

Growth of Mineral Species

Tom Mortimer

At the 2023 MMNE symposium I was the winning bidder on a silent auction offering of ten years worth of *The Canadian Mineralogist* magazine. This journal, like its cousin, *The American Mineralogist*, is a very technical publication. Most articles are on a species or a locality/environment that are outside my interest, and often beyond my comprehension. But in most of the quarterly issues there is a topic of at least tangential interest to my NH mineral passion.

The February 1997 issue has a short introductory article “Old Mineralogical Techniques” by J. Mandarino. A table within the article, Figure 1, copied below, illustrates the growth of mineral species from 1800 to 1973. When I started my adult collecting in 1974, the total world-wide species count was about 600. At the time Phillip Morrill published his 1960 booklet, *New Hampshire Mines and Mineral Localities*, (my “goto” reference for NH), there were only about 350 world-wide.

PERIOD	NUMBER OF SPECIES
1800 - 1819	87
1820 - 1839	167
1840 - 1859	180
1860 - 1879	200
1880 - 1899	193
1900 - 1919	178
1920 - 1939	256
1940 - 1959	342
1960 - 1973	575

Presently, (July, 2023), mindat.org lists 5,943 species ! The mineral collector’s life was so much simpler in Morrill’s day. A collector starting in the mid 70’s had some hope of obtaining a sample of every species. The collector of minerals from a defined border region (like NH) could be even more optimistic for a complete suite.

A case Study of New Hampshire Species

My mindatnh.org web site has photos of 306 New Hampshire species, with supporting analysis for most of the uncommon ones. My working list of confirmed NH species contains 334, suggesting that I remain 28 short of my goal. The exact total of all NH species at any given time is fluid and a somewhat subjective number. New species are being routinely defined, others discredited. More exacting analysis has redefined some of my specimens.

Several minerals found in New Hampshire have been refined by mineralogists into large groups based on small chemical differences, e.g. arrojadite (16 members), jahnsite (14 members), whiteite (9 members). My NH list just references the group name, as the determination of these small chemical differences is often beyond our capability to differentiate with the BC instrument that we use. Hydrated (water containing) minerals are also an issue. The water content can result in a unique species name, e.g. the meta, para prefixes. Determination of a mineral sample water content requires skilled technique with expensive laboratory instruments, again beyond the what is available to the amateur collector. In my NH species list I have combined species like autunite, meta-autunite, torbernite, meta-torbernite.

When I cross-reference my NH list with mindat’s (NH count = 346), a number of rarities come up. Researching the mindat.org references on these, one finds some species that were identified from a core of a deep bore hole. Others were found as some tiny bleb on a thin section slide. My contention is that a regional species list for the mineral collector should be one limited to species that one has at least some remote hope of obtaining.