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National Commission for Stratigraphy Belgium

NCS meeting report 21/11/2017

Meeting report: National Commission for Stratigraphy Belgium

GSB-RBINS, 21/11/2017

Present (9)

Isabelle Belanger, Marie Coen-Aubert, M. De Ceukelaire (Webmaster), Alain Herbosch, Bernard Mottequin, N. Vandenberghe (P), Jacques Verniers (S), Kris Welkenhuysen, Johan Yans

Excused (5)

Frieda Bogemans, Katrien De Nil, Michiel Duser, Vanessa Heyvaert, Stephen Louwye.

1. The chairperson opens the meeting at 10h05. He welcomes Kris Welkenhuysen, as invited representative of the Belgian Geological Survey to the NCS. No new items are added to the agenda and it is hence accepted.

The report of the previous meeting of 2017-1 is approved, after some minor technical corrections.

2. The chairperson repeats the six tasks of each of the subcommissions (as mentioned in the previous report).

a. to complete the lithostratigraphical scale at the level of the members and remarkable horizons, following the NCS procedure).

b. to provide the latest published tables, figures and schemes of the lithostratigraphy for the website and a list of 5-10 references of important publications.

c. to coordinate the work between the active members on the concerned time interval; update the list of members with new active members.

d. to organise scientific activities (discussion meetings, excursions, workshops, core inspections) open for the geological community.

e. for the chairperson and secretary to participate in the bi-annual meetings of the NCS

f. to contribute actively to the website with news of the Subcommission, thoughts, defining current problems and possible answers.

Subcommissions: activities (past and planned), proposals to be ratified, comments...

Lower Palaeozoic

The website is up to date; no proposals formulated. Tim De Backer noted in the spring that an accepted formation was not included in the website, which was rectified. Following the published revisions of the Cambrian formations and of the Ordovician formations, the revision of the Silurian formations is planned for 2018 by Verniers, Herbosch & co-workers. Alain Herbosch mentions the submission to Geologica Belgica of a new geological map (1/200.000) with extensive explicatory manuscript, of the outcrop area of the Brabant Massif, based on the reviewed lithostratigraphy of the Cambrian and Ordovician formations and the newly published (or still unpublished) maps of the Walloon region.

The chairperson, stimulating more activities in the subcommissions, inquires if a meeting can be organized, for examples, around the new publication. The talk associated with the Geologica Belgica Medal Vandembrouck (winter 2018) by J. Verniers, can also emphasize different aspects linked to the lower Palaeozoic stratigraphy.

Devonian

Marie Coen-Aubert mentions some problems with the Devonian chronostratigraphy with several non-ratified GSSP's, the searches for new GSSP's for the Devonian-Carboniferous, and for the Pragian-Emsian (Uzbekistan, Germany, Czech Republic, and Pyrenees). Discussion continues on the new Membre of Martelange, proposed by Dejonghe et al., 2017 after the submission but yet unpublished new geological maps and explanatory texts of the Walloon Region. A publication appeared: *Lagrou, D. & Coen-Aubert, M. 2017. Update of the Devonian lithostratigraphic subdivision in the subsurface of the Campine Basin (northern Belgium). Geologica Belgica. 20/1-2: 01-13.*

A 3-day excursion (Mid-Late Palaeozoic of Western Europe: the Belgian classics) will be organized for the fifth International Palaeontological Congress (Paris, 9-13 July 2018).

Carboniferous

The Hemptinne Formation has been introduced since 2013 and was discussed on the website as was the Ourthe Formation discussed in 2016. The chair and secretary of this Subcommittee being not present, the proposal for the new Hemptinne Formation and Ourthe Formation cannot be approved (as was the case in the previous meeting of January 2017). Some technical problems with a.o. thickness has been resolved. The NCS awaits the presentation of the formation at their meeting, upon which the acceptance can follow.

Permian-Triassic-Jurassic

Isabelle Belanger mentions no problems and no changes with the chronostratigraphy. Works has been achieved on new data and detailed description of Triassic-Jurassic series in boreholes from southern Belgium and Grand-Duchy of Luxembourg. This collective work led by F. Boulvain will soon be printed. (*F. Boulvain, I. Belanger, R. Colbach, S. Dechamps, D. Delsate, D. Deligny, P. Ghysel, J. Michel, S. Philippo & B. Ramlot, 2017. New sedimentological data from Triassic to Jurassic boreholes and sections from Southern Belgium and Luxembourg. Professional Papers Geological Survey of Belgium, vol. 319.*)

During an excursion in 2016, a discussion was held on the status of a subunit of the Arlon Formation: the Hondelange Member. Focus was made on the suggestion to level up the Hondelange unit to the formation level, hence the Formation of Hondelange. Following these discussions an article was prepared and sent to *Geologica Belgica*: the Hondelange Formation and the sequence stratigraphic canvas of Belgian Lorraine (F. Boulvain & I. Belanger, in press). The purpose of the current work is (1) to suggest a new status for the Hondelange Formation, formerly considered as a member of the Arlon Formation (Boulvain *et al.*, 2001) and (2) to synthesize all information acquired from boreholes and to propose a sequence stratigraphic canvas for the Triassic and Jurassic of Belgian Lorraine.

Boulvain, F., Belanger, I., Delsate, D., Dosquet, D., Ghysel, P., Godefroit, P., Laloux, M., Roche, M., Teerlynck, H. & Thorez, J., 2001a. New lithostratigraphical, sedimentological, mineralogical and palaeontological data on the Mesozoic of Belgian Lorraine: a progress report. Geologica Belgica, 3 (1-2), 3-33.

Alteration units: proposal.

On top of the Hirtzenberg hill, the highest point of Arlon region, a formation of undetermined age and of a very altered facies has been recognized and mapped as the Hirtzenberg Formation in the Geological Map of Wallonia. As this formation cannot be included in the usual stratigraphic scale by lack of information, it could however be classified as an alteration unit.

Cretaceous

The Vert Galand Formation, in a second version, has been posted as proposal since 13.1.2016 and has been approved by mid-2016 and hence is hereby ratified. The alteration unit, “Clay-with-flints formation”, was posted as proposal since 26.2.2016 and can now be considered as accepted. Study and discussion starts on aspects of the Bernissart units.

Palaeogene-Neogene

The subcommission has been very active again. Noël Vandenberghe summarizes from the report of their last meeting of 27/10/2017. The restudy of the leper Group of the outcrop areas and of geophysical well-log data of more than 200 boreholes is finished. It allowed better correlation and several new insights. The result is summarized in a flyer: “a practical guide to identify the lithostratigraphic units in the leper Group”, with overview tables and schemas of formations and members and with short descriptions of all units. It has been distributed to interested parties. It will allow non-specialized users (universities, education, consulting engineering firms, construction workers, geotechnics, administrations, ...), to see more clearly in the thick clayey-silty-sandy succession, with many lateral and horizontal facies changes. Similar summaries in flyer format could also be envisaged for other groups.

Rik Houthuys, Noël Vandenberghe and Johan Matthijs prepared a document regarding the Brussels Formation, including a proposal for three members, mainly based on grain size with little emphasis on carbonate and glauconite content. It concerns a document essentially for practical use and is currently under discussion. The different decalcification and alteration levels can cause problems for the attribution to the different units of the formation, for mapping purposes as for the interpretation of their genesis.

Johan Matthijs prepares a publication on the affiliation of the Maaseik Member either to the Heers or the Hannut Formation. Together also the affiliation of the Beselare member is now under discussion.

In the Neogene, the Kasterlee Formation is now under discussion.

Within The Netherlands (TNO) – Flemish (VITO) H3O project, some fine-tuning appeared to be necessary for the Belgian Neogene lithostratigraphy, which will be incorporated in the publication on the Belgian Neogene, planned for 2020.

Quaternary

The Arenberg Formation has been put as a proposal on the website since 2016 and without having received further comments can be considered as accepted.

The commission concentrated now its work in 2017 on the Meuse-Rhine Group: the Pleistocene and Holocene fluvial sediments deposited by the river basins of Meuse and Rhine on the Belgian territory. The group can be divided into two parts: downstream or upstream of Liège. The manuscript on the part of the Meuse-Rhine Group downstream Liège is nearly ready to be distributed and discussed. The part upstream of Liège still needs more work. In the spring 2018 a meeting is foreseen to list the existing problems and to discuss uncertainties in both parts.

New Subcommission on Alteration units

Several subcommissions encountered problems with special units, containing altered rocks derived from sometimes very different parent rocks or facies changes due to in situ alteration and where no

clear attribution can be made to a Subcommission. The units are mapable and are indicated on the new geological map of Wallonia e.g. with a shadow or overprint.

It was discussed at the previous meeting and positively appreciated (Jan 2017). The NCS agreed with the creation of the new subcommission, with Johan Yans as chairperson and Michiel Duser as secretary . Its task will be first to catalogue all possible alteration units to be included or excluded according to the criteria used (e.g. will diagenetically dolomitized limestone be included or not); formulate scientific, societal utilities for the new divisions; select possible members for the subcommission; organize a meeting with stakeholders, where the first synthesis can be presented and possible further issues can be discussed. The meeting should be well advertised to attain all possible interested persons (consulting firms, water companies, environmental sanitation firms ...).

3. The Belgium/Dutch chronostratigraphic chart

The ICS offers the possibility to add translations of the official ICS chart (in English). Beginning of July 2017 the chairperson was informed of an initiative of The Netherlands to translate the chart into Dutch. Since they have another tradition of spelling the names than used in the Flemish community, a Belgium/Dutch version of the chart has been compiled by the Flemish speaking members of the NCS and send to the ICS and a larger audience of persons who use these terms. Consequently we translated the English termination - ian and – an endings into respectively – iaan and – aan, we use “onder” and “boven” for “lower” and “upper” in chronostratigraphical terms (and early and late for the corresponding time involved) and other spellings as used in recently published standard books in Flanders. The table is free of rights and can be downloaded from the website of the Nationale Commissie Stratigrafie: https://ncs.naturalsciences.be/sites/default/files/ChronostratChart2017-02BEDutch_1.pdf

4. Experience with the website

The user’s friendliness is discussed. Typing “National Commission Stratigraphy Belgium” in the search engine is the quickest way to arrive on the NCS website. The intensity of use was monitored prior to its move to the IRSNB/KBIN website, but a counting devise can be reinstalled. Several persons agree with the easy to look up information and the fast updates of news, proposals, and reports.

Qua content, it is appreciated that in the alphabetic list of formations and members as accepted by the NCS, they are connected with a link to the descriptions. It is also appreciated that the units used on the new Geological map of the Walloon region but not yet discussed or proposed to the NCS are also included. The missing Devonian members are also listed separately in a file marked “Region Wallone”, but it is remarked that the list has not been updated since several years. It is appreciated that the NCS news appears monthly in *Miscellanea Geologica*. One member indicates that several email addresses of the 2001 article are obsolete and should be deleted in those articles on our website.

The chairperson and the webmaster invites once more to put news, thoughts, invitations for meetings and excursions on the website, that it can remain an active form of communication of our NCS and persons using it.

5. Future ways for the working of the NCS

5.1 Role of NCS versus subcommissions

The chairperson sees five key roles:

The subcommissions do the main work of the committee.

The NCS is installed by the “National Committee on Geological Sciences, NCGS”, part of the “Royal Academies for Science and the Arts of Belgium, RASAB”, the National Scientific Member for Belgium to the “International Council for Science, ICSU” linked with UNESCO. The NCGS appoints a chairperson and he/she chooses a secretary. They have to report yearly to the NCGS. In practice the NCS can communicate directly with ICSU. For example, the issue of the translation of the chronostratigraphic chart in Dutch was handled directly by NCS; it would have been hard to achieve this result without NCS.

The NCS can stimulate/emulate/control the working of the subcommissions, when needed.

The organisation of the website for contact with the larger community of users of the stratigraphy.

A meeting place of geo-scientist working on stratigraphical matters in the three regions in Belgium (Flemish region, Walloon region, Brussels region), each responsible for their part of the subsurface.

5.2 Meeting schedule of NCS. The chairperson observes the difficulty to have a full attendance of our committee twice a year, due to a distances and a full workload. To be able to follow the procedure for accepting new formations within 6 months discussion time he proposes to have at the end of spring or early summer an electronic consultation and a physical meeting at the end of year. This proposal is accepted.

5.3 Composition of the board (chair, secretary, webmaster) in the future.

The chairperson prefers a younger person in charge of the NCS and will contact possible candidates and inform the NCS; he adds that a new board brings new ideas and initiatives and therefore it is preferable to have professionally active persons in charge. Alain Herbosch urges him maybe to rethink this decision, since he has been doing a very good job with good palpable results of the NCS.

The post of secretary was for two years and this will be taken in 2018 by Kris Welkenhuysen, active in the Belgian Geological Survey (KBIN/IRSNB). This way this scientific institution continues to show its interest in stratigraphical research.

6. Any other business

The meeting ends at 11h40.

Chairperson: Noel Vandenberghe, Secretary: Jacques Verniers, Webmaster: Marleen De Ceukelaire