International Union of Geological Sciences

International Commission on Stratigraphy

International Subcommission on Stratigraphic Classification

ISSC

www.geocities.com/issc_arg

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NEWSLETTER N. 7

(Circular n. 108)

June 2005

CONTENTS

1. EDITORIAL

WHEELS ARE MOVING

Six months after the dissemination of ISSC Newsletter n. 6 and after a very active and complicated period, we are again communicating to our large membership about the progress of the project for the new Guide.

A scientific journal was selected (see page 22), an agreed-upon title was chosen, two Working Group leaders were appointed for lithostratigraphy and biostratigraphy (see page 24).

An outline for the new chapter on cyclostratigraphy was prepared by the Task Group leader Professor Andre Strasser (see page 25).

All ISSC members are requested to comment on this outline and to add eventual additional topics. I count on your active participation on the one month on-line review time for the outline. This style of work proved to be very successful in a national project dealing on lithostratigraphic classification and has been even accepted by ICS directory for the approval of GSSPs (see page 5).

So, please send your comments ASAP and volunteer to provide examples for one of the Working Groups and /or Task Groups that will be appointed in the near future.

The concluding remarks after the Firenze 2004 workshop were “let us work like a team”.
Step by step, starting from bottom up, we commenced to build up a pyramid that should be completed by 2008.

I count –as ever and even more – on your active participation

Milan, June 24 2005

Maria Bianca Cita

ISSC Chair

2. ROSTER OF ISSC MEMBERS THAT PROVIDED THEIR QUALIFICATION

Answers to a circular letter distributed by the ISSC Secretary in March.
Listed according to the date of the answers.

Name	Nationality	Field of expertise	Chronostratigraphic interval(s)
Alberto C. Riccardi	Argentina	Bio-stratigraphy (Also involved in Magnetostratigraphic and Chemostratigraphic research)	Jurassic and Cretaceous
Philip H. Heckel	USA	Genetic stratigraphy, biostratigraphy	Carboniferous, direct experience with Pennsylvanian, and close connection with experts on Mississippian
Stan Finney	USA	Graptolites	Ordovician
Donald E. Owen	USA	Stratigraphy, subsurface stratigraphy, sequence stratigraphy, and stratigraphic nomenclature	Cretaceous
Duck K. CHOI	Republic of Korea	Paleontology (Trilobites)	Cambrian and Ordovician
Robert (Bob) M. Carter	Australia	Sequence stratigraphy	Cenozoic (mostly)
Salvador REGUANT	Spain	Bio- and chronostratigraphy. Geologic and scientific terminology	Cenozoic (chiefly Paleogene)
Peter F Rawson	U.K.	Stratigraphy/Palaeontology. Senior author of the UK's (Geological Society) 'Guide to Startgraphical Procedure'	Cretaceous
Hendrik de la Rey Winter	South Africa	Timely linkage of stratigraphy with tectonic and magmatic cycles applicable to all orders of cyclicity. The ultimate goal of stratigraphy as defined by Hedberg, Guide, 1976.	About 40 years at expert level, and ongoing at practical cutting-edge level since the plate tectonic revolution. Less knowledgeable on older than 3.2 Ga and 1.8-0.7 Ga intervals in SA.
Platon Tchoumatchenco	Bulgaria	Brachiopod biostratigraphy,outcrop sequence stratigraphy, cyclostratigraphy.	Jurassic
Yokichi Takayanagi	Japan	Microbiostratigraphy centering around foraminifera	Upper Cretaceous to Pleistocene
Andre Strasser	Switzerland	Cyclostratigraphy Sequence stratigraphy	Jurassic, Cretaceous, Pleistocene
Jan Zalasiewicz	UK	Biostratigraphy, field lithostratigraphy, graptolites, perhaps chronostrat?	Ordovician/Silurian, Quaternary

Frederik J. Hilgen	Holland	Integrated stratigraphy, cyclostratigraphy, paleoclimatology	Neogene, Cenozoic
Albert Brakel	Australia	Clastic sedimentology, coal geology	Permian, Paleoproterozoic
Fritz Steininger	Germany	Paleogene / Neogene Boundary	Neogene, Cenozoic
Roger A. Cooper	New Zealand	Timescale development and methodology, quantitative stratigraphy, graptolite biostratigraphy.	Ordovician
Michael Dermitzakis	Greece	Micropaleontology-paleontology, biostratigraphy	Neogene, Quaternary, Holocene
Charles Holland	British	Biostratigraphy, principles of stratigraphy, and cephalopod paleontology	Siluran, Cambrian, Ordovician, Devonian
Gilles Serge Odin	France	Geochronological terminology, definition of units	
Ashton Embry	Canada	Lithostratigraphy, sequence stratigraphy	Devonian, Triassic, Jurassic, Cretaceous
Michael Orchard	Canada	Conodonts	Triassic
James Ogg	USA	Integrated stratigraphy, magnetostratigraphy, sedimentology, cyclostratigraphy	Paleogene, Cretaceous, Jurassic, Triassic
J. Bruce Waterhouse	New Zeland	Stratigraphy (mapping etc.) and structure of orogens plus brachiopoda and Mollusca	Carboniferous, Permian, Triassic
Lucy E. Edwards	USA	Coastal Plain stratigraphy (US Atlantic and Gulf of Mexico coast). Dinoflagellate biostratigraphy, Cretaceous and Cenozoic stratigraphy, correlation, calibration, and nomenclature. Quantitative stratigraphy and graphic correlation. Stratigraphic nomenclature	Cretaceous and Cenozoic
Brian Pratt	Canada	Sedimentology (especially carbonates, reefs); paleontology (especially trilobites)	Cambrian (mainly); also Proterozoic
Piero Gianolla	Italy	Sequence stratigraphy-Mapping Geology	Triassic
Jacques THIERRY	France	Biostratigraphy, lithostratigraphy, chronostratigraphy, sequence stratigraphy.	Jurassic (fossil groups investigated : ammonites and irregular echinoids).
W A Berggren	USA	Chronostratigraphy, Biostratigraphy	Cenozoic

Yuri Karogodin	Russia	Cyclostratigraphy (lithmostratigraphy)	
Mike Johnson	South Africa	Lithostratigraphy	As an employee of the South African Council for Geoscience (previously Geological Survey of South Africa) tasked with editing map legends as well as being Secretary of the South African Committee for Stratigraphy, I am expected to be familiar with stratigraphic successions of all ages - which in South Africa means 3600 Ma to the present. There are currently about 1400 formally named lithostratigraphic units in our national stratigraphic data base, which gives some indication of the complexity of the task. I am also one of three co-editors of a new textbook on South African geology, responsible for the Phanerozoic section as well as co-responsible for the Proterozoic; the book will hopefully be in print by the end of the year.
Geza Csaszar	Hungary	Lithostratigraphy, and to certain extent: biostrtaigraphy and sequence stratigraphy	Lower and Middle Cretaceous up to Cenomanian

3. GSSPs APRROVED

INTERNATIONAL UNION OF GEOLOGICAL SCIENCES

INTERNATIONAL COMMISSION ON STRATIGRAPHY

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7 Feb, 2005

IUGS Secretariat
attention: Hanne Refsdal
Geological Survey of Norway
N-7491 TRONDHEIM
NORWAY

Request for IUGS Ratification of the GSSP defining the **base of the Ladinian Stage** of the **TRIASSIC System**

The International Commission of Stratigraphy has approved the following Global boundary Stratotype Section and Point (GSSP) defining the base of the Ladinian Stage of the Triassic System.

The Global boundary Stratotype Section and Point (GSSP) for the Base of the LADINIAN STAGE (middle Triassic) is defined at the top of a distinctive 20-cm-thick groove (= "*Chiesense groove*") of limestone nodules in a shaley matrix, located about 5 m above the base of the Buchenstein Beds in the Caffaro river bed (45°49'09.5''N, 10°28'15.5''E), south of the village of Bagolino (Province of Brescia, northern Italy). The lower surface of the overlying thick limestone bed has the lowest occurrence of the ammonoid *Eoprotrachyceras curionii* (base of the *E. curionii* zone; onset of the Trachyceratidae ammonoid family). Secondary global markers in the uppermost Anisian include the lowest occurrence of conodont *Neogondolella praehungarica* and a brief normal-polarity magnetic zone. The GSSP level is bracketed by U-Pb single zircon age data, indicating that the boundary age is ~240 to 242 Ma.

The details of this GSSP are explained in the enclosed proposal. This proposal had been revised following an initial ICS Executive review (Autumn, 2004), then transmitted to ICS for final voting during December-January 2005.

The votes received from the Full Commission were **13 "Yes"(93%)** (*details, and summary of remarks are on the next pages*). One member officially "Abstained" (but provided comments) and three members did not respond.

The previous voting by the Triassic Subcommission was 15 "Yes" and 3 "No". Details with copies of comments are appended to the end of this document.

Clarifications of some aspects of the Ladinian GSSP proposal were requested by Dr. Cita (chair of Subcommission for Stratigraphic Classification), and the responses from Dr. Orchard (chair of Triassic Subcommission) are also appended to this document.

The ICS hereby submits this GSSP for the base of the Ladinian Stage of the Middle Triassic to the IUGS for ratification at their next meeting. We also attach the set of comments on the proposal by ICS voting members. If ratified, then a modified form of this proposal will be published in *Episodes* and in *Lethaia*.

Sincerely,

James G. Ogg ***(Secretary-General of the ICS)***

VOTE SUMMARY

On the Global Stratotype Section and Point (GSSP)

Defining the LADINIAN Stage (middle series of the TRIASSIC System) in northern Italy

TOTALS **13 Yes (93%), 1 Abstain, with a few remarks**

3 votes were not received

Office	Name	Vote	Comments
Chair	Gradstein	**YES**	
Vice-Chair	Finney	**YES**	
Secretary	Ogg	**YES**	"Although this GSSP is not perfect (*potentially at a slightly condensed horizon, and global correlation, especially to terrestrial realm, is not yet established*), this is the best candidate remaining after a decade of dedicated multi-disciplinary work by the international working group."
Quaternary	Gibbard	*[none received]*	
Neogene	Hilgen	**YES**	

Paleogene	Molilna		"The proposal seems to be very good and I see no objections indeed. The section seems complete enough and well studied. The radiometric date is close to the Ladinian base in the ICS 2004 time scale. I am not familiar with the original Ladinian definition area, but I hope the proposal is not in conflict with the stratigraphic position of the original site or area."
Cretaceous	Premoli Silva	*[none received]*	
Jurassic	Morton	**YES**	
Triassic	Orchard	**YES**	
Permian	Henderson	**YES**	With reservations *(see image of comments on next page)*
Carboniferous	Heckel	**YES**	
Devonian	Becker	*[none received]*	
Silurian	Rong Jiayu	**YES**	
Ordovician	Chen Xu	**YES**	
Cambrian	Peng Shanchi	**YES**	"Please note that so many voting members *[of Triassic Subcommission]* (9 no responses) have no reply which is a serious problem for the voting. It may be that the side effects of this action will be potential."
Ediacaran	Gehling	**YES**	
Precambrian	Bleeker	**YES**	"A thorough review and process appears to have been followed. I note, however, that in the Triassic Subcommission's vote, 15 votes were in favour against 3 votes against plus 9 'no responses', i.e. 15 in favour to 12 against or 'didn't bother'. Plus 3 formal abstentions ….not exactly glowing endorsement."
Classification	Cita	**ABSTAIN**	*[Explanation and discussions are attached – (1) ICS voting & discussion period of 2 months is too short; (2) new radiometric ages differ from earlier time scales; and (3) GSSP doesn't match "traditional" boundary.]*

Further Documentation from Triassic Subcommission:

Below are extracts from e-mail responses by Dr. Roberts (secretary of Triassic Subcommission) and Mike Orchard (chair of Triassic Subcommission) to Maria Bianca Cita that explains the high percentage of non-received votes during the Triassic Subcomm vote and other aspects. These were sent to all ICS voting members. These are followed by Maria Bianca Cita's explanation of her "ABSTAIN" vote for the ICS postal ballot.

Date: Tue, 18 Jan 2005 15:46:57 -0500
From: Christopher McRoberts <mcroberts@cortland.edu>
Subject: Re: Base Ladinian Stage
To: Maria Bianca Cita <maria.cita@unimi.it>
Cc: Ogg Jim <jogg@purdue.edu>, "Michael J. Orchard" <MOrchard@nrcan.gc.ca>

Hi Maria,

Thanks for your email.

First question is:
Why with such a well documented proposal, so rich in detailed sections and providing information on various fossil groups that guarantee a satisfactory correlation potential, and a reliable radiometric age from a volcanic interbed, only 15 members approved the proposal, whereas 3 voted against and 9 did not vote? Is that possible to know the names and motivations of the dissenting members?

Yes, the response rate was not as high as we had hoped. Apparently, the STS voters list has not been updated for many years. We are aware of several members on the list that have retired, are no longer in the business, or have chosen not to participate. The voter list used for the ballot contained these individuals. The STS executive has recently revised the STS voters list to ensure a higher turnout while maintaining geographic/discipline representation.

As you know, we had a 69.2% turnout (exceeding the 60% quorum) and a 83.3% majority of those who responded favored passage. There were three dissenting votes for the Brack et al. proposal. Of these three, two supplied comments along with their vote. As you requested, I attach their comments verbatim in a pdf file. In short, I believe there was a strong consensus amongst STS voters in favor of the proposal.

The second question/comment is more specific.
The eastern part of Lombardy, where Bagolino is located, belongs to the Southern Alps that represent the type area for the middle Triassic. Since the early days of stratigraphic research traditionally the Buchenstein Formation characterized by open marine, pelagic facies has been referred to the Ladinian.
The application of the proposed GSSP (base of the E. curionii zone) to the classical area of the Dolomites, where carbonate platforms (as Latemar, Sella Group, Sassolungo) are separated by intraplatform basins characterized by basinal facies as Buchenstein, would result in deteriorating the stratigraphic resolution.
If you look at the synthetic columnar log of fig. 6b (page 11) it is clear that a lot of biostratigraphic events predate the first appearance of E. curionii not only concerning the evolution of ammonoids, but also of Daonellae and of Conodonts but almost nothing happens after (above) the proposed GSSP. if E. curionii is not recorded (and it is well known that the taxon is rare) how one can trace the beginning of the Ladinian?
There are so many good markers that predate E. curionii, and may provide excellent interregional or even intercontinental correlations for instance Nevadites, that a selection of such a marker seems preferable.

Your concerns above were largely discussed prior to the STS general ballot.
In addition to the Brack et al proposal, there were two others (one by Vöros et al. and one by Mietto et al.). Much of the discussion on the merits of the three proposal took place within the Anisian/Ladinian task group (chaired by A. Baud) long before August of 2004 when I assumed the post of STS Secretary. In 2002 and 2003 there were a series of meetings and votes within the Task Group, the final one leading to the acceptance of the Brack et al. proposal and the subsequent STS vote of late 2004. Some of the discussion and results of

the earlier voting appears in Albertiana vol. 29. I believe Orchard (STS chair, Warrington (former STS secretary), or perhaps Baud (A/L Task Group Chair), can provide more accurate details on the earlier votes.

I hope this helps,

Cheers,

Chris

--
Dr. Christopher A. McRoberts
Secretary, Subcommission on Triassic Stratigraphy
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Date: Fri, 28 Jan 2005 12:19:01 -0500
From: "Orchard, Mike" <MOrchard@nrcan.gc.ca>
To: 'Maria Bianca Cita' <maria.cita@unimi.it>
Cc: "McRoberts Chris (E-mail)" <mcroberts@cortland.edu>, "Ogg James (E-mail)" <jogg@purdue.edu>
Subject: RE: Base Ladinian Stage

Dear Maria

Thank you for your keen interest in the base Ladinian question. You are certainly in an excellent location for discussing the pros and cons of GSSP placement with people who have considerable knowledge of the issue and who have likely presented diverse views on the subject.

It has been a difficult task to get to our present position. Historically, as you may have learnt from Maurizio, there has been considerable polarization between proponents of the Reitzi datum (mostly Hungarians) and those who favored Curionii. Third options have been presented over the years but have never gained the support afforded the two primary candidates. In a 2002 meeting in Hungary, the task group agreed on a process by which we would finally come to a decision. Arguments were made, competing proposals were published (in Albertiana), and the majority view was accepted.

You ask about recognition of the base Ladinian in the absence of curionii.
This concern is addressed by the supporting criteria that form part of the proposal, namely: "the lowest occurrence of the ammonoid Eoprotrachyceras curionii (base of the E. curionii zone; onset of the Trachyceratidae ammonoid family). Secondary global markers in the uppermost Anisian include the lowest occurrence of conodont Neogondolella praehungarica and a brief normal-polarity magnetic zone. The GSSP level is bracketed by U-Pb single zircon age data, indicating that the boundary age is ~ 240 to 242 Ma."

I am not an ammonoid expert but I respect the views of those who have argued for the proposed definition. There is no disagreement that the appearance of the Trachyceratidae is the most significant, and most easily recognized ammonoid event within the interval under discussion. Taxonomic controversy surrounds practically every other potential correlation datum, including Nevadites. Personally, I can only offer you the perspective of a North American conodont worker: the curionii datum is practically the same as that long advocated by North American experts (Tozer, Silberling, Bucher), and in Nevada it is recognized also by the appearance of the conodont Budurovignathus praehungaricus. For me, this is an evolutionary event amongst the conodonts on par with the ammonoid one. Other (older) conodont taxa are either missing (e.g. trammeri) or shrouded in taxonomic uncertainty (e.g. alpina). Therefore, for trans-Panthalassan correlation there is no

better choice. This view was expressed as a contribution to task group deliberations and was one amongst many.

You also make a point about historical stratigraphic usage and deterioration of resolution. On this I can only add that many arguments have been made about historical priority and tradition, but we have not been bound by them.
As regards resolution, that is only as good as the data and the tools we have and I do not see that the choice of a datum for definition would result in a worse situation. On the contrary, a GSSP decision will stabilize our time scale and benefit us all.

As STS Chair, I must emphasize that the process of coming to the present GSSP proposal was fully democratic both within the task group, and subsequently amongst the STS titular members. Chris has explained the unfortunate lack of response from inactive members.

I hope this helps.
Yours sincerely,
Mike Orchard
----- End forwarded message -----

Date February 8, 2005
From: maria.cita@unimi.it
Subject: Ladinian GSSP
To: MOrchard@nrcan.gc.ca
Cc: MCroberts@cortland.edu, jogg@purdue.edu

Dear Mike, dear Chris,

Thank you very much for your timely, exhaustive, informative and friendly answers to the questions I asked concerning some political and scientific problems involved in
the proposal.

I want to make it clear that I had no intention whatsoever to discredit your decision, and that I do not intend either to make noise on GSSP in general and on this GSSP in particular.

What I want is to feel free to express my opinion as chairman of ISSC, that is the subcommission that has the responsability to look after the application of the decisions to the "real world". ISSC does not consist of a few eminent specialists of various fossil groups from a limited number of countries, plus one or eventually two physical stratigraphers, but has a large and qualified international participation including chairmen of national or multinational stratigraphic commissions, geological surveys and alike., that disseminate and control the proper application of stratigraphic principles , procedures and decisions.

In the present scenario, the ICS voting members are expected to rubber stamp the decisions of the proposing subcommissions, and each subcommission works as a closed system. As chair of ISSC, I disagree on this style of work and try hard to have some communication. With STS it has worked... and remember that you - as STS chair – are ex-officio member also of ISSC and your opinions on what we are planning to do, and future decisions, are wellcome.

My concern is that to change the chronologic position of a stage boundary of more than three million years (compare the numerical age of the GSSP with the numerical age of the Anisian/Ladinian boundary on the Gradstein et al 2004 Time scale) is not a joke and might cause negative reactions in the countries where the Triassic is well exposed and well known since a long time

Of course I share the opinion that we need to stabilize stratigraphy, and that the formal definition of GSSPs, validated by ICS, is fundamental in this respect, but on the other hand I think that to keep the existing names is better than to introduce new ones, and that the type area of a stage should be changed only in case the original one is unacceptable.

You have a long way to go before defining all the Triassic golden spikes still unsettled. and I wish you a good luck. .At this point, may I ask you which is the fate of the substages of the Anisian (Illyrian, Bythinian, Pelsonian, Aegean) so commonly used by Tethyan stratigraphers? Will they survive or they will be abandoned and forgotten alltogether?

Well, my vote is an abstention but don't worry; this will not change the result of the postal ballot. My forecast is 19 yes and one abstention.

All my best maria

I enclosed the comments accompanying my vote.

Name MARIA BIANCA CITA
ICS Subcommission/Office ISSC

Date February 8, 2005

Vote Ladinian GSSP
Abstention

Comments

b) The proposal is excellent, very well documented and results from a long process, dominated by biostratigraphic and chronostratigraphic arguments.
c) I appreciate the possibility of briefly discussing the proposal with the officers of STS, although this discussion is too late in the process, and will not change the result of the postal ballot.
d) I see a discrasy between numerical ages obtained by radiometric datings and chronostratigraphical ages based on the succession of chronozones.

On one hand the age of the Anisian/Ladinian boundary seems to increase through the years, as documented by the comparison of some well known time scales published in the last few years

Gradstein & Ogg 1996	234.3
Haq & Eysinga 1998	235
Gradstein et al. 1998	237.0
New GSSP 2005	240-242

On the other hand with the GSSP defined at the base of the E. curionii chronozone the Ladinian looses two well known chronozones which means approximately one third of its estimated duration.
As numerical ages for the Ladinian based on zircons derive from various localities, they seem insufficient to me to motivate such an important change.

e) As chair of ISSC, that has the responsability to look after the dissemination and proper use of the officially validated units, my concern is that too little attention has been paid to historical and traditional aspects.

The Buchenstein Formation has consistently been attributed to the Ladinian for over 120 years, but according to the new definition it looses 50 % of its duration in terms of chronozones.
For the future I foresee the possibility of ambiguity in the use of the term Ladinian.

Prof. Maria Bianca CITA

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INTERNATIONAL COMMISSION ON STRATIGRAPHY

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23 March, 2005

IUGS Secretariat
attention: Hanne Refsdal
Geological Survey of Norway
N-7491 TRONDHEIM
NORWAY

Request for IUGS Ratification of the GSSP defining the **base of the Changhsingian Stage** of the **PERMIAN System**

The International Commission of Stratigraphy has approved the following Global boundary Stratotype Section and Point (GSSP) defining the base of the Changhsingian Stage of the Permian System.

The Global boundary Stratotype Section and Point (GSSP) for the Base of the CHANGHSINGIAN STAGE (Upper Permian) is defined at the at a point 88 cm above the base of the Changxing Limestone (base of Bed 4a-2) at the Meishan D section, just above a flooding surface marking the second parasequence in the Changxing Limestone. The Meishan D section is located between Nanjing and Shanghai, China, at 31°4'55"N and 119°42'22.9"E and is freely accessible and well protected because the point is defined in the same section as the base-Triassic GSSP. The GSSP level coincides with the FAD of the conodont species *Clarkina wangi* within the lineage from *C. longicuspidata* to *C. wangi*. Secondary markers include the first occurrence of the ammonoid *Sinoceltites* and the fusulinacean *Palaeofusulina* aff. *sinensis* at the GSSP level and the first occurrence of the ammonoid *Tapashanites* only 42 cm higher. The GSSP level can also be correlated within a normal polarity zone, with a reversal occurring above the point, but within the *C. wangi* Zone. The GSSP interval includes U-Pb zircon age data indicating that the boundary age is about 254 Ma.

The details of this GSSP are explained in the enclosed proposal. This proposal had been revised following an initial ICS Executive review (Winter, 2004-05), then transmitted to ICS for final voting during February-March 2005.

The voting by the Permian Subcommission was 15 "Yes" and 1 "No". The votes received from the International Commission on Stratigraphy were **12 "Yes"(80%)** (*details, and summary of remarks are on the next pages*). Three members officially "***Abstained***" **(20%)** (but provided comments that explained their reluctance to make a definitive yes/no) and two members did not respond.

Clarifications of some aspects of the Changhsingian GSSP proposal were requested by Dr. Cita (*chair of Subcommission for Stratigraphic Classification*), and the responses from Dr. Henderson (*chair of Permian Subcommission*) are also appended to this document. The set of answers by Dr. Henderson clarifies some of the points of concern that had been expressed by other ICS voting members.

The ICS hereby submits this GSSP for the base of the Changhsingian Stage of the Upper Permian to the IUGS for ratification at their next meeting. We also attach the set of comments on the proposal by ICS voting members. If ratified, then a modified form of this proposal will be published in *Episodes*.

Sincerely,

James G. Ogg ***(Secretary-General of the ICS)***

NOTE:

For the past decade, the ICS voting procedure for GSSPs and other proposals has been a single 2-month electronic/postal ballot accompanying the formal proposal from the relevant subcommission. However, as has been noted by Dr. Cita (comments to her "abstain" vote on this GSSP), such procedures do not lend themselves to group discussion and clarification prior to voting.

Therefore, at the March meeting of the ICS Executive, it was decided to take advantage of Web-technology and change the method of voting on GSSP proposals to a split 2-month process: (1) an open posting of the GSSP proposal on the ICS website for a 1-month interval of commentary and reply (by anyone, not just ICS subcommission chairs), followed by (2) closure of the open discussion interval and call for votes to be e-mailed to the ICS secretary-general for tabulation within two weeks. This would still allow adequate time for individual review and consulting external experts on proposals, and would encourage early submission of questions/concerns to be answered immediately by the relevant working groups or other stratigraphers. This will make the decision process more informative and democratic.

VOTE SUMMARY

On the Global Stratotype Section and Point (GSSP)

Defining the CHANGHSINGIAN Stage (uppermost stage of the PERMIAN System) at a GSSP in central China

TOTALS **12 Yes (80%), 3 Abstain (20%),** **with several remarks**

2 votes were not received

Office	Name	Vote	Comments
Chair	Gradstein	**YES**	
Vice-Chair	Finney	**YES**	
Secretary	Ogg	**YES**	"But formal publication needs to include a global correlation diagram (not just text) that schematically shows how the GSSP projects to other realms and facies. The associated ICS database needs to be provided with the raw magnetostratigraphy and other digital data."
Quaternary	Gibbard	*[none received]*	

Neogene	Hilgen	**ABSTAIN**	"The proposal follows the concept of "definition preceeds correlation" which is not my favorite approach. In this respect the proposal heavily weights on biostratigraphic events of which the inter-regional correlation potential is not yet clear. Moreover other correlation tools such as magnetostratigraphy are only shortly dealt with and the quality of, for instance, the paleomagnetic data are not discussed at all. I also express my concern about the presence of a significant unconformity shortly below the base of the Changxing Limestone in section D. This unconformity is even indicated as a shearplane in figure 3, so what is it??? And if section C is so much better in this respect why is that section not selected as boundary stratotype instead of section D (but of course one has to find out what happens with the "unconformity" going from D to C!). Nevertheless I do realize the historical concept and importance of the Changhsingian STAGE and GSSP and it is for this reason that I abstain from voting. Nevertheless, a response to my critical remarks above will be welcomed."
Paleogene	Molina	*[none received*	
Cretaceous	Premoli Silva	**ABSTAIN**	***See detailed comments on next page; and clarifications by C. Henderson.***
Jurassic	Morton	**YES**	**1.** I am rather concerned that problems of global correlation between China and Tethys (and other areas ?) remain unresolved by this proposal and have to be left for further study. There are not so many areas where marine strata in this stratigraphical interval occur, so surely it would have been possible for these problems to have been investigated and, hopefully, resolved before the proposal was presented to ICS. **2.** I have the impression that the membership of the Stage Working Group is confined to those who have worked on the Meishan sections and wonder if there has been sufficient input from others and about other areas. **3.** The case for the GSSP is well documented so my reservations expressed here over voting yes are not so strong. However, I do wonder if the proposal is premature in its submission by the Permian Subcommission to ICS.
Triassic	Orchard	**YES**	"The proposal represents an optimal solution to difficulties around Upper Permian faunal provincialism and is well supported by physical and chemical criteria. The relatively novel taxonomic discrimination of key conodont species relies on quite subtle morphological criteria that need to be tested more widely, but the approach has demonstrated utility elsewhere in the Permian and Triassic."
Permian	Henderson	**YES**	
Carboniferous	Heckel	**YES**	
Devonian	Becker	*[none received]*	
Silurian	Rong Jiayu	**YES**	

Ordovician	Chen Xu	**YES**	
Cambrian	Peng Shanchi	**YES**	
Ediacaran	Gehling	**YES**	
Precambrian	Bleeker	**YES**	"A thorough review and process appears to have been followed. Irrespective of the details of conodont biostratigraphy, there is a distinct advantage to have two important GSSPs in a single continuous section. If the ash layers are easily accessible, future studies of their zircons may refine the ages and resolve the current discrepancies between the two major studies. A more in-depth discussion of the problems of this particular choice of GSSP, and the pros & cons of possible alternative locations (were there any?), would be welcomed by this Subcommission chair. I also have one technical question/comment: In the section on chemostratigraphy (page 12), it states that the carbon isotopes were measured on "bulk sediment samples". As the chosen GSSP is also a facies transition from mostly silty sediments to carbonates, the carbon isotope trend towards more positive values may just reflect this change in sampling medium rather than a change in the composition of ambient seawater. A reference is made to a paper by Li (1998), which I think is in a Chinese journal (*Journal of Stratigraphy*) and not easily accessible."
Classification	Cita	**ABSTAIN**	SPS has been highly proactive in the last several years and step-by-step is changing the basic stratigraphic subdivisions of the Permian System. What I would like – as responsible of the ICS Subcommission that cares about the dissemination, the degree of acceptance and the application of all the "products" of stratigraphic classification – is to have more "DISCUSSION TIME" allocated after the proposals presented by an appropriate ad-hoc WG and approved by the pertinent subcommission is distributed but prior to voting. In the case in hands, the WG was not widely international, being composed by 6 Chinese, one Canadian and one American scientists, clearly dominated by Conodont specialists. **Question is:** Has a wide international consultation – not limited to the 16 voting members of SPS – been done? According to me, this should be required before formally introducing a new global stage of VERY SHORT DURATION in the Paleozoic ***[Questions and Discussions with C. Henderson (Permian Chair) are attached]***

4. QUATERNARY ISSUE

The Quaternary issue treated at length in Newsletter n. 6 is becoming more and more complicated.
To start with, we received two more answers after the dissemination of the newsletter, as follows:

Norman P. Lasca, chair NACSN, USA nplasca@uwm.edu – e-mail of January 10, 2005
As Ashton Embry may have reported to you after the North Americam Commission on Stratigraphic Nomenclature (NACSN) meeting in Denver this past November, the Commission took a formal position on the terms Tertiary and Quaternary.
The position of the NACSN, representing Canada, Mexico and the United States of America, is that both the Tertiary and Quaternary be retained as Periods. Further, the base of the Quaternary is the base of the Pleistocene as defined by the base of the Calabrian in Italy.

Michael D. Dermitzakis, Athens, vrec-fin@uoa.gr - e-mail of January 5, 2005
Dear Maria-Bianca,
First of all I would like to express my deepest apologies for this great delay to answering the urgent items for ISSC members enclosed in ISSC Newsletter no 5 but I was abroad for quite a long time.
I am willing to volunteer ISSC National Liaison.
Additionally I would like to ask you to incorporate in your mailing list my second e-mail address which is <mailto:vrec-fin@uoa.gr>
Concerning the items to be answered
1. yes, I consider Quaternary as a valid and useful Chronostratigraphic unit
2. Quaternary is a system of the Cenozoic Erathem.
Comments:
I agree with Bill Berggren´s point of view that most specialists use Quaternary as a climatostratigraphic unit without themselves realizing it.
However it depends on us to reinforce it as a chronostratigraphic unit.
So, for the shake of stratigraphic stabilitiy Quaternary must be retained and based on common statigraphic rules.
Additionally, the terms Pleistocene and Quaternary as chronostratigraphic entities cannot be separated, therefore, the base of Quaternary must remain at 1,8ma

This makes ISSC position even more clear and unambiguous.
Then, a document was distributed by Jim Ogg, explaining the procedures for decisions of the Task Group.

Procedure for Decisions by ICS-INQUA Joint Task Group on the Quaternary

Members:
Chair: James Gehling, Australia (jgehling@ozemail.com.au)
Vice-Chair: Brad Pillans, Australia (brad.pillans@anu.edu.au)
Secretary: James Ogg, USA (jogg@purdue.edu)
Members:
Nicholas Shackleton (njs5@cam.ac.uk)
Jan Piotrowksi (Jan.Piotrowski@geo.au.dk),
Leszek Marks (leszek.marks@pgi.gov.pl)
John van Couvering (vanc@mail.micropress.org)
Phil Gibbard (plg1@cus.cam.ac.uk)
Frits Hilgen fhilgen@geo.uu.nl)

The recent "Cambridge" meeting on the Quaternary was a useful debate on several of the issues facing the ICS-INQUA joint task group. At this point, it would seem appropriate for the Joint Task Group to solicit any additional external advice, exchange views, and Formally Vote on two main sets of questions

within a FIXED SCHEDULE. The goal is to finalize a summary report of the recommendations to the ICS subcommissions by mid-August for their consideration and voting

The first set of questions is the most contentious, and the decisions by the majority on those issues may constrain the recommendations for the second set. I have had e-mail discussions of this procedure with Jim Gehling and Brad Pillans, plus informed the chair/vice-chair of ICS.

Brief background:

"The subject of defining the Boundary between the Pliocene and Pleistocene was isolated from other more or less related problems, such as the pending definition of the Calabrian, and the status of the Quaternary within the chronostratigraphic scale."

-- E. Aguirre and G. Pasini (1985, *Episodes* 8: 116), "*The Pliocene-Pleistocene Boundary*"

"The demand to lower the Plio-Pleistocene boundary *(to 2.5 Ma)*, abolishing its formal definition through the Vrica GSSP, is thus rejected. … Despite the clear result of the vote, its acceptance by Quaternary stratigraphers remains uncertain. In some cases, the existing (Pleistocene) boundary was simply ignored and the base of the Quaternary placed at 2.5 Ma."

-- ICS report to IUGS (Dec, 1998) on joint vote by 34 members (59% to retain, 38% to lower)

(1) Definition.

Note that this is a 2-part question.

(a) Should there be a formal definition of the term "Quaternary"?

[Yes], [No], [Undecided/Abstain]

(b) And, what is the appropriate span of "Quaternary" time and the associated stratigraphic record that adequately satisfies the modern usage, concepts and needs of global "Quaternary" workers?

The two primary candidates (briefly) are:

[0.0-**1.8 Ma**; beginning at the influx of cold-water marine fauna to the Mediterranean]

[0.0-**2.6 Ma**; beginning at the significant onset of global cooling and first glacial evidence]

Well-documented position statements have been prepared by Brad Pillans (e.g., Quaternary Science Reviews; Episodes), and Phil Gibbard (e.g., Boreas, and recent "Cambridge" report) for the 2.6 Ma option. Several shorter letters supporting the 1.8 Ma option were received by INQUA/ICS in 2004, and others were assembled in a report by the ICS Subcommission on Stratigraphic Classification.

SCHEDULE:

20 April - 20 May – E-mail exchanges of views, position papers, and gathering of additional external advice (very important!) among the Joint Task Group (see addresses above). These documents and e-mails could also be gathered and posted at the Quaternary Subcommission website for later reference. Any ADDITIONAL candidates for definition should also be submitted during this interval.

20 May – A ballot on the 2-part question will be sent to Task Group members with the candidate definitions.

20-30 May – Votes with brief comments (less than 4 sentences, "signed") should be submitted to Jim Ogg for tabulation. He will compile these into a summary document; which will then be circulated to the Task Group. The results would be submitted to both ICS and INQUA, plus their appropriate subcommissions (e.g., ICS's Quaternary, Neogene) for written input.

(2) Chronostratigraphic Status/Rank

In preparation for this step, I have asked for advice from officers of the ICS Subcommission on constraints from Stratigraphic Guide on chronostratigraphic hierarchy (if an Epoch could be split between two "sub-Periods" – they already indicated that splitting between Period-level rank is not allowed under the current Guide), whether decisions on higher-ranked boundaries takes automatic precedence over previous groupings of stages into epochs, what is the procedure for changing the Guide on these topics, and related issues. I tried to acquire advice on "principles", but the first answers I received were only views on base-Pleistocene GSSP, which is not the current issue.

Again, this would be a 2-part question:

(a) Should "Quaternary", as defined by the Task Group, be given an official chronostratigraphic rank, ratified by both ICS and INQUA?

[Yes], [No], [Undecided/Abstain]

(b) If so, and considering that there are currently GSSPs for Cenozoic units fixed at 1.8 Ma ("Pleistocene") and 2.6 Ma ("Gelasian"), then what is the recommended chronostratigraphic scheme?

There are two primary candidates, IF "Quaternary" spans the past **1.8 myr**; hence coinciding the base of Pleistocene:

[Period/System], [sub-Period/sub-System]

(I'd prefer to avoid "Era")

There are at least two primary candidates, IF "Quaternary" spans the past **2.6 myr**, hence approximately coinciding with the base of Gelasian:

[Period/System; if allowed under Strat Guide], [sub-Period/sub-System]

NOTE: there are other possible candidates.

For this potential 2.6 Ma possibility, I have asked the chair and vice-chair Subcommission on Stratigraphic Classification for advance advice on the flexibility of grouping ratified stages into sub-Periods or redefining Epochs. This is not a question of moving/dropping a GSSP, but whether a 10-year-stability guideline applies to nomenclature/rank/groupings.

SCHEDULE:

30 May - 20 June -- E-mail exchanges of views, position papers, and gathering of additional external advice among the Joint Task Group. As before, these documents and e-mails could also be gathered and posted at the Quaternary Subcommission website for later reference. Candidates for status/rank/groupings should also be submitted which are appropriate for the prior majority decisions on definition of Quaternary.

20 June -- A ballot on the 2-part question will be sent to Task Group members with the candidate definitions.

20-30 June -- Votes with brief comments (less than 4 sentences, "signed") should be submitted to Jim Ogg for tabulation. He will compile these into a summary document; which will then be circulated to the Task Group. The results would be submitted to both ICS and INQUA, plus their appropriate subcommissions (e.g., ICS's Quaternary, Neogene, Stratigraphic Classification) for written input of all members.

30 July – The summary document of Task Group decisions and recommendations will be submitted to all ICS subcommission chairs for their consideration, gathering of other opinions, and posted discussion in advance of the ICS meeting in Leuven Belgium in early September.

5 September 2005 -- At this Leuven meeting, the ICS will have brief summary presentations on the issues and different recommendations by the Task Group chair, the ICS Quaternary Subcommission chair, the Neogene Subcommission chair, and the INQUA Comm. Strat. chair. The ICS will then take a vote with additional written comments on the Task Group recommendations. This will complete the ICS portion of the dual-commission work.

2006/2007 -- Simultaneously, and perhaps extending into their congress in early 2007, INQUA will have a similar process. If necessary, the Task Group will meld the ICS/INQUA documents for a second joint-commission voting round. Therefore, by late 2007, a set of decisions on the Quaternary definition and status/rank will be decided. This will be formalized prior to the International Geological Congress, and included on the distributed time-scale material.

As a response, and after consultation with the commission vice-chair and several ISSC members, I prepared a short document to make official our position.
The documents reads as follows:

POSITION OF ISSC TOWARDS QUATERNARY ISSUES

TO WHOM IT MAY CONCERN

Introduction

To abolish the term Quaternary is considered an arbitrary decision not well founded scientifically and which will not be accepted by the International community as it happened years ago with the Tertiary, which is still largely used worldwide.

ISSC has a very large membership of influential stratigraphers representing national and/or multinational Commissions on Stratigraphy, Geological Surveys, Geological Institutions, Geological Societies, and has the responsability of disseminating stratigraphic rules and procedures, and to look after their practical application. It discourages drastic and immotivated changes in the major subdivisions that risk to destabilize the system.

Common sense rules

Having said that, ISSC considers that essential rules ("Common Sense" rules sensu Embry, 2005) to be followed when establishing a hierarchy of time units are:

1) A lower order unit (eg an era) must contain at least two units of the next higher order. Thus an era must encompass at least two periods, a period must have at least two epochs and an epoch must have at least two stages. It was always this way until ISC started to "define and refine" things.

2) A higher order unit cannot be part of two lower order units. Thus a period cannot be part of two eras, an epoch cannot be part of two periods, and a stage cannot be part of two epochs. Boundaries must coincide where appropriate. For example the base of the Induan defines the base Early Triassic, the base Triassic and the base Mesozoic. Any deviation from this results in chaos.

Strong recommendation

Moreover, ISSC strongly recommends to avoid the unfortunate practice of erecting new orders of time units as sub-era, sub-period, sub-epoch, sub-stage.

ISSC poll on the Quaternary issue

A poll launched by ISSC chair through ISSC Newsletter n. 5 after the various meetings held during the 32°IGC in Florence showed that a very large majority of ISSC members considers Quaternary as a chronostratigraphic unit (38 out of 43 answers) and that an even greater majority (32 out of 35 answers) gives to the term Quaternary the rank of a system.

Moreover, a very clear indication deriving from the poll is that:

- base Quaternary = base Pleistocene
- base Pleistocene as defined at the Vrica section in Calabria.

Personal comments by the ISSC chair

Besides these statements and recommendations on behalf of ISSC, I add my personal comment as stratigrapher Maria Bianca Cita, former chair of SNS for 2 terms, INQUA honorary member, author of dozens papers on Quaternary stratigraphy.

The 2.6 My boundary proposed for the base of the Quaternary (if decoupled from the base of the Pleistocene) requires some discussion and clarification. The Gelasian GSSP was proposed, accepted and ratified (1996 when M. B. Cita was chairing the Neogene Subcommission), for a Pliocene stage, and the "magic number" 2.6 My derives from the age attibuted to the Gauss/Matuyama magnetic reversal. In other words, a clear and unambigous datum plane working well both in marine and continental successions. No major biostratigraphic marker is found just at that point of the Pliocene, and the cooling trend recorded starting around 3My is just a trend, lasting some 0.5

My. Nobody can fix a precise point to document the initiation of glaciation in the northern hemisphere, and 2.6 My is certainly not a magic number in this respect. Everyone should know by now that drilling in the Artic Ocean (Lomonossov Ridge, August 2004) documented that the first evidence for northern hemisphere glaciation dates back to the Middle Miocene (15 My).

Epilogue

If you look at the climate change, you find trends, cycles and events, but TO MIX CHRONOSTRATIGRAPHIC UNITS WITH INFORMAL, UNDEFINED OR POORLY DEFINED CLIMATOSTRATIGRAPHIC CONCEPTS IS A DISASTER. This is why we want to clarify our position towards the Quaternary Issue in a formal way, before further steps are undertaken.

To quote Amos Salvador "the worst thing we can do is to do nothing".

5. ICS PLENARY MEETING (Louvain, Sept. 1-5, 2005)

March 17, 2005

Dear colleagues:

During its annual meeting, held in Houston, Texas, March 5-6, the Executive Committee meeting of ICS approved the workshop "Futures Directions in Stratigraphy" (and future of ICS) that will be held in Leuven, Belgium, 1-5 September 2005.

Those invited to attend are the chairs of all ICS Subcommissions and Committees, the ICS executive, and our local organizers and hosts Drs. VandenBerghe and Bultynick. In fact, all Subcommission chairs are expected to attend. Accordingly, all on-site costs (lodging, meals, and field trip) will be covered by ICS (courtesy of money raised from the Geologic Time Scale 2004 project and a special allocation from IUGS). It is hoped that Subcommission chairs can support their individual travel to Leuven, but at least partial travel support will be provided for special cases. The workshop will involve two long days of hard work, and it will be followed by a relaxing two-day excursion through the Ardennes and the Meuse Valley visiting important, classic localities of the Devonian and Carboniferous, as well as the quarry at Maastrich.

Over the next few weeks you will receive detailed materials on the agenda for the Leuven workshop. The primary topic will be the future of ICS.

As you know, ICS has the mandate of completing selection of all GSSPs by 2008. It appears that the Subcommissions will be largely successful in doing so with the realization that some particularly difficult boundaries will take longer. Nevertheless, in 2008, IUGS will view the objectives of ICS as having largely been met. While acknowledging the success of ICS, IUGS has many demands on its budget and is likely to reduce substantially its allocation to ICS and also might expect ICS to contract with its primary objective largely completed. At the same time, most of us would agree that ICS and, in particular, the Subcommissions serve as catalysts for considerable system/period based research, and the continuation of substantial ICS/Subcommission activities is beneficial to stratigraphy and the Earth sciences. What do we do? Is there a future for ICS and the Subcommissions? If so, how do we plan for the future? The ICS executive cannot do this by itself. It can be done best through the concerted, coordinated efforts of the hundreds of stratigraphers who participate already in the activities of ICS and its Subcommissions, but obviously, the Leuven workshop cannot accommodate hundreds of stratigraphers. Thus, it is appropriate, in fact it is essential, that Subcommission Chairs working with the ICS executive and representing the greater stratigraphic community undertake this task, and that task will be the primary agenda item at Leuven.

Other agenda topics requiring discussion and careful consideration at Leuven include:
1) the ICS sponsored book "Stages and their Boundaries", which summarizes information on all approved GSSPs and will be published in time for distribution at the 33rd IGC in Oslo.
2) promotion of progress on selection and approval of GSSPs.
3) Quality control of GSSP proposals.
4) Cores as auxiliary or primary references for GSSPs for special boundaries.
5) Dual versus single classification (chronostratigraphic and/or geochronologic units).
6) The Quaternary
7) Medals and Awards

More information on these topics will follow in the coming weeks. We want each of you to come to Leuven having received essential background information and fully prepared to address these topics. At this time, reserve the dates 1-5 September on your calender, and please begin your search for travel support.

Sincerely,
Stan Finney
Organizing Chair of 2005 Leuven Workshop

°°°°°°

March 22, 2005

Dear Stan,
thank you for your informative message of March 17 and for organizing what appears as an informative meeting.

I am particularly interested in topics 3 (quality control of GSSP proposals), 5 (dual versus single classification) and 6 (the Quaternary) of your agenda.
Besides the agenda topics that you listed, I suppose that each subcommission chair is expected to present a report on the current and future activity, and I would like to know in advance how much time is allocated for this activity.

Regional Stages, propose as additional agenda item.
Will you please let me know which is the official position of ICS versus regional stages, whose use has been suggested for the Pleistocene, where no global stages are foreseen?
Can you give me some clear reference to an official document or publication?
I need this information because we are organizing a two days workshop where we plan to propose a set of agreed-upon regional marine stages for the Mediterranean Pleistocene.

Best regards,
Maria Bianca

°°°°°°

March 24, 2005
Dear Maria:

We should break into small groups to address some of the agenda items in detail with the small groups then presenting proposals to the full group on the last afternoon. The topics in which you are interested should be addressed in this manner, and I will assign you to a small group that evaluates them. Accordingly, I will not schedule them at the same time.

Yes, each Subcommission is expected to present a report. For the System based subcommissions, we expect short presentations on progress on GSSPs. Time will be limited and the focus will be on boundaries that are problems. It is important that you present a report on the progress of ISSC on sequence- and cyclo-stratigraphic classification, and any other directions to be taken by ISSC. With regard to time, I think that we must limit each presentation to 10-15 minutes, or less if possible.

It is my understanding that ICS does not have an official position on regional stages. As I have tried to make known, their are regional stages/series for the Ordovician for each major continent or paleo-plate. Historically, most of these were established on unit stratotypes without much concern for boundaries. However, some of the North American series and stages (e.g. Ibexian, Whiterockan, and Mohawkian Series) have had boundaries defined on the basis of key biostratigraphic events in reference sections. These stratotype sections and points are published, but they were not formally approved or ratified by any stratigraphic commission. They are accepted and used because 1) they are well defined, and 2) the work well. Thus, I see no problem with your workshop formally defining regional stages.

I hope that this is helpful.

Stan

6. THE PLAN FOR THE NEW GUIDE

With references to Newsletter n. 6 item 4, pages 25 and 26 that we do not want to repeat here, the plan for the new Guide is shaping up step by step, as conceived, following the "let us work as a team" bottom-up approach of the Firenze 2004 "Post Hedberg developments in Stratigraphic Classification" first ISSC workshop.

A title was chosen after extented consultation "Stratigraphic classification: definitions, application of the principles, real world examples".

The final goal is to have a hard copy of a real book, well illustrated, with plenty of real world examples, users friendly, simple, concise, clear, convincing.

The various chapters of the future guide will be published separately, as soon as they are ready, as review papers on one and the same international scientific journal.

When we started (end 2004) we had two Task Group leaders appointed, and we were considering four possible journals "Lethaia", "Earth Science Reviews", the new "Stratigraphy" and the old "Newsletters on Stratigraphy".

After extended consultation, our choice was for the last, and we publish here for transparency as it is our style the letters exchanged.

I plan to meet with Dr. Kosinowski as soon as the first review paper (=future chapter) is ready; should be in a few months, if you ISSC members respond efficiently.

April 8, 2005

Dear Dr. Kosinowski,
purpose of this letter is to submit to your attention a series of well-documented illustrated review papers on different branches of stratigraphy produced by the International Subcommission of Stratigraphic Classification that I am honored to chair since 2002.

This Subcommission has been founded by Hollis Hedberg in 1952 and chaired by him for 25 years. It has always been a high profile subcommission that predates the same International Commission on Stratigraphy. The main products of this multidisciplinary, multinational subcommission are the International Guide of Stratigraphic Classification edited by Hollis Hedberg in 1976, a second edition by Amos Salvador in 1994 and the abridged version edited by M. A. Murphy and A. Salvador in 1999.
In the long life of the subcommission over hundred circulars has been distributed.
If you are interested in our activity we can send to you the six Newsletter of ISSC distributed so far, since I took over after Alberto Riccardi.
From time to time it is necessary to update the guide because of new methodologies introduced, scientific advances in general, problems arising from the practical application of the rules and conceptual problems originating conflicting attitudes.

We have already two task groups actively working on Sequence Stratigraphy with Ashton Embry (Canada) as task leader and on Cyclostratigraphy with Andre Strasser (Switzerland) as task leader.
Our plan is the creation, dissemination within the Subcommission and the future publication of a series of multiauthored review papers on several branches of stratigraphy, each one describing the concept of classifications with real life examples, and recommendations for the nomenclature

We are looking for a scientific journal interested in our project. I personally like Newsletters on Stratigraphy because
1- it is a well enstablished 40-years old journal (a classic),
2- because it is european,
3- because it has a format which is compatible with the "pocketbook" style of the handbook I have in mind for the stratigraphic classification guide,
4- because it has an online distribution.

Copies of this letter are sent to Prof. Jacques Thierry who is a member of ISSC and of your editorial board, and to Dr. Manfred Menning, who is a new very active ISSC member, who knows you very well. Another ISSC member who is in your editorial board is Prof. Y. Takayanagi from Japan, that you might contact.
We tentatively plan to have 1-2 review papers per year, and look for a collection of all these papers to constitute the core of a new guide in the future.

Thank you for your attention.
With my best personal regards,
Maria Bianca Cita

°°°°°°

May 9, 2005

Dear Prof. Cita,

Thank you very much for your telephone call and your letter concerning the future publication of contributions on stratigraphy produced by colleagues and ISSC members. We are glad that ISSC has chosen Newsletters on Stratigraphy to maintain cooperative relationships between stratigraphic geologists and organisations. If the announced contributions follow the NoS instructions as well as professional criteria (i.e. reviewing standards), the papers of the ISSC are welcome at any time. We are - like you and your friends - interested in the diversification of basic stratigraphy as well as modern stratigraphic tools and facts. ˆ We will inform the Publisher of the Newslertters, Dr. Naegele, about our answer, and also your colleagues Menning and Thierry. Please, do not hesitate to send us papers.

With best regards,
Michael Kosinowski
(Editor Newsletters on Stratigraphy)

In the previous editions of the Guide, Hedberg (in 1976) and Salvador (in 1994) were both authors and editors.

The future Guide will be multi-authored, and ISSC chair's role is foreseen as that of a "scientific coordinator".

Task Group leaders are appointed for categories of stratigraphic units not included in previous ISG as

- cyclostratigraphy
- sequence stratigraphy
- chemostratigraphy

Working Group leaders are appointed for categories already considered as

- lithostratigraphy
- biostratigraphy
- magnetostratigraphy
- chronostratigraphy

It took almost 20 years to arrive at the publication of the first guide.

But now the communications are much faster and cheaper. On the other hand, stratigraphy is much more sophisticated and expecially from the mid Jurassic on – it took advantage of the incredibly large data originated by Deep Sea Drilling in all the world's oceans.

Right now, (end June 2005) we have two Task Group leaders actively working, ISSC vice-chair Ashton Embry for sequence stratigraphy and Andre Strasser for cyclostratigraphy, and two working group leaders appointed. They are excellent well known stratigraphers and "old" ISSC members, dr. Waterhouse for lithostratigraphy and prof. Jacques Thierry for biostratigraphy.

I hope they will start soon to put together an efficient WG and to communicate within themselves in order to propose comparable and compatible outlines, always keeping in mind the practical aspects of the Guide.

The approval by our large and variegated membership proceeds in two steps:

STEP 1 - is the distribution of a detailed outline of each chapter (=review paper to be published in Newsletters on Stratigraphy). ISSC members have one month on-line review time to send comments or additions to the leader proponent (and to us). No answer means approval.

STEP 2 – after one month, the leader/proponent may start writing. When the text and illustrations are ready, they will be put in the ISSC website for another one month on-line review, then finalized and sent to the publisher.

7. CYCLOSTRATIGRAPHY OUTLINE by Task Group leader André Strasser

International Union of Geological Sciences
International Subcommission on Stratigraphic Classification

Stratigraphic classification:
Definitions, applications of the principles, and real world examples
(planned to be published in the " Newsletter on Stratigraphy")

Cyclostratigraphy

1. Introduction
- Historical overview (cf. Fischer et al. 2004, SEPM Spec. Publ. 81)
- Current use of cyclostratigraphy
- Jungle of nomenclature (cycles, cyclothems, parasequences, bundles…)
- Goal of this paper

2. Concepts and methodologies
- Orbital forcing (cf. Schwarzacher 1993, Dev. Sedimentol. 52; De Boer and Smith 1994, IAS Spec. Publ. 19)
- Fischer plots
- Time series analyses
- Need for independent time control
- Astronomical time-scales

3. From orbital cycles to the sedimentary record
- Transfer of insolation changes through the climate system into the oceanic and terrestrial systems: sea-level changes, productivity changes, terrigenous input changes
- The sedimentary record: limestone-marl alternations, T-R cycles, geochemical cycles, faunal-floral cycles
- The link to sequence stratigraphy

4. Case study: Pennsylvanian cycles, mid-continent USA
→ P. Heckel (participation confirmed)

5. Case study: platform to basin correlations, Late Jurassic and Early Cretaceous of the Jura Mountains
→ A. Strasser
Detailed analysis of facies and stacking pattern on shallow carbonate-siliciclastic platforms and of limestone-marl alternations in hemipelagic basins leads to a coherent sequence- and cyclostratigraphic interpretation of Late Jurassic and Early Cretaceous climatic and sea-level changes. However, an initial biostratigraphic and tectonic framework is needed.

6. Case study: astronomical time-scale, Miocene-Pliocene of the Mediterranean realm
→ F. Hilgen (contacted, not yet confirmed)

7. Potential and limitations of cyclostratigraphy
Potential:
- Highest time-resolution for pre-Quaternary studies
- Astronomical time-scale tied to the Present, floating astronomical time-scales

- Narrow time framework for sedimentological, ecological, and diagenetic studies
- Improvement of GSSPs

Limitations:

- Bad quality of outcrop or logs
- Missed beats
- Sub-Milankovitch processes
- Lacking independent time control
- Autocyclic processes

8. Recommendations for cyclostratigraphic classification

- As simple as possible, without inventing new terms (cf. Hilgen et al. 2004, SEPM Spec. Publ. 81)
- Interpretation must start from the sedimentary record and not from the concept
- Classification must be adapted to type of study (practicability)
- Different scales of time-resolution may be applied, according to the quality of the sedimentary record

ONE MONTH ON-LINE REVIEW PROCESS

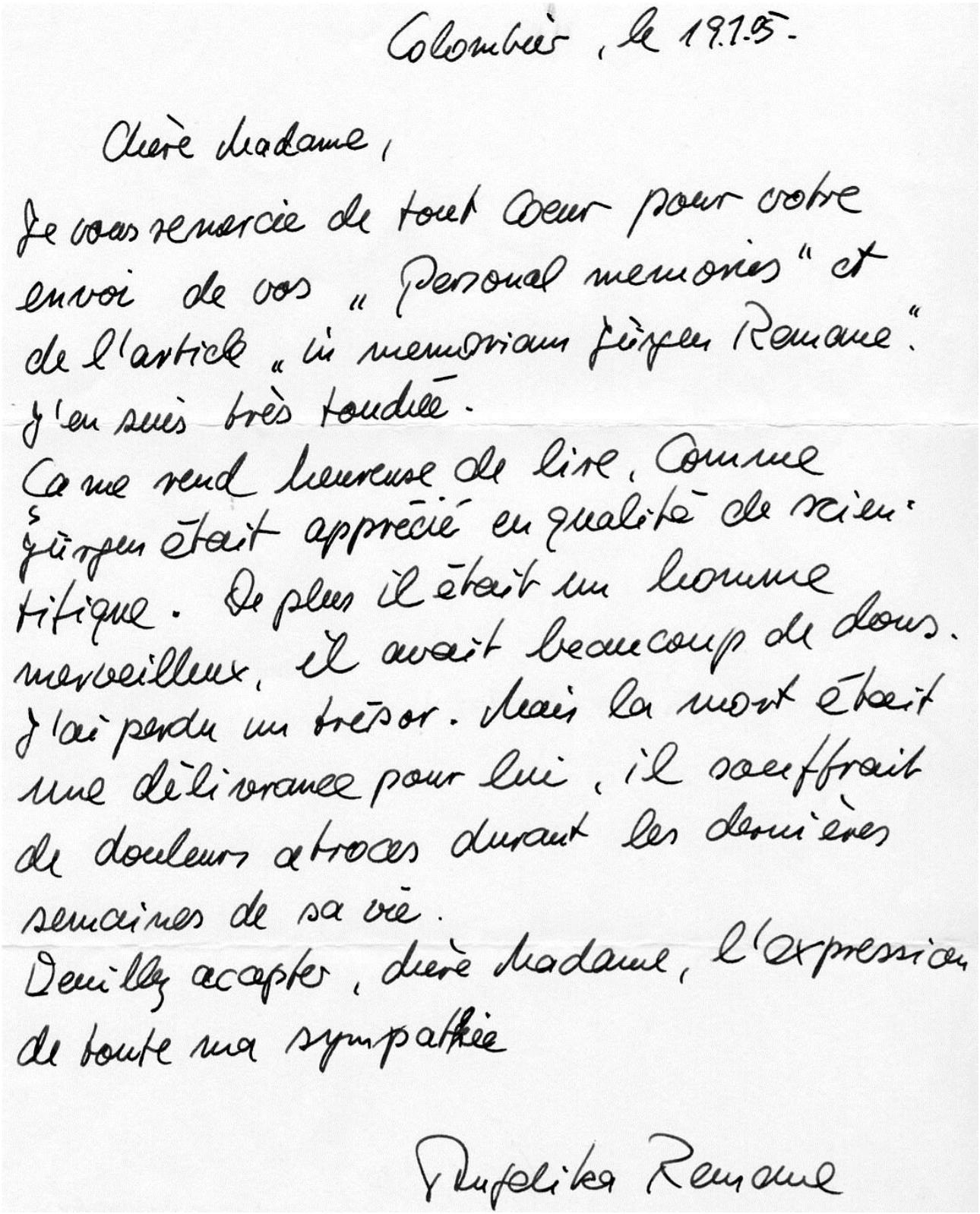
ISSC members are urgently requested to send by **end July 2005**

COMMENTS…….

SUGGESTED ADDITIONS……..

No answers will be considered as approval of the cyclostratigraphy outline
(that I consider excellent and well articulated)
but comments are welcome and solicited

8. LETTERS RECEIVED

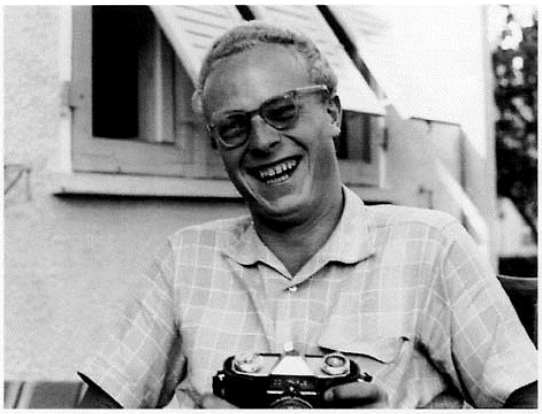


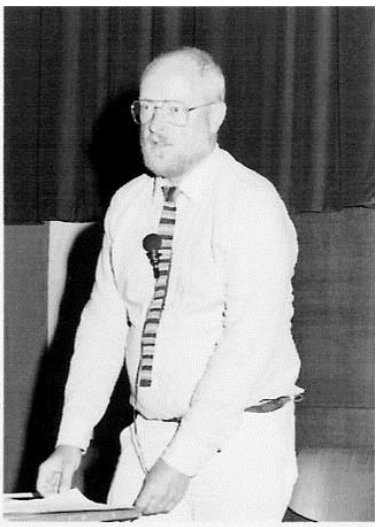
Colombier, le 19.1.95.

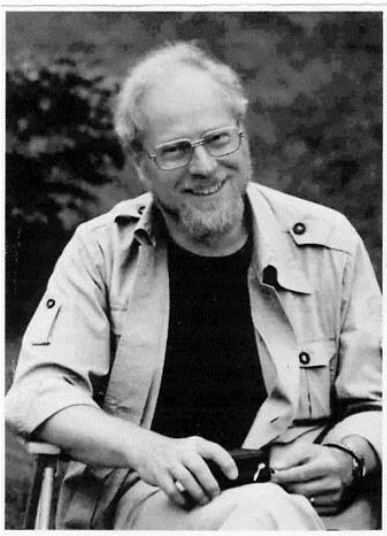
Chère Madame,

Je vous remercie de tout cœur pour votre envoi de vos „Personal memories" et de l'article „In memoriam Jürgen Ramm". J'en suis très touchée.
Ça me rend heureuse de lire, comme Jürgen était apprécié en qualité de scientifique. De plus il était un homme merveilleux, il avait beaucoup de dons. J'ai perdu un trésor. Mais la mort était une délivrance pour lui, il souffrait de douleurs atroces durant les dernières semaines de sa vie.
Veuillez accepter, chère Madame, l'expression de toute ma sympathie

Angelika Ramm







Pour votre participation à notre profond deuil pour

Jürgen Remane

pour les lettres de condoléances, les fleurs et les dons,
j'aimerais vous exprimer mes sincères remerciements.

Jürgen restera présent dans notre mémoire.

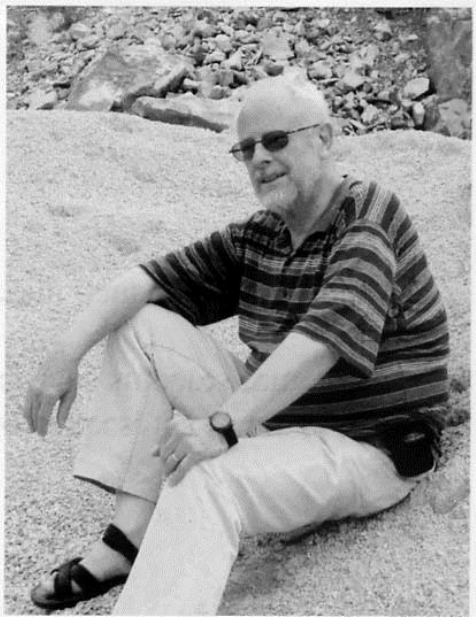
Angelika

Reste calme, reste silencieux,
ne demande pas: pourquoi?

ne pas échanger des questions amères
la réponse n'est que comme la brise marine

quoi que tu cherches à discerner
l'obscurité, le mystère, la question persistent.

d'après Theodor Fontane



Loris Waterhouse, New Zealand loris@xtra.co.nz – e-mail of April 6, 2005

Dear Maria

I have enjoyed your newsletters, and am pleased that you are undertaking the huge task of issuing a new text. On that, whilst it clearly will incorporate the new thinking , the need remains for the "old" emphasis on formations etc. I map mountains that have been through two orogenies, involving nappes, folding and strike-slip faulting, so that the original basins have been sliced, chopped, twisted, to the extent that their original dispositions are well disguised, and cannot be sought without painstaking analysis, formation by formation.

There are some larger questions I would like to ask.

First, can the Guide become a Code. I suggest it may be time.

Essentially, this will mean that units and stratigraphic analyses not meeting requirements of the new Code, are not valid. Further, units in the past not conforming during their time, if proposed after 1976 and 1994(? -not checked) will not be valid. If only the Stratigraphic rules had the power of the rules for zoological nomenclature.

Second, would that mean a court for enquiry and valification is required for settlement of disputed cases? (I think not).

Third, how can the rules - or the guide or whatever, be better publicised and "enforced". Things seem to be getting worse, not better, in the literature published in English. That is because editors prefer "peer-review" and referees over rules and procedures. And in many instances, referees appear to prefer their own ideas regardless of rules. As well "fashion" - what is currently popular, may be preferred.

Four, an attempt was made to slap down the subcommission, and your presumption for conducting a straw poll over Pleistocene. I admit this is a matter for some delicacy. Nonetheless, I do believe that there is a role for an overall supervisory, or at least advisory body, to overview the boundary subcommissions and nomenclature proposals. I need not itemize the way that these subcommissions have been working, but at times they often seem closer to a court of law with patriotism playing a large part, rather than a scientific enquiry, and a court of appeal, even if its function were simply to raise questions over a plenary vote (and some of these are known to have been inadequately transparent and integral).

With best wishes

Bruce Waterhouse

Jim Ogg, USA jogg@purdue.edu– e-mail of April 13, 2005

Dear Maria Bianca Cita and Aston Embry,

During the recnet voting for the uppermost stage of the Permian – the Changhsingian GSSP -- you (Maria Bianca Cita) made a very important point, and I quote it:

"Has a wide international consultation ˆ not limited to the 16 voting members of SPS ˆ been done? According to me, this should be required before formally introducing a new global stage of VERY SHORT DURATION"

This was one justification for your decision to Abstain. Indeed, the Changsingian Stage seems to be only about 3 myr in duration, therefore one of the shortest in the entire Phanerozic (only Pliocene Epoch is composed of shorter stages; and stages were abandoned for the short-duration Pleistocene Epoch).

I can foresee a similar issue arising if a "Quaternary" PERIOD (2 chronostratigraphic levels higher) is proposed for formalization with a GSSP at either 2.6 Ma or 1.8 Ma. In your opinion, what should the international procedure be for formalizing a Quaternary as a period-level or subperiod-level division of the Cenozoic? How much consultation outside INQUA/ICS should be involved, and what would be a formal process for ths external opinion? Or, in your opinion, does the International Quaternary Association (international body at same level as IUGS, national bodies in each country) represent adequate worldwide advice on this issue?

I think it is important that the international divisions of Earth history represent both intervals of useful dialog and have global correlation value. If decisions are made by working groups of ICS on establishing stages (or the larger epoch/period intervals) without involving the "consumer", than these will suffer the same fate as the non-used divisions for the Precambrian that was elegantly designed by a committee of pre-Cambrian workers, but then faded into obscurity.

Again, this question is for informal input, not an official ISSC decision at this time.
-- Jim

Mike Johnson, New Zealand mjohnson@geoscience.org.za – e-mail of April 22, 2005
Dear Prof. Cita
In spite of your action having incurred the displeasure of the ICS hierarchy, I think you have done stratigraphers world-wide a valuable service by running the recent opinion poll among ISSC members, since it clearly showed the overwhelming support that exists for the retention of a Quaternary System/Period. In your response to Stan Finney you quite correctly referred to the broad-based nature of the ISSC membership, with many organisational members representing the national stratigraphic commissions/committees, geological surveysand geological societies of their respective countries. These are the kind of people whose opinions the ICS executive should be eagerly canvassing, rather than creating the impression that dissenting views are to be suppressed at all costs.
The section headed "Tertiary and Quaternary" in Stephen Walsh's document, which was circulated to ISSC members, succintly summarises the reasons why the terms Tertiary and Quaternary have not outlived their usefulness. In South Africa we also have large areas of continental Cenozoic strata which can at best be labelled "T" or "Q" on our maps, since they generally lack diagnostic fossils or other means of dating them precisely.
The Georef data base statistics which Amos Salvador unearthed and communicated to the rest of us in Circulars 86 and 93 are highly significant in the context of this debate. In Circular 86 (January 1993) he noted that a search of published titles for the period 1980 to 1992 (inclusive) yielded 4155 "hits" for Tertiary out of a total of 7225 for Tertiary + Paleogene + Neogene (i.e., 57.5%). In Circular 93 (May 1998) he reported that for the period 1992 to 1997 (inclusive) the figures were 1547 and 2871 for the same categories (i.e., Tertiary 54%). I have extended his search to the present, turning up Tertiary usage figures of 51% and 49% of the totals for the periods 1997 to 2001 and 2002 to 2004 respectively. Whether the slight decline in the use of Tertiary over the past 15 years is due in any way to the relentless ICS campaign or simply reflects a greater degree of specialisation is impossible to tell. The fact remains, however, that "Tertiary" still appears far more often in the titles of geological papers and books than either Paleogene or Neogene on their own. Clearly, the ICS's stratigraphic charts have had a minimal effect on the way people are using,

and no doubt will continue to use, these terms in practice.
On the ICS website it is obviously assumed that the demise of the Tertiary and Quaternary is a fait accompli, with the authors stating that "because of the historically ambiguous way in which the boundary between the Tertiary and Quaternary has been defined, these terms have fallen out of favour for formal scientific use". But the truth of the matter is that both terms are in fact still very much alive and well in formal scientific publications, while any ambiguity that may have existed regarding the definition of the Tertiary-Quaternary boundary applies equally to the Pliocene-Pleistocene boundary. Getting rid of Tertiary and Quaternary does not solve the boundary problem (or are Pliocene and Pleistocene next in line for consignment to the dustbin?). It is also significant that no hint is given that the Quaternary may yet be salvaged by the joint ICS(SQS)-INQUA working group mentioned in Stan Finney's letter.
Note no. 6 on the 1989 Global Stratigraphic Chart (in Episodes,Vol. 12, No. 2) states that "ICS has, since 1976, divided the Cenozoic Erathem into Paleogene, Neogene and Quaternary Systems". But it is also stated that "Tertiary is a useful informal term to include both the Paleogene and Neogene", a view repeated in various forms on subsequent editions of this chart. The website article also concedes that "it doesn't seem likely that there will be a rush to abandon the term 'Tertiary' in popular use" and that the "Cretaceous-Tertiary (or KT) boundary" is unlikely to ever become the "Cretaceous-Paleogene (or KPg) boundary". If all this is the case, why not retain Tertiary as a formal unit? As Stephen Walsh put it, "No one is forcing Berggren or anyone else to employ these terms, so if others find them useful, why try to suppress them?"
To conclude, I would fully endorse Amos Salvador's plea to "leave things as they are now - the way they are accepted and used throughout the world: the Cenozoic Erathem comprising the Tertiary and Quaternary Systems, and the Tertiary including the Paleogene and Neogene Subsystems". Stephen Walsh expresses exactly the same sentiments in the opening statement of his document. I have not had the opportunity to consult with the other members of the South African Committee for Stratigraphy on the Tertiary issue (they have already expressed themselves in favour of retaining Quaternary) but I am sure they would concur with me on both scores.
Best regards
Mike Johnson (Secretary, South African Committee for Stratigraphy)

Nick Shackleton, UK njs5@rock.esc.cam.ac.uk– e-mail of May 27, 2005
Dear Maria,
What a lovely surprise to hear from you! Thanks for this clear document.
It is clear that there is massive support for the Quaternary; it would be interesting to have a poll on people's opinion on the extension of the Neogene.
All the best, Nick

9. DISSENTING VIEWS

This new heading is dedicated to the dissemination of (part of) the huge correspondence we receive from time to time from an "old" (since 1995) member of ISSC, Dr. Hendrik de la Rey Winter who is extremely active and obviously has a lot of time to read and comment our newsletters.

Most of his comments are critical and show an antagonistic attitude, but we do not want to keep them for ourselves, hidden to our large international membership.

RESPONSE TO NEWSLETTER NO. 6
By Independent Member of South Africa, HD Winter

The following is a systematic response to Newsletter 6 or ISSC Circ.107 of December 2004, starting from page 1. It is the only way to ensure a comprehensive coverage of the contents. Hopefully out of that you can list, in priority sequence, the issues upon which consensus has been gained before creating closed WG's [purpose: as Readers?] on subjects that depend on prior consensus at higher levels. I recommend that WG's not be rigorously closed lest the outcome become as unresolved as the Sequence issue. For this I was proposed by Salvador and Murphy and accepted by Remane in 1994. I presume that ICS will have the final say on principles and procedures of stratigraphy and their definitions, possibly in that order of priority, and that ISSC will ultimately prevail on the classification categories, which entails responsibilities to regions/countries.

I cannot believe that there is any good reason why the classification does not break down into classes, as the longer word suggests. I predict that there will be only three main classes, each with hierarchical and specialist subdivisions, some with sophisticated technological backing. In the order of importance, I believe the ranking will be: -

1. ***Chronostratigraphy***, consisting of ranked regional layers [strata], all the boundaries of which units have been mapped in nested orders of size,
2. ***Biostratigraphy***, modified from provisional outline by Cita [p.26], and
3. ***Lithostratigraphy***, based entirely on lithofacies that are associated such, that the country or region can be mapped prior to conversion to 1 with or without 2, when practical and economic reasons dictate the imperative.

The boundary ages of originally mapped European depositional basins are chronocorrelated [time correlated] to other plates on Earth following the GSSP procedure to map global geology and to promote global correlation.

What a profound and logically simple basic framework for total analysis of Earth history this could be! No longer will the Precambrian or the continental deposits of the total ***G*eologica**l **T**ime on the **S**cale be downgraded. Each class will feature strongly where appropriate. The outcome would be that Earth history is analysed closer to truth at each attempt. Truth or reality reminds of the only workable way to eliminate the accumulation of errors in a complex multiple study effort such as the 5-year plan. The scientific method of experimentation, trial and error, must prevail. Eliminate principles and procedures that fail critical tests and replace them by those that pass. The 1976 Guide introduced errors that the new teams retained. These added new errors, and so on via the 1994 issue, Remane and others, and in 1999 the abbreviation, until the accepted errors overcame the correct conclusions – a recipe for chaos. The situation can only be turned around if these mistakes are exposed and corrected before embarking on the build-up. Everyone makes mistakes: so if yours are exposed, be thankful and help to remedy the matter without upsetting the apple cart. Failing to clean the existing record is like placing that cart before the horse.

After adding penciled notes to the second run through I start with 1. Editorial. Zamoida, Gladenkov and other Russians have reviewed schemes that are worthy of careful scrutiny and adding to the database. They have collaborated with South Africans on your neglected Precambrian. Let the grand target for the next IGC not make you too hasty not to heed the introductory statements above. In SA we have the people, the precedence of the defunct Subcommission on Precambrian Stratigraphy, and talent to tackle the Precambrian anew, and ISSC has already received a Precambrian Test 4, that seems to have blown Cita's mind as to the implications. Keep the data on file or recommend publishing it in Episodes or wherever you wish. Certainly not in a biostratigraphical journal! Remember that some 85% of all stratigraphy lies within the Precambrian! The same principles, procedures and definitions of stratigraphy should also be valid for the great majority of geological time that cannot accommodate biostratigraphy, adding continental and volcanic strata, or the outcome is sure to be biased [cf Tests 1,2,3 results].

On p.3 the internationally agreed upon rules are seen as the cause of acrimonious disagreements between ICS and ISSC concerning a minor [not hot in my mind!] issue, the base of the Quaternary, that can easily be resolved by changing 'rules' that are inapplicable when not valid for the whole **GTS**. That base should be the most representative GSSP in eastern Italy [Vrica?, Gelasian?], and reflect the original concept of Agassiz concerning Quaternary rather than any

volcanic age of Olduvai on the African plate. A storm in a teacup, real ivory tower stuff of no practical or economic significance, when I look at the latest Phanerozoic time scales used by petroleum geologists and see a date close to 1.6-1.8 Ma.

What do you mean by 'multifaced' or 'Orthostratigraphy' on p.4 without defining it for us foreigners to understand? Calibration of one event against another should not give rise to a new time scale or 'category', but merely to another column on a GPS chart indicating a subordinate of one of the classes, or an error [p.5]. What is the point of voting on the issue [-p.9], when true scientists debate an issue until *consensus* is gained. We are not geopoliticians.

The 3. Quaternary issue [pp.10-24] is out of order until more important issues have been debated to overall consensus. I shall point out reasons for this statement. Should we *have* to follow clearly defined rules without question, we shall crash land into a major pitfall and lose all credibility. The Guides are guides; not codes or rules to be blindly accepted, even if wrong [p.10]! Cita will have to think again. Geologists don't believe, they either know or need to [top p.11]. Bob Carter, Australia, [p.11] agrees with me that we deal with a unit of time here, not of chronostratigraphy. The ballot question is leading in that logically it cannot be both chronostratigraphic and a stratigraphic ***unit*** on any other plate but the European, where they include subdivisions of *two* sequential [successor] basins. "The whole point of GSSP,s is that they are arbitrary reference points along the ***time scale [my accent]***. Given the care with which they are established, the ISSC should never move a designated reference point [*stratotype]* unless there are quite exceptional reasons for doing so." ICS should retract with apologies. Enough harm has been caused. The bulk of erudite contributors have unwittingly been led astray to believe that chronostratigraphic units can be anything but regional. As reward to the enlightened, Anthony Tankard (1986) showed that an essential structural link to plate tectonics is opened by this theory for structural geologists to improve their regional historical reconstructions. Hedberg (1976) was right about time: the later Guides must be corrected.

Berggren [p.14] saw the light, but missed the best solution. Zachariasse [p.15] leans toward the Quaternary being a period [of time], though he referred to the Global Chronostratigraphic Chart, instead of the Global Geochronological Chart, the true name as originally introduced. By p.18, I realized again with horror that the wrong theory is still being brainwashed into most students worldwide. Cita's comments [pp.18-19] confirm. Why not follow the example of Leonardo da Vinci, the Renaissance genius? In his rambling records you may even find evidence that he had sparked the light of revelation into Steno. Strata are more than 'rock bodies, layered or unlayered': they are nested layers of more continuous units within mapable boundaries of greater discontinuities. Change that definition. A commision's definition of a horse invariably ends in something like a camel. This responsible commission is ICS [Finney, Vice-Chair ICS, p.21]. Concerning the Subcommission on Ordovician Stratigraphy, if there be no Ordovician depositional basin in Wales, as suggested after intense historic bickering, how can ISSC obey the 'rules' of the blundering ICS? The poem: "The Charge of the Light Brigade" came to mind. Specialist commissions do not have the broad view to tell where they should fit into the GTS. Cita agrees, I think [p.22].

Finally, I agree with the clear and erudite essay of Amos Salvador [p.23-24], who obviously refers to tangible regional stratigraphy, avoiding any inference of whether global chronostratigraphic units exist or not, because that was not the issue. His final paragraph on p.24 summarizes a consensus on the Quaternary, and the case is closed.

4. Ideas and plans for the new Guide

4.1 Sequence. In my previous communications with ISSC recently I stressed that the co-ordinators of the new Guide should devise a framework that addresses all issues raised in a logical order and discussed until consensus is reached, as above, or ISSC may lose their best contributors. They cannot be expected to spout wisdom for free and be ignored, forever.

Re Sequence I ask Embry to note all my previous contributions objectively, and I shall help him to realize that he is creating issues that have been solved and published in SAJG. I may remind him specifically as I come across these points. Use the new WG as Readers.

4.2 Cyclostratigraphy. This very important geological study is the best example of the objective or purpose of fundamental or pure stratigraphy. Thus it cannot turn around and pose as a Category, otherwise it uses circular reasoning to prove its premises.

Cyclicity is strictly a temporal term, and Hedberg regularly insisted that time is not a stratigraphic unit. Zalasiewicz & Co, please note.

4.3 WG's. If appropriate; physical and chemical stratigraphy are specialist subdivisions of lithostratigraphy, as I pointed out to ISPS before they threw in the towel. Answer to special request is YES! [p.26], and the case history is the Test 4 that has been procrastinated.

4.4 Biostratigraphy. DNA may yet ratify "Jurassic Park". Preston Cloud has made a suggestion that the whole GTS may be divisible theoretically into life evolutionary periods. The amino acid extracts may soon come up with surprises, viz. "National Geographic" Nov. 2004. Read the presidential address of Edna Plumstead, eminent researcher on coal and fossil plants [GSSA].

4. Letters Received. [pp.27-41]. I see much to support my stance, but my penciled notes are too abundant to be incorporated in this communication, designed to spring clean the historic dust [garbage] swept under the carpet. Remember the IT adage: GIGO: "Garbage In, Garbage Out"?

Let us quickly hear about a positive reaction in the next Newsletter while I prepare a case history aimed at "AAPG Bulletin" on a neglected coastal onshore prospect lead of 1969-1971 involving Jurassic barrier bar reservoirs and correctly used sequences.

Other dissenting views by a non member have been circulated directly a few months ago by Steve Walsh who asked to be in our mailing list. He read carefully our two last newsletters and commented several items.

Steve Walsh may be considered the most popular stratigrapher worldwide since he published a review paper in 2004 and three in a row on "The role of stratotype in stratigraphy" in 2005 on "Earth Science Review" which notoriously is the scientific journal with the highest impact factor in our research field.

January 25, 2005

Dear Colleagues,

I enjoyed the recent ISSC Newsletters, and have attached an essay that will be relevant to the planned revision of the International Stratigraphic Guide (ISG). I would like it to be included in the next ISSC Newsletter, but because it was noted in No. 6 that no new Newsletter will be prepared for some time, I'm sending this essay now to all of you. Make no mistake, I want to influence the revision of the ISG, and would like to convince as many of you as possible before major work begins on that project.

My thoughts on the Tertiary and Quaternary were developed in an essay that I was going to send to Felix Gradstein in order for him to hand out in Florence, but which never got finished. So here they are, updated.

I thank the editors of Newsletter 6 for mentioning my essay on the Zalasiewicz et al. (2004) paper. For those who missed it, it's in The Palaeontology Newsletter, v. 57, pp. 18-26, along with Jan's witty reply (which, however, does not convince me; see attached). Also see the paper by Walsh, Gradstein, and Ogg (2004) entitled "History, philosophy, and application of the Global Stratotype Section and Point (GSSP)" in Lethaia, v. 37, pp. 201-218.

Naturally I will welcome any comments on or criticisms of the attached essay, and feel free to forward it to other interested colleagues.

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Sincerely,

Steve Walsh

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