



**INTERNATIONAL MINERALOGICAL ASSOCIATION
COMMISSION ON NEW MINERALS, NOMENCLATURE
AND CLASSIFICATION**

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10 February, 2023

Dear Richard Pažout,

Congratulations on your new mineral, LAZERCKERITE (2022-113)!

The attached summary will appear in my next memorandum to the members of the Commission on New Minerals, Nomenclature and Classification. You should consider the comments of the members when you write your final description.

Although the Commission has no strict rule dealing with publication, I would ask that you ensure that the first published record of your mineral is in the scientific literature.

The CNMNC has decided to announce new minerals (**with or without their name, depending upon the authors' wishes**) with some data on the CNMNC website, one month after their approval. The text that will appear is attached below.

One of the rules of our Commission is that the description of a new mineral must be published within **two years** of notification of the approval. If publication does not take place during that time, approval of the mineral and its name will be withdrawn.

Proof of receipt of the type specimen(s) by the curator of the collection in which the type specimen(s) have been deposited must be sent to me as soon as possible to ensure approval.

The Commission strongly disapproves of the practice of providing specimens of new species to mineral dealers prior to the full description of the new species being published in the scientific literature.

Please send a copy of this letter with the manuscript of your description when you submit the paper for publication. This will indicate to the editor of the journal that the mineral and its name have been approved by the Commission on New Minerals, Nomenclature and Classification of the International Mineralogical Association.

Please send a reprint of the description to me when it is published.

Best regards,

Ferdinando Bosi

Chairman CNMNC

Encl.



**Monthly announcement of new minerals on the CNMNC website and in the
Mineralogical Magazine and the *European Journal of Mineralogy*
with or without their name, with a limited number of data.**

The Commission on New Minerals, Nomenclature and Classification decided in January 2010 (Proposal 09-D: the early publication of new mineral names) that additional data would be published one month after the approval date on the CNMNC website. This data will also be published in the *Mineralogical Magazine* and in the *European Journal of Mineralogy*, under the heading of a CNMNC Newsletter.

For your newly approved mineral, the following data will be published in line with the above, unless you wish the mineral name to remain confidential until the full description is published. If this is the case, the name will be removed from the data listed below. **NOTIFY ME BY E-MAIL IF YOU DO NOT WISH TO HAVE THE NAME OF YOUR MINERAL RELEASED PRIOR TO PUBLICATION.**

IMA No. 2022-113

Lazerckerite

$\text{Ag}_{3.75}\text{Pb}_{4.50}(\text{Sb}_{7.75}\text{Bi}_4)\text{S}_{24}$

Lze?

In the medieval mine dumps of the Old Bohemian Lode, Kutná Hora Ag-Pb-Zn ore district, ca. 60 km E of Prague, Czech Republic (49°58'29" N, 15°16'09" E)

Richard Pažout*, Jakub Plášil, Michal Dušek, Jiří Sejkora and Gheorghe Ilinca

*E-mail: richard.pazout@vscht.cz

Lilianite group

Monoclinic: $P2_1/n$; structure determined

$a = 13.2083(9)$, $b = 19.4595(8)$, $c = 8.405(1)$ Å, $\beta = 90.032(7)^\circ$

3.408(32), 3.407(34), 3.353(100), 3.004(22), 3.003(25), 2.902(39), 2.901(37), 2.101(29)

Type material is deposited in the collections of the Department of Mineralogy and Petrology, National Museum, Cirkusová 1740, 19300 Prague 9, Czech Republic, catalogue number P1P 11/2022

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2022-113
LAZERCKERITE

	Yes	No	Abstain
Mineral	19		3
Name	16	2	4

Consequently, both the mineral* and the name** have been **approved**.

*In view of comments on the cell orientation and mineral name, the authors responded with arguments similar to those of the proposal 2022-112. In the formal paper that will describe this mineral, it is recommended that all issues raised by CNMNC members be addressed.

**The authors agreed to change the name from “erckerite” to lazerckerite (as suggested by a CNMNC member) to avoid confusion with eckerite. Please change your records accordingly.

COMMENTS ON THE MINERAL:

Those who voted **YES** made the following comments:

1. It would be better to report an experimental PXRD based on the measured single-crystal X-ray diffraction data collapsed into two dimensions.
2. Good work.
3. (001) twinning by pseudo-merohedry, obliquity 0.03°.
4. Without X-ray powder diffraction data, but with enough information to establish a new mineral.
5. *Name*: after Czech expert on the mining district containing the type locality.
Occurrence/Paragenesis: as rims on and intergrown with earlier Ag-Pb-Bi sulfosalts in polymetallic hydrothermal vein deposit.
Chemical Analysis/Formula: OK; total only slightly below 99%, which is unusual for sulfosalts and hence merits comment. As often with sulfosalts, structural information needed to obtain an informative formula recalculation.
Physical Properties: OK. Slightly limited by small size but some data likely very similar to those for related phases.
Optical Properties: AOK. Good reflectance dataset, compared with those for related terrywallaceite.
XRD data/Crystal Structure: OK.
Other data: n/a.
Type material location: OK.
Relationship to other minerals: A unique Pb-poor, mixed Sb-Bi $N = 4$ homologue in the lillianite family.
References: OK.
6. In Table 7 for erckerite, holubite and ramdohrite a unit cell type “A” is given with similar lattice parameters. But in Table a different setting is given for erckerite. Why? Table 7 and text: andorite IV is now quatranderite

Those who voted **NO** made the following comments:

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Those who **ABSTAINED** made the following comments:

1. Accurate description and justification for a new name in terms of site population and ordering. Nevertheless, I am confused with the choice of cell orientation: Why is the cell oriented differently from ramdohrite and holubite? Both are isostructural with erckerite and should show the same space group: $P2_1/n$. Indeed, beta (almost 90°) has been chosen differently and therefore space group changes (only setting) to $P2_1/c$. This

is unnecessary and misleading. In fact, the structures of holubite and eckerite are identical but shifted due to the unfortunate change of cell setting. I guess that the same result (in terms of structure topology and site population) will be obtained if α is the monoclinic angle and the cell is oriented as for holubite. Authors should provide a sound motivation for the different choice either refine cell letting α to be unconstrained, while constraining the other two angles and using a $P2_1/n$ setting; then, redo refinement and tables. If these are isostructural, start from the same cell orientation and refine the same model, so the site names are the same and coordinates very similar! It does not help this random choice of cell orientation. The authors should pay more effort on this detail, considering the complicated structure and solid solution of lillianite homologues series. Only for this reason I abstain.

2. Cell orientation is confusing.
3. Holubite, erckerite, ramdohrite are isostructural, called type A ($a \approx 19 \text{ \AA}$, $b \approx 13 \text{ \AA}$, $c \approx 8.5 \text{ \AA}$) in Table 7. However, holubite and ramdohrite has 2_1 symmetry along the $\sim 13 \text{ \AA}$ axis called **b** axis, while erckerite has 2_1 along the 19 \AA axis called axis **b**. (Mistake in Table 7). In Table 8 erckerite, oscarkempffite, andorite IV have different chosen cell axis, but have 2_1 symmetry along the $\sim 19 \text{ \AA}$ long axis (erckerite), 2_1 symmetry along the $\sim 13 \text{ \AA}$ long axis (oscarkempffite), 2_1 symmetry along the $\sim 17 \text{ \AA}$ long ($2 \times 8.5 \text{ \AA}$) axis (andorite IV). Staročeskéite has higher $Cmcm$ symmetry for $a \approx 8.5/2 \approx 4.25 \text{ \AA}$, $b \approx 13 \text{ \AA}$, $c \approx 19 \text{ \AA}$.

In spite of the fact that possible (pseudo-)merohedral twinning could complicate determination and refinement and heavy atoms with high absorption could result worse data quality and R values which are significantly better with data cutoff (1 \AA resolution), it would be nice to see R values for different point groups for comparison and try refinement in different space groups as well. Maybe it results better statistical parameters. Maybe authors did.

COMMENTS ON THE NAME:

Those who voted **YES** made the following comments:

1. If the name is confusing with eckerite, use of the first name "Lazarus" would be another option.
2. I found the given pronunciation "/erke'rait/" somewhat misleading. In the name "Ercker" there is no accentuation on the second "e" (and also not on the first one).

Those who voted **NO** made the following comments:

1. Too close to eckerite.
2. Too similar.

Those who **ABSTAINED** made the following comments:

1. Really close to eckerite
2. Too close to eckerite.
3. To avoid confusion with eckerite the proposed new mineral species could be named lazerckerite where laz stands for Lazarus, the given name of Ercker.
4. Due to the vote abstain for the mineral.