N–S or NE–SW trend sub-orthogonal to that of the Variscan chain. The development of this transcurrent Eurasia and Gondwana margin, which progressively evolves towards a real transform margin affected by transtension and crustal thinning, points to a possible change of convergency between these two plates, rotating approximately from SW–NE to E–W (Fig. 1).

The South-Alpine and surrounding areas, already affected by the main Variscan deformation, suffered this change of geodynamic conditions and saw the development of a great number of intramontane basins of tectonic origin (pull-apart or strike-slip basins), linked to extensive transcurrent faults (*e.g*. the Collio, Tione and Tregiovo Basins in eastern Lombardy and western Trentino: Cassinis and Perotti, 1994; Cassinis *et al*., 1997) extending into the deep crust, accompanied by asthenospheric upwelling with diffuse intrusive and effusive magmatic activity of highly variable chemical composition, due to the previous crustal inheritances.

The geometric restoration of the Late Paleozoic tectonic setting is complex owing to the restricted Permo-Carboniferous outcrops and the younger deformations (transport and rotation) induced by Alpine tectonics. However, a large number of tectonic lines are still recognizable, marked by dextral transcurrent displacement and an ENE paleo-trend. The most important of these lines are: the Cevennes Fault (in southern France); the Campidano, Posada-Asinara (in Sardinia) and the western Corsica lines; the

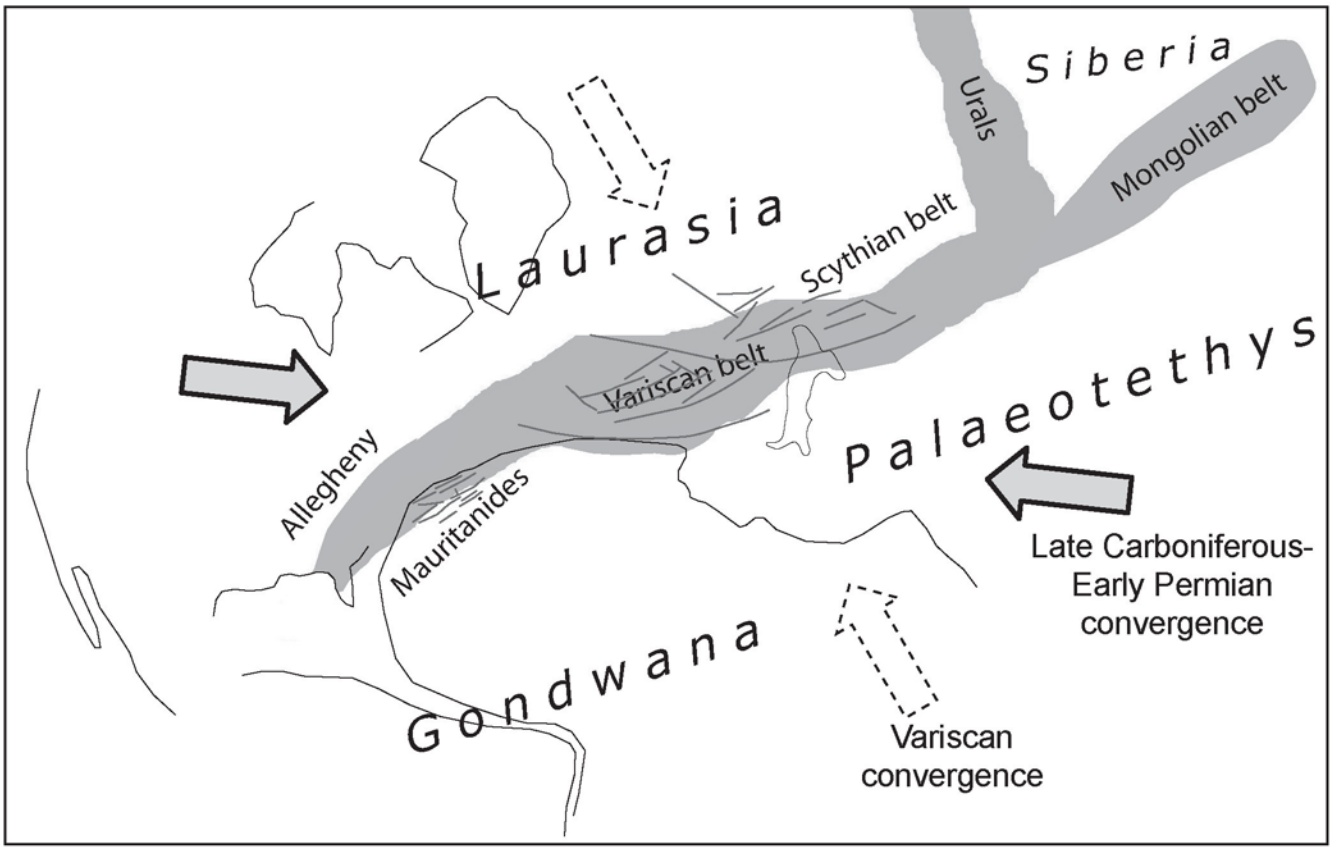

Fig. 1 Schematic reconstruction of the Variscan chain during the Late Paleozoic.

Canavese, Cossago-Mergozzo-Brissago, Engadina, Val Camonica and Giudicarie lines (in the Alps); and the numerous faults that involve the crystalline basement in the Po Plain, shown by interpretation of geophysical and particularly magnetic data (Cassano *et al*., 1986).

In addition to these lines, subparallel to the Variscan orogen and to the transform margin between Eurasia and Gondwana there is another fault system with NW paleo-direction (*e.g*. the Val Trompia and Tonale lines) and extensional movement, as well as a third system indicating minor NE-trending extension.

Most of these tectonic lines had a pre-Carboniferous origin and were subject to different polyphasic movements: during the Late Carboniferous to Early Permian transtensional phase the main dextral dislocations were induced by the ENE-trending system, whereas the NW faults represented extensional structures, which controlled the formation of the main basins.

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History of the "Permian and Triassic Geologists Association (1987 – 2008)

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As passing President of the Permian and Triassic Geologists Association (AGPT), which was set up about 21 years ago in Paris in order to highlight the geology of the Upper Paleozoic to Lower Mesozoic continental successions in Europe, I wish to point out the remarkable scientific activity and the organization

Thematic days and excursions of the Permian Geologists Association (1986–2004)

1	Date	Title	Organizers
	23-Jun-86	Permian volcanism	N. Toutin-Morin?
	8 Oct. 86	The Lodève and St. Affrique Basins	J.-F.Becq-Giraudon
2	24-Jun-87	The Permian-Triassic transition: Annulled excursion	D. Mercier
3	16-17 June 88	Correlation elements and their stratigraphic implications within continental and marine Permian	G. Gand et B. Bonin
	22-23 Oct. 88	Stephanian to Permian Brive-la-Gaillarde Basin (Corrèze)	P. Lavergne and J.J. Ch â teauneuf
4	13-Jun-89	Economic potential of the Permian basins	J.J. Ch â teauneuf and A. Durandau
	Sept. 89	Permian of the Pyrenees	C. Lucas
5	12-Jun-90	Structure of the Permian basins	L. Courel
	Sept. 90	Permian of Val Gardena	G. Cassinis *et al.*
6	12-Jun-91	Permian carbonate sedimentation	P. Freytet *et al.*
	4-7 July 91	Permian of the Morvan	J. Broutin, G. Gand and J.J. Châteauneuf
7	11-12 June 92	Permian of the Western Mediterranean	J.-P. Deroin
	23-30 August 92	Sarre and Palatinate Basin	K. Stapf
8	18-Jun-93	Permian Metallogenesis and Stratigraphy	V. Mathis
	5-8 Sept. 93	Magmatism of NW Corsica	B. Bonin
9	12-14 Sept. 94	Session " Permian " from the first Congress of French Committee of Stratigraphy (Toulouse)	J.J.Châteauneuf
	12-Jul-94	Permian of the Vosges	M. Durand
10	16-Jun-95	Permian-Triassic transitional events	J.-Fr. Becq Giraudon
	1-8 July 95	Permian of Thuringia and Saxony	J.W. Schneider, H. And Walther, H. Luetzner
11	21-Jun-96	Permian (Open Theme)	R. Damotte
	11-17 July 96	Excursion to the N French Alps	J.-P. Deroin, G. Gand, F. Guillot, D. Mercier
12	20-Jun-97	Permian Paleomagnetism and magnetostratigraphy	H. Théveniaut
	8-9 Nov. 97	Excursion to the Bourbon-l ' Archambault Basin (Allier, France)	G. Gand *et al.*
13	19-Jun-98	Geostratigraphy and Biochronology	J.-P. Deroin
	13-17 July 98	Bohemia and Moravia basins (Czech Republic)	S. Stamberg
14	18-Jun-99	Between Laurussia and Gondwana: the Permian of Europe and North Africa	J.-P. Deroin
	15-18 Sept. 99	Permian basins of Sardinia	G. Cassinis *et al.*
15	16-Jun-00	Paleogeography of the Permian times	J. Broutin
	7-13 April 2000	Permian basins of Morocco	J. Broutin, B. Cabanis *et al*., P/TM or. Gr.
16	15-Jun-01	Permian "Crisis"	B. Cabanis
	6-10 July 01	Permian of the Asturias and Cantabrian Mts. (SP)	E. Martínez-García
17	8-10 July 02	3rd Congres "Strati" in Lyon (CFS)	G. Gaillard and P. Hantzpergue
	9-11 May 02	Permian basins of Provence	M. Durand *et al.*
18	20-Jun-03	Geodynamics and structure of the Permian basins in Variscan and peri-Tethyan areas	J.-P. Deroin
	8-10 May 03	AGBP and AGP excursions in Burgundy	J.-P. Deroin and G. Gand
	1-6 Sept. 03	Permian of Bulgaria (Balkans, Moesia, SW Bulgaria)	S. Yanev

Thematic days and excursions of the Permian and Triassic Geologists Association (2004–2008)

	Date	Title	Organizers
	20-22 Sept. 04	Permian in the Central Iberian Chain	A. Arche *et al* .
19	10-12 May 05	Symposium on the Permian and Triassic playas (Cancelled excursion)	AGPT and Montpellier II Univ.
20	2-4 July 07	Symposium of Autun (Burgundy, France)	AGPT and Nat. Hist. Mus. of Autun
	18-20 Sept. 07	Excursion to Dôme de Barrot (Maritime Alps)	M. Durand, G. Gand
	26-28 Sept. 08	Excursion to Alsace and Lorraine	S. Bourquin,M.Durand

of the members of this Association. The "Permian Geologists Association" was founded on 1 September 1987, with these aims:

- promotion, encouragement and development of scientific research on the Permian System;
- exchange of information as regards to the Permian, in France and abroad;
- diffusion of this information through any appropriate way.

However, it needs to be made clear that this scientific group has always shown an interest in the Upper Carboniferous and the Lower–Middle Triassic, of which the continental deposits are often continuous with the Permian. And, it is in this context that the activity developed from this Association has drawn particular attention to the C/P and P/T system boundaries.

From 1991 to December 2003, the information was communicated by letter of the AGP which later, during the general Assembly held in Paris in June 2004 and after a change of statutes, was published in the Official Journal of July, the letter of the AGPT. A second decision was taken at the Assembly regarding the organization of a scientific meeting every two years, generally in June, in substitution of the annual meeting held in Paris, and of a yearly excursion, mostly carried out during the summer period. Lastly, the 2004 Assembly also led to the creation of an internet site for the AGPT, as follows: <http://www.univ-brest.fr/geosciences/AGPT/ >.

The composition of the AGP and the AGPT consists of an Honorary President† (Nadège Toutin-Morin, co-founder President), the Past Presidents (Nadège Toutin-Morin, 1987–1997; Jean-Jacques Châteuneuf, 1993–1995; Bernard Bonin, 1995–1997; Jean-Paul Deroin, 1997–1999; Jean Broutin, 1999–2001; Bruno Cabanis, 2001–2003; Georges Gand, 2003–2005; Marc Durand, 2005–2007), an executive bureau (with a president, vice-president, secretary, treasurer, a head of publications), a board of directors and representatives to the "French Committee of Stratigraphy" (CFS) (with five members) and to the "Subcommission on Permian Stratigraphy" (SPS) of the ICS (with two voting members and a corresponding member).

The topics of the organized thematic days (marked in the above list by bold numbers) show a very wide variety of scientific subjects mainly dealing with the continental Permian of Europe. These meetings highlighted the main geological features of several regions, such as their stratigraphy, sedimentology, paleontology, petrography, structural framework, and so on. Moreover, correlations with European countries, and with some limited African and United States areas, led to the advance of a good deal of paleogeographical, paleotectonic and other reconstructions, of great scientific interest. In this context, specific subjects relating to paleomagnetic, magnetostratigraphic and metallogenic research and to the P/T boundary events have also been discussed.

The organized excursions have mainly focused on the Permian-Carboniferous and Permian-Triassic geology of a large number of regions in central and western Europe. However, from the year 2000, these field trips have also taken place in some less well-known areas, such as in Africa (Morocco) and eastern Europe (Bulgaria). Several members of the Association took part in international meetings or excursions organized in Africa (Oman, Namibia, Madagascar...), Asia (China, Japan, Siberia...) and the US (Arizona, New Mexico, Texas...), these meetings being associated with group research collaborations, whereas other interregional studies have been performed for more personal research (Laos).

The contributions held in the thematic days have generally been published in small books, which give a remarkable amount of information. These "abstract volumes" consist of about 20 articles. Nevertheless, the greatest part of the AGPT activity is represented by the guidebooks of the excursions, well printed and full of interpretative schemes. In fact, these guides inform us in detail of the current state of geological research related to the visited regions. Consequently, they form the most important repository for the geological knowledge of the Permian and Triassic basins, among the scientific topics tackled by the AGPT. The Association has also provided to students, in spite of its modest financial limits, the possibility to participate in meetings or excursions, to accomplish doctoral research on the field, or to be included in research for the recovery of, for example, paleontological material. In addition, the Association has published two scientific memoirs as mementos of now-deceased geologists who dedicated their careers to studies on the Permian or Triassic basins (R. Frey, C. Greber and N. Toutin-Morin, the co-founder President of the AGP).

The AGPT activity at first concentrated on European continental deposits, and successively joined itself with the working group of the IUGS Subcommission on Permian Stratigraphy (SPS), as well as the Cracow (Poland, 1997) and Utrecht (Holland, 2003) International Congresses based on the Carboniferous and Permian Systems. During the second meeting, in particular, the direction of this new Working Group devoted to continental successions (after a preliminary activity managed by V. Lozovsky *et al*.) was entrusted to Joerg Schneider from Freiberg/Sax. for his geological and paleontological research in various countries, and his continuous and efficacious attempts to correlate the marine deposits. Joerg Schneider, who is a voting member of the SPS, is

also a very active member of the AGPT, and previously carried out and still continues important research on the Late Paleozoic basins of central and southern France. In this context, the studies recently published by a Franco-German group in Autun, but mostly in the Lodève area, aimed to review again, with great attention, the stratigraphy and geological evolution of both the aforementioned basins. This research definitely shows that the AGPT represents a European "melting-pot" of known data where each working group finds mutual interests and is able to put forward their own scientific activities. These continental working groups, adhering both to the AGPT and the SPS, even though they pertain to very different administrative bodies, complete each other with the achievement of common subjects, based on the ever-more detailed knowledge of the geological events which affected the Permian and its transition to the Mesozoic.

It is known that the continental deposits are subject to specific examinations that are not necessarily the same as for the marine deposits, where the fossils very often provide, for environmental and age interpretations as well as geological reconstructions, very significant data. The radiometric, magnetostratigraphic, tectonic and paleontological data (based mainly on vertebrates and flora) are also of great help for the study of the continental environments. Furthermore, transitional zones between marine and non-marine domains generally represent key areas suitable for relatively more detailed dating compared with those obtained from strictly continental environments.

As a consequence of the above historical review, it seems evident that the AGPT has played a leading role in highlighting the different features of the continental Permian in Europe, based partly on previous studies, but mainly founded on modern research, in accordance with the present evolution of the earth sciences. The attained results have stirred up much interest from the European geological community regarding the new ideas and suggested interpretations. If we take into account the successes achieved, there is no reason to drop the main themes followed up to now by the AGPT. They will be reinforced by the greater numbers of participants and active members, which should allow the Association to continue to help young researchers and to finance working groups and new initiatives. On the other hand, it would also be desirable to generalize the applicability of the scientific results obtained from AGPT activities to an international plan, in particular regarding the continental basins that represent a specific topic of our Association.

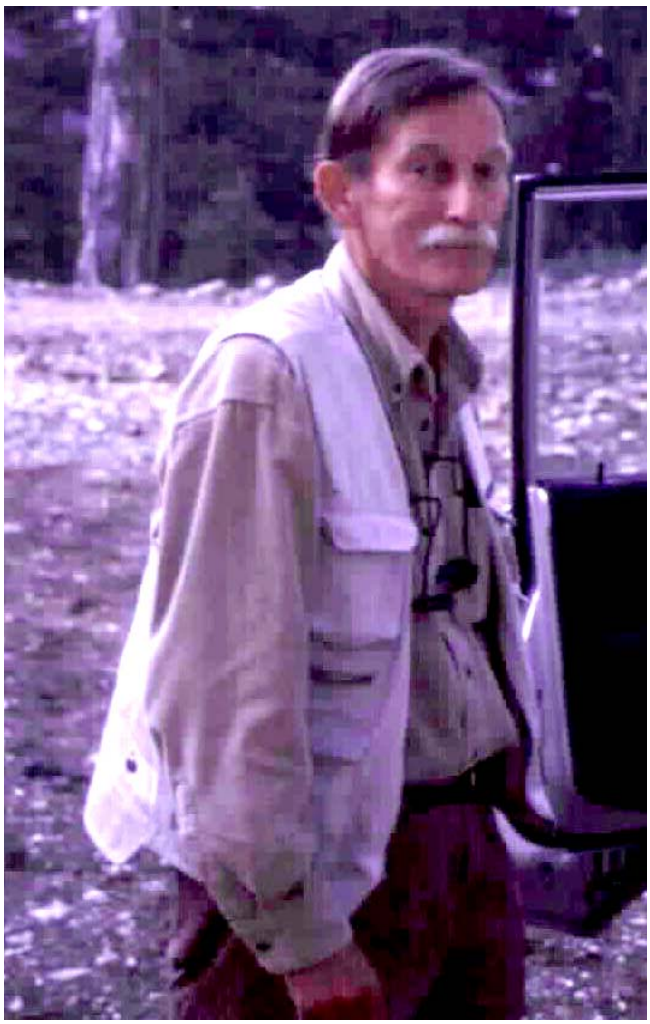
In the name of the AGPT past Presidents (B. Bonin, J. Broutin, B. Cabanis, J.J. Châteauneuf, J.P. Deroin, M. Durand, G. Gand, N. Toutin-Morin).

Editors Note:

SPS certainly encourages the activity of AGPT and would welcome more contributions to Permophiles. The Continental Working Group of SPS led by Joerg Schneider is very active, but only a few contributions end up being published in Permophiles, but these have clearly shown the adoption, where practical, of the International Geological Time Scale. The process of defining the stages of the Permian is nearly complete and I see correlation of this marine time scale into continental successions as one of the major tasks for SPS in the future. It would be great to see greater coordination of activity; for example, it is unfortunate that the field excursion being planned for summer 2009 occurs during almost the same dates as the official SPS meeting associated with the International Conodont Symposium.

Charles Henderson

IN MEMORIAL



Jean Marcoux in the field, S Turkey, May 2001

IN MEMORIAM
Jean Philippe Marcoux (1940-2008)

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Our friend Jean Marcoux passed away on 17 June 2008 after a three-month battle against cancer in Orsay, France. His death interrupted a Professorial lifetime of passionate geological research and fieldwork, as an esteemed teacher and of community activities. He is survived by his wife Noëlle, by their daughter Céline and son François, and three grandchildren.

Jean was born during the war on 8 October 1940 in Marseille, France, to well-educated parents. Both were teachers and *agrégé de Lettres Classiques*. He spent his early childhood in Marseille

and in his grandmother countryside house near Gemenos where he acquired early a taste of observation and a fondness for Natural Sciences and entomology. In 1951 his family moved to Paris where he started his secondary schooling. An enthusiast of climbing and mountaineering, he followed mountain instructor courses. He started Geology at Paris VI University and after one year moved to Paris XI University at Orsay in the new geological laboratory of the Professor Jan Houghton Brunn. He got an assistant position in 1969, and started in Brunn's laboratory, a PhD thesis (French "Thèse d'Etat") on "The anatomy of the Antalya nappes in SW Turkey".

Very early in the seventies Jean worked on Permian and Triassic stratigraphy and took part to the IGCP project No 4 "Triassic of the Tethys realm" leaded by Prof. Zapfe from Vienna. The Geology of Turkey was one of his interests and quickly he learned Turkish of the countryside and could speak it very fluently. Discovering very thick successions of shallow water Permian limestones, he measured and sampled stratigraphic sections, and published in 1978 with M. Lys an important note on the stratigraphy of the Middle to Upper Permian of the Antalya Nappes, based on fusulinid and small foraminifer biochronology.

In 1980 he became full Member of the Subcommission on Triassic Stratigraphy (STS) and in 1982 Member of the Working Group on Permian-Triassic Boundary. In 1986, Jean organized with L. Krystyn, O. Monod and C. Sengör and me, a field workshop on Permian-Triassic in Gebze (near Istanbul) and in Kemer (Turkey), in the following of the IGCP project 203 meeting in Brescia. This workshop with Field guidebooks was very successful and followed by a paper on "The Permo-Triassic boundary in the Antalya Nappes (western Taurides, Turkey)".

From 1977 to 1985, due to his important knowledge on Tethys geology and all his contributions to Geoscience, Jean was invited to participate in six expeditions of French Research in Ladakh Himalaya and in Tibet and he participated as co-author to not less than twenty high ranked papers. Searching Exotic Blocks in Suture Zone he discovered, with his colleagues shallow water Permian limestones lying on pillow-lavas in the Indus accretion arc (Ladakh) and he participated to the publication with M. Lys of the very rich foraminifer content of the Upper Permian "*Colaniella* zone".

September 30, 1987, Jean presented his "Thèse d'Etat" entitled *Histoire et Topologie de la Néotéthys, contribution à partir d'exemples de la Turquie et de l'Himalaya-Tibet* at the Pierre et Marie Curie University in Paris and received the highest honours.

In 1999 he became Full Professor in Geology at the Paris VII University. He was teaching different student degrees, from general geology for beginners to geology of the Earth and paleogeography for Master students. Convinced of the importance of the field approach for students, he devoted himself up to one month in total each year for field camps in Normandy or Languedoc and field trips through the Alps. In 1993, Jean was elevated *Professeur de 1ère classe* at Paris VII University. Jean was also very engaged in his country and became Chief Editor of the *Bulletin de la Société Géologique de France* from 1997 to 1999 and his scientific contribution to Geoscience earned him the prestigious *Prix Fontannes* of the Geological Society of France in 1999.

For the Tethys research program managed by J. Dercourt and starting in 1989, Jean chaired the working groups for Triassic paleogeographic and paleoenvironmental maps (Anisian and Norian maps) and was asked to participate with working groups on the Permian map (Murgabian). To complete the data, he organized with me fieldwork on the Permian Basin (W Texas), on the Permian and Triassic of West Timor and we started research on the Permian and Triassic units in Oman. During 4 years, Jean and I organized numerous meetings of our working groups. On paleogeographic base maps reconstructed by E. Ricou, Jean drew with his computer the three paleoenvironmental maps ready to print. These maps were issued in 1993 in the "Atlas Tethys" with their explanatory notes. During the summer of 1997, within the Peri-Tethys Program, Jean and I went together to Simferopol (Ukraine) to participate on fieldwork leaded by G. Kotlyar on Permian and Triassic blocs, in Crimea and both take part in the published report.

From 1992 to 2007, he organized field work in Turkey and participated as co-signatory to important papers on Triassic magnetostratigraphy (first author Y. Gallet). In 1995, he participated also on paleomagnetic studies of Permian and Triassic in Saudi Arabia and supervised the Ph.D. work of H. Théveniaut. From 2000 to 2004 Jean helped greatly my PhD student, S. Richoz, in his field research on Permo-Triassic transition (PTT) in Turkey, finding together with N. Ozgul, new PTT sections in Alanya and Tashkent area.

Jean has been also very active on Permian and Triassic research in Oman, supervised theses and participated in numerous publications. An excellent teacher, Jean Marcoux first was a field geologist who could feel as comfortable in sedimentology as in tectonics, in magnetostratigraphy and in paleontology. He had an easy communication style and got along well with his colleagues and always wanted to share his enthusiasm and encyclopedic knowledge. He was always ready to do something for his friends, for his colleagues and helped many young geologists who wanted to start a scientific career.

His scientific production is important and of high quality, well oriented on field facts and data and convincing conclusions, and at times outside temporary trends or models. He brought a new knowledge on the Permian and Triassic of South Turkey.

Jean was a modest scientist often staying in the back, but however being author or co-author of about a hundred high quality publications and about 140 abstracts or short notes. He has left some common research in progress; we will achieve some of them for his memory.

For Permophiles readers, I have chosen below his papers about Permian time and sediments.

Other aspects of Jean's life with the development of his Turkish research has been beautifully related by Celal Sengör in the Turkish Journal of Earth Sciences, vol. 17, p. 637-652, with a list of his publications. An account of his Triassic research is also given in Albertiana vol. 37.

Jean, tu es parti trop tôt, nous avions tant de projets,
tu laisses un grand vide, mais nous poursuivrons ton œuvre.

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New books about Permo-Carboniferous Faunas

Museum of Eastern Bohemia at Hradec Králové issued in the last two years two books specialized on the Permo-Carboniferous Faunas of the Czech Republic.

The first book „Permo-Carboniferous Actinopterygians of the Boskovice Graben, Part 1 – *Neslovicella*, *Bourbonnella*, *Letovichthys*, *Elonichthys*" (author S. Štamberg, ISBN 978-80-85031-71-3) deals with the new discoveries of actinopterygians including the description of two new genera and three new species. The relations of the actinopterygians from the Boskovice Graben to the actinopterygians from the other Permian-Carboniferous basins are discussed. The book containing 155 pages, including 75 pen and ink drawings and 39 photo plates and costs 13 Euros plus postage.

The second book „Carboniferous and Permianm Faunas and their occurence in the limnic basins of the Czech Republic" (authors S. Stamberg and J. Zajíc, ISBN 978-80-85031-77-5) lists the localities and taxa of the fauna with the present view of their stratigraphic range and present taxonomic concepts. The list of localities contains 205 places and 104 boreholes from which faunas has been described. The list of faunas encompasses 399 species with their synonyms, reviews the type material and photos of the types of important specimens. The book contains 224 pages, including 284 photos, and costs 15 euros plus postage. Both books may be ordered at the Museum of Eastern Bohemia, Elišèino nábøe•í 465, 500 01 Hradec Králové, Czech Republic, e-mail: muzeum@muzeumhk.cz.

ANNOUNCEMENTS

IGCP 572 "Permian-Triassic Ecosystems" (2008-2012): A launch

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As reflected in widespread public concern, modern marine ecosystems are fragile and defaunation events occur frequently in modern oceans and over the past decades and centuries, probably due to natural and/or anthropogenic disturbances, including for example, global warming, oxygen depletion and toxic chemical pollution [18]. Looking into the past, life on Earth has undergone at least five major mass extinctions in the past 550 million years [26]. The sixth mass extinction, and potentially the worst, is now said to be in progress. Despite widespread upheaval, marine ecosystems have recovered from every Phanerozoic catastrophe. These pre-historical biotic crises are natural global experiments that provide lessons for us in effective ecological management; not only in predicting the possible impact of defaunation events on the marine ecosystems, but also, perhaps, in revealing ways to help accelerate the post-event restoration of the devastated ecosystems. In this regard, we, together with more than 130 researchers from 26 countries around the world, proposed the IGCP 572 to study a severe extinction event that occurred during the Permian-Triassic (P/Tr) global warming event (~252 million years ago). By analyzing the post-extinction reconstruction of marine ecosystems in the Early Triassic we hope to determine how marine ecosystems recover after global-scale natural crises.

As the greatest mass extinction of life on Earth during the past 550 million years, the P/Tr extinction resulted in dramatic elimination of >90% marine species and >70% land life ([5]). The possible causes including: increased carbon dioxide concentrations and global marine anoxia, hypercapnia (CO_2 poisoning), a bolide impact, rapid global warming, and plume-induced volcanic eruption, may have triggered this catastrophe ([31], [8-12], [14-16]). Some of these triggers (*i.e.* global warming and increased CO_2 levels) are observed in the present. Thus, the proposed study has tremendous relevance to today's concerns regarding the extent to which human activity has influenced the loss of marine habitat and species.

Our objective in understanding the biotic response to the past crisis should be to develop a general understanding of the recovery mechanisms of marine ecosystems following the P/Tr crisis on a global scale from the low-paleolatitude regions (*e.g.* South China) to the high paleolatitude regions (*e.g.* Greenland, New Zealand) [25]. The ultimate aim of IGCP 572 is to provide insights to help manage the current defaunation event and subsequent recovery of marine ecosystems. Specifically we aim to:

1. utilize stratigraphically important fossil groups (e.g. conodonts, ammonoids) to establish robust biostratigraphic frameworks for the Early Triassic sequences worldwide, to enable accurate, high-resolution global correlation;
2. elucidate the recovery patterns of various fossil groups (e.g. brachiopods, bivalves, echinoderms, foraminifers etc.) by conducting phylogenetic analyses to help minimize sampling biases, and thus determining the true timing of recovery of various clades;
3. utilize paleoecologic, paleontologic (body and trace fossils), and sedimentologic information to fully document marine communities throughout the recovery interval in a variety of environments from shallow to deep habitats and tropical to temperate climate zones, and construct a novel database of global P/Tr ecosystem types;
4. analyze community structures (e.g. alpha diversity, richness, dominance, tiering, biotic guilds), and to test and further refine a global paleoecological recovery model recently proposed [28-29] and forming the basis of part of this project;
5. assess the roles of the so-called disaster taxa, Lazarus taxa and refugia in the recovery communities, and determine the relationships between microbial (stromatolites, thrombolites, calcimicrobial) structures and metazoa within a single community and between microbialite and metazoan communities;
6. utilize geochemical signatures (carbon, oxygen and sulfur isotopes, and biomarkers) as independent indicators of environmental and climate changes during the recovery stages in different habitats and climate zones;
7. reveal catastrophic events recorded in the Early Triassic successions and elucidate their relationships with those triggering the P/Tr mass extinction as well as effects on the Early Triassic ecosystems by integrating geochemical, paleontologic and sedimentologic data;
8. elucidate the factors controlling the recovery rates of benthic communities in various habitats and climate zones, determine what are the similarities and differences in the response of the marine ecosystem to biotic crises at different scales, and assess climate effects on the restoration of a defaunated marine ecosystem.

The P/Tr mass extinction not only caused the largest crash in global biodiversity since the Cambrian explosion, but also dramatically re-directed the course of subsequent biotic evolution.

Consequently, it is largely responsible for much of the structure of marine ecosystems today [2]. In fact, some triggers of the P/Tr extinction event such as oceanic anoxia, influx of hydrogen sulfide, global warming and plume-induced volcanic eruption still influenced the Early Triassic oceans millions of years after the event itself. As a result, deleterious environmental conditions prevailed throughout much of the Early Triassic ([15], [6], [3]). Various paleoecologic and sedimentary features such as the presence of disaster taxa including stromatolite mats, wrinkle structures, and seafloor calcium carbonate precipitates ([20-21], [27]), as well as lack of reefs built by colonial metazoans in shallow water, testify to the processes and effects of environmental degradation. Other aspects of the stratigraphic record, as well as evidence from stable isotopes, also indicate that environmental conditions that would cause significant biotic stress existed during this time. Startling fluctuations in the records of several stable isotope systems through this interval also indicate a reorganization of the global carbon reservoir, indicating that the Early Triassic was a time of unusual environmental change [17]. Increased levels of CO_2 accompanied by a decrease in atmospheric O_2 level in the Early Triassic atmosphere led to global warming and oceanic anoxia ([7], [1], [14]). These widespread deleterious oceanic and climate conditions almost certainly influenced the timing and shape of the recovery following the P/Tr extinction [32].

However, the above conclusions are derived from studies of theoretical modelling or detailed field studies from western US, northern Italy and a few other regions [29]; few comprehensive Triassic recovery studies have been conducted in other parts of the world. Although the importance of paleoecology in biotic mass extinction studies has been addressed by several recent studies ([3], [17]), there are, so far, two influential paleoecologic studies concerning ecologic recovery from the P/Tr crisis ([23]). In South China, the P/Tr successions are extensively exposed and well constrained by multiple fossil groups. In this region almost all types of depositional setting (*i.e*. nearshore, open platform, ramp to offshore basin) seen in modern tropical oceans were present in the P/Tr transitions. Unfortunately, the Early Triassic recovery of ecosystems in this region still remains poorly constrained, despite several past efforts ([15], [17-19]). No recovery data have been reported from the remaining regions proposed in this project (*i.e*., Japan, Russian Far East, southern Tibet, elsewhere in Asia, western Australia, New Zealand, Greenland-Spitsbergen), although the studies concerning the P/Tr extinction event have been published ([25], [7]). These regions were also located at different climate zones from a low-latitude tropic to a high-latitude cold zone. Thus, the data from the above regions are crucial to success in formulating a global recovery model.

Quantifying biotic recovery is not easy [28]. One established model describing biotic extinction and subsequent recovery, proposed by Kauffman and Erwin [13], is based on the application of theoretical concepts of survivorship to the fossil record. In particular, taxa in the extinction aftermath were interpreted as having survived by virtue of one or other survival mechanism, based on characteristics of their stratigraphic range. However, this model is heavily reliant on interpretations based on literal reading of the stratigraphic ranges of fossil taxa and has incurred criticism of some aspects [28]. Alternatively, based on detailed paleoecologic studies of the recovery communities, one of the proposers (Twitchett) formulated a novel recovery model that attempts to quantify recovery rates and process using empirical, paleoecologic data only [28-29]. This model will be further tested and refined/rejected/replaced during the proposed project.

To achieve the above eight aims, this five-year IGCP project (2008-2012) will undertake the following ten studies:

1. Global latest Permian to Middle Triassic biostratigraphy [Aim 1];
2. Recovery pattern of fossil goups and preservational and sampling biases [Aim 2];
3. Recovery model of paleo-communities [Aims 3, 4, 7];
4. Community ecologic analysis [Aims 3, 4, 5];
5. Early Triassic microbial community [Aims 3, 5, 7];
6. Collapse and re-building of P/Tr reefs [Aims 4, 7];
7. Paleophysiology of P/Tr mass extinction and its aftermath [Aims 4, 7];
8. Biomarker studies of the P/Tr successions [Aims 6, 7];
9. Isotope geochemistry of the P/Tr transition [Aims 6, 7];
10. Restoration traits of marine ecosystems and comparison with modern defaunation event [Aim 8].

For more detailed descriptions of these studies see project website at [http://www.igcp572.org]. Briefly, the IGCP 572 is an ideal vehicle to bring together colleagues working on the P-Tr sequences of the world, with high quality research facilities and spectacular fossil records to address a truly global problem. In the past, several IGCP projects (i.e., 335, 359, 467) have been conducted by several generations of geologists to enhance our understanding of the P/Tr mass extinction and subsequent recovery. However, many issues of this paleoecologic crisis and subsequent prolonged recovery have remained little understood. Thus, studies of these issues have enjoyed a surge in scientific interest of the past 10-15 years that shows no sign of abating. In addition, these eight goals listed above will be achieved primarily by collaborative fieldwork in key Early Triassic successions in >10 different countries over five years (2018-2012) and related laboratory work in over 20 different countries. The results of our project, which are to be published in four edited books and special volumes, in international peer-reviewed journals, in annual symposium proceedings and on the World Wide Web, will advance scientific understanding of the interactions between the biosphere and geosphere and lead to a better understanding of ancient defaunation events. The firm support and active involvement in this project of most top scientists in this field from around the world will lead to unique training opportunities for postgraduate students from a range of countries (Argentina, Austria, Australia, Canada, China, Japan, France, Germany, Iran, India, Switzerland, UK, USA) as well as professionals from developing and developed regions alike. As a result, the IGCP 572 will provide a friendly platform for participants to communicate their own research results and also bring together global experts, and research facilities to solve a truly global-scale problem. The competitive track records of the proposers underscore this project's high chance of academic success as well as its potential to achieve significant societal benefits in the form of knowledge sharing and enhanced scientific cooperation between nations.

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IGCP 572 activities in 2009

1. IGCP 572 is sponsoring a session at the 9th North American Paleontological Convention titled "IGCP 572: Recovery of ecosystems after the Permian-Triassic mass extinction". The 9th NAPC will be held in June 21-26, 2009 at the University of Cincinnati, Cincinnati, USA. A small amount of money is available from IGCP 572 (Permian-Triassic Ecosystems) to help defray meeting costs for project members. If you are interested in applying for funds from the IGCP, please contact both meeting conveners: Margret L. Fraiser (mfraiser@uwm.edu) and Richard J. Twitchett (richard.twitchett@plymouth.ac.uk) by February 12, 2009. The amount awarded will depend on the number of applicants, geography of applicants, and stated need for funds.

2. IGCP 572 is also sponsoring a session at the "International Conference for Evolution of Tethys from Paleozoic to Mesozoic" at Angara, Turkey and organizing an annual field excursion in southern Turkey in August 31 to September, 6, 2009.
Conveners: Sylvie Crasquin, Steve Kershaw, Aymon Baud.
A small grant is available from IGCP 572 (Permian-Triassic Ecosystems) to help defray meeting costs for project members. If you are interested in applying for funds from the IGCP, please contact either Sylvie Crasquin (sylvie.crasquin@upmc.fr) or Steve Kershaw (stephen.kershaw@brunel.ac.uk) or Aymon Baud (aymon.baud@unil.ch) as soon as possible.

3. IGCP 572 will sponsor a thematic session for the "Permian-Triassic mass extinction and recovery" at the 10th Palaeontological Society of China Congress & 25th Chinese Palaeontological Convention, October 11-15, 2009, Nanjing, China.
Conveners: Jinnan Tong, Zhong Qiang Chen.
IGCP 572 Chinese working group will also organize 1-2 field excursions to investigate the Permian-Triassic boundary and Lower

Triassic successions in South China after the convention. If you are interested in attending this meeting and field excursion, please contact Prof. Jinnan Tong as soon as possible (e-mail: jntong@cug.edu.cn).

Fifth Symposium on Permo-Carboniferous Faunas at Hradec Králové (Czech Republic)

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The Fifth Symposium on Permo-Carboniferous Faunas was held at the Museum of Eastern Bohemia from July 7th to 11th, 2008. The symposium was sponsored by the Museum of Eastern Bohemia at Hradec Králové and the Institute of Geology, Academy of Sciences of the Czech Republic. It revived the traditional series of well attended workshops on Permo-Carboniferous Faunas, which was initiated in 1984 at the National Museum d´Histoire Naturelle at Paris. Three further symposia followed (in 1988 at Hradec Králové; in 1990 at Bad Dürkheim; and in 1992 at Edinburgh), after which the series was interrupted.

There were 33 attendees from 10 countries at the 5th Symposium at Hradec Králové. The first three days were dedicated to lectures involving all groups of Upper Paleozoic invertebrates and vertebrates, as well as biogeography and biostratigraphy. This first group of lectures included the following: **Stamberg, S. and Zajíc, J.** (Czech Rep.) Carboniferous and Permian Faunas; **Schneider, J. W.** (Germany) Basic Problems of Biogeography and Biostratigraphy; Pennsylvanian and Permian Faunas of Morocco; **Dostál and Prokop** (Czech Rep.) A New Martinoviids; **Jarzembowski, E.** (United Kingdom) Upper Carboniferous Insects; **Turner, S.** *et al*. (Australia) Devonian-Triassic Xenacanthiform Sharks; **Fischer, J. and Schneider, J. W.** (Germany) Paleobiogeography of *Lissodus*; **Young, S.** (United Kingdom) Stratigraphic and Geographic Provenance of Acanthodes; **Zajíc**, J. (Czech Republic) Czech and Moravian Acanthodians; The Main Late Carboniferous and Early Permian Lake Fish Communities; **Schultze, H. P.** (USA) Vertebrates of the Gharif Formation of Oman; **Turek, V.** (Czech Rep.) Trace Fossils from the Intrasudetic Basin; **Werneburg, R.** (Germany) The Marine-lagoonal and Lacustrine Fossil-lagerstatte Kinney Brick Quarry; **Klembara, J. and Ceròanský, A.** (Slovakia) New Skull and Dental Features of *Discosauriscus austriacus*; **Ruta, M.** (United Kingdom) Interrelationships of Major Temnospondyl Groups; **Marjanoviè, D. and Laurin, M.** (France) The Origin of Lissamphibia; and **Anderson, J.** (Canada) The Early Permian Evidence for Frog and Salamander Origins.

The subject of the Special Workshop was the "Interpretation of Marine and Freshwater Environments in Carboniferous and Permian Deposits." An introductory lecture on this topic, given by **H.-P. Schultze** (USA) led the following contributions: **Martínek, K.** (Czech Rep.) Marine vs. Freshwater Environments**; Lojka, R.** *et al*. (Czech Rep.) Environmental Response to Climatically Driven Lake-level Fluctuations; **Soler-Gijón, R. and Martínez, N.** (Germany, Espagne) Tidal Rhythmites in Upper Carboniferous from the Puertollano Basin; **Rak, S.** (Czech Rep.) The Lower Carboniferous Trilobites; **Opluštil, S.** (Czech Rep.) Sedimentary Environments of the Late Paleozoic; **Matysová, P.** *et al*. (Czech Rep.) Stratigraphical and Paleoenvironmental Comparison of the Fossil Wood Record; **Libertin, M. and Dašková, J.** (Czech Rep.) Primitive Gallery Forest; **Pšenièka, J.** (Czech Rep.) Taphonomy and Characteristics of *Corynepteris angustissima*; **Martínek, K. and Prouza, V.** (Czech Rep.) Krkonoše Piedmont and Boskovice Basins: A Record of Permo-Carboniferous Climate. This session was concluded by **Schneider, J. W.** (Germany) Continental-continental and Continental-marine Correlations of Late Carboniferous and Permian Basins. Posters dedicated to the following topics were exhibited and discussed: The Fauna of the Lake Börtewitz (**Tschernay, P.** *et al*., Germany); Probable Causes of the End-Permian and the End-Pleistocene Extinctions (**Ruban, D. A.**, Russia); The best preserved specimen of Trigonotarbida (**Hradská, I**., Czech Rep.) and The Bromacker Quarry (**Martens, T.** *et al*., Germany).

During the last two days of the symposium, the participants visited the most instructive Upper Carboniferous and Lower Permian faunal sites in the Krkonoše Piedmont Basin and Boskovice Graben.

The abstracts of all lectures and the Excursion Guide to the Krkonoše Piedmon Basin and Boskovice Graben were printed in a special publication entitled "Faunas and Palaeoenvironments of the Late Palaeozoic."

On the occasion of this symposium, the Museum of Eastern Bohemia at Hradec Králové issued a comprehensive book entitled "Carboniferous and Permian Faunas and their Occurrence in the Limnic Basins of the Czech Republic" (by S. Stamberg and J. Zajíc), summarizing in 224 pages the current state of knowledge about these faunas, including synonyms, reviews of the type material, and photos of some important specimens. It also includes a list of 205 localities and 104 boreholes with their stratigraphic range.

Next Event from AGPT

9-11 July 2009. Field excursion in the Carnic Alps (Austria-Italy, Upper Carboniferous and Permian) organized by Karl KRAINER (University of Innsbruck).
Please contact G. Cassinis (cassinis@unipv.it) for information and registration.

University of Calgary, Calgary, Alberta, Canada

The second International Conodont Symposium will be held in conjunction with the annual Pander Society meeting as well as the annual business meeting of the Subcommission on Permian Stratigraphy at the University of Calgary during July 2009. General information is provided below, and more detailed information is provided at the following website: http://www.ucalgary.ca/conodont/icos or contact Charles Henderson (Chairman of ICOS 2009) via email at charles.henderson@ucalgary.ca or cmhender@ucalgary.ca.

General Meeting Dates: July 12-17, 2009

- Icebreaker on University Campus: Sunday evening July 12, 2009
- Sessions at Department of Geoscience: July 13-14, 2009
- Workshops and day trip to Royal Tyrrell Museum of Palaeontology; July 15
- Sessions at Department of Geoscience theatre; July 16-17, 2009
- Western style banquet; Thursday evening July 16, 2009 at Kananaskis Guest Ranch

Fieldtrips:

- Burgess Shale day trips; Saturday July 11 and July 18
- 3 night, 4 day post-conference Rocky Mountain fieldtrip with overnights in the resorts of Banff and Jasper; mostly latest Devonian to Early Triassic units will be viewed with collecting opportunities including the Permian-Triassic boundary. There will also be a stop to see the glaciers on the Columbia Icefields Parkway.

Accommodation:

- A block of rooms have been reserved on campus; these are apartment style.
- A small block of rooms have been reserved at Village Park Inn close to campus
- More information is provided by links to our website
- Room reservations and registration will be completed by Conference and Special Events Services on Campus beginning March 16, 2009.

Registration and Abstract deadline:

- Abstract deadline is April 17, 2009.
- Registration begins March 16 and continues to July.
- Early bird registration ends April 17, 2009.

Getting to Calgary:

- There are two daily flights on Air Canada to Calgary from Frankfurt and London and starting in May daily flights from Amsterdam.
- There are daily flights from Sydney, Hong Kong, Shanghai, Nanjing connecting through Vancouver
- There are numerous direct or connecting flights from the United States, especially from Chicago, Dallas, Denver, Los Angeles, Minneapolis, Seattle, and San Francisco.
- Direct flights from most major cities in Canada.

The University and City Attractions:

- The University has over 25,000 full-time students and has excellent facilities for our meeting including accommodation
- Calgary has a population of nearly 1.1 million and is the gateway to the southern Canadian Rocky Mountains
- Calgary is home to the greatest outdoor show on earth – the Calgary Stampede (July 3-12, 2009)

Probable Sessions:

Any paper that discusses conodonts or uses conodonts within a broader context to solve geologic problems is welcome.

1. The role of apparatuses in taxonomy and paleobiology
2. Taxonomic Methods and Cladistics
3. Paleobiologic affinity of conodonts and the origin of Vertebrates
4. What is a conodont species?
5. Lower to Middle Paleozoic biostratigraphy.
6. Pander Society Session
7. Integrated Biostratigraphy and Geochemistry.
8. Carboniferous Biostratigraphy
9. Triassic Biostratigraphy
10. Permian Paleobiogeography and Biostratigraphy (SPS meeting).
11. Definitions and Correlations of the Cisuralian (Lower Permian) Stages. Visit our website and considering visiting the "Heart of the New West" in JULY 2009.

Charles Henderson, Chairman ICOS 2009

SUBMISSION GUIDELINES FOR ISSUE 53

It is best to submit manuscripts as attachments to E-mail messages. Please send messages and manuscripts to my E-mail addresses; hard copies by regular mail do not need to be sent unless requested. Please only send a single version by E-mail or in the mail; if you discover corrections before the deadline, then you may resubmit, but indicate the file name of the previous version that should be deleted. Manuscripts may also be sent to the address below on diskettes prepared with a recent version of WordPerfect or Microsoft Word; printed hard copies should accompany the diskettes. Word processing files should have no personalized fonts or other code and should be prepared in single column format. Specific and generic names should be *italicized*. Please refer to Issue #46 of Permophiles (*e.g*. Nurgalieva *et al*.) for reference style, format, *etc*. Maps and other illustrations are acceptable in tiff, jpeg, eps, bitmap format or as CorelDraw or Adobe Illustrator files. The preferred formats for Adobe Pagemaker are Microsoft Word documents and bitmap images. We use Times Roman 12 pt. bold for title and author and 10 pt. (regular) for addresses and text (you should too!). Please provide your E-mail addresess in your affiliation. Indents for paragraphs are 0.20 inch; do not use your spacebar. Word processing documents may include figures embedded at the end of the text, but these figures should also be attached as separate attachments as bitmaps or as CorelDraw or Adobe Illustrator files. Do not include figure captions as part of the image; include the captions as a separate section within the text portion of the document. If only hard copies are sent, these must be camera-ready, *i.e*., clean copies, ready for publication. Typewritten contributions are no longer acceptable. All the contributors must provide electronic versions of your text and elctronic or camera-ready hard copies of figures.

Please note that we prefer not to publish articles with names of new taxa in Permophiles. Readers are asked to refer the rules of the ICZN. All manuscripts will be edited for consistent use of English only.

I currently use a Windows XP PC with Corel Draw 13, Adobe Page Maker 7.0, Adobe Photoshop 7 and Microsoft Office programs; documents compatible with these specifications will be easiest to work with.

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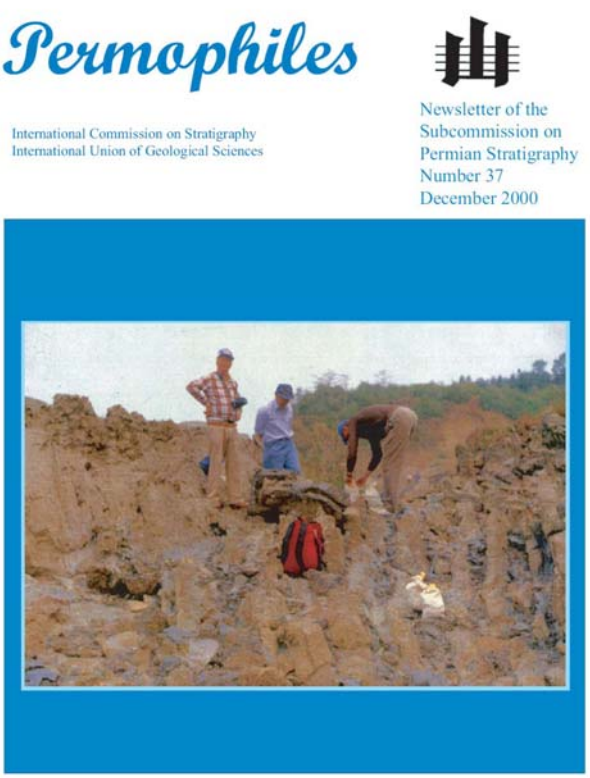
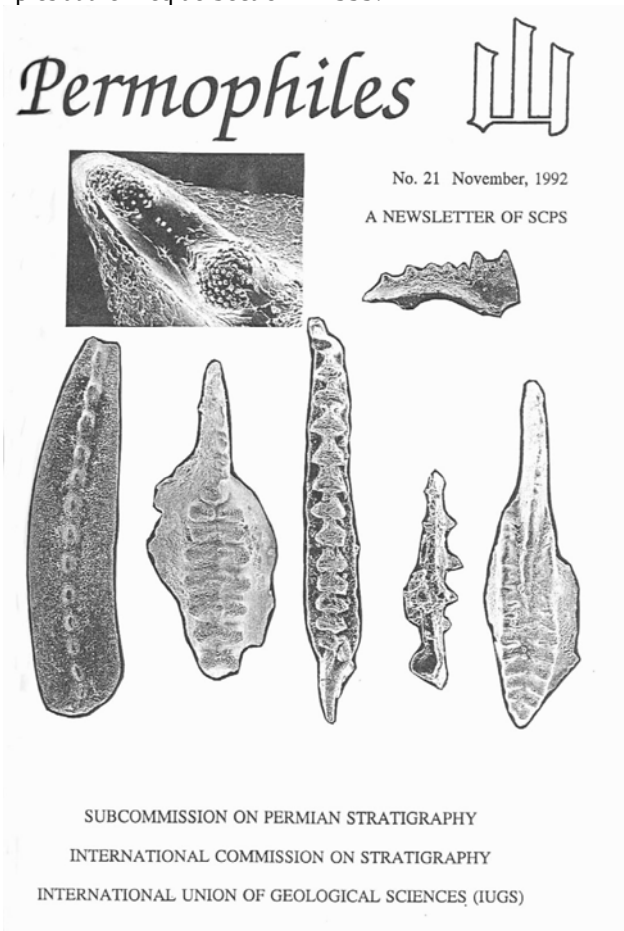
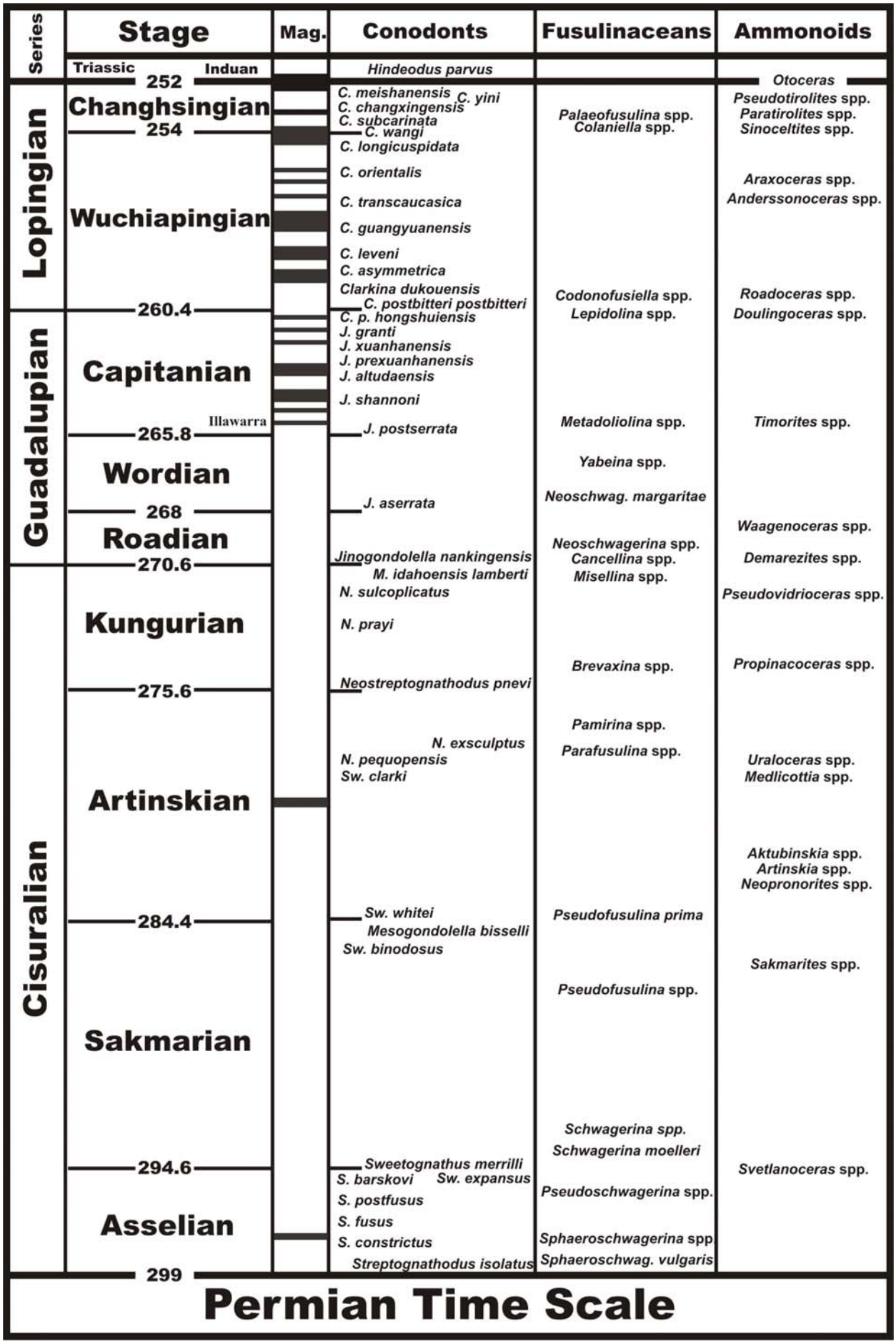
Submission Deadline for Issue 53 is Friday, July 10, 2009



Cover of Permophiles #37, Brian Glenister (left), Shuzhong Shen (middle) and Bruce Wardlaw (right) were collecting conodont samples at the Tieqiao Section in 1999.



Cover of Permophiles #21 published in 1992 showing Early Permian conodonts from Arctic, Canada.



International Permian Time Scale

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