

Minerals Subcommittee Meeting Minutes March 2019 – March 2021

A. Roberts – Chairperson

This is an “executive summary” of the activities of the Mineral Subcommittee and the Mineral Task Group for the last two years from March 2019 until March 2021.

First off, I would like to thank Andy McDonald (Laurentian University, Sudbury) for over twenty years of active service on the Minerals Task Group and for also being the “leader” of the Mineral Group Classification scheme. His expertise, especially for mineral classification, is going to be hard to replace. Andy had decided in 2020 to “retire” from active service with ICDD and I wish him well in his future endeavors.

Secondly, I would like to welcome Travis Olds (Carnegie Museum of Natural History, Pittsburg) as a new member of the Mineral Task Group. Travis has a strong background in mineralogy and crystallography and has joined us for, and made significant contributions to, our virtual task group meetings this past year. Welcome on board.

You are probably wondering why I did not schedule a Zoom meeting this March. I made an “executive decision” not to because of the motion I must put forward (the preliminary motion and some background are below). I felt that this motion deserves some major discussion which can only be served at a “face-to-face” meeting. I simply did not feel that a virtual meeting would do the motion any justice.

I will forgo the following for this timeframe: Approval of Minutes of the March 2019 Meeting, Review of Mission Statement, and Board of Directors’ Liaison Report. As far as I know, except for the latter, there is nothing to report. I have not talked to Scott Misture (Board Liaison for Minerals Subcommittee), but I know that our motion from 2019 has been approved. For those interested, here was the motion:

The Mineral Subcommittee recommends to the Technical Committee the following: within the Mineral Name field, Schaller modifiers should be replaced by the term “-bearing”. For example, “Fluorapatite, strontian” would now become “Fluorapatite, Sr-bearing”.

Minerals with two or more Schaller modifiers would have the pertinent elemental symbols separated by commas; e.g. “Barite, calcian, strontian” thus becomes “Barite, Ca-,Sr-bearing”. The Mineral Task group has agreed to this terminology, but this is not IUPAC approved. The IUPAC recommendation (as proposed by Peter Bayliss) is to use the term “-rich”. We believe that the English word “rich” implies the wrong connotation, and would prefer “bearing” instead.

How do I know it was approved? Because it is implemented in PDF4+ Release 2021.

I will summarize the activities of the Mineral Task Group below:

- (a) In December 2019, the Mineral Task Group (L. Bernstein, A. Kampf, A. McDonald, A. Roberts) met at headquarters and reviewed 142 temporarily approved minerals for PDF Set 70.
- (b) In 2020, the Task Group (now including T. Olds for A. McDonald) met virtually in August (60 patterns), September (completed editing from August), November (60 patterns), and December (49 patterns). Additionally, 2 patterns were reviewed by email. The final mineral count of approved mineral patterns for Set 71 is 167.

It would certainly appear, just based on new mineral submissions to CNMNC, that the number of mineral patterns to be added to the experimental file (00 database) will be consistently between 140-170 per year for quite some time.

As a consulting editor, I(ACR) am sent an “alpha” copy of the most recent PDF Release (usually in the May to June time frame) where it is my job to edit the Mineral Related new additions (compounds and minerals) of mainly the 01(FIZ) and 04(LPF) databases. Output of corrections is usually 20-30 pages and is typically completed by early summer.

I (ACR) continue to add synthetic mineral names (based on CNMNC newsletters and chemical/crystallographic searches of the most recent PDF) to the 00,01,03, and 04 databases. This is an ongoing project and I typically send a listing of 5-8 pages of additions to headquarters in May or June.

Additional new groups (or supergroups, or families etc.) have halted, for the time being, with the “retirement” of A. McDonald. Hopefully, one of the other members of the Mineral Task Group (with a crystal structure background which I do not have) will step forward and help out. In the meantime, new additions to existing Mineral Classifications are continuing to be added in a timely manner.

I continue to add IMA numbers for post-1959 minerals to the appropriate field in the PDF. This is typically synthetic equivalents or more recent experimental or calculated powder data derived from naturally occurring material. The IMA number spans the 00, 01,03, and 04 databases. THAT IS THE CRUX OF THE PROBLEM.

Mineral Subcommittee motion (background):

A number of years ago, I was approached by Tom Blanton and told that ICDD (BOD decision?) had decided to add a "IMA No:" field (PDF tab -> part way down and to the right of "Mineral Name:" field.) and would I be able to populate the field. I agreed and happily started filling in this field with synthetic equivalents and the like. These additions were mainly to the calculated patterns of the 01(FIZ) and 04(LPF) databases.

Fast forward to either 2018 or 2019, at a Mineral Task Group meeting at headquarters, it became obvious that the other three members objected to me adding an IMA number to experimental powder data that did not correspond to the original powder data published in the original publication of said mineral. We debated the point, but eventually moved on to complete the editorial assignment. It should be pointed out that staff at headquarters are aware of the "issue". Last year, during virtual meetings, it basically came to a head and I was asked (told?) to make a motion (since I am the Chairman of the Minerals Subcommittee) to delete the "IMA No:" field from the PDF. The other members of the task group (excluding myself) were very vociferous about this.

So here goes a preliminary motion:

The Mineral Subcommittee recommends to the Technical Committee the following: the searchable field "IMA No:" should be deleted from all future PDF Releases. We (L. Bernstein, A. Kampf, T. Olds, and A. McDonald) feel very strongly that the "IMA No" should only be reserved for powder data (both experimental and calculated) extracted from the original publication of a given mineral. In future, the given IMA number associated with a new mineral would be added to the appropriate Comments box of the experimental/calculated powder pattern. (Note: most new mineral descriptions published in at least the last twenty years include a crystal structure which is then abstracted by FIZ and LPF and a calculated powder pattern produced and eventually sent to ICDD. The IMA number would be added to the appropriate FIZ (database 01) and/or LPF (database 04) entry. Thus, a specific IMA number would, in most cases, only be added to the Comments box of 2-3 patterns of the PDF.)

This probably needs to be modified somewhat, which is why it is just "preliminary". You will note that I did not include myself within this motion. Personally, I am ambivalent; I can see the merits of both sides of this argument and will happily comply with whatever is decided. So please "don't shoot the messenger". I would expect a somewhat "lively" discussion regarding this motion, both at the Minerals Subcommittee meeting and the Technical Committee meeting. That's the main reason why I choose not to participate in a virtual meeting; ones that I have "attended" tend to have only one person talking and everybody else just listening with little or no feedback.

I don't have anything to report from Steve Hillier of the Clay Minerals group. Perhaps he will attend the March 2022 meeting and enlighten us on new developments in the "Clay Universe".

One other thing before I sign off assuming a "real" meeting in March of 2022, please try not to coincide the Minerals meeting with the Micro and Meso Subcommittee meeting. I, for one, am a member of both and I haven't been able to attend a "Zeolites" meeting in ages.

Andy Roberts