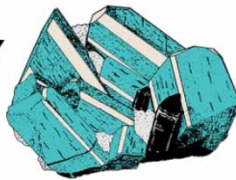


**FRIENDS OF MINERALOGY
COLORADO CHAPTER**



*All future meeting are canceled
until conditions change*

***If meetings restart in 2020, Our Chapter’s meeting place is: Berthoud Hall, room 109,
Colorado School of Mines campus, Golden.***

We’ve moved to the CSM campus. Parking on CSM campus streets and parking lots is free after 5 p.m.; parking along Maple or Illinois Streets should work well, or you may use campus parking lots—the closest is Lot D, west of Elm St. Berthoud Hall is at 16th St., between Illinois & Maple; the address is 1516 Illinois St. You may enter either from the east (Illinois St.), north, or west (Maple St.) sides. Go to the lower level, the 1st floor.

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June 11, 2020. FMCC will be hosting a virtual meeting presentation by Dr. Rob Bowell who will be discussing **The Minerals of Tsumeb**. Details for logging into the presentation were provided in the meeting email.

The Minerals of Tsumeb Mine, Tsumeb, Namibia: Dr. Robert Bowell



Abstract

Many mines have complex mineral deposits that can lead to a wide variety of minerals and different mineral assemblages. With over 400 known minerals, as of 2020, 71 type minerals of which 16 are only known from this location and 38 elements that are geochemically anomalous in concentration, the Tsumeb mine in Namibia is perhaps one of the most comprehensive mineral assemblages. In addition, the sulfide-bearing breccia pipe deposit was subject to oxidation by surface and groundwater generating three distinct zones of oxidation. Add to this a location in karstic limestone and the potential for cavities in which large perfect crystals can grow and Tsumeb is truly an African treasure box. Mining of the high-grade ore, once the largest global producer of lead and germanium, took place over a 96-year life that finally ended in 1996. Potential still exists for both ore and minerals, but sizeable challenges are also present but maybe one day this giant of the mineral world will awake again.

Figure 1. Dr. Robert Bowell at the Tsumeb headframe, Tsumeb mine, Tsumeb, Namibia



Diopside, Tsumeb mine, Tsumeb, Namibia. Photograph courtesy of Robert Bowell.



Pink-red smithsonite, Tsumeb mine, Tsumeb, Namibia. Photograph courtesy of Robert Bowell.

Dr. Robert Bowell, Speaker Biography



Rob Bowell is a geochemist working in the mining industry. He started as a coal miner before going to university followed by work in Africa, starting at Tsumeb. Following a PhD he worked in Africa for mineral exploration. He has worked for SRK Consulting for 25 years globally. He has collected minerals since he was 8 years old and has an emphasis on collecting suites from mining districts including Tsumeb, Laviron, Tiger and Gwennap parish in Cornwall as well as a worldwide micromount collection.

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If you have any informational or mineralogical articles that you would like FMCC to include in future newsletters, please send them to any of the officers.

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George White reminisces about mineral collecting in Colorado



George White circa 1927, along the Gold Camp Road, west of Colorado Springs on a collecting trip. Photograph 338-12, courtesy of the Colorado Springs Carnegie Library.

The following article was prepared by George White of Colorado Springs in June 1973. The article was given as an oral presentation before the Colorado Springs Mineralogical Society on June 8, 1973. Text enclosed in square brackets were added by the editor for clarity or explanation.

The article can be cited as: White, George. 1973. Collecting reminisces speech given to the Colorado Springs Mineralogical Society, June 8, 1973. 25 p. Manuscript in the Colorado Springs Mineralogical Society folder MSS-36, Pikes Peak [Penrose-Carnegie] Library, Colorado Springs.

“Ladies and gentlemen, it is a pleasure to be here. I am ashamed to tell you that I have not been a very faithful member of this Colorado Springs Mineralogical Society. Mr. Fillmore was right in saying that I was a charter member. I was there at that historic moment in 1936 when this club was born. As I look out upon this crowd here tonight, I don't see one single one of those charter members who are present. As a matter of fact, one thing that impresses me very greatly is this — almost half of you here are ladies. At this meeting we had two ladies in a crowd of about 15 or 20 men. They were very brave, so I am glad to see that the balance is being corrected. This is fine indeed. Another thing, I was president of the club in 1944 and 45 and our membership was nowhere near as large as it is now. And as I look around you tonight I can only see one old gray head that I recognize when I was president and I'm not going to embarrass him by telling you who it was. There is only one man here tonight who was there at the time I was president, so you can do your own speculating.

I'm not going to give you any treatise on how to dig minerals. As a matter of fact, I'd probably have a heck of a time following a "peg." I certainly can't compete with some of these folks who have been so outstanding in their production of minerals as you have among you. I do know, however, that I have had an awful lot of fun playing around with mineral collecting, and I could be called an amateur of the rankest sort, but I had a great advantage over some of you in that I was here many, many years ago before there were so many restrictions and so many limitations and so many no trespassing signs around.

Now what I intend to give you tonight is a sort of a series of reminiscences going back 53 years and bringing you down to date over my experiences in collecting in this immediate area and I'm going to particularly emphasize the boys whom I collected with and where we went and what we found and much of it will probably overlap the experience that many of you have had here. Now do you hear me clearly enough? Is this loud enough for you? I like this reference to old timers and I have to subscribe to that theory and if any of you are unfortunate enough to wear bifocals, I think you'll agree that they're a dag-gone nuisance, so I'm taking them off and going to use the glasses I wear in my work as a CPA where I can see things a lot better and a lot closer.

We moved to Colorado Springs from Missouri in June of 1920. Late that summer I began to get interested in mineral collecting. At first my only companion in that venture was a young fellow by the name of Wayne Ward, a boy about my age whom I had known in my old home town and whose family moved here at the time we did. We went through high school together but he left for a while, then returned later to attend Colorado College and graduate. Had Wayne stayed here, he would undoubtedly have been one of the charter members of this club, as he never lost his interest in collecting. In July, 1933 he acted as director of a Rocks and Minerals national association outing in which 22 mineral enthusiasts visited St. Peter's Dome and upper South Cheyenne Canyon. At that time they were the guests of Mrs. Abby Kernochan at her cabin and Mrs. Kernochan by the way was another one of the charter members of our group.

At about the time I started school, the fall of 1920, I met two other fellows interested in minerals. One of them was Roger Bale, a long, lanky chap whose father attended the School of Mines and had a mineral collection. The other was a young fellow by the name of Ray Althouse who lived down the street from where I did at 815 E. Willamette. Besides attending High School and Scout Troup 22 together, these 3 fellows and I, on weekends, went collecting on various places which we could reach in a day or on foot since none of us had available automobile transportation.

Wayne had introduced me to a book in the public library, *Crystals and Gold* by the Rev. R. T. Cross, a Congregational Minister, who came to Colorado Springs from New York state in 1876, and who preached here until 1882 when he moved to Denver. Rev. Cross was an avid mineral collector and his

book contains very valuable reference to the early collecting areas of this region, many of which he had visited in the early days when the good specimens were plentiful. Many years afterwards, I first read his book, I located several unsold copies in the offices of the publisher in York, Nebraska, which I purchased and sold to the library and some of my collector friends. By the way, the library should have 2 or 3 of those copies. And if they do, I certainly recommend them to you. Throughout this article are many references to *Crystals and Gold* made verbatim since they relate to the Pikes Peak Region and its minerals.

That first fall and winter of 1920 and 1921 were spent in my earliest attempts at collecting minerals and these of course confined to places easily accessible to hikers. One of these was Palmer Park or Austin Bluffs as we know it today. It seems rather strange to think of the bluffs as a source of specimens when one sees the hundreds of houses which surround this area today, but 53 years ago it was way out in the boondocks, and we reached it by hiking across vacant ground from the end of the Wahsatch streetcar line to the West base of the bluffs. Rev. Cross had mentioned there were blood red carnelians and some agates and some chalcedony there. The latter being translucent and yellow brown in color. We did find such specimens which were nothing sensational, but we seldom came away empty handed.

Another locality which claimed our early attention was Specimen Rock. And some of the boys had found crystals of quartz and feldspar on the steep slopes leading up from Bear Creek Canyon. Before the meeting I had a little tete-a-tete with George Fisher who was showing me some of the things he found up there and we were reminiscing on how hard that climb was to get up there to Specimen Rock -- if any of you have been there, you'll share that view. Actually, we found better material near Sentinel Rock, a short distance to the North. These two big cliffs loom up prominently on the lower part of Tenney's Crag, which itself is a portion of Mt. Arthur, which is about 10,800 feet above sea level. Are you familiar with where Specimen Rocks is located? Do you know it when you see it from town? Well, if you're familiar with it, it stands up over here, there's a great big old darnick on the far North end and a little slope in between and then a smaller rock which is Specimen Rock on the other end.

We soon learned that the area around Specimen Rock was a noted mineral locality. Cross had written that in the early 1880's Mr. Arsene Thiebaud of later Crystal Peak fame had found some crystals on Bear Creek near Specimen Rock which Professor Strieby of Colorado College had called topaz. Some of these came into Cross's possession together with some smaller crystals of a peculiar flattened form found with the topaz. These flattened crystals were identified by C. Whitman Cross, no relation to Rev. Cross, with the U. S. Geological Survey in Denver, as phenacite, a sub-gem that had not before been found in America, and which had then been found in only 4 or 5 places in the world. At this particular site, the phenacite were found embedded in smoky quartz and also in a coating of small mica crystals covering amazonstone. Whitman Cross described those first Colorado topaz as phenacite crystals in the American Journal of Science for the October, 1882 issue. A reading of this article would be of interest to you.

I never found either topaz or phenacite on any of the many collecting trips I made to the Specimen Rock locality, but I know for a fact that they have been found in this general area. As far back as 1927, Edwin Over gave me a good crystal of amazonite with a small brilliant topaz crystal embedded in a cavity where a quartz or mica crystal might have grown. He had found this at Gravel Hill, which is on the old Bear Creek Road, about a half mile above the junction with the High Drive, the location being almost opposite Specimen Rock to the West. I also purchased from Ed Over in 1933 two good matrix specimens of phenacite embedded in quartz and amazonite, almost as described by Cross. In his early collecting years, Over had worked this area very extensively and had found a number of phenacites there. You might be interested in knowing what I paid for those phenacite specimens- Clarence Coil will never get over this. But I had my label on the one I have left as being a cost of 15 cents. And I would wonder what that would be worth today. Thank you. Your inflation factor is real well taken.

Just a very short time ago I had lunch with Leonard Sutton, who is one of the charter members of this society. I mentioned to him our early collecting days and he asked me if I remembered the topaz crystals he'd found about 40 years ago in the vicinity of Gravel Hill. I had to admit that I had forgotten it completely. That was when he was going to school at Colorado College. Later on, as you may know,

Leonard Sutton graduated and became a noted jurist and at one time was Chief Justice of the Colorado Supreme Court. He has been in Washington on very important government business and has now returned to Denver and in all those years Leonard still has a great yen for mineral collecting. Do you know even though you've stashed this habit and hobby away and forget it for a while, as I have done, you never completely get over it. Once that mineral collecting bug bites you, it leaves a scar that can never heal over, and it breaks out again from time to time when you least expect it.

Apparently the Bear Creek area was also well known for other minerals. In a volume of the U. S. Geological Survey for 1882 [1883] and '84, George F. Kunz in his section devoted to precious stones had this to say and I quote verbatim [see Kunz (1885 p. 752)]: "The Pikes Peak Region at Bear Creek is by far the richest locality for smoky quartz and many thousands of crystals have been procured from one inch to those from one foot to over 4 feet long, the latter one being in the cabinet of Dr. A. E. Foote, of Philadelphia." Since Foote was known to have been at work at Crystal Peak near Florissant about that same time, I have wondered if these two localities could have caused some confusion to the writer. Because, while we know there was smoky quartz crystals in that area around Specimen Rock, I have never understood or known of any such volume as being thousands, and I have never heard on any being found that were 4 feet long, but the longer I live the more I realize how little I know.[Kunz was confused and wrong.]

My early collecting trips to the Specimen and Sentinel Rocks locality began in the 20's - in the 1920-21 period, and I went there on numerous occasions with several of the fellows about all we ever found were small or medium sized quartz crystals usually stained with hematite, pseudomorphs of hematite after siderite, occasionally some amazonite, and some crystals of muscovite mica. The best quartz crystal I ever saw from Specimen Rock was found by Gerald Church early in the 1920's. It was about 4 inches long and one inch thick, vary finely terminated and of a rich, dark, smoky color, in contrast with those murky crystals which are usually found there. The entire area from Specimen Rock north to Crystal Park is very rich in pegmatites and is pockmarked with countless diggings, which is mute evidence to the enormous work done there by crystal hunters.

As I cover Crystal Park later in this article, I will only mention at this time a place perhaps a mile and a half north of Sentinel Rock called Crystal Mountain. It is reached by the old Palmer Trail beyond the falls near Hunter's Run and is perhaps a quarter of a mile west of the trail. It was here that Over in 1926 uncovered a big pocket of exceptionally large terminated smoky quartz crystals, some in groups up to a foot in length. They were mostly opaque but their size was exceptional, and four of the crystals weighed ten pounds apiece. In all, over 500 pounds were extracted from this big pocket. I visited this spot on several occasions but found only minor - things. I might say that if any of you are interested in this write up by Over was made in the Rocks and Minerals magazine in 1933 and is available to those of you who have a file of those old magazines.

When I entered Colorado Springs High School in the fall of 1920, I found myself lost in a student body of about 1200. Out of that group I knew perhaps a dozen since we had moved here but 3 months earlier. Among the teachers at the school was Professor Daniel Shutts, affectionately known as Daddy Shutts, a very kindly man, who taught science, including physiology. Although, I didn't take any of his courses, I soon noticed that in his classroom was a cabinet containing some crystals and other mineral specimens. Quite naturally I was interested in the contents of this cabinet and thus became acquainted with Professor Shutts, with whom I often talked about the specimens to be found in this area.

One day, probably in the late spring of 21, I noticed another fellow who seemed to be absorbed with the contents of the mineral cabinet. Since we were both obviously interested in the same thing, I introduced myself, and met for the first time Willard Wulff, also a sophomore in the school. Thus began a friendship which has endured to this day. Over a span of 52 years, Willard and I have shared so many pleasant experiences that I consider him as my best collecting friend and one of my oldest and truest acquaintances.

About a year and a half later, again made the acquaintance at Colorado Springs High School of another fellow who shared my mineral interests but who was to pursue them far beyond anything I ever did. In the school library were some old volumes of the U. S. Geological Survey in which I found references to minerals of the Pikes Peak region, including Crystal Peak, Crystal Park, and the other

places. Between classes during which time I probably should have been pursuing my regular studies, I'd pore over these old mineral references. For some time, in the winter of 1922 I'd noticed a slender young man of ruddy complexion, early black hair and piercing dark eyes who was also reading the same books. Again I introduced myself and learned the name of this mineral-minded student, Edwin Over, Jr. So another collecting friend was made and again a friendship was started which lasted until Over's tragic death 42 years later, while in the field collecting. During the time he was around here, Ed and I went on many mineral trips together, as well as being associated in business and other matters. He was such a unique person that my remembrance of him will form a part of another article which I am currently preparing on mineral dealers and collectors of this region.

Another locality for collecting which was visited frequently during my early years here was Fairview. You will not find this place mentioned in Dana, or any other mineral reference, - even Cross. But it is nonetheless fairly well known for the variety of specimens to be found. How many of you are acquainted with Fairview? Some of you have been there, have you not? I'm surprised. I'll tell you something about it. Actually, it is part of the mineralized area which includes Cookstove Mountain, St. Peter's Dome, and points in between, and has been the source of somewhat the same minerals to be found in the other, better known places.

My introduction to Fairview came in the late summer of 1921 when Willard and I stopped at the place after a hike up on the old Short Line railroad, whose rails and ties were still in place, even though the trains had ceased to run. There we met a Dr. Gray of Garden City, Kansas who had a summer home just off the right of way where he and his wife and several sons spent the summer. This place was called Gray's Rest, and he was there many summers during the time I became acquainted with him. We also at that time met Professor I. Allen Keyte who was head of the Geology Department at Colorado College, who told us of the many minerals to be found in the dumps below the road at Fairview, a variety, he said, of over 20, and he related the story of a large quantity of feldspar crystals which had been shipped from there on a flatcar several years before.

On another occasion in early September of 1921, Ray Althouse and I had been prowling around the Fairview dumps, where we found some good feldspar single crystals and groups. Late in the afternoon we went up the steep slope above the railroad bed to see what might be found there. At one location I found a fair crystal of clear quartz and Ray proceeded to unearth a large crystal of light smoky color, quite clear and about 5 inches long. It was about the best quartz crystal I ever saw from Fairview. But subsequent search in that region has failed to show up anything else of the quartz nature. On many trips to this locality I found fair zircon crystals, good feldspars, very good riebeckite, and quite recently some very interesting brilliant Astrophyllite blades broken open from quartz masses. There was one dump on which I found at least 5 small specimens of the rare bastnaesite in small, rough, resinous looking, reddish-brown crystals. They were not much to look at, to be sure, but I considered myself fortunate indeed to even find any of these very rare things.

You've probably read or heard of the now almost legendary find of tysonite and its equally rare alteration mineral bastnasite, somewhere in the vicinity of St. Peter's Dome. Dana merely refers to it as being in the granite of the Pikes Peak Region, which is very general, while Over goes so far as to say that the locality was near the base of Cook Stove Mountain, which puts it pretty close to Fairview. At any rate, it was a marvelous find, according to W. C. Hart of Manitou, who told me the story at least 45 years ago and who was so impressed with it that he often chided me because I wasted my time chasing after quartz and feldspar crystals, when I could have been trying to track down that lost tysonite and bastnaesite. Apparently some local, lucky collector which could have been Thiebaud, came across this rich pocket and brought it into J. G. Hiestand of Manitou. Unfortunately, the exact source was not divulged to Hiestand and nobody has ever since located it.

I have previously mentioned Dr. Gray who had the summer home at Fairview. As the sons grew older, these boys naturally hunted around the area surrounding their home. On one occasion which I'm sure was after Dr. Gray was gone but before the house was torn down, I came across some quartz crystals near the cottage, probably found by the boys. They were pretty sad looking quartz, being of the customary opaque, dingy quality peculiar to Fairview. However, these were somewhat different-being an opaque, black original crystal covered by a lighter, almost milky white secondary growth, resulting in a

doubly terminated crystal badly coated with a yellowish stain. Utterly unattractive as crystals,--but on the inside smoky part I noticed an incrustation of brilliant, minute crystals which I at first took to be zircon. Mr. Cahn, examining these with his microscope, informed me they were cassiterite crystals which were relatively scarce in that particular vicinity.

During the past 3 or 4 years I've taken a number of youngsters just developing an interest in minerals to the old Fairview locality and they never fail to find something good. Toward the south end of the dump someone who might have been one of this club opened up an extensive vein of black riebeckite and white quartz. If you've got some kids who have a desire to go out on their own and find something, I would recommend Fairview. It's an easy place to reach, I'd be glad to give you directions, and I think they'd ramble up and down there and you might be surprised what they would come across.

I've never looked over Cookstove Mountain very much, but several of our group have and some good things have been found there. Around the Gold Camp Road about a mile above Fairview, Ed Over uncovered some good crystals of fluorite on one of the slopes of Cookstove. They were green, covered with dark purple, and occurred in good, cubic crystal groups. I know for a fact that Clarence Coil, Reese, and John Alexander did well at times at Cookstove.

St. Peter's Dome stands out not only as a mountain landmark, but as a source of a large number of rare minerals, probably more than at any other locality in the Pikes Peak Region. Possibly best known for the gemmy, hyacinthine zircons found at the old Eureka Tunnel; by the way, Dana, or Kunz, rather, describes these zircons from the Eureka Tunnel as being the finest ever found of this mineral. Now this is in one of his early books and he describes their locality as being near the Pikes Peak Toll Road due west of the Cheyenne Mountains. Now you try and find that! You'll be looking for a long time. But he wasn't so far wrong, it was west of Cheyenne Mountain, singular, and it was near the old Pikes Peak Toll Road. There was one, and it goes right near the base of the Eureka Tunnel. However, Cross, who describes this place very vividly states that in later years a railroad ran close to the place, and of course that is true because your present Gold Camp Road is laid on the bed of the Short Line Railroad. However, it is also the source of cryolite, astrophyllite, riebeckite, or arfvedsonite, as you want to call it, prosopite, pyrochlore, xenotime, fergusonite, cassiterite, galena, sphalerite, and that list of rare minerals mostly suitable for microstudy which includes danalite, gearsutite, thomsenolite, ralstonite, and others, but as far as I was concerned only the gemmy zircons lured me to the Dome in my earlier collecting years.

Prior to 1925, I recall only one trip, since I had no car and it was a very long hike up the Corley Highway, laid upon the roadbed of the old Shortline. After I became affluent enough to buy a used Ford Model T roadster in 1925, the gates literally swung open and St. Peter's Dome was in reach. Usually Willard Wulff or Roger Bale or both would accompany me and we had a system, whereby I would pay one toll of a dollar while the other two fellows hiked ahead around the toll gate through the bushes to join me on the road beyond, thus cutting the cost to 25 cents apiece. Now we really worked that! Fortunately, there's nobody in here whom I hope was friendly with the people who used to run the road. But we certainly worked that to a frazzle.

Cross mentions these gemmy zircons back in the early 1880's, in fact, it was he who identified them since they were being thrown out on the dump and being called rubies by the prospectors who had run the tunnel in search of the gold which was never there. After several fruitless trips we finally located the old tunnel which appeared to have been pretty much deserted and forgotten for many years. But for some time after that we could always count on bringing away a good lot of the gemmy crystals in white matrix which could be found on the old dump or in the bed of the little stream which flowed right by the place. Or we would relax in the cool shade of this secluded spot and sift from 1/8 inch to 5/8 inch single, gemmy crystals from the fine, disintegrated quartz. In many of the matrix specimens the zircons were set in a bed of soft, yellow kaolin and attached to the white massive quartz and these were generally quite finely developed gemmy and brilliant. I also found some associated with galena. Now Kunz states that the general color is a brownish red. They also occur in a purple tint and some very rarely are green, although I think I've never seen any that were green. I never ventured into this old tunnel. That's one thing I'm against. But, Ed Over came across some fine matrix specimens from the face of the rock above the tunnel in the mid 1930's. I have a very fine one which I bought from him, and I later did some work there on the shelf myself. This was one of the classic locations of our region - world famous and I

remember it very fondly. In later years somebody acquired the property thinking there was a chance of finding uranium there and proceeded to tack up warning signs for the trespassers. The last time I went there, flaunting the warnings, I found nothing, so perhaps this is another of those old localities which belonged to yesterday.

While we're considering St. Peter's Dome, I would mention another collecting spot about a mile and a half up the road above the Eureka Tunnel. Willard and I had burrowed around in this area in September, 1933 reaching it from the old stage road, that is the old toll road, to the chimneys from which it became the old toll road, then on across which cut the road down below the Corley Highway. You will probably recall there's a place around there where there's a big jeep road that goes down, well that is actually the old Pikes Peak toll road that was built back in the early 1880's. At any rate, Willard and I found many dumps and some good altered opaque zircon groups. Well, I thought they were fairly good and showed them to Mr. Hart of Manitou who told me they were very poor, not comparable to others and suggested I throw them away or at some offending dog.

Sometime in the early 1940's Orville Reese, Perry Osborn, Tim Anglund, and probably Otis Dozier, all of them fairly new members of the mineral society at that time, found a vein of opaque grey zircon in that general vicinity and an even better pocket of very fine reddish matrix specimens down the slope to the east, under the roots of a pine tree. Perry Osborn showed me the place and told me how he and the boys took out that fine pocket on a cold, snowy day in winter. They had to build a fire to heat the ground so they could dig in it - that's how avid they were. A bit further down the slope was a large outcrop of very good astrophyllite and riebeckite, where one could find plenty of specimens. I think there's still a lot of them there.

While we're talking about zircons, there's another locality which must be mentioned. Sometime in the autumn of 1945, I met a young man who was stationed at Ent Air Force Base, His name was Warren Johannson and his home was back in New Hampshire. He and his wife Dorothy were living not too far away and we struck up a mineral friendship, since he was an enthusiastic collector and had worked some of the old localities in the East. I had invited him to visit the club during the time I was president. During his days away from the base, Warren would tramp around the mountains to the west of the town looking for crystals, and I gave him some tips on where they might be found. He didn't have a car so he had to hoof it.

I was hardly prepared for a report which he gave me one evening in early November of that year. He had been browsing around Bruin Inn about a quarter of a mile up North Cheyenne Creek, when he noticed an old tunnel which ran into the hill about 1000 feet above the creek to the south. I am sure I'd seen that tunnel many times before and had most likely prowled all around it. But when he showed me several large finely formed zircon crystals which he'd found on that dump and on the face of the tunnel, I felt extremely foolish to think that a newcomer from back east had discovered what we old fellows here had missed. The following Sunday, November 11, I took Warren and his wife up to the locality and we worked three hours on that dump and on the face of the tunnel, obtaining a number of very fine specimens. Our plans were to go up again the next weekend but an early snow spoiled that. Soon afterward, Warren was released from the service and went back to his home in New Hampshire. In the meantime he had met Perry Osborn at the club and he proposed that the next year, when the weather permitted, Perry and I should work this zircon outcrop, just the two of us, much more thoroughly and that the crystals found should be divided equally three ways. This we agreed to do and in April 1946, when the snows melted. Perry and I began our work at the site. For at least two months, when weather permitted, we would go up there, always together, and we never came away empty handed. We followed along the outcrop and gradually enlarged the workings until we had a hole about five feet across by four feet high. From this locality we took out literally hundreds of good crystals of zircon, ranging in size from 1/4 inch to some almost two inches across. I found one fine crystal an inch and a half in quartz matrix, and on the same trip Perry got a single intergrown crystal which measured 2 inches across. As was our custom, we brought our catch home, spread it out on the table and matched. for first choice, after which we kept on selecting until we'd picked all the crystals I won the toss and chose the big single crystal. These zircons were all opaque, almost always a rich chocolate brown, and very sharply crystallized. Since we removed them from a matrix of massive quartz and some feldspar in the

pegmatite seams, nearly all the crystals showed some contact. Osborn and I often speculated on what these zircons might have been had they developed free in a pocket of soft mud or kaolin. But, even as they were, I can say without exaggeration that they were the largest and the finest crystals ever found in the region with the possible exception of the gemmy ones from the Eureka Tunnel, and these of course were considerably smaller. We found no groups of much size although several matrix specimens were obtained. We picked out Warren's share and sent them to him while I personally exchanged many of my crystals with Wards, Schortmann's, Gunnell, and other dealers, as well as sending some to Dr. Fred Pough, who was much pleased. I still have the best ones in my collection while Perry's suite was left to his son Leland.

One of the first minerals I read about in *Crystals and Gold* was celestite from the Garden of the Gods. I think a direct quote from Cross's book here would be of interest. I'm quoting Cross, "One day I saw in a mineral store at Colorado Springs a geode of sky blue celestite. They told me it came from the Garden of the Gods, an appropriate place in which to find such a mineral. Now this garden covers quite a large region and it was only after much inquiry and two fruitless trips that I found the locality. On those two trips we walked right over the spot without knowing it. It was less than a quarter of a mile from the gateway to the Garden of the Gods. The cows had worn a path in the red soil, get that, and knocked out a few geodes, and that was practically all the development the locality had had when we found it. The nodules, buttons, or pancakes were of all sizes from a small button to one that I found that weighed 8 pounds. They were found standing on edge in a narrow ledge of red rock which projected a little from the red soil, and which was in a vertical position as are the rocks on either side of the famous gateway. The nodules were solid blue celestite, or if not solid, their cavities contained crystals of celestite. We dug out a large number. Then others found the spot out and hurried to get their share. On one day, 15 persons were there digging. After the owner of the ground put a stop to the digging, one dealer went out and dug by moonlight in order to avoid the watchman and the dogs." So states Cross, and his work there must have been as far back as the early 1880's.

I wrote "Willard and I went out to the celestite diggings on March 6, in the Garden of the Gods. We found all we could carry back and there's more left. It's a beautiful blue color, very massive and heavy, but few geodes. We brought out two masses a foot long. We continued our work there for some while as evidenced by notes dated back in August of 1934 in which I went to the Garden with Orville Reese and found some large geodes even then. So if nothing else this proves that one must never assume that a locality is exhausted simply because it appears to be worked out.

In 1945 Warren Johansson, being rather slender, wiggled under the fence which had subsequently been put up all around the property, but was unable to locate any celestite and I do not have any knowledge of anyone else who has found anything there up to the present time. Have any of you ever been out to that place or have you found any celestite in the Garden of the Gods? George Fisher? Ray Ziegler? Ray: "Yup, didn't find anything." You've been there. Did you get anything George? George: "About the same thing Ray got." You'll have to admit some of those old buzzards knew how to dig, then. We took out some beautiful stuff there, and I don't have much left. It went like hotcakes. I traded it all over the U. S., but I have some very good ones still left. It is magnificent. There's a notation, I believe this is in Fred Pough's book on minerals, of the occurrence of blue celestite near Manitou. There again, if you try to find that from that description, you'll be chasing around a long ways trying to locate it.

If one locality can be called frustrating and disappointing my vote goes unqualifiedly to Crystal Park. Despite the fact that I've been there on several occasions I don't have anything worthwhile to show for it. And Crystal Park is mentioned many times as a source of topaz, phenacite, columbite, and associated minerals. The Dana Manual of 1886, as well as the U.S.G.S. of '85, lists Crystal Park in connection with topaz and phenacite. While Kunz in his Gem Stones of North America states that some large and fine crystals were found there in the early 1880's, including the largest and finest phenacite ever found in the United States, which is 2 inches by 1 and one fifth inches in size. I've seen a picture of it - that's in Kunz's "Precious Stones".

I've always felt there was some confusion between the reported finds in Crystal Park and those at Specimen Rock, further to the south, since Thiebaud worked at both localities. Perhaps Cross expressed

a correct opinion on Crystal Park as a source of good specimens when he writes of one of his trips there in July, 1880, "I had previously searched through the park and found no crystals, for had not hundreds of collectors and tourists been there before me." Now that was 93 years ago, so it's not strange one hears little about many finds up there today.

Cross did make a rich find, however, in the way of smokies on the slope of Cameron's Cone on that trip which renewed his faith to some degree. A visitor to that area will be impressed by the large number of diggings to be seen a short distance south from the entrance through to snowplow rock. These are somewhat east of a trail which leads south from the Palmer Trail and most of the dump material is a white quartz. I've never found a trace of a crystal on those dumps, either clear or smoky. But, some undoubtedly were taken out years ago. Actually, the best location for area collecting seems to be on the shoulders of Cameron's Cone, or to the west of the Palmer Trail which leads south of Bear Creek and Specimen Rock.

On my first ascent of Cameron's Cone in the summer of 1922 with Roger Bale, I found a very large jet black crystal of smoky quartz about 4 x 3-1/2 inches. This is on the northwest slope of the Cone not far from the summit, since we had climbed the peak by way of the easier ascent from Dark Canyon. On another occasion, 1926, Over and I explored the park finding some tourmaline crystals on quartz. We then climbed the very steep east face of the cone - a route which I definitely do not recommend to anybody - and worked our way south on Mt. Arthur until we hit Hunter's Run to the north of Specimen Rock. It was one of the hardest hikes I ever took.

During the summer and fall of 1934, Crystal Park was being cleaned up by a crew of WPA workers under US Forest Service supervision, in the process of which old dead trees were moved and the stand of trees was thinned out. Some boys from Colorado College were on this project and one of them, Clanton Roach, who played quarterback on the CC football team, found an odd looking rock which he tossed into his truck. It broke across the basal cleavage and proved to be a large topaz crystal, about 3-1/2 by 3 inches, partly clear and fairly well developed. Professor Mathias of the Geology Dept. acquired it for the CC mineral collection, where it was several years ago and it may still be today. This find aroused Willard and me and on a cloudy, cold day in early September we got the key to the park gate and drove in Willard's car through rain and snow, where according to my notes we did a lot of tramping around through the park in miserable weather but found no topaz.

Nothing more was heard of Crystal Park until Over began to spend a lot of time there. He came across some small, brilliant topaz crystals in matrix resembling those from Durango, Mexico. A few years later he struck some pegmatites which yielded very dark green amazonite crystals, some of which were of very good size and color. In this and adjoining pockets he also came across the finest phenacite crystals I ever saw from this Pikes Peak Region which included Crystal Peak. They were water clear and beautifully developed, some as large as 5/8ths of an inch, single and in matrix. I have a suite of 10 such crystals from two separate finds which he made probably late in 1954 with the phenacite and amazonite stone. Over also found some remarkable topaz crystals. They were a beautiful amber color, severely etched and quite well modified, some ever distorted in shape. It was a rich find, and Ed never would divulge the exact locality, although he hinted they were south and west of Crystal Park somewhere, so go to it [see Rich Frettard and Jean Cowman's yellow-amber gem topazes, same type of material but not the same pegmatite].

On March 23, 1932, I'm taking you back, folks, a lot of you are not that old, my diary states, "Ed Over came in with some beautiful barites and calcites from someplace near his mica mine on the Canon City road". And again on April 10, "Ed, Willard and I drove down the Canon City road to Little Fountain Creek then through the Mary Ellen ranch to a point about a mile southeast of the ranch, where we found cone on cone, barites and fine clustered calcite. This is a locality which you now know as being on the Ft. Carson reservation. However, this was 10 years before the time the army took over the place, and when we went there we had to get permission from the owners of the ranch who I believe were the Corley's. On only one occasion were we refused the right to go through the property. I made several trips there with Over, Willard, Reese and others. Seldom did we come away empty handed, for as Cross expressed it back in the 1870's "it was one of the first localities that I visited in Colorado and one that I

visited often and always successfully, from which many collectors and many trips could not exhaust the contents".

I hesitate to even mention Crystal Peak in the esteemed company of such present collectors as Clarence Coil, Ray Ziegler, George Fisher, Chris Christensen, and a number of others of you, for their well known production of fine amazonite, smoky quartz, goethite, and other minerals has far exceeded anything we collectors of the 20's, 30's, and 40's ever found. Yet, as I look back to my pleasant trips to that world famous spot, I doubt that any of you have ever enjoyed the privilege of roaming over a large area without fear of trespassing on somebody's property as we did many years ago.

My first visit to the old Crystal Peak Gem Mines was in the summer of 1922 when Willard and his family took us up there in their car. I will never forget the thrill of that trip even though I went there many times in later years. We always respected Mr. Whitmore's property - he was the man, incidentally, who owned the Gem Mines - and usually did most of our hunting in the area south and west of his claims. To reach such places, we'd go up the road north from Florissant and turn left on a road leading to the Schmidt property. This was the site of old man Thiebaud's cabins, built in the 1880's, and we explored much of the ground from which he took some fabulous specimen.

Another means of access was to drive up the road from Lake George to the Gem Mines, then cut off to the right through Mr. Daniels' property, where we parked our car and hiked across to some of Thiebaud's extensive diggings. Daniels lived on the old Charles ranch which had been a stage stop back in the 1870's and 80's, and the old barn was still standing 40 years ago. Daniels was always kind enough to permit us to cross his land and we respected that by asking for his permission. My finds were not important enough to mention, but a few incidents deserve comment.

On Memorial Day, 1932, my mother and I spent the day at the Gem Mines and there we found Ed Over, who was up helping old man Whitmore. He and I hiked about 5 miles looking for topaz and as I recall it, Ed had found some south and west of the Gem Mines but on this particular day all we got was a lot of exercise. However, in November, 1932, Over and I went up again by way of the Lake George road and through Mr. Daniels' property to the Thiebaud diggings, previously mentioned, where we both found topaz and phenacite crystals on the old dump. Mr. Hart of Manitou had told me many years ago how they had sifted the loose soil from these diggings-from the prospect holes - through a collander in order to find the small lenticular crystals of phenacite. All the ground around there had been extensively dug up and there were trenches everywhere. In later years a Mr. Hess bought the place and built a house. But when we came across it and for some time afterwards, we were free to do as we wished and work as much as we cared too.

On October 22, 1933, I took Orville Reese up to this topaz site, this being Reese's first trip to Crystal Peak and we both found topaz and goethite. Then in May, 1934, Willard, Reese, and Ralph Monell, the science teacher at Cheyenne School, and a newly interested mineral collector, and later one of the charter members of the club, went with me on a Rocks and Minerals Association group trip to this same area at which time Willard found a new pocket of topaz crystals in place. The four of us continued to work that topaz and phenacite site during '34 and '35, but the pickings got pretty slim. The last trip I made there was in August, 1941 with a group of members of the Colorado Springs Mineralogical Society which had been formed in November, 1936. Reese had taken us up on an old road from Florissant to the Hess property, where we found nothing. From there we worked our way down the hill overlooking the Daniels ranch, when we suddenly saw an irate Mr. Daniels approaching us on his horse. He gave us a bad time for trespassing and digging on his land without permission. He was right, of course, and only Mr. Willit Willis's calm manner turned his wrath, aside and we went our way in peace. So much for the topaz and phenacite at Crystal Peak. They were fine as long as they lasted.

I recall another source of phenacite on amazon stone somewhere on the southwest flank of Crystal Peak along an old dim road which ran from near Sheep's Nose south toward the Thiebaud cabins. This was probably in 1942 or 43, because I remember that Tim Anglund, Lamont Keller and Perry Osborn were in the party and we only found a few fair specimens. In all my mineral collecting no minerals appealed to me more than topaz and phenacite, probably because of their scarcity, and it has been my good fortune to have found them in several spots in the Pikes Peak Region and adjacent areas, other than Crystal Peak.

It was mid April 1925 and Roger Bale had recently acquired an old beat up Model T Ford roadster. It wasn't much to look at and certainly not much to ride in, but it was transportation and more than I had at the time. So Roger, Willard and I set forth that day up the Corley Road, using our technique of minimizing toll costs by two of us walking around the gate. Willard, who was then a geology student at Colorado College, had a short time before been on a field trip with his geology group up the Middle Beaver, which comes down a rather steep canyon to the old railroad station of Clyde about 30 miles from the Springs. A road ran up this canyon to the Seven Lakes, and was used to haul supplies to the caretaker. Some fair smoky quartz crystals had been found in that area by some of the group and that was what the three of us were looking for on the day we went up. About a mile and a half up the road from Clyde, we saw Roger who always walked ahead of us because of his long legs and his loping gait, suddenly stop, bend over and pick up something from the gravel near the end of the road. When we caught up with him, we asked him what he'd found and he replied: "I was wondering if I could duplicate this". Then he showed us what he'd found - a very clear, brilliant, and clean cut crystal of topaz about 3/4 of an inch, and length - it was of a simple habit, nicely terminated, with a hint of hematite inclusion stain. That was the first topaz crystal any of us had ever found and naturally we were very much elated. Despite a thorough search we only found two other partial crystals that day. I returned to the locality on a few other occasions, once with Over, at which time we thoroughly hunted both above and below the place where the topaz had been found but with no success. Since we were at the site of a glacial moraine, it might be that the topaz were in soil which was in drift and had been brought down from far above. At any rate, here is an intriguing site which might be worth further exploration and it emphasizes the fact that such rare minerals are likely to occur in the most unusual places.

Late in the summer of 1928 Willard Wulff and Roger Bale, and I spent a summer prowling around Crystal Peak. On our way back to Florissant, we looked up an old prospector by the name of George Reeser, who, according to both Mr. [Lazard] Cahn and [William C.] Hart, had done extensive mineral work in the Crystal Peak region, especially on the pegmatites above the Stevens Ranch [along the east side of the South Platte River]. We had a most interesting interview with this kindly old gentleman, who was about 80 years of age. In the course of our chat he mentioned that he had found good crystals of topaz in several spots in Tarryall Mountains north of Lake George in the late 1890's or early 1900's.

The next summer, 1929, Willard and I took Reeser and headed for the site in the Tarryall Mountains, where he believed he could again locate the place from which he got the topaz years before. I remember he urged us to go before the summer rains began, since the Tarryall would be easier to cross. We left the car at a ranch house. Now here's how we got in. We don't go around that long way like you do. We left the car at a ranch house about 2 miles beyond the old deserted town of Tarryall post office, formerly old Puma City; then crossing the river through a potato field we proceeded on foot about a mile or so to a little ravine and across the hill to a place which Reeser recalled as the source of his topaz. I will not recount the details of this rediscovery of Reeser's topaz diggings, since this has been written up in a most thorough and fascinating manner by Willard Wulff in an article which he authored under the title "Topaz in the Tarryall Mountains of Colorado" and which was published in the September '34 issue of *Rocks and Minerals*. Suffice it to say here that we found some very good crystals on that day by merely scratching over his old dumps. For several years, Willard and I continued to search the area, and later, Over and Reese worked the diggings also, with Reese finding some fine blue crystals in another outcrop nearby.

My last trip there was in September 1938 with the Mineralogical Society, on which occasion Mr. Cahn went with us on his one and only field trip with the group. Mr. Cahn never left Spruce Camp - he didn't try to do any walking, but the rest of us did. We hiked the somewhat long route from Spruce Camp to the topaz workings with very little luck. In the light of later developments at this site I am ashamed to admit that I have not been up there for 35 years.

One cold, snowy night in the winter of 1941 or 42, one of the new members of the club came over to see me. He was a young fellow by the name of William Crabtree, and he was interested in the Tarryall topaz locality which Willard and I had worked. He planned to spend some time up there during his spring vacation in high school. I explained the layout of the place and made him a rough map. It

must have proved to be accurate for a few weeks later he came over to show me some very fine single crystals of topaz several inches long which he had found. He had spent several days at the site, living in an old house nearby and had dug down and in a different direction from the big pine tree which marked our old locality and had struck a rich peg containing topaz. Poor Bill never got to exploit his new find to any great extent for he was drafted soon after and was later killed in action in the war. But if he didn't work this place much, others did in a big way.

It was not long before Orville Reese, Perry Osborn, Tim Anglund, Otis and Dozier were making regular pilgrimages up there and I recall that Osborn and Anglund did especially well finding some nice matrix groups. I don't know what happened to me at that time - I never got in on all those junkets, but this was during the war and I was out at Peterson Field in the base finance fiscal office - I guess I just didn't have time to do it - besides, I might have been swung off on some other hobby, but I never got up there when these boys were really hitting the dough.

The rest of the Tarryall story you know better than I. Now on a mineral claim of the Mineralogical Society, I understand that crystals are still being found there. It has always been my opinion that the Tarryall Mountains are rich in topaz and that the surface has not even been scratched, speaking both literally and figuratively. Consider the fact that there is a topaz mountain up near Bordenville, not far away, as shown on the maps, and that according to Reeser, some very fine greenish colored crystals were found at Goose Creek, which is also not far away. Reeser saw them at a ranch but the boy who found them never gave him the exact site. There's another mystery locality perhaps worthy of further checking. Some day I would like to visit this old Reeser topaz diggings again in order to see the great changes which I understand have been made.

Occasionally a collecting area will surprise you by producing minerals which you didn't expect to find and never had found there previously. Such was the case of one I worked first in September, 1934. On that Labor Day, Reese, his son, Don, and I hiked about a mile and a half west of the top of the High Drive on the trail which leads to Jones Park, 4 miles away. We went over a little ridge north of the trail to an area which overlooked Bear Creek Canyon and Specimen Rock to the west. There on a gravel slide we found about 40 carlsbad twins of feldspar, including some groups. These were good and appeared to have weathered out of a pocket. There were also some manebach twins in matrix. I went up there several times in 1935 with Wulff, Monell, and Reese, during which time we dug into a peg which yielded a number of fine baveno twins. Quality-wise these were the best I ever found, being very clean cut, almost porcelain-like in quality with terminations covered with an albite coating very much resembling adularia. By 1936, however, we felt that we had taken out the best of the crystals and the feldspar locality gradually ceased to interest us.

However, in 1944 my interest in the place came to life again in a very unlooked for way. In April that year I had returned to my office from the air base finance office at Peterson Field where I had been stationed for a year and a half. William Mason III was stationed at ENT Air Base at that time and three young men there were interested in minerals and wanted to go somewhere where they might be found. So Mason asked me if I would act as a guide. This was in June. I chose the old feldspar locality which I had neglected for 8 years as the site of our trip for two reasons. First, the boys could possibly find some of the crystals we had overlooked, and second, and more important, it was close at hand and wouldn't take too long to reach, since gas rationing was still very much a factor. Mason drove us up there and I turned the would-be collectors loose on the gravel slopes while I relaxed under a tree in the shade, since I felt sure there was very little good stuff left. Toward mid afternoon one of the fellows who had been scratching around in a gully between two big rocks brought up a handful of material he had found and asked me to look it over. Quite casually I did so and explained what was there. And then it happened! In the lot were two specimens which at first glance seemed fit only to be tossed away. One was a very poor, dingy colored smoky quartz crystal an inch and a half long and the other an amazonite crystal about 1 inch. But there was something different about them - on the top of the amazonite was a very small, brilliant crystal, while attached to the base of the sad looking quartz was a well developed straw colored crystal about 1/8 inch. I looked at them carefully with the glass and couldn't believe my eyes, they were both phenacites, and good ones at that, being well developed and clean cut. It seemed incredible that they would be found on that ridge where only feldspar crystals had previously occurred, but then I

looked down the steep slope below the gulley where the specimen had been found and realized that I was standing on the top of old Gravel Hill, while across Bear Creek canyon to the west loomed Specimen Rock, both of which had been known to definitely yield phenacite. Things began to fit into place and I figured this spot could well be the source of the crystals which spilled down the slope to the road below. Needless to say, I suddenly came to life and spent the rest of the afternoon down the gulley in which I found several small, very good single crystals.

My diary doesn't mention another trip up there until September 17, at which time Lamont Keller and I visited the place, although I feel sure that both of us must have gone before. We kind of alternated with the use of our ration cards. On that day, however, Lamont found a very fine crystal - the largest one yet - about 5/8 inch and beautifully developed. Later I found one which was larger but did not equal his in quality. Some of the crystals were straw colored and many were perfectly developed, with a very narrow prism and doubly terminated. One small crystal was perched on the top of a small fluorite octahedron. Lamont and I decided to keep this place to ourselves and between us we managed to spare enough gas to make several trips up there during 1944 and '45. All in all we found a good number of them. Some of the crystals coming from lentzes in quartz which we exposed in the ledge above the gulch. In quality and size, they were the best phenacites I'd seen up to that time, being larger and better developed than those from Crystal Peak, although they were not uniformly as fine as the ones which Ed Over later found in Crystal Park in the 1950's. I had written about this to Dr. Fred Pough, curator at the American Museum, telling him of the find, as I knew he was very interested in phenacite and had written extensively about that mineral. He arranged his trip to return from Mexico to visit me for five days in early August '45 for the express purpose of seeing our new place. Lamont and I took him up to the place and we all were lucky that day. He later went on two other collecting trips with members of our society and gave a fine talk to the Society on the minerals of Brazil.

Another locality which I visited on occasion was about a mile or so up the Tarryall Road out of Lake George, from which we turned to the left on an old road which went up past the site of the 1890's mining town of Hayman. Beyond this a short distance was an abandoned mine on the dump of which we found very good specimens of molybdenite in quartz, which proved to be good trading material. There was also some fair garnet on this dump but the best material was vesuvianite, which occurred in short, stubby brown crystals in matrix, some being very good.

Somewhere north of this place up on Badger Flats was the site of some very fine vesuvianite crystals in matrix which Tim Anglund found in the 1940's. In quality these were extremely good, being very similar in habit and color to the ones found at the classic locality of Sanford, Maine. Tim kept the site of this find strictly to himself and he never would tell just where it was. So I presume that's lost unless somebody's pried it out of somebody that might have been there with him and I don't know who that was.

In the life of every collector there must be a liberal sprinkling of wild goose chases and rumors, and I've had my good share of both. Of the former I can recall Willard Wulff and I exploring the dry creek bed of Williams Canyon for garnets which Mr. Hart said had been found there. Of a day in November 1934 when Reese and I hunted around the Pine Valley ranch for smoky quartz crystals and another trip in the same month with Reese to the old stone quarry at Castle Rock in search of those fine clear, grayish, barite crystals in basalt which had formerly been found there. The net result of all these trips was absolutely nothing but exercise.

The rumors were even more fascinating if not rewarding. Mr. Hart once told me of a find of very beautiful canary yellow topaz crystals at the Oil Creek Tunnel over on the north slope of Pikes Peak. I even went so far as to interview one of the men who'd worked on that project but could get no definite information. And the tale Hart told me of the man who took out a big pocket of fine smoky quartz groups and crystals somewhere near Timberline on the East face of Pikes Peak was another one to excite you. Frankly, all these stories about finding good crystals on Pikes Peak seemed completely out of line, for after all who had actually found anything worthwhile on Pikes Peak? That is, until 1945 when Clarence Coil, pecking around some pegs above Glen Cove where amazonite and smoky quartz crystals had been found, suddenly sunk his pick into a mud pocket and pulled out the finest topaz crystal which had ever been found in the Pikes Peak region. From that locality Clarence, Reese, Osborn and later Over

and John Alexander took out an amazing number of fine topaz crystals, while Lamont Keller and Bob Chadbourne also obtained excellent specimens. I never went up there but once, after the best crystals had been found and got nothing, at which time I paid less attention to the gravel slopes in which they could have been found, than I did to those forbidding granite chimneys which loomed above me and which had come so close to resulting in a tragedy to some. The Glen Cove topaz locality must be ranked as the very finest of its kind in the immediate Pikes Peak region and second only to Devil's Head, which has produced more crystals and perhaps larger ones, although I question whether the quality was better insofar as the region adjacent to Pikes Peak is concerned. The work of W. B. Smith at Devil's Head in the early 1880's was followed 50 years later by the rediscovery of the topaz pegs by Edwin Over and Bob Wilfley in 1932 and a summer of hard work there in 1934 by Over and Arthur Montgomery, at which time a fine lot of superb crystals was produced.

One more locality, famous for rumor must be mentioned. In George P. Kunz's book, *Gems and Precious Stones of North America* is an illustration in color of a fine cinnamon colored topaz crystal which is labeled as coming from Cheyenne Mountain, Colorado. The written text states that a topaz crystal weighing 18-1/5 ounces came from there in 1886, which although very perfect, had little gem value. Kunz again refers to these topaz crystals from Cheyenne Mountain in the text of his book and later in the appendix he changes the locale from Cheyenne Mountain to Devil's Head. Frankly, the topaz which is illustrated in Kunz book is so very similar to those from Devil's Head [The crystal illustrated in Kunz was dug at Devils Head by Walter Brown Smith in 1885. The specimen is still in the American Museum of Natural History and has been exhibited at the Denver Gem and Mineral Show several times] and so fine that I doubt if this could have been the one which was alleged to have been found at Cheyenne Mountain, but that does not rule out Cheyenne Mountain. Ed Over, who saw this specimen which Kunz illustrated either in the American Museum or the National - do any of you know which one it's in? Is it the Smithsonian or the American? I think it's in the American Museum and I believe it came from the Bement collection by way of a gift from Clarence Bement [Yes]. Over told me that he was quite certain it came from Devil's Head, being almost identical to the ones from there that he found.

However, let us now go back to *Crystals and Gold* by Rev. Cross [Cross 1903, page 52] and see what he says about this topaz. "On one of his trips over Cheyenne Mountain, Mr. Thiebaud found some topazes, one of which was quite large, I think the largest ever found in Colorado. It weighted more than a pound and was about the size and shape of a small smoothing iron. A part of the termination was missing, which of course greatly reduced its value as a crystal. I bought the whole lot and in looking over the pieces I noticed one that I thought might fit the broken corner. I put it on and sure enough it fitted exactly. It increased the value of the big crystal many fold so that I sold it for \$50. "This was written in 1904." It was the most profitable specimen I ever bought, even after I had paid the finder considerably more than I had agreed to pay him." So here is the version of the man who first acquired the big crystal from the finder. Now either Rev. Cross is not up on his minerals or old man Thiebaud misrepresented the source of his find. I am inclined to doubt both of these theories, since Cross was very knowledgeable as to minerals, and as far as Thiebaud was concerned, Cross said of him that he always found him reasonable in his prices and perfectly honest.

I have never heard of Thiebaud working at Devil's Head - that was W. B. Smith's stamping ground. Smith knew about Crystal Peak, where Thiebaud worked and in fact wrote about that area in the *American Journal of Science* of October, 1887, a year after the supposed topaz find at Cheyenne Mountain was made. So who knows what might really have taken place. It just seems to be one of those mysteries which will probably never be solved and it's possible that the topaz you see credited to Cheyenne Mountain in Kunz came from Devil's Head and that there really was topaz from Cheyenne Mountain, which I'm inclined to believe. In defense of Cheyenne Mountain as a possible source of that big topaz, however, Walter Knorr told me many years ago that he and his brother had found topaz crystals on the southern end of Cheyenne Mountain or on Black Mountain which is further south. When I doubted the fact of them being topaz, Knorr described the basal cleavage and the striations which convinced me but, he never could give me any definite site of his finds. And remember, too, that when the Cheyenne Mountain toll road was being built in 1925, some workmen blasted into a pocket and took out a very large and clear smoky quartz crystal of good quality. Now do any of you happen to know if

that crystal is up at the lodge on top of Cheyenne Mountain? I think it was up there at one time. Have you ever seen or heard of this, Clarence [Coil]? Well, it was around someplace and I think it was up on top of Cheyenne Mountain in the Shrine of the Sun Lodge.

Until the Glen Cove topaz were found, I felt that Cheyenne Mountain was an unlikely site for topaz, but who knows, there may be other pockets up there on that mountain just waiting to be uncovered.

Now the end of this long, rambling article is overdue. I am sure I have enjoyed putting it together a lot more than you have listening patiently to it. To me, it's been a journey back into a very pleasant past, reliving some of those happy toys of my life. The localities that I visited and the crystals I found were most rewarding, all in a great outdoor setting where one could go where he pleased and do what he wanted to do, quite different from today. But above and beyond all such pleasure was the deeper enjoyment of hunting specimens with a fine group of fellows who shared your interest with you. Many of them have now left us. Of the son who tramped the hills with me in the early days, Wayne Ward, Roger Bale, Ira Dugan, Ed Over, Orville Reese, Perry Osborn, and Tim Anglund have all passed on. They together with those still with us, made my mineral experiences of the past 53 years a real pleasant memory and I salute them all.

Thank you.

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