MINUTES OF THE 73rd ANNUAL MEETING

North American Commission on Stratigraphic Nomenclature

Monday, 5 November 2018, JW Marriott Hotel, White River Ballroom C, Indianapolis, Indiana

1. Call to Order of the 73rd Annual Meeting. Commissioner Brett, Chair, called the meeting to order at 1:05 pm.

2. Approval of Agenda. Commissioner Brett introduced himself, as Chair, and Commissioner Pratt, as Vice-Chair; he asked if there were additions to the agenda. There were none. Commissioner Edwards noted that she would have to leave the meeting briefly in order to present her talk. Commissioner Brett moved, seconded by Commissioner Pratt, that the agenda be approved. Carried.

3. Roll-Call. Attachment 2. Commissioner Pratt read the roll-call.

For the American Association of Petroleum Geologists (3)
Robert W. Scott (absent)
Richard Denne (present)
Katherine (Kate) A. Giles (present)

For the Association of American State Geologists (3)
Berry H. (Nick) Tew (absent)
Matt Joeckel (absent)
TBD

For the Geological Society of America (3)
Bill Berggren (present)
Shanan Peters (absent)
Marieke Dechesne (present)
Joe Hannibal (incoming; present)

For the U.S. Geological Survey (3)
Lucy E. Edwards (present)
Randy C. Orndorff (present)
Nancy Stamm (absent)
Janet Slate (alternate; present)
Julie Herrick (incoming; present)

For the Geological Survey of Canada (3)
Robert MacNaughton (absent)
Jim Haggart (present)
Rod Smith (present)

For the Canadian Society of Petroleum Geologists (2)
Brian R. Pratt (present)
TBD

For the Geological Association of Canada (2)
Frank Brunton (absent)
John Johnston (present)

For the Instituto de Geología de la Universidad Nacional Autónoma de México (1)
Ricardo Barragán Manzo (present)

For the Society of Sedimentary Geology (2)
Marie-Pierre Aubry (present)
Howard Harper (present)

For the Asociación Mexicana de Geólogos Petroleros (1)
Hilarión Sánchez Hernández (absent)

For the Sociedad Geológica Mexicana (1)
René Alejandro Téllez Flores (absent)

For the Servicio Geológico Mexicano (2)
Rosario Isabel López-Palomino (absent)
Arturo Palma-Ramírez (absent)

Commissioners-at-large
Carlton E. Brett (present)
Norman P. Lasca (present)
Ed Landing (absent)
Ismael Ferrusquía-Villafranca (absent)
Stanley C. Finney (present)
Richard H. Fluegeman (present)
Tom Dignes (absent)

4. Introduction of new commissioners and guests. New Commissioners Hannibal and Herrick were already named in the roll call. Commissioner Brett introduced them again as well as guests:
Brian T. Huber (Vice-Chair, International Commission on Stratigraphy)
Pat McLaughlin (Indiana Geological Survey)
Poul Emsbo (U.S. Geological Survey)

5. Approval of Minutes of 72nd Annual Meeting (23 October, 2017, Seattle, Washington). Attachment 1. The minutes of last year's meeting were approved.

6. In memoriam of past Commissioners. Commissioner Brett noted that David S. Fullerton passed away this past year. Commissioner Edwards reminded the commission that he was a Quaternary stratigrapher and served as a Commissioner in 1978–1984 and again in 2005–2014. A moment of silence was held.

7. Recognition of awards received by Commissioners. Commissioner Brett noted that he had been appointed to the Senckenberg Museum.

8. Chair's report. Commissioner Brett noted that it had been a busy year and summarized his main activities:
(1) Compiled and circulated the minutes of the 72nd Annual Meeting.
(2) Welcomed new members in writing.
(3) Worked with Commissioner Orndorff in helping him with items for the new website.
(4) Co-authored with Commissioners Pratt and Landing a proposed amendment to the Code to formalize Submembers, which is now published in *Stratigraphy*.
(5) Worked with representatives of various member organizations to fill commission vacancies.
(6) Helped organize, with Commissioners Edwards, Fluegeman and Pratt, poster session T124 on Integrated Biostratigraphy, which attracted 24 contributions.
(7) Arranged for the meeting room, provision of snacks, and delegating the libations to Commissioner Pratt.
(8) Helped prepare the Powerpoint slide for the AGI joint societies meeting.
(9) Worked with past-Chair Edwards and Vice-Chair Pratt on planning items.
(10) Proposed, organized, and wrote the guidebook for the two-day, post-meeting GSA field trip 419 on Middle Paleozoic Stratigraphy of the Louisville area which is co-sponsored by NACSN and the Ohio and Indiana geological surveys. This trip highlights the value of hierarchical subdivisions including Submembers.
(11) Appointed a new nominating committee for next year's Commissioners.
(12) Prepared and circulated a draft agenda and solicited input well in advance of the meeting.
(13) Worked with Commissioner Aubry on the proposals on Subseries and the use of Biochron, and with Commissioner Scott on the proposal on Chemostratigraphy.
(14) All in all handled a great deal of NACSN correspondence, amounting to nearly 300 to 400 e-mails.

9. Vice-Chair's report. Commissioner Pratt summarized his main activities:
(1) Co-authored with Commissioners Brett and Landing the proposed amendment to the Code to formalize Submembers.
(2) Helped organize, with Commissioners Edwards, Fluegeman and Brett, poster session T124 on Integrated Biostratigraphy.

(3) Liaised with Werner Piller, Chair of ISSC, regarding the Commissioner Scott proposal on Chemostratigraphy.
(4) Arranged the libations for the meeting.

10. Provisionally numbered Note 69, Commission Records 2013–2017, to be co-authored as usual by past chairs, i.e. Commissioners Brunton, Scott, Edwards and Fluegeman. Commissioner Fluegeman noted that it is almost ready to submit to *Stratigraphy*. He wishes to include links to the meeting minutes on the website and include interactions with other organizations.

11. Report on proposal for formal Submembers. Commissioner Brett outlined the history of the manuscript co-authored with Commissioners Pratt and Landing, and helped significantly by Commissioner Edwards. It was handled by *Stratigraphy* editor Jean Self-Trail, peer-reviewed, and is now published. The proposal follows the usual procedure of being available for comment for one year. Commissioner Brett stated that he is increasingly using the Submember rank in his research as well as adopting formal Bed and Beds nomenclature.

12. Report on AGI business. Commissioner Lasca represented NACSN at the AGI business meeting the same morning. He described the AGI Code of Conduct that was presented, and pointed out that all member societies will have to adhere to it. Harassment accusations should be dealt with by independent, outside agencies. He also described AGI's new fee structure based on dues-paying members, which means NACSN does not have to pay anything. He suggested we acknowledge AGI when we can and include it as a co-sponsor for conference sessions. Members of associated organizations can receive a free digital copy of the magazine *Earth*. AGI is dealing with numerous issues such as licensure, data breaches and cybersecurity, and so on, none of which directly concerns NACSN.

13. Report on IUGS and ICS. Commissioner Finney and guest Huber reported on this. ICS is the most visible and active group in IUGS, and there is a hope for increased funding. ICS chair David Harper sent his regrets. He noted that completing and calibrating the geological time scale is the priority, and that the website will be updated in a timely manner. The idea of creating Geoparks around GSSPs has been well received. Finney noted that three new stages have been established for the Holocene, and that there were over 100K Facebook views about this, proving the visibility of this decision. The Cambrian stages are also a priority. The Anthropocene receives media attention but there has been no formal proposal despite being long-promised. Commissioner Brett asked if there was any interest in Devonian substages, and Commissioner Finney suggested that taking care of the definition of the Emsian and the Devonian–Carboniferous boundary should be the priority.

14. Report on Latin American Geoscience Societies. Collaboration was initiated some years ago by Commissioner Ismael Ferrusquía-Villafranca in order to establish a unified Latin American stratigraphic code equivalent to the North

American Code which itself has now been translated into Spanish. He has reported that he was not successful in this endeavor. Commissioner Lasca filled in background on this and noted that in general involving national surveys has not elicited much response. Commissioners Barragán Manzo and Pratt say they will try again, hopefully in collaboration with the Asociación de Servicios de Geología y Minería Iberoamericanos. Commissioner Edwards pointed out that if it is approved the Submembers proposal will have to be translated into French and Spanish.

15. Report on the NACSN archives. Commissioner Lasca issued his usual request that Commissioners cc all email correspondence to him, and thanked everyone who has done so already.

16. Report on the NACSN website. Commissioner Orndorff noted that AGI is back to hosting the NACSN website, and asked the commission to recognize Commissioner Edwards for all she has done to help this process. He also urged Commissioners to provide any feedback they can, and thanked everyone who has already done so.

17. Discussion on inclusion of Cuban stratigraphers in NACSN. Commissioner Fluegeman reported that he had no contact with Cuban colleagues in the past year. Commissioner Barragán Manzo noted that he has established collaborations with Cuban colleagues and will explore this in relation to NACSN involvement. Commissioner Pratt also noted that GSA had asked him several years ago if he could help organize a Caribbean conference in Cuba under their auspices, but that was put on hold soon after for political reasons. Commissioner Edwards pointed out that incorporating Cuban societies would require a change in NACSN bylaws. She suggested NACSN should find out what Cuban groups might want, in terms of adopting and contributing to stratigraphic principles, so that federal, academic and industrial groups are represented. Commissioners Orndorff, Lasca, Fluegeman and Barragán Manzo offered to explore a potential collaboration, including contacting the current president of the national society. It was noted that the forthcoming Convención Cubana de Ciencias de la Tierra y Geoexpo will be in 2019. Commissioner Edwards moved, seconded by Commissioner Fluegeman, that an appropriate representative from Cuba be invited to attend the next NACSN meeting in Phoenix. Carried.

18. Discussion on the inclusion of Chemostratigraphy in the Code. Attachment 3. Commissioner Scott had circulated a discussion of the subject before the meeting, but not a formal proposal with draft changes to the Code. Commissioner Pratt introduced the discussion, noting that ISSC had initiated the subject with the review paper by Weissert et al. (2008) which was meant, down the road, to lead to revision of the Guide. He noted that H. Weissert felt that formalizing chemostratigraphic units was premature, until it was agreed upon what they should consist of. Commissioner Edwards had circulated ahead

of time some comments to the attachment and also suggested that it is premature, and for the time being additions to the Code fit better with the discussion of formal and informal units (p. 1560). She noted that any chemostratigraphic unit can have a corresponding chronozone which could be called a 'chemochronozone' or simply a chronozone. She mentioned that she asked Commissioner Scott had he envisaged would be the fundamental unit, but he did not know the answer. Commissioner Fluegeman indicated that it did have to be a material unit independent of time. Commissioner Edwards had suggested as a starting point a definition: "*A chemostratigraphic unit is a body of rock of rock that is defined or characterized by its specified geochemical properties such as isotopes of carbon, oxygen and strontium or their ratios, as well as common elements, trace elements, rare earth elements, and total organic content, and is distinct from overlying and underlying units having different geochemical properties. Chemostratigraphic units are material categories based on physical content like lithostratigraphic, biostratigraphic and other units. Currently, such units are named in a variety of ways, are highly useful in stratigraphic analysis, and are regarded as informal."* Commissioner Brett indicated that the advantage of including chemostratigraphy in the Code is to avoid chaos in how 'units' (i.e. excursions) are recognized and named. Guest McLaughlin pointed out that those doing stable-isotope chemostratigraphy would be amenable to a formalized nomenclature, and that oxygen-isotope stages have long been in use for the Cenozoic. Guest Huber noted that there is some variation in the way chemostratigraphy is used, especially to define and correlate named 'ocean-anoxic events' (OAEs) and that there is no formal body to ratify them, so that they are essentially informal. Guest McLaughlin pointed out that a composite standard would be the aim of integrating datasets from different regions. Various Commissioners and guests suggested sponsoring conference sessions, a workshop, a townhall meeting, and possibly a dedicated SEPM research conference. Commissioner Brett moved, seconded by Commissioner Pratt, that an ad hoc committee be established to explore the matter, and that it could include non-Commissioners with appropriate interest and expertise. Carried.

19. Discussion on the proposal to formalize Subseries in the Code. Attachment 4. Commissioner Aubry summarized the situation and had prepared a manuscript draft for *Stratigraphy* which had been circulated beforehand. She pointed out that Subseries are widely used in the marine Cenozoic. Commissioner Edwards noted that Subseries and Superseries are already in the Guide. Commissioner Finney noted that if Subseries were designated Lower, Middle, and Upper, then this would produce awkward usages such as Lower Lower Ordovician. He also noted that most potential subseries are one stage in extent anyway. Commissioner Orndorff moved, seconded by Commissioner Lasca, that the manuscript be finalized and submitted. Carried.

20. Discussion on the need for a formal definition of Biochron in the Code. Attachment 5. Commissioner Aubry, introduced the topic and had prepared a

draft proposal which had been circulated beforehand. Commissioner Edwards pointed out that Biochron had been in the 1961 Code but subsequently omitted. Commissioner Edwards moved, seconded by Commissioner Harper, that Commissioner Aubry proceed with developing a manuscript for submission to *Stratigraphy*. Carried.

21. Discussion on future directions of NACSN. Commissioner Brett noted that besides the initiatives already under way, he would like to see a serious discussion about 'state-line' geology, because political boundaries lead to separate stratigraphic schemes, causing problems for mapping, databases, nomenclatural priority and so on. He also noted that these issues are relevant for a discussion of allostratigraphy and how much facies change is permissible within formally named units. Various Commissioners suggested sponsoring sessions on the topic at forthcoming conferences, such as GSA, GSA section meetings, STRATI, AAPG–SEPM, NAPC etc. It was noted that NAPC in Riverside has a special session dedicated to Mike Murphy.

22. Appointment of Nominating Committee for 2018–2019. Commissioner Brett stated that Commissioners MacNaughton, Fluegeman and Brunton have agreed to serve in this capacity.

23. Election/Renewals of Commissioners-at-large. The terms of Commissioners Lasca, Landing and Finney expired in 2018 and Commissioner Brett offered that they could be renewed. Commissioner Harper moved, seconded by Commissioner Pratt, that all three be re-apppointed. Carried. Two new Commissioners-at-large were proposed, Commissioner Mike Easton moved by Commissioner Edwards, seconded by Commissioner Orndorf, and Commissioner Orndorff moved by Commissioner Pratt, seconded by Commissioner Lasca. Both carried.

24. Presentation of scrolls. Commissioner Edwards printed out the scrolls and Commissioner Brett presented them to those whose terms expired in 2018, including special 'recognition' of Commissioner Pratt. Commissioner Orndorff thanked Commissioner Brett for his activities as chair.

25. Adjournment of the 73rd Annual Meeting. Commissioner Brett proposed that the meeting be adjourned. Commissioner Edwards so moved, seconded by Commissioner Orndorff. Carried.

26. Call to Order of the 74th Annual Meeting. Commissioner Brett called the meeting to order.

27. Report of the Nominating Committee and Election of Officers for 2018–2019. Commissioner Lasca reported, on behalf of himself, Commissioner Orndorff and Commissioner Scott, that Commissioner Pratt is proposed as Chair

and Commissioner Haggart as Vice-Chair. Nominations were closed and the slate was elected by acclamation.

28. Remarks by incoming Chair. Commission Pratt thanked everyone for all their efforts and stated that he is looking forward to helping carry forward the various initiatives. Commissioner Harper mentioned that it might be worthwhile to establish a social media presence. Commissioner Pratt declared the 74th Annual Meeting in recess until the fall of 2019 and invited Commissioners and guests to stay and socialize until the meeting room had to be vacated.