

Botanical Nomenclature and Art. 19 of the *International Rules of Zoological Nomenclature*, the original spelling of a name must be retained, except in the case of a typographic error or of a clearly unintentional orthographic error (error of transcription, a *lapsus calami*). When this rule is applied to the above-mentioned examples, we find it necessary to use the original forms *Aglaia*, *Meioneurites*, *Oiorhinus*, *Euonymus*, *Evetria*.

It may be proposed, however, to authors of new names that, owing to the requirement of euphony, the following suggestions should be regarded in the future:

1. The diphthong ϵi be transliterated before a vowel as *e*, and before a consonant as *i*.
2. The diphthongs $a i$ and $o i$ be still transliterated as *ae* and *oe*, respectively.
3. The diphthong υi be transliterated as *yi*, e.g., $\acute{o}\rho\gamma\upsilon\acute{\alpha}$, *orgyia*, $\mu\upsilon\acute{\alpha}$, *myia*.
4. The diphthong av be transliterated before a vowel as *av*, and before a consonant as *au*.
5. The diphthong ev be transliterated before a vowel as *ev*, and before a consonant as *eu*, e.g., $\epsilon\upsilon\epsilon\upsilon\acute{\rho}\epsilon\tau\acute{o}\varsigma$, *eueuretus*.
6. The diphthong ov be still transliterated as *u* (contrary to a proposal by Höfker followed by Valckenier Suringar [2]).

The question of writing the simple letters *v* (*u*) and *i* (*j*) being of a typographic rather than an orthographic nature, we may use the rules of transcription both prospectively and retrospectively, provided that a proposal for the amended version of the respective paragraphs is accepted. Such minor additions to the *Codes* would bring the official biological nomenclature in greater compliance with practice.

On the other hand, some rules of the transliteration of Greek diphthongs cannot have any power to change the original orthography of names, and may only be considered as being a prospective but nonretroactive recommendation.

References

1. BONNET, P. *Bull. Zool. Nomenclature*, **3**, 199 (1950).
2. VALCKENIER SURINGAR, F. *Mededeel. Rijks Herbarium (Leiden)*, **56**, 42 (1928).

Probable Extreme Age of Pegmatites from Southern Rhodesia¹

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The relative ages of the granite intrusives which, by and large, comprise the vast basement shield areas of the earth's crust, have been a cause for much investigation. The history of these basement-complex plutonics is extensive, and batholithic intrusion may extend over a period of as much as $1,000 \times 10^6$ years. For example, in North America, many of the younger masses have ages of about $700\text{--}1,000 \times 10^6$ years,

¹This investigation is part of a general program of spectrographic research, carried on in the Department of Geology, MIT, under contract with the Office of Naval Research, Washington, D. C.

whereas in one area (southeastern Manitoba) evidence (1, 2) seems conclusive that the age of pegmatites is $2,000 \times 10^6$ years or more. The latter area represents one of the oldest on the earth's crust thus far dated.

In southern Africa, granite and ortho-gneiss basement rocks—locally known as the “Old Granite”—are well exposed along east and west coasts; in the central area the “Old Granite” is usually well covered. Along the west coast (South-West Africa and northern Cape Province) a few age determinations have been made by either lead or strontium methods (3, 4). These ages, some of which are only approximate, range from 700 to $1,100 \times 10^6$ years; none is extremely old. Stretching northward from Natal, the eastern “Old Granite” is exposed in Swaziland, eastern Transvaal, and particularly in Southern Rhodesia. Here some of the pegmatites carry lepidolite, the ages of nine of which have been determined (Table 1) by the strontium method. The method of analysis is basically the same

TABLE 1
STRONTIUM AGE DETERMINATIONS ON NINE LEPIDOLITE SPECIMENS FROM SOUTHERN RHODESIA*

Location	Years ($\times 10^6$)
1 Pope Tantalum Mine, 11 miles east of Salisbury (Large mauve flakes)	2,000 1,900 2,500 2,100 2,350
Mean	$2,150 \pm 200$
2 15 miles NNE of Salisbury (Pale, compact)	2,300 2,200 1,750 2,700 2,200
Mean	$2,200 \pm 200$
3 Lutope Tin Mine, Wankie District (Deep-purple, medium-grained)	2,050 2,100 2,200 2,100 2,100
Mean	$2,100 \pm 200$
4 Odzi District (Light-mauve, medium-grained)	2,000 2,000 1,950 2,450 1,950
Mean	$2,100 \pm 200$
5 Antelope Mine (Massive, purple)	2,100 1,900 1,750 1,900 1,700
Mean	$1,900 \pm 200$
6 South of Al Hayat Claims, Bikita Kop, Bikita District (Pale, fine-grained)	2,300 2,200 1,700 2,400
Mean	$2,150 \pm 200$

Location	Years ($\times 10^6$)
7 Mauve Kop, near Fort Victoria, Bikita District (Deep-purple, medium-grained)	3,100 3,300 2,900 2,300 3,100
Mean	$2,950 \pm 300$
8 Nigel Claims, N of Al Hayat Mine, Bikita District (Purple, columnar)	2,100 2,100 2,000 2,200 1,800
Mean	$2,050 \pm 200$
9 Al Hayat Mine, Bikita District (White lepidolite)	3,000† 2,250 2,200 2,500 2,350
Mean	$2,300 \pm 200$

* All measurements calibrated in terms of a standard lepidolite from southeastern Manitoba, the age of which has been taken as $2,200 \times 10^6$ years. $2,200 \times 10^6$ years = mean of lead and strontium ages. Analysts: M. Davidson and L. Ahrens.

† This result omitted from calculation of mean.

as described by Ahrens (4) but has been modified and improved by M. Davidson in the Cabot Spectrographic Laboratory, MIT.

The mean value for each specimen is given in Table 2. With the exception of No. 7, all means fall within the range $1,900$ – $2,300 \times 10^6$ years, which gives a mean for all specimens of $2,100 \times 10^6$ years.

TABLE 2
(Mean Ages from Table 1)

No.	Age (years $\times 10^6 \pm 200$)
1	2,150
2	2,200
3	2,100
4	2,100
5	1,900
6	2,150
7	$2,950^* \pm 300$
8	2,050
9	2,300
Mean	2,100

* This result excluded from calculation of mean.

Seen as a whole, the nine ages indicate with a high degree of probability that the area of basement intrusives covered by these lepidolite specimens is extremely old and is comparable in age with the basement granite exposure in southeastern Manitoba. This makes at least two areas on the earth's crust that have an age of about $2,000 \times 10^6$ years, or perhaps a little more. A third possible area of like magnitude in age is that of the granites and associated pegmatites at Varuträsk, Sweden (an age investigation on this area is still in progress). A fourth region of great age, but possibly a little younger, is that of northern Karelia, Russia.

Field evidence in Southern Rhodesia, as elsewhere, on the basement intrusives shows that phases of massive igneous emplacement were fairly numerous, and the fact that eight of the above ages are in good agreement (within $\pm 200 \times 10^6$ years of the mean) does not necessarily mean that they belong to the same phase of activity. They evidently all belong to the same major cycle of orogenic events. The analytical error on each specimen is about 10% ($\pm 200 \times 10^6$ years at $2,000 \times 10^6$ years) and gives some latitude for more than one phase of activity. Taken as a whole, the area is approximately twice as old as the basement plutonics along the west coast.

A chief criticism that may be leveled at the validity of the age determinations given here is that no isotope analyses have been made. Although such an analysis is always desirable, there seems little doubt that the strontium in the Rhodesian specimens is largely radiogenic. This is based for the most part on reasons given (2) in the discussion of lepidolite ages from Manitoba and on the following short discussion on calcium.

Strontium is commonly associated with calcium, and the concentration of this common element serves as a useful, though rough, indicator of the possible presence of ordinary strontium. Table 3 gives some approximate calcium concentrations. With the exception of No. 9 (0.07% Ca), calcium is relatively low (0.006–0.015%) and is typical of the amounts frequently found in lepidolite. The measured age of No. 9 (Table 1) appears slightly greater than any of the other accepted ages and could conceivably be due to the presence of a little common strontium.

TABLE 3
APPROXIMATE CALCIUM CONCENTRATION IN SOUTHERN RHODESIAN LEPIDOLITE

No.	% Ca
1	0.006
2	.007
3	.01
4	.015
5	.006
6	.012
7	.01
8	.01
9	0.07

Considering the great age of these specimens, a fairly high proportion of this calcium (up to 40% in some) is likely to be radiogenic; that is, formed by β -decay of K^{40} .

No attempt will be made to discuss the geological significance of the lepidolite ages here, but one of us (AMM) is utilizing them as an aid in attempting to determine the pre-Cambrian succession in Southern Rhodesia.

References

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