

AN EXPERIMENT IN SPECIMEN APPRAISAL

Wendell E. Wilson
P.O. Box 783 Bowie,
Maryland 20715

John S. White, Jr.
Dept. of Mineral Sciences
Smithsonian Institution
Washington, D.C. 20560

Photos
By
W.E.W.

PART 1

One would think, on an intuitive basis, that if a group of experienced and knowledgeable curators, collectors and dealers independently appraised each specimen in a collection they would arrive at remarkably similar figures. We thought the same thing, and decided to test this hypothesis. The results, we thought, were a foregone conclusion, but the statistical proof would be new and interesting.

The following experiment was devised to test the hypothesis that experienced value judges will consistently and closely agree. Ten specimens from the collections of the National Museum of Natural History (Smithsonian Institution) were placed on display at mineral shows and in the Smithsonian offices where guests could view them. Selected people were asked to independently assign dollar values to these pieces. All of these people were either collectors, mineral dealers or curators of public mineral collections. An attempt was made to include a large proportion of highly experienced, qualified appraisers, but we purposely included some inexperienced people as well. Naturally we "knew" that those in the former cate-

gory would be remarkably consistent, and those in the latter category remarkably erratic. Imagine our shock when the resulting data annihilated all of our premises!

Before discussing the data, we would like to invite readers to test their own expertise in the appraisal of mineral specimens. The ten specimens are pictured here; write down your estimate of a reasonable retail value for each of the ten pieces shown (or simply make a wild guess) just as if you were thinking of buying or selling the specimens yourself. Then compare your appraisals with those of this article on page 48.

This survey was conducted over three years ago, and repeated recently, so perhaps you will wish to make two estimates for each specimen: one for its 1976 value and one for its 1972 value.

The specimens were chosen to provide a spectrum of values and types, from an exquisite California gold to a relatively common Vera Cruz amethyst. The selection includes species often found on the current market, and items almost never seen for sale.

Carefully consider the sizes and colors indicated when making your appraisals. Then read Part II beginning on page 47.

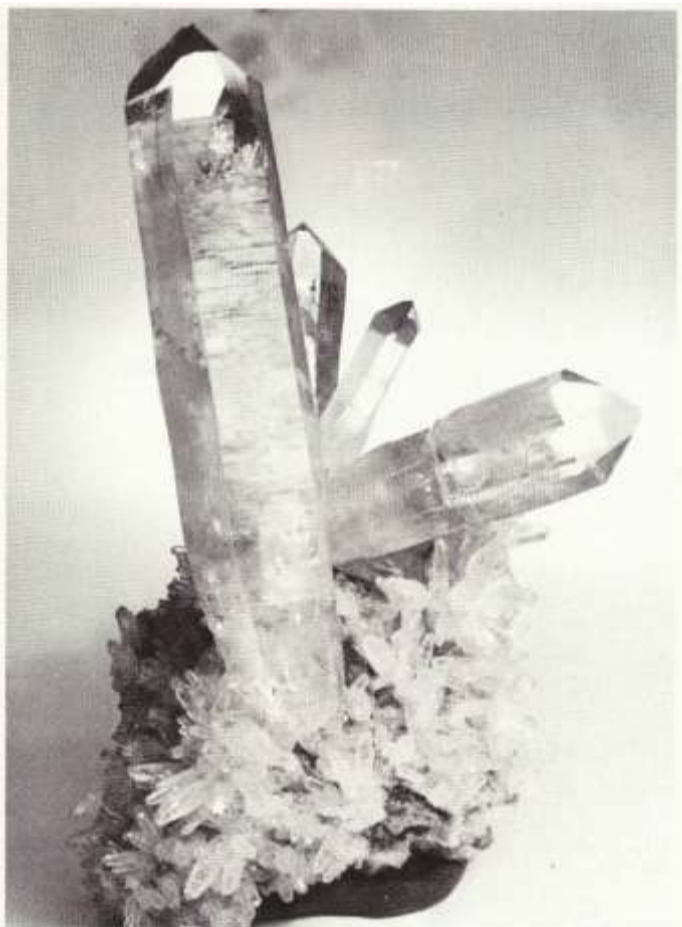


Figure 1. Quartz, variety amethyst, from Las Vigas, Vera Cruz, Mexico. The crystals have purple tips of good color and the large crystal is doubly terminated. Specimen height: 9.3 cm.

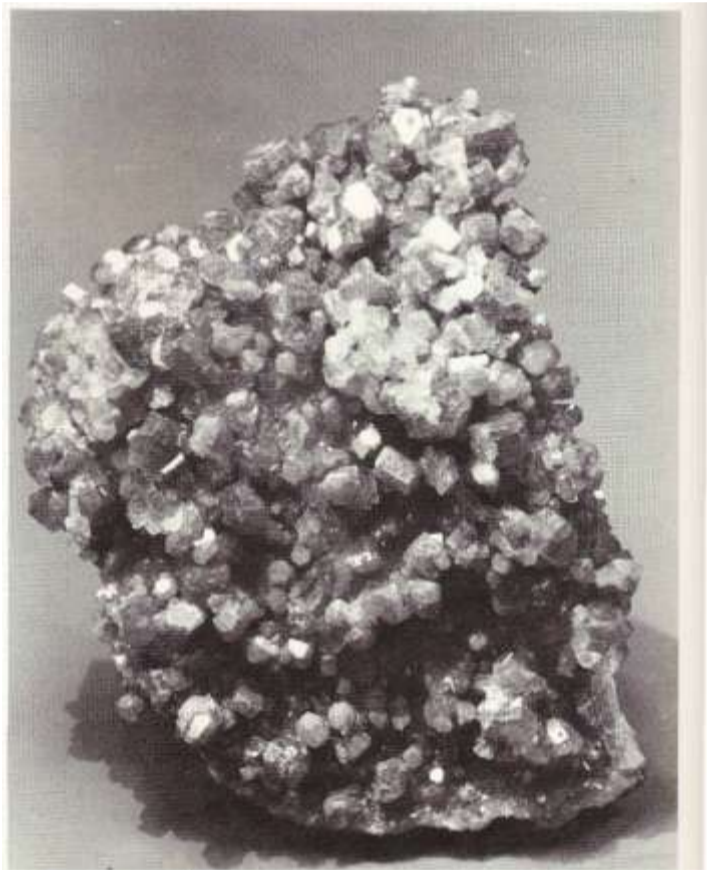


Figure 2. Vanadinite, from the Old Yuma mine, Pima County, Arizona. Rich orange red. Specimen height: 7.0 cm.

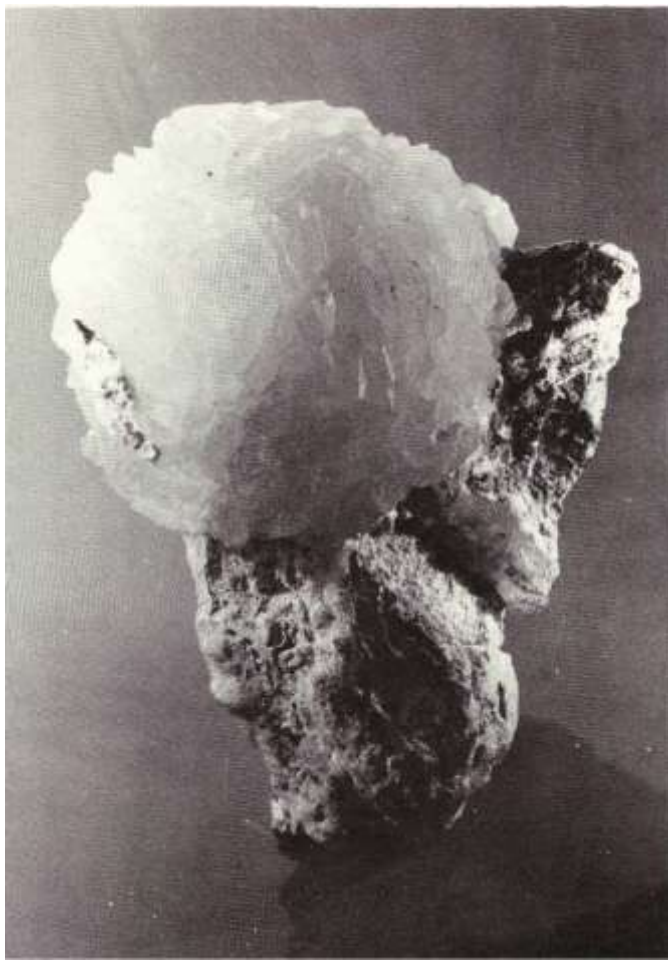


Figure 3. (left) *Brucite*, from Wood's Chrome mine, Lancaster County, Texas. Very pale green color. Specimen height: 7.3 cm. Figure 4. (below) *Apophyllite*, from Poona, India. Medium limegreen; not as darkly colored as the darkest pieces from India, but still an attractive green. Specimen height: 4.5 cm.



Figure 5, (above) *Fluorapatite* with quartz, from Panasqueira, Portugal. Pale green. Specimen height: 6.0 cm.

Figure 6. (right) *Epidote* from Knappenwand, Untersulzbachtal, near Salzburg, Austria. Greenish black. Specimen height: 6.7 cm.

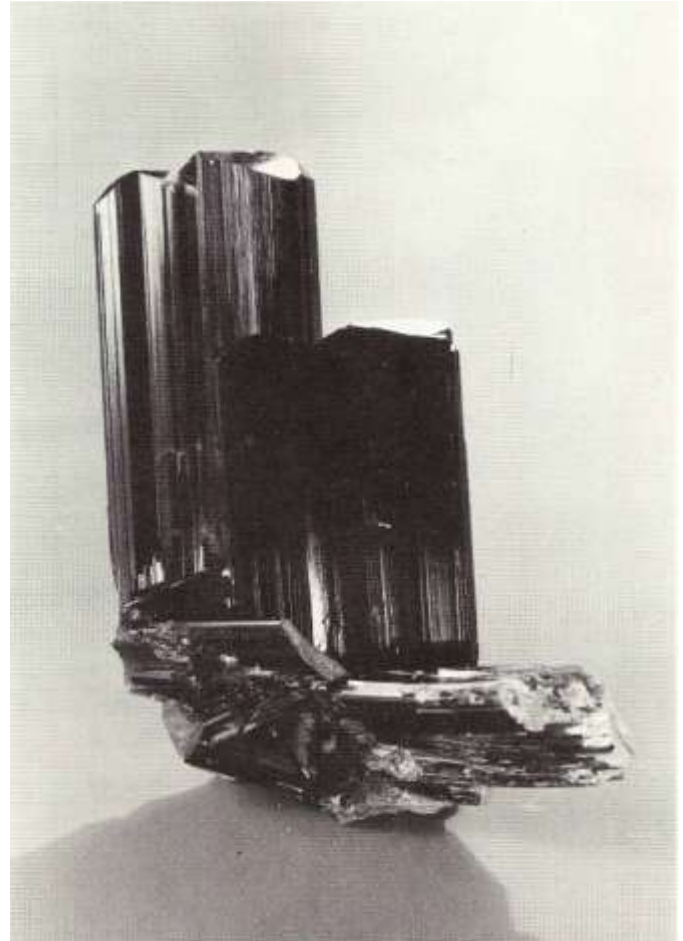


Figure 7. (below) *Mimetite*, from Tsumeb, Southwest Africa. Very pale yellow. Specimen height: 5.7 cm.

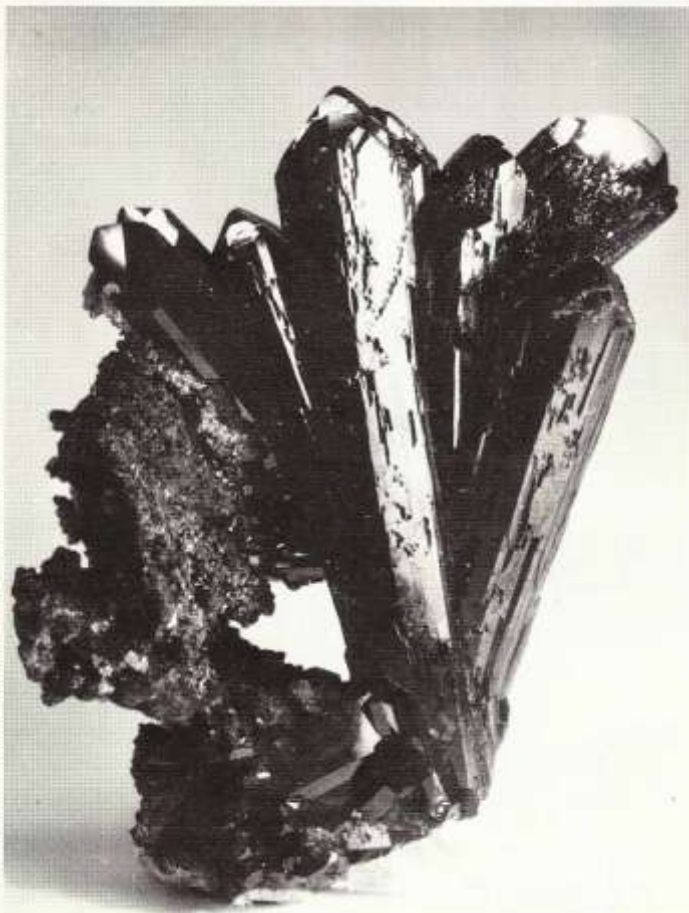


Figure 8. (top right) *Bournonite*, from Horhausen, Westerwald, Germany. Repaired, but a good job. Specimen height: 5.5 cm. Figure 9. (left) *Azurite*, from Tsumeb, Southwest Africa. Black with blue internal reflections. Specimen height: 8.5 cm. Figure 10. (above) *Gold*, from Grass Valley, California. Rich yellow. Specimen width: 8.0 cm.

AN EXPERIMENT IN SPECIMEN APPRAISAL

PART 2

(Continued From Page 40)

The results of our two appraisal tests are given in Table 1. The first appraisal was concluded in October of 1972; the repeat was concluded, for the most part, in April of 1976. Although somewhat fewer appraisers were involved the second time (22 vs. 27 the first time), the relative proportion of dealers to collectors and curators was about the same. Many, though not all, of the people in the first test were involved in the second test, but none were told the test would be repeated; it is fairly safe to assume that they could not remember or be influenced by their own 1972 estimates when they repeated the appraisal in 1976.

One may well ask whether this data has any meaning at all. Specifically, what is the *true* price of a specimen? In reality, a successful selling price is a function of time; a low price (relative to what most people would expect for a particular specimen) results in a quick sale whereas a higher price for the same piece can result in a long, difficult sale. Remember that \$1000 may seem a "low" price for certain fine specimens whereas \$10 might seem too high for lesser pieces. The higher a particular specimen is priced, the fewer people there will be who would be willing to pay that price for that specimen. The fewer the potential buyers, the longer it takes to find one of them. So we must define a "reasonable retail price" as the price at which the specimen would sell in a reasonable period of time, or after exposure to a reasonable number of people (see editorial, v. 7, n. 6). We feel the average of all the appraisals for a given piece probably best approximates a reasonable retail price, and therefore is meaningful; one should bear in mind, however, that it might be quite possible for a piece to sell at a higher price if the seller has more than average patience.

While not what we expected, the data are nevertheless very interesting. The first column (A) lists the averages of all of the appraisals for each specimen during each of the two appraisal periods. These are the figures with which you will want to compare your own estimates. But if you are not too close to these figures, don't feel bad. The second and third columns list the averages of the highest and lowest appraisals. For example, for the 27 appraisers in the first test we averaged the lowest seven appraisals (column B) and the highest seven appraisals (column C). The range was far wider than we expected, indicating that even experts cannot closely agree. The next column gives the actual highest and lowest appraisals for each piece.

We separated the curators and collectors (buyers) from the dealers (sellers) to see if their appraisals differed significantly; they did. In general each group seems to have been influenced by some wishful thinking. The dealers' estimates of the "selling prices" were higher than the collectors' and curators' estimates of the "buying prices," probably similar in concept to the "bid" and "asked" prices of the stock market. There were some exceptions, but in general the dealers' appraisals were higher. However, different criteria may be in use by the two groups; perhaps the dealers have special customers already willing to pay a premium for such specimens that collectors and curators would normally be unwilling to pay. For example, at the *Mineralogical Record* mineral auction every year, dealers routinely outbid the collectors present!

In one statistical test on the first appraisal the experts were divided into two groups: those with more than twenty years of

experience and those with less. Neither group showed a clear-cut superiority. In fact, one appraiser had virtually no experience in the buying or selling of fine specimens and yet his appraisals were excellent. Apparently accuracy of judgment requires considerably less than twenty years to acquire, if indeed it ever *can* be acquired.

Some specimens were more difficult for the appraisers to evaluate than others, and their appraisals, in general, have become significantly more erratic since the 1972 test. The column labeled C-B/ A might be illustrated by a simple case. Suppose only four appraisers are involved; C is the highest appraisal of the four, and B is the lowest. These two extremes are compared to the average of all four appraisals (A). It appears that in 1972 the highest and lowest estimates of only four people were likely to differ by an amount about equal to the full average value of the specimen! For example, if the average value were \$200, the estimates were likely to range from \$100 to \$300 ... a sizeable spread. But by 1976 the situation had become even worse; the difference between the highest and lowest of four estimates was liable to be nearly *twice* the "actual" value of the piece! If the value were \$200, the estimates might run from \$50 to \$400.

In a similar test we rated each appraisal according to the ratio of the appraisal to the average of all appraisals for the specimen, dividing the lower value into the higher. For example, a guess of \$50 compared to the actual average of \$100 would be considered off by a factor of two. A guess of \$200 on the same \$100 piece would also be considered off by a factor of two. Summing the ratios for the ten appraisals given by each person, we obtained a measure of each person's accuracy relative to the grand average. Richard Bideaux was the winner in 1972, and Victor Yount was the winner in the recent test. Vic's average appraisal was off by a factor of only 1.4 (1.0 would be a perfect score). The 22 appraisers in the recent test, as a whole, were off by an average factor of 2.05. You may compare your own estimates to these scores obtained by the experts. The most inaccurate appraiser was off by a factor of 3.01.

Using the same ratios as above, we summed the ratios for each of the 22 appraisals for each specimen to obtain a measure of the trouble appraisers had with each piece. The average values are listed under the column labeled "difficulty". The most difficult pieces to assess were the apatite and brucite; the easiest were the amethyst, vanadinite and bournonite.

Values have definitely tended to increase significantly, even though they are poorly defined. Only the Old Yuma vanadinite lost value, probably due to the influx of fine Moroccan vanadinite. The others performed extremely well, from an investment standpoint; on the other hand, people who dread the increase in mineral prices might not be as pleased as the investor. It is clearly one of those situations to which you can either point with pride or view with alarm. The last columns indicate the *yearly* appreciation (or "interest rate") for each specimen and the total appreciation over the entire 3.4 year period. Even though this is an exceptionally fine selection of specimens, we think the near tripling of the total value during only 3.4 years is phenomenal, and may be the most significant finding of this experiment.

Perhaps other inferences may be drawn from the data, but we will leave them to readers. Only three conclusions seem relatively safe: (1) experts are in poor agreement on the value

Table 1. Appraisal statistics

SPECIMEN	APPRAISAL DATE*	(A)	(B)	(C)	AVG.OF CURATORS AD COLLECTORS APPRAISALS	AVG.OF DEALER APPRAISALS	DIFFICULTY	C-B A	APPROXIMATE AVG.YEARLY APPRECIATION, 1972 TO 1976. **	3Y2-YEAR APPRECIATION
		AVG. OF ALL APPRAISALS	AVG. OF LOWEST 1/4 of APPRAISALS	AVG. OF HIGHEST 1/4 of APPRAISALS						
AMETHYST	1972	\$104	§ 90	\$175	\$35-225	\$107	\$100	0.82		
	1976	223	9	413	75-700	202	240	1.77	1.44	29%
VANADINITE	1972	127	110	130	40-325	127	130	0.16		
	1976	122	59	225	30-400	120	124	1.77	1.36	-1%
APATITE	1972	425	310	530	125-1100	452	395	0.52		
	1976	675	171	1475	125-2500	545	783	2.46	1.93	14%
BRUCITE	1972	325	170	500	50-1000	242	400	1.02		
	1976	541	158	1142	50-1250	370	683	2.41	1.82	16%
APOPHYLLITE	1972	370	190	530	50-1200	222	510	0.92		
	1976	640	242	1292	125-1800	698	629	2.03	1.62	17%
EPIDOTE	1972	795	470	1420	200-1750	629	945	1.19		
	1976	1977	583	4167	250-4000	2090	1883	2.38	1.81	31%
MIMETITE	1972	805	390	1400	150-2500	666	935	1.25		
	1976	3204	917	6917	500-10000	3035	3346	2.38	1.87	48%
BOURNONITE	1972	835	500	1150	100-2500	632	1020	0.78		
	1976	1582	667	2700	450-3000	1525	1629	1.73	1.29	21%
AZURITE	1972	1735	1020	2635	750-5000	1281	2160	0.93		
	1976	5809	2600	9917	750-12000	5775	5838	1.83	1.26	42%
GOLD	1972	2340	1105	3815	425-6000	1748	2885	1.16		
	1976	7457	3008	12667	1550-15000	7555	7375	1.78	1.30	40%
TOTALS	1972	7560								
	1976	22230						MEANS: 2.05		37%

*The 1972 appraisers included 14 dealers, 9 collectors and 4 curators;

The 1976 appraisers included 12 dealers, 9 collectors and 5 curators.

**For example, if a specimen doubled in value in 3.4 years, it would have appreciated at a rate of about 22% *per year*. Over the *entire period* it would have appreciated by 100%.

of specimens, (2) they are getting poorer, and (3) mineral values for specimens like these are definitely rising at a significant rate. One should not view mineral prices as absolutes; they will be debatable at least within a range of from one half to twice the price listed on the label or suggested by a buyer or seller.

ACKNOWLEDGMENTS

Our thanks to all of the people who took part in this study.

[NOTE: During the following years, up to around 1980, the specimens appreciated very little, but we did not repeat the survey during that period.]