

International Subcommittee on Cambrian Stratigraphy (ISCS)  
Business Meeting, St. John's, Newfoundland, 21 June 2017

1. Thank you to organizers and field trip leaders of the Newfoundland meeting (Alex Liu, Guy Narbonne, Duncan McIlroy, Marc Laflamme, Ed Landing, Jack Matthews, Latha Menon, and field trip leaders). Thank you to all who have made this meeting possible, and who have made us welcome here.
2. Introduction of officers and Voting Members (for term ending 2020): Loren Babcock (Chair), Per Ahlberg (Secretary), and Xingliang Zhang (Vice-Chair); additional VMs who are here: José-Javier Álvaro, Gabriella Bagnoli, Olaf Elicki, Gerd Geyer, Malgorzata Moczydlowska-Vidal, Elena B. Naimark, Shanchi Peng, Michael Steiner, and Maoyan Zhu.
  - 2.1. Chairs of Working Groups:
    - Terreneuvian: Maoyan Zhu
    - Stage 2: Michael Steiner
    - Stage 3: Xingliang Zhang
    - Stage 4: Jim Jago
    - Stage 5: Linda McCollum
    - Stage 10: Per Ahlberg
    - Web page: Malgorzata Moczydlowska-Vidal (Michael Streng, webmaster)
3. Current Voting Members (for the term 2016–2020):
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4. Request for updated contact information (especially email addresses) from all VMs, Honorary Members, Corresponding Members; also alternate rapid contact (fax, etc.).
5. In 2013–2014, the new ISCS webpage was introduced and modified. Recent information is posted there.
6. ISCS sponsored/co-sponsored meetings this year:
  - 6.1. ISECT 2017 (this meeting)
7. Announcement of upcoming meetings.
  - 7.1. 6<sup>th</sup> International Conference on Trilobites and Their Relatives, Tallinn, Estonia, 7–10 July 2017. Principal organizer: Helje Pärnaste.
  - 7.2. International Workshop on Evolution of Cambrian Arthropods – Taxonomy, Ontogeny and Phylogeny, Xian, China, 1–6 September 2017. Organizing committee: Dongjing Fu, Tao Dai, Yu Liu, and Fangzhen Zhao.
  - 7.3. Dayangcha International Workshop on the Cambrian-Ordovician boundary (DIWCOB), 20–25 September 2017, Changchun, NE China.
  - 7.4. IGCP Project 653 Annual Meeting – Filling the gap between the Cambrian Explosion and the GOBE, Yichang, China, 08–12 October 2017. Chair organizing committee: Zhang Yuandong.
  - 7.5. International Conference on Ediacaran and Cambrian Sciences, August 2018, Xian, China (ICECS 2018). Organizing committee: Yaoping Cai, Jian Han, Hong Hua, Kangjun Huan, Jianni Liu, Xingliang Zhang (chair), and Zhifei Zhang.
8. Discussion of progress toward publication of stage and series names
  - 8.1. Ratified boundaries defined by GSSPs:
    - 8.1.1. Furongian Series/Paibian Stage – 2004, Lethaia
    - 8.1.2. Drumian Stage – 2007, Episodes
    - 8.1.3. Terreneuvian Series/Fortunian Stage – 2008, Episodes
    - 8.1.4. Guzhangian – 2009, Episodes
    - 8.1.5. Jiangshanian – 2011; GSSP, Episodes (2012); ASSP, Episodes 2013
9. Discussion of work toward defining remaining GSSPs.
  - 9.1. Stage 5 (*Oryctocephalus indicus* level): Three possibilities have been discussed: FAD of *Oryctocephalus indicus*, FAD of *Ovatoryctocara granulata*, FAD *Paradoxides* s.l. After formal voting in 2015, the Working Group has recommended using the FAD of *O. indicus* as the primary chronostratigraphic tool for recognizing the base of the stage and the conterminant base Cambrian Series 3. Following this recommendation, two GSSP proposals were submitted to ISCS in 2016. One proposal is from the Split Mountain Section, Nevada, USA, and the other one is from the Wuliu-Zengjiayan Section at Balang Village, eastern Guizhou, China.
  - 9.2. Stage 10 (*Lotagnostus americanus* level). Alternate possibility for level: *Eoconodontus notchpeakensis* level. Possibilities for a GSSP section: Siberia, South China, Kazakhstan, Utah, etc.
  - 9.3. Stage 2: Possible levels: *Watsonella crosbyi* or *Aldanella attleborensis*. Possibilities for a GSSP section: Siberia, South China, etc.
  - 9.4. Stage 3 (approximately FAD trilobites): The earliest trilobites known seem to be *Profallotaspis jakutensis* in Siberia, *Hupetina antiqua* in Morocco and *Fritzaspis* in

Laurentia. Potential markers of small shelly fossils: FAD of *Pelagiella subangulata*, *Microdictyon effusum* or *Mobergella radiolata*. If the level is to be identified principally through biostratigraphic means, its position also needs to be recognizable using non-biostratigraphic means. A manuscript (Zhang, X.L. et al.) reviewing the possibilities and difficulties have been accepted for publication in Earth-Science Reviews.

9.5. Stage 4 (approximately FAD *Olenellus/Redlichia*): ISCS favors placing stage base at FAD of a single trilobite species. Possibilities: a species of *Olenellus* (s.l.), *Redlichia* (s.l.), *Arthrocephalus chauveaui*, *Judomia*, or *Bergeroniellus*. Such a position would be at a level roughly corresponding to the base of the Dyeran Stage of Laurentia, the base of the Duyunian of South China, and the base of the Botoman Stage of Siberia.

9.6. Cambrian/Terreneuvian/Fortunian GSSP. A Working Group has been assembled to provide a recommendation about whether or not we should consider options for redefining the GSSP.

- We need to remind persons interested in sections for consideration as GSSPs of the ICS/ISCS procedure: the relevant Working Group must identify the preferred level first; then there will be a call for proposals from the WG; then the WG will decide on the best section and refer the decision to ISCS for a vote by the Voting Members.

10. Other matters?