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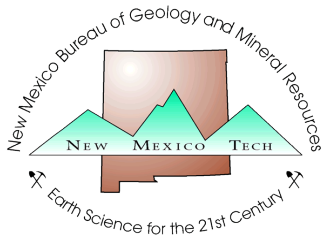

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A rocky history— The first 100 years of the Mineral Museum in Socorro, New Mexico, USA

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Introduction

The New Mexico Bureau of Mines and Mineral Resources on the campus of the Institute of Mining and Technology in Socorro, south-central New Mexico, is home to what is widely recognized as the best and most complete collection of New Mexico minerals anywhere and one of the better overall collections of minerals in the southwestern United States. The collection, which began as a rather hastily assembled group of several hundred specimens in ca 1898, has evolved through prosperity and depression, fame and tragedy, to a superb treasure of over 10,000 cataloged pieces today. The museum continues to play the active role, as it has for almost 100 years, of participating in major educational events and mineral shows and also providing aesthetic, educational, and scientific benefits to amateur rockhounds, professional earth scientists, and students of all ages.

The first collection

The New Mexico School of Mines (name officially changed to New Mexico Institute of Mining and Technology in 1960) was established by the territorial legislature in 1889 to provide for higher education in the earth and related sciences such as mineralogy, geology, mining and metallurgical engineering, as well as chemistry, mathematics, and other courses of study exclusive of agriculture (NMSM, 1902, p. 7). The school's governing board of directors (first Trustees, now Regents) was assigned the responsibility of, among other things, prescribing the various courses of study, deciding the number of branches into which the school would be divided, and to "provide apparatus, mineral and geological cabinets...with a view to promoting the best interests of the institution" (NMSM, 1902, p. 9). Thus the seeds of what would evolve into the mineralogical museum were cast in the founding legislation. The difference between a dream committed to paper and a dream turned into a reality is great, as the fledgling school was soon to find out. With great hope and fanfare the New Mexico School of Mines opened its doors for instruction on September 5, 1893—and promptly closed them again because of lack of infrastructure, equipment, and most importantly, funding. The school remained closed during 1894 but by the following year was able to reopen permanently with a full curriculum (Christiansen, 1964, p. 10). Now that the basics were firmly in place, some of the accessories could at last be addressed—one of which was the geological and mineralogical cabinet.

Just when the very first specimen or group of specimens was acquired is lost to history, but by 1899 the institute could boast that "the School of Mines now has a collection of several hundred specimens of minerals found in the territory" (NMSM, 1899, p 23). Once established, the collection grew rapidly. Within two years the number of pieces had increased to "several thousand" and the following statement was issued: "It is desired to make the collection representative of the entire mineralogy of New Mexico. Specimens for the cabinet will be received and acknowledged with thanks." (Some things never change!) "Many specimens from abroad and various parts of the United States have been received during the past year which add greatly to the value of this typical collection." (NMSM, 1903, p. 26).

The staff of the School of Mines was often in the field investigating the geology of the territory's mines and mining districts. Rufus M. Bagg, professor of mineralogy and petrology, was one of the more prolific contributors to the early museum, to wit: "Dr. R. M. Bagg and O. H. Arnold returned Tuesday from the Santa Rita mining district where they were making investigations. They came back loaded with beautiful material for the mineralogical cabinet." (Chieftain, 12 Dec 1903, p. 4). Two months later he "returned from Magdalena...where he was investigating the Graphic and neighboring mines and collecting material for the mineralogical cabinet of the school. A large amount of fine specimens of ores and minerals were secured." (Chieftain, 27 Feb 1904, p. 1). Spectacular material was donated by the mine operators as well: "Captain [Asa B.] Fitch of Magdalena has presented the school with a fine large specimen of dog-tooth spar crystals which number several hundred in clusters which are entirely replaced by zinc ore [read: smithsonite!]. The specimen is unique." (Chieftain, 1 Mar 1904, p. 1). Captain Asa B. Fitch was Cony T. Brown's mining associate in the Magdalena mining district. The Fitch collection was purchased by Mahlon T. Everhart during the 1930s and much of Fitch's fine Magdalena material may be seen on display in the Mahlon Everhart collection today. C. T. Brown was also an early museum benefactor and gave "scores of mineral and ore specimens [to] the school collection" (Porphyry, 1925, p. 108). No wonder the collection regularly outgrew its surroundings! These accounts and several others clearly indicate that the original museum collection contained an abundance of Santa Rita's famous native copper and cuprite and a suite of Magdalena's equally famous smithsonites, cerussites, aurichalcites, as well as the unique pseudomorph of smithsonite after calcite! The first collection was housed on the third floor (the tower) of Old Main, but not for long. New material was added at such a pace that the collection soon outgrew its surroundings and by early March 1902, the first move was required: "The

Also in this issue

Coming soon

Oil and gas activities in 1996
Tertiary strata in the Galisteo Basin
Albian ammonite from southwest NM

geological and mineralogical cabinets have been removed from the third story to the basement (under the north wing of the building), where commodious rooms have been fitted for their reception." (Chieftain, 21 March 1902, p. 3; Fig. 1).

The first curators

Credit for assembling this material into a bona fide collection must certainly go to Presidents Fayette A. Jones (1898-1902) and Charles R. Keyes (1902-1905). Jones was an engineer and Keyes a geologist, and both men had a deep appreciation for the science of mineralogy and the minerals to aid in instruction. The Chieftain (29 March 1902, p. 3) noted that the collection included "scores of specimens...from all parts of the world...Professor Jones has taken great pains during his travels to gather together this collection." Keyes augmented the school's collection with that of his own and made it available for study by the advanced student. Keyes' collection consisted of "a small but carefully selected series of crystals, collections of crystalline rocks, chiefly from type-localities of Europe and this country, and working suites of fossils, illustrating structures and the types of life from all the various geological formations, both American and European, these being especially rich in crinoids, which number upwards of 2,500 specimens." (Small indeed!) (NMSM, 1902, p. 97). Soon after the arrival of President Keyes, the collection had again outgrown its assigned space and was moved to the first floor north wing of Old Main where it would remain throughout its existence (NMSM, 1903, p. 95). Keyes extended Jones' efforts in improving the educational utility and display value of the collection not only in regard to the type and quality of material but to the display cases themselves: "The school has recently received from the U.S. Museum of Washington, D.C., a number of working blue prints and specifications of unit exhibition cases for minerals, ores, and rock specimens. They are unique in many ways and are the final results of selection, adaptation, and modification of all that is best in museum exhibits from Europe and this country." (Chieftain, 28 Nov. 1903, p. 4). Many of these cases, made from quality hardwoods and adorned with beautiful Queen Ann styling, were constructed and served the museum well for many years (Figs. 2, 4). Keyes went one step further than Jones in recognizing the value of the collections by proposing a comprehensive plan for a complete and separate museum facility. The building was to be fire-proof and "especially adapted for museum purposes with large display halls on the first and second floors, around which are arranged small rooms for special collections, and for *research* [authors' emphasis] work, and with workrooms and storerooms in the basement" (NMSM, 1902, p. 95). The proposal died with Keyes' departure. Both men oversaw the management and use of the collection and the acquisition of new material. Thus the first curators were the Institute presidents themselves. Thereafter, until the collection was transferred to the New Mexico Bureau of Mines, the geology department chairmen would serve as curator of collections.

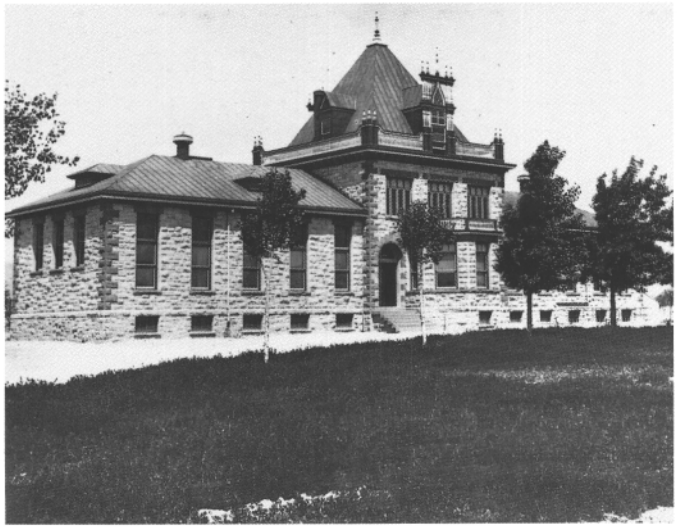

FIGURE 1—Old Main, ca 1910, was home to the original collection through July 1928. Built to withstand the ages, but not fire, it was constructed of grey trachyte (rhyolite quarried west of campus in Blue Canyon) and trimmed with red Arizona sandstone. The museum would occupy, at different times, space in the tower, the basement, and for the longest period, the north wing of the first floor (extreme right in this view). Photo courtesy NMIMT archives.

The first mineral shows

The first few years of the twentieth century were busy ones for Fayette A. Jones. Subsequent to serving as president of the School of Mines until 1902, he was field assistant to the U.S. Geological Survey collecting mining statistics for the New Mexico mining census. He also enjoyed a very busy consulting career and was a member of the New Mexico Board of Exposition managers to the World's Fair in St. Louis. He was, in fact, chairman of the committee on mines and mining from 1903-04 (Twitchell, p. 83) and was the driving force behind the School's and New Mexico's superb mining and mineral displays at the exposition. His efforts were amply rewarded: "The major part of the New Mexico mineral exhibit at the Louisiana Purchase Exploration at St. Louis consisted of collections prepared by the School of Mines. The display occupied a prominent place near the center of the Palace of Mines and Metallurgy. As the only exhibit of its kind by a mining school it attracted wide attention.

> Arranged in a score or more of large cases were the leading mineral products of New Mexico, selected with special care as to value and beauty. Included were a number of cases of remarkably rare and showy zinc and copper minerals and ores. A special series consisted of zinc carbonate minerals, which for variety, delicacy of coloration and beauty have never been surpassed. Two im-

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FIGURE 2—The original museum on the first floor, north wing of Old Main, looking south toward the center of the building. The non-display part of the collection was readily accessible to students studying mineralogy, crystallography, and petrology. Note the microscopes, mineralogical library, and students' desks. (Kemmerer collection, courtesy NMIMT archives.)

FIGURE 3—The mineralogical display at the St. Louis Worlds' Fair in 1904 relied heavily on the colorful and sometimes quite rare minerals of the Magdalena district to win the gold medal for the Institute. The reputation of the fledgling New Mexico School of Mines spread far and wide as a result. (Photo from NMSM catalog, 1907, facing p. 90).

mense pyramids of showy crystalline ores were embraced in the display. Four large special collections were of particular interest. These consisted of 1) the largest variety of zinc and copper minerals and ores from a single locality; 2) a collection of rare zinc and copper ores; 3) a unique collection of showy crystals of zinc and copper minerals; and 4) a complete smelting proposition from one mine. (NMSM, 1907, pp. 90-91).

From this description one may safely deduce that the mines of the Magdalena district were heavily represented with many fine examples of smithsonite, aurichalcite, azurite, and malachite and probably native copper and cuprite as well (Fig. 3). Many of the journalists and critics who attended the Exposition considered the New Mexico display to be excellent—second only to that of Colorado: "Next to Colorado, the greatest mineral exhibit at the World's Fair is carried by New Mexico, and the display is attracting the attention of the eastern world. As this exhibit was chiefly obtained and prepared by the School of Mines at the solicitation of the Board of Commissioners, the people of the territory are to be congratulated that it has an institution commanding the highest respect of the mining world" (Chieftain, 30 June 1904, p. 1, reprinted from a St. Louis paper). Note that critics then were no more reliable than now: "In competition with the world, New Mexico takes the silver medal on educational exhibits; the gold medal on the mineral collection; grand prize on the ethnological exhibits; gold medal on wheat, alfalfa, and mohair; also fifty other awards" (Chieftain, 5 Nov 1904, p. 1). Incredibly, the New Mexico School of Mines, its existence hardly known outside the territorial borders, achieved first place against the rest of the world. After the Fair closed, the collections were returned to Socorro and were again set up in the first floor north wing of Old Main. Proudly and prominently featured in the center of the north wall were the gold and silver medals (Fig. 4).

Fayette A. Jones was never one to remain content with past achievements. During his second term as president (1913-1917) he again thrust the New Mexico School of Mines into the limelight, this time at the Panama-California Exposition in San Diego in 1915. Jones was "appointed Mining Commissioner of the New Mexico Board of Exposition Managers and had direct charge of collecting and assembling the mineralogical and geological exhibit," one of the best ever on the west coast (NMSM, 1916, p. 91). The New Mexico Pavilion, modeled after the famous Church of Acoma and which still stands today as the Balboa Park Club Building (Avery J. Smith, pers. comm.), held exhibits from all over the new state. The mineral exhibit, to which the school contributed, comprised four exhibit cases "filled with specimens of New Mexico minerals. Too large for any case, a great block of copper-bearing porphyry stands directly in front of the door. The native metal runs in ruddy veins throughout the tawny rock...There are hundreds of striking color effects among the minerals. Gold, gleaming and dull; white silver; orange and red pyrites...white meerschaum; turquoise gems...There is one large block of coal, weighing 3000 pounds, which is reputed to be the largest ever taken from the ground..." (San Diego Union, 8 Aug 1915, n.p.). The New Mexico building received a gold medal; the special copper exhibit and the mineral exhibit won grand prizes. Surprisingly, the spe-

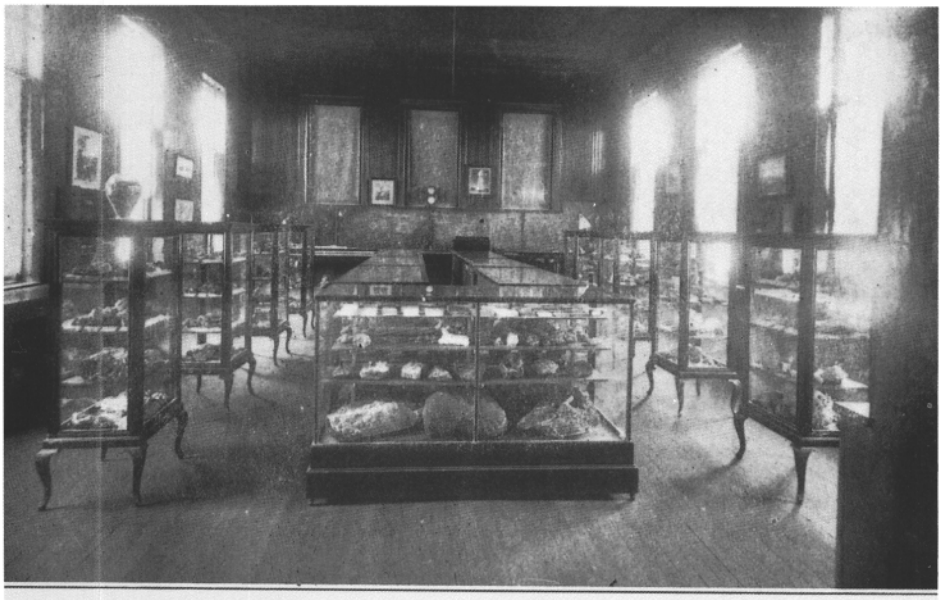

FIGURE 4—The original museum on the first floor, north wing of Old Main, facing north. The beautiful Queen Ann-style cases and the 1904 World's Fair gold and silver medals are plainly visible (far center) in this ca 1905 view. (Photo from NMSM catalog, 1927, facing p. 25).

FIGURE 5—Despite his presidential and other executive responsibilities, Edgar H. Wells led the annual field trip through the southwestern mining districts for many years. Wells (left) is shown here with the senior class students and Professor Adolph S. Walter (lower right) along with other, unidentified men, in the famous Bridal Chamber stope at Lake Valley, New Mexico in 1924. On such excursions, specimen material often returned to Socorro to enrich the "mineralogical cabinet." (A. S. Walter collection, courtesy NMIMT archives).

cial coal exhibit took the gold medal (Los Angeles Times, 15 Aug 1915, Sec. I, p. 8). The New Mexico Pavilion was so popular the Board of Exposition Managers elected to keep it open well into 1916. Thereafter, the mineral collection was returned to Socorro, quite possibly accompanied by a grand prize. Many have openly wondered how the tiny New Mexico School of Mines so quickly achieved a position of prominence among mining schools and a reputation for scholastic excellence far larger than the institute itself. This is part of the reason.

The mineral museum would reach its zenith during the late 1920s. By 1927, the collections were housed in

> twenty-two large cases which display over 2000 minerals and ore specimens. About 2,500 additional mineral and rock specimens are kept in the drawers of wall cabinets and cases. These are frequently used in lectures and for examination by the students. Of the entire collection of over 5,000 specimens, about two-fifths belong to the mineral collection, two-fifths to the rock collection, and one-fifth to the paleontological collection. (NMSM, 1927, p. 25).

The entire mineralogical collections were arranged, as much as possible, systematically according to Dana's System of Mineralogy (NMSM, 1927, p. 25). Supplementing the mineral material were 250 plaster and 600 wooden crystal models, as well as over 300 carefully selected natural crystals. The main collection also included some 250 specimens selected to reveal crystal development (NMSM, 1927, p. 25).

And then, in a flash, on July 5, 1928 at 1:30 in the afternoon, it was gone—literally. The fire, which was thought to have started spontaneously in a janitor's closet under the main stairs, roared through the building so quickly, little was saved. Stenographer Harriet Herkenhoff managed to save the vital records of the school by tossing them into the fireproof safe in the President Wells' office but all else was a total loss: the awards, medals, photographs, the John Wesley Powell and Charles Lyell manuscripts, and, of course, the fossils, and minerals (Chieftain, 7 July 1928, p. 1). The vision of President Keyes' 25-year-old proposal to construct a separate, fire-proof museum facility vividly comes back to haunt us, and the magnitude of the loss is overwhelming. Had Keyes prevailed, the original collection would be with us today.

Re-establishment of the Mineral Museum

The heartbreaking task of re-establishing the museum would fall on the shoulders of Edgar H. Wells. President of the school from 1921 to 1939, he was not only professor of geology and mineralogy and State Geologist, but would become the first Director of the Bureau of Mines in 1927 (Fig. 5). Like his predecessors, Edgar Wells was aware of the futility of trying to teach the earth sciences without the advantage of nature's mineralogical and geological products at hand. A determined effort was made and soon the Institute would announce that

> material for the new museum is being collected during the 1928-29 school year and with the opening of school in the fall of 1929 there will be on display in Brown Hall a large and representative collection of minerals, rocks, ore, and fossils... (NMSM, 1928, p. 21).

Significantly, the following announcement was also made:

> The State Bureau of Mines and Mineral Resources is making a collection of New Mexico minerals, ores, rocks, and fossils and these will also be on display in Brown Hall (NMSM, 1928, p. 21).

Brown Hall, of course, is the two-story building constructed during 1929 to replace Old Main and named in honor of the recently deceased C. T. Brown, for many years a well-known mining man and "unquestionably the School of Mines best friend and greatest benefactor" (NMSM, 1925, p. 45; Porphyry, 1925, p. 11; Eveleth, 1992; Fig. 6). The new museum temporarily occupied a room in the basement of the new building but soon moved to a large second-floor room on the south end when the second floor was finished (NMSM, 1929, p. 16). During 1930, large additions were made and by the end of the year the collection was said to "have reached the high standard of the one destroyed in the fire." (NMSM, 1930, p. 22). And five years later, "valuable additions have been made to the museum recently both by collection and purchase" (NMSM, 1935, p. 24).

The former is a pretty lofty statement considering the fact that the original collection had taken the gold medal at the 1904 World's Fair. Alas, based upon the authors' first-hand knowledge (via the museum catalogs) of what was in the new collection prior to 1938, it was wishful thinking. Many alumni from 1928-30 don't even recall the school having a mineral collection (Phil Mudgett, Lawson Entwistle, pers. comm.). However, a major event was about to occur that would allow the museum to claim at least some of its former glory: the purchase of the C. T. Brown material. Among the several enterprises of Cony T. Brown, mining was his forte. During the latter part of the 19th and early 20th centuries he leased and operated numerous mines all over New Mexico and the southwestern United States, many of which have since become near-legendary for the mineral treasures they produced. Brown was present when the great lead, zinc, and copper carbonate orebodies were developed in the Magdalena district and when native silver and chlorargyrite were still considered ore minerals throughout much of the mining world (today these species are considered rare mineral curiosities). It's an understatement to say that he assembled a spectacular collection. Brown was an excellent horse-trader—what he couldn't collect himself he acquired by exchange; as a result his collection was worldwide in scope although the focus was on New Mexico and the southwestern U.S. A rather persistent legend in the new museum has the Brown family giving his collection to the school upon or soon after his death (17 Jan 1925). Such is the stuff of which legends are made: if true, the Brown collection would have been lost in the July 1928 fire along with the rest of the museum. The fact is, the school purchased the Brown collection directly from son Tom, in 1938, for the princely sum of $200 (Regents, 1938). One suspects that the purchase price was partly a token amount and partly a reflection of Tom's philanthropy. For the Wells administration, the purchase was a stroke of genius: the collection had finally achieved the high standard of the earlier one, and just in time! (This is not to slight the many contributions made by the alumni of the period who routinely sent specimens, many of them collected while pursuing their worldwide careers, back to Socorro. The catalog is full of their names, and the collection was measurably enriched.)

FIGURE 6—Brown Hall, built to replace Old Main lost in the July 1928 fire, is a much larger structure although it occupies the same location. The new collection was temporarily housed in a basement room but spent most of the duration in a large, second floor room on the south end (extreme left) before finally going back to the basement. Brown Hall was home to the museum for nearly 35 years (1929–1964), longer than any other location to date, and was the site of the "Coronado's Treasure Chest" festivities. (Photo courtesy NMIMT archives)

The half-century mark—a time to celebrate

The Brown addition was a most fortuitous purchase at a critical moment in history: the Institute would soon be celebrating its Fiftieth Anniversary in conjunction with the Coronado Cuarto Centennial and the museum would play a central role in the festivities. Riley M. Edwards, a member of the Coronado Cuarto Centennial Commission, was the individual who originally suggested that the mineral museum be renamed "Coronado's Treasure Chest...since one of the objects of the famous expedition in search of the Seven Cities of Cibola and Quivira was the discovery of mineral wealth" (Chieftain, 19 Oct. 1939, p. 1; NMSM, 1940, p. 22). Some funding was provided by the Commission, possibly for some remodeling of the museum room and construction of new cases (C. T. Smith, pers. comm.). New Mexico Governor Miles, principal speaker at the ceremony, praised the work done by the School over the past half-century and had some particularly poignant words to say about Dr. Edgar Wells who had suffered a tragic death earlier in the year. President C. E. Needham formally dedicated four new buildings on campus that had been constructed with financial assistance through the federal Works Progress Administration and the Public Works Administration. Part of the ceremony for the "Treasure Chest" dedication took place in the museum. Wells was honored and forever remembered by dedicating one of the buildings, Wells Hall, to his memory (Albuquerque Journal, Oct. 28, 1939, n. p.; Albuquerque Tribune, Oct. 28, 1939, n. p.). It was a fitting tribute to a man who was truly dedicated to the best interests of both the school and the students.

The years immediately following the Centennial were, at best, anticlimactic. The glory days of the fiftieth anniversary appear to have been quickly forgotten. President Wells was succeeded by Presidents Needham and Reece, both of whom served during some very troublesome times for the school and can certainly be forgiven if their attentions were drawn away from such esoteric things as mineral museums. The real problems began with the arrival of the Institute's first physicist president, E. J. Workman, subsequent to which the museum would become little more than an orphaned child of the geology department. Workman was a very good president, but he was deeply

involved with rebuilding the school's scholastic reputation and enrollment. Clay T. Smith arrived in Socorro in February 1947; later that year he was transferred to the geology department and was assigned responsibility for the museum by department chairman Georges Vorbe. Vorbe was frustrated by the lack of a separate facility dedicated to the geology department. Such a facility, he envisioned, would include "not only classrooms and laboratories but a well-appointed museum" (NMSM, Biennial Report, p. 44). The geology department eventually received additional space but at the expense of, not in addition to, the museum. By 1950, the museum room was converted into a classroom, and the collection was moved to the basement on the north end of the building, a room also used by the New Mexico Bureau of Mines. A few display cases were left in the upper hallway on the second floor so at least a few specimens remained for all to see (Clay T. Smith, pers. comm. 1996). The senior author (RWE) arrived in 1963 and clearly recalls those cases, which remained there throughout 1964. Most of the remainder, with the exception of several boxes of duplicate and low-end material that was stored in the basement of Driscoll Hall, went to the Brown Hall basement.

The basement was a dismal place for the collection; it was poorly lighted and the cases, as well, had no lighting fixtures. The room was not readily accessible to the occasional visitor and, in fact, it was kept locked most of the time (Robert Bieber-man, pers. comm. 1996). Smith, who was told when he arrived in the department, "this is the museum, look at the pretty specimens, here's more material, and [now] do something with it" (Clay T. Smith, pers. comm. 1996), was distressed by the situation. He very much wanted to "do something" with the collection, but what? He had just two staff members and one graduate student at his disposal and could not adequately run the department and simultaneously provide the attention the museum deserved. His solution appeared when he read the statutory language in the Act that established the New Mexico Bureau of Mines and Mineral Resources in 1927, particularly that section that stated that among the objects and duties of the Bureau would be "to collect typical geological and mineral specimens" (Laws of New Mexico, 1927). Of course, very similar language was to be found in the territorial act that created the School of Mines, but that was, by now, long forgotten. This discovery, along with the dismal situation in the basement museum encouraged Clay Smith to badger Dr. Eugene Callaghan, then Director of the Bureau, to accept responsibility for the collection, a transfer that was, Smith argued, both reasonable and appropriate. Callaghan finally agreed to accept respon

FIGURE 7—The south end of the large New Mexico bay in the Workman Center museum. Notable in the center of the view is the large cluster of selenite roses from west-central New Mexico and the Fayette A. Jones transit and portrait in the new acquisitions case on the left. (Photo, NMBMMR archives.)

sibility when the Bureau could provide appropriate space.

The Bureau of Mines building

By 1957 that time had arrived: the Workman administration and the Board of Regents felt the need to move the Bureau of Mines into a dedicated facility. A proposal was submitted to the state legislature to fund a 30,000-ft^2 Mineral Industries Building to provide space for, among other things, "1. the mining and petroleum laboratories of the State Bureau of Mines...2. (a) the storage of 'geological and mineral specimens and samples of products...,' the collection of which the Bureau is required by legislative enactment." ("A Building," ca 1957, n.p.). The funds were appropriated, but the Bureau of Mines Building would become an addition to the already existing Workman Center instead of the separate structure originally envisioned. This plus later additions was to become home for the Bureau for the next forty years. The Bureau of Mines wing became available in 1962, but at the last minute Workman was hesitant to allow space for a mineral museum. The new director of the Bureau, Alvin E. (Lefty) Thompson, insisted that the museum be included in the plans and largely because of his perseverance, the first facility on campus specifically designed for the purpose became the new museum (Frank E. Kottlowski, pers. comm. 1996).

The Workman Center museum

This museum was an excellent facility for its time: the largest of four bays was dedicated appropriately enough to New Mexico's minerals. The three smaller bays displayed (1) minerals of the U.S. exclusive of New Mexico, (2) minerals of the world exclusive of the U.S., and (3) a specially built fluorescent display (Fig. 7). The west wall contained a series of shallow cases that displayed at different times, the systematic (Dana Classification) mineral collection, and later, specially designed displays highlighting New Mexico's more productive mining districts. Five additional stand-alone cases featured either new acquisitions or sales material.

The collection had barely been set up in the new museum when a new problem appeared. E. J. Workman retired as president in late 1964 and was replaced by Sterling Colgate. The new president, like his predecessor, was not an earth-scientist and did not fully appreciate the educational utility of a mineral collection in the computer age. He ventured a major step further than Workman, however, and actually suggested that the Bureau sell the entire collection and convert the museum space into offices (Edward Bingler, Jacques Renault, pers. comm. 1996). Jacques Renault was hired as a post-doctoral research assistant by Dr. Frederick Kuellmer. Kuellmer soon resigned and Renault became the de-facto mineralogist

at the Bureau. He took President Colgate's suggestion as a very real threat and immediately proposed a novel project to computerize the entire museum holdings (Jacques Renault, pers. comm. 1996). Just one other collection, that of the Smithsonian, was undergoing sophisticated computerization at the time. The project, the results of which were published in Bureau Circular 111 (Renault et al., 1970), highlighted three major aspects of the collection, aspects which had been fairly obvious since the early days to earth scientists (vis-a-vis Keyes' early proposal) but apparently not so obvious to others. The first, and most evident was the aesthetic aspect: people derived much enjoyment from observing the colorful and beautiful specimens. The second was the teaching aspect: the museum collection played a significant role in science education by maintaining and providing material to teach mineralogy, crystallography, petrology, etc. The third is the research aspect: the Bureau's collection, unlike many others, is a working collection in that samples of various, and sometimes quite rare ores, rocks, and minerals, are routinely provided to researchers for chemical and mineralogical analyses, x-ray standards, etc. (Renault et al., 1970, p. 1). Should the researcher desire a suite of base-metal sulfides from the metallogenic provinces of southwestern New Mexico, many from mines which have not been worked in nearly 100 years, this museum could provide it.

The computer program enabled the researcher to quickly cross-reference the entire collection to determine such parameters as mineral assemblages, geographic locality, and physical location, i.e., storage or display (Renault et al., 1970, p. 3). President Colgate saw the publication, apparently was satisfied, and the idea of selling the museum contents quietly died.

This incident brings to mind one additional aspect: preservation. In this regard, the museum is an archive. Over a period of time many of the display pieces become irreplaceable relics of New Mexico's and the world's mineralogical heritage as, one by one, the mines and districts from whence they came are reclaimed by nature and more recently by man. To remain a viable entity, the museum must maintain the public trust through long-term stability. Only by doing so will donors be comfortable entrusting their valuable and desirable objects to its care. The last thing a donor wants to see is a unique, world-class specimen or artifact sold or traded off a year or two later.

Meanwhile, Edward Bingler had begun the first systematic inventory of the school's collection in 1965. And herein lies a fine little mystery involving the old (original) museum card file: that of the so-called missing C. T. Brown specimens.

The Brown collection occupies the first 1.000 or so numbers in the card catalog and is followed by an unused block up to number 3,000. Why should this be so? At least one chronicler, Jacques Renault, has attributed the unused block to that portion of the C. T. Brown collection lost in the 1928 fire in Old Main, vis-a-vis the following:

> The mineralogical museum was begun in the early 1900s when C. T. Brown, a member of the Board of Regents, gave 2,565 specimens to the New Mexico Institute of Mining and Technology (then called New Mexico School of Mines). Unfortunately, 50 percent of the Brown collection was destroyed by fire in 1928... (Renault et al., 1970, p. 1).

There are two problems with this: first, the number of specimens indicated by Renault falls significantly short of 3,000. Second, as we have seen earlier, the school did not acquire the Brown collection until 1938, some ten years after the fire. When Bingler began the inventory project, the only catalog in existence (other than the handwritten ledger book accompanying the Brown collection) was the original card file that is still maintained in the museum's archives today as the working hardcopy. Bingler accepted the information recorded on the cards and proceeded to cross-check that information against the actual specimens in the collection (Edward Bingler, pers. comm. 1996) making additions or corrections only where obviously necessary. He duly catalogued the 1,000 or so Brown specimens, and not finding the others, he, like his predecessors, left vacant the next 2,000 numbers.

We (RWE and VWL) initially assumed that the card catalog was started upon the arrival of the Brown collection during the Wells administration. It seemed reasonable that the curator at the time may not have known how many specimens would be arriving and set aside a block of 3,000 for the collection. This could explain why the remainder of the school's collection, those specimens which had been acquired for the new collection subsequent to the fire, were catalogued after the Brown collection, beginning with no. 3001. But it was not to be: Clay T. Smith clearly recalls his student assistants, Jack Reinhart and Woodrow Latvala, putting together the first card catalog during ca 1947-48 (Clay T. Smith, pers. comm. 1996). Smith further recalled that the geology department possessed an ancient typewriter that produced only upper case letters, exactly what is to be seen today on the older accession cards. Reinhart and Latvala would doubtless choose to catalog the Brown specimens first (they were certainly the most spectacular and interesting). The more lackluster pieces could be done later.

What then, is the solution to this mystery? Consider the following: Brown gave many specimens to the School of Mines during his lifetime (prior to January 1925) (Porphyry, 1925, p. 108), but these indeed would have been in the Old Main display on that fateful day and would have been totally lost. It is illogical, therefore, to assume that Reinhart and Latvala would leave an open block of numbers for specimens that no longer existed. Alternatively, as has been suggested by Clay T. Smith, a portion of the Brown collection may have been retained by the family, a portion that the geology department had reason to believe would eventually be transferred to the school. No evidence has surfaced to support this hypothesis, however, and no additional C. T. Brown specimens have appeared over the years.

In the final analysis, the gap in the numbers and the reason for it remain unresolved, the knowledge of why it was done having died with Reinhart and Latvala. Regardless, the authors are certain that there are no missing Brown specimens.

When Bingler left in 1967, Renault completed the inventory. The remainder of the collection, presumably the reserve and study material that had been stored in the basement of Driscoll Hall, was moved to the museum storage area, and the transfer was complete (Renault et al., 1970, p. 1; Richard Chaves, pers. comm. 1996). The Workman Center museum would remain home to the collection for the next 30 years, during which time the catalog would expand to include more than 9,000 items.

Contributions of the museum curators, 1963 to present

Over the years the museum curators have left their mark on the collections as well as on the museum sites. The authors regretfully have no detailed information on the role of curators prior to 1963 other than the events discussed elsewhere in the text. Since about 1963, mineralogists and other professional staff of the New Mexico Bureau of Mines have had the added responsibility of curating the Bureau's collections, and they all have contributed positively to the museum's success.

Edward Bingler (1963-1967; dates show service as curator of collections) oversaw the transfer of the mineral collection from the geology department to the Bureau. Thus the task of designing the initial layout and organization of the displays fell upon his shoulders. Bingler established both the systematic (Dana) collection in the Workman Center museum (recall that the original collection in Old Main was also set up, in part, according to the Dana system) and the fluorescent display.

Jacques Renault (1967-1974) completed the first inventory begun by Bingler and, as we have seen, completed the first computer cataloguing of the museum's holdings. Renault also vastly improved both the shelving and lighting in the display

cases and set up what would be the first of the Bureau's traveling displays at the Albuquerque airport. This display (from 1969-1974) occupied one of the vendor cases seen by passengers as they traversed the concourses. New Mexico's mining districts were highlighted on a state geological map and mineral specimens or ore samples produced in the districts were displayed on nearby brackets. The display, from all accounts, was very popular.

The popularity of the airport display doubtless led in the 1970s to the Bureau's "mineral-mobile," a traveling display in the truest sense conceived by Renault and then director, Don Baker. A single-axle trailer was equipped with a wedge-shaped body, fold-out door panels, and museum-type shelving. Minerals and ore specimens from the museum collection, as well as maps, charts, and other publications traveled throughout the state with Bureau personnel, providing a visual and instructive adjunct to educational talks and seminars principally at secondary schools. Other, less-mobile traveling displays have been established at various times in the Santa Rita museum, Socorro Chamber of Commerce, New Mexico State Fair, and Socorro County Fair, to name but a few. Additionally, specimens and artifacts are routinely loaned to other institutions and museums.

Joseph Taggart (1974-1978) reinventoried and relabelled the entire collection and made material improvements in both the Dana and fluorescent displays. Taggart was curator during a difficult time at NMIMT, a time when theft and vandalism were rampant campus-wide. Taggart installed steel security doors at both ends of the Workman Center museum hallway as well as in the museum storage area. Hard to believe but prior to this the museum was wide open 24 hours a day, 7 days a week! Joe was also instrumental in securing the first of the museum's cash donations when an anonymous donor provided funding "in memory of Yola Coulter" for the purchase of several spectacular pieces. These, including the excellent Tsumeb dioptase, can be seen on display today.

Robert North (1978-1988) began organizing part of the New Mexico collection according to mining districts and established the museum sales case. Peter Modreski, Ramon DeMark, Rodney Ewing, Robert North, and others, helped establish the well-known and widely acclaimed New Mexico Mineral Symposium. The first symposium in 1979 was held in Albuquerque, but all subsequent symposia have taken place in Socorro on the NMIMT campus. Thanks to sponsors such as the New Mexico Bureau of Mines, Albuquerque Gem and Mineral Club, New Mexico Geological Society, Chaparral Rockhounds, Los Alamos Geological Society, and others, the symposium is now self-sustaining. Originally planned as a biennial event, the substantial support of the Bureau of Mines subsequent to the first symposium (since reimbursed), along with its editing and support staff, enabled the event to become annual. The Bureau mineralogist and/or curator, assisted by a co-chairman in recent years, has become the traditional chairman and organizer of the event. The symposium is now the flagship of the museum's educational function and brings together students, rockhounds, and professional earth-scientists to discuss, in a semi-formal atmosphere, new mineral occurrences, localities, and contributions to the science. Presentations and slide shows have run the gamut from amateur mineral collecting trips to faceting techniques, to the scientific basis for color in minerals and gems **(Table 1).**

Marc Wilson (1988-1992) further developed the mining district display concept, acquired several notable and colorful mineral specimens from around the world, and along with Debra Wilson, produced the popular mineral postcard set. Discussed elsewhere is his role in establishing the Museum Endowment Fund and his noble attempt to expand and improve the Workman Center museum.

The current curator, Virgil Lueth (1994–), was responsible for designing much of the new museum facility and worked closely with architect Phil Stevens in planning the layout, lighting, materials selection, case construction, and security.

Lynn Heizler has served as Assistant Curator and symposium coordinator since 1995.

Robert Eveleth has served as acting curator in the absence of a staff mineralogist during 1978,1988, and 1992-93 and as Associate Curator since 1994.

Expansion to demolition

The Robert Burns poem with the line, "The best laid schemes of mice and men," always comes to mind when the topic of expanding the Workman Center museum is discussed: such plans often go awry. By 1990, the size and quality of the mineral collection was straining the limits of the museum facilities: much excellent material was packed away in boxes, unseen by the public, for lack of adequate display space. Equally troubling was the chaos in the storage area where the reserve and research (working collection) materials were kept. Two unforeseen incidents would resolve both problems. In an effort to cure the display-space problem, at least temporarily, a proposal was made to convert the outdoor patio area between the existing museum and the original east part of Workman Center into an expanded display area (the patio had long since fallen into disuse). Bureau mineralogist Marc Wilson came up with an impressive artist's conception of an open display area surrounded by a second-story balcony lined with special built-in display cases, and the entire space roofed over with a transparent dome or pyramid. The proposal had an unexpected result for it was soon discovered that the wiring and other utilities in Workman Center were so far below code (i.e. currently acceptable construction standards) that changing or remodeling just a small portion of the building would trigger a regulatory remake of the entire facility! Further study would reveal that the cost of bringing Workman Center into compliance allegedly exceeded the cost of demolishing the old structure and erecting a new one in its place. Thus, a seemingly harmless and excellent proposal set off a chain of events that led to the demolition of Workman Center and the removal of the entire collection to its latest and newest location in the Workman Addition.

The Workman Addition is on the extreme northwest corner of the older Workman Center. The addition was constructed during the late 1970s with funds derived, in part, from gold recovered from government surplus electronic components. Accordingly, the new wing was often called the Gold Building by its previous occupants. (What could be more appropriate than to have the Institute's gems and minerals in the Gold Building?) During 1995, the building was remodeled and the new museum facilities installed. Once again, the space allotted to the museum was coveted by others and considerable last-minute arguing over floor space ensued. Much credit is due the administration of Dr. Daniel Lopez for fully appreciating the public relations value and educational opportunities made possible by the museum, and the facility was constructed as planned.

Storage and security

The new facility in the Workman Addition solved the problem with the display material but did nothing for the working collection. This portion of the collection had so seriously outgrown the storage facilities that individual specimens and objects, despite computer assistance, were difficult, if not impossible, to locate in the jumble of packing boxes and dusty trays. The solution appeared when the research portion of the Bureau's paleontological collections was transferred to the New Mexico Museum of Natural History and Science in Albuquerque beginning in 1994. The old paleontology lab had been well equipped with heavy-duty, lockable steel cabinets (50 of them), and the senior author immediately saw in them the long-term solution for storage, not only for the research materials but for the excess display material as well. Bureau Director Dr. Charles Chapin agreed, and the cabinets were duly transferred to the new facility with the move.

TABLE 1—The New Mexico Mineral Symposium, inception to date. Source: Mineral Symposium booklets, announcements, and recollections of Robert M. North, Robert W. Eveleth, and Ramon DeMark.

No.	Dates	Location	Chair/Co-Chair	Featured Speaker	Featured Address
1	29–30 Sept. 1979	Northrop Hall, UNM, Albuquerque, NM	Peter Modreski Ramon DeMark Rodney Ewing[1]	—	[2]
2	25 Oct. 1980	Weir Hall, NMIMT, Socorro, NM	Robert M. North	—	[3]
3[5]	13–14 Nov. 1982	Macey Center, NMIMT, Socorro, NM	Robert M. North	—	[4]
4	12–13 Nov. 1983	Weir Hall, NMIMT, Socorro, NM	Robert M. North	Robert W. Eveleth	"New Mexico's mining camps, characters, and mineral treasures"
5	11–12 Nov. 1984	Weir Hall, NMIMT, Socorro, NM	Robert M. North	Laurence Lattman	("Untitled) ("High-tech materials for modern society")
6	9–10 Nov. 1985	Macey Center, NMIMT, Socorro, NM	Robert M. North	Peter Bancroft	"Gem and mineral treasures—I"
7	8–9 Nov. 1986	Macey Center, NMIMT, Socorro, NM	Robert M. North Robert W. Eveleth	Vandall King	"Pegmatite petrology through phosphate mineralogy"
8	14–15 Nov. 1987	Macey Center, NMIMT, Socorro, NM	Robert M. North Robert W. Eveleth	Robert Jones	"Copper throughout history"
9	12–13 Nov. 1988	Macey Center, NMIMT, Socorro, NM	Robert W. Eveleth Marc L. Wilson	Peter Bancroft[6]	"Gem and mineral treasures—II"
10	11–12 Nov. 1989	Macey Center, NMIMT, Socorro, NM	Marc L. Wilson Robert W. Eveleth	Philip and Kathryn Goodell	"Adventures in the Sierra Madres, Batopilas, and Chihuahua, Mexico"
11	10–11 Nov. 1990	Macey Center, NMIMT, Socorro, NM	Marc L. Wilson	Peter Megaw	"Mineralogy of the Potosi mine, Chihuahua, Mexico"
12	9–10 Nov. 1991	Macey Center, NMIMT, Socorro, NM	Marc L. Wilson Robert W. Eveleth[7]	Gilbert Gauthier	"Mineral classics of Shaba, Zaire"
13	14–15 Nov. 1992	Macey Center, NMIMT, Socorro, NM	Robert W. Eveleth	Stanley Dyl, II[8]	"Mining history and mineralogy of the Lake Superior Copper district"
14	13–14 Nov. 1993	Macey Center, NMIMT, Socorro, NM	Robert W. Eveleth	Bernard Kozykowski[9]	1. "Franklin—Its mines and minerals" 2. "The Sterling Hill mine—A precious hillside preserve"
15	12–13 Nov. 1994	Macey Center, NMIMT, Socorro, NM	Virgil W. Lueth Robert W. Eveleth	Fred Ward[10]	1. "The 'precious' gems: where they occur, how they are mined" 2. "Jade"
16	11–12 Nov. 1995	Macey Center, NMIMT, Socorro, NM	Virgil W. Lueth Robert W. Eveleth	Miguel Romero[11]	"The Romero Mineral Museum"
17	9–10 Nov. 1996	Macey Center, NMIMT, Socorro, NM	Virgil W. Lueth Robert W. Eveleth	Robert Jones[12]	1. "Gemstones of Russia" 2. "Anecdotes on collectors I have known"

[1] The first symposium was organized by Peter Modreski, Ramon DeMark, and Rodney Ewing, all of whom considered themselves "co-chairmen."
[2] Banquet was held at Isabella Room, Kirtland AFB Officers Club but no dinner address was given.
[3] Open forum in lieu of dinner presentation.
[4] No formal banquet at the Third Symposium—thus no dinner speaker.
[5] Symposium was conceived as a biennial event; Bureau infrastructure and staff support allowed annual scheduling, 1982 onward.
[6] The Ninth Annual Symposium featured two special talks: the featured speaker was Peter Bancroft as indicated; "special guest speaker" was Robert Jones ("What causes color in minerals?").
[7] The Twelfth Annual Symposium was co-chaired by Marc Wilson and Robert Eveleth. The three technical sessions were individually chaired by (1) Marc Wilson; (2) Steve Bringe; (3) Paul Hlava.
[8] Stan Dyl's featured presentation was given as the final talk for the Saturday program. Robert W. Eveleth delivered a short vignette, "The Baldy Deep Tunnel mine, Elizabethtown, NM" as the dinner presentation.
[9] Bernard Kozykowski gave two presentations: the first during the program, and the second after dinner.
[10] Fred Ward gave two presentations: the first during the program and the second after dinner.
[11] Dr. Romero's presentation was given as the final talk for the Saturday program. Virgil Lueth delivered a brief dinner presentation, "A sneak preview of the new and improved New Mexico Mineral Museum."
[12] Robert Jones gave two presentations: the first during the program and the second after dinner.

This windfall allowed every object in the collection, whether mineral specimen, man-made product (metal buttons, ingots, refinery products, etc.), artifact, or fossil, to be assigned a dedicated area in one of the alphabetically arranged cabinets. Equally important, each specimen is further arranged geographically by mining district or state/country in individual trays to which a computer-generated label is permanently affixed. When a specimen is removed for study, research, or display, the tray and computer label remain in the assigned space and a colored tag (e.g. "on display") is placed in the tray indicating

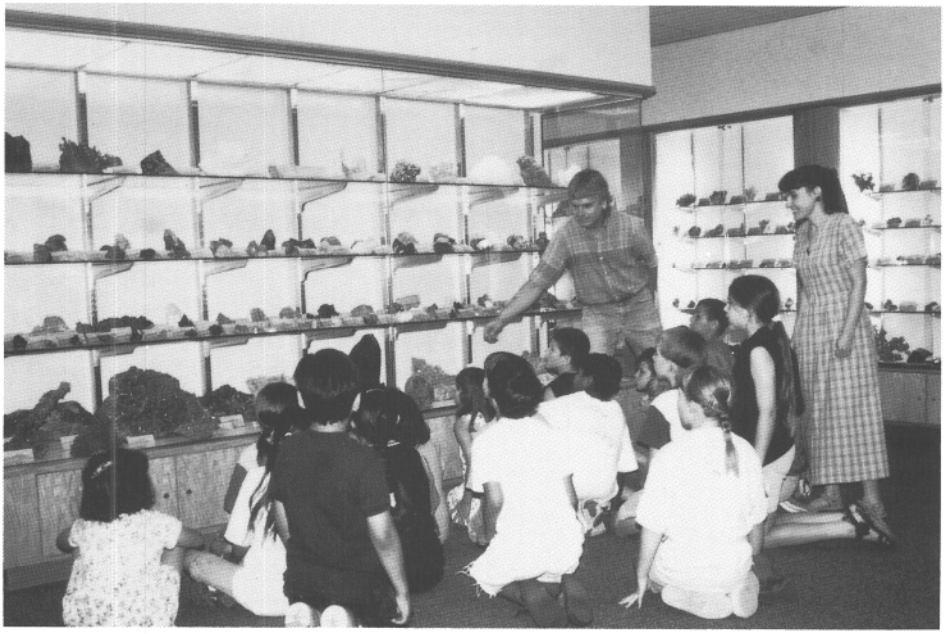

FIGURE 8—The new museum of the 1990s is the flagship of the New Mexico Bureau of Mines and Mineral Resources educational outreach program. In addition to overseeing hundreds of visits by students, researchers, and tourists, the museum staff conducted some 50 special instructive tours for over 1,000 school-aged children and senior citizens groups during the 1995–96 school year. One of the school groups (above) is introduced to nature's mineralogical treasures by Virgil Lueth, museum director, and Lynn Heizler, assistant curator. The mineralogical museum at Socorro will soon enter a second century; the legacy of Fayette A. Jones, Charles R. Keyes, and C. T. Brown lives on. (Photo by George Zamora, New Mexico Tech Public Information Office, May 1996.)

why the specimen has been removed. A computer search locates any mineral or mineral assemblage in a matter of seconds; individual pieces can now be physically located in a few minutes.

The cabinets are in a warehouse fully equipped with fire alarms, sprinklers, and electronic motion-sensor alarms. No unauthorized persons are permitted in the warehouse area unaccompanied: only the mineralogist, assistant and associate curators possess cabinet keys and security codes to access the collection. Not only have the storage and retrieval maladies been corrected, but security, which was nonexistent previously, is now state-of-the-art.

The new museum and display

The new museum facility occupies a total of 4,100 ft^2 of space in the renovated Workman Addition. Mineral exhibits are designed to be accurate and informative, and all casework is composed of glass, stainless steel, white oak, and painted maple. Two standup cases, accessible from the rear, occupy the center of the display gallery, while other cases highlighting New Mexico minerals surround the main gallery (Fig. 8). Lighting in the cases consists of case-length, full-spectrum fluorescent lights with built-in accommodations for additional lighting. Open areas are maintained at each end of the gallery for future expansion. An ultraviolet-mineral display is in a walk-through bay behind the reference collection. Cases highlighting new acquisitions and gemstones occupy one side of the entryway. Mineral sales cases are also located in the entry so that the visitor may bring a mineral treasure home from their visit. All proceeds from sales are used for the purchase of new museum material.

Mineral exhibits in the 1,900-ft^2 display gallery focus on New Mexico but also include specimens from around the world. Eight important mining areas are highlighted along with three cases of minerals from other New Mexico localities. The mining areas featured are the Organ, Santa Rita–Tyrone, Fierro–Hanover, Hansonburg (Bingham), Magdalena, Old and New Placers mining districts and minerals from pegmatites and uranium deposits. Other displays include minerals from the southwestern United States, the United States (exclusive of the southwest), Central and South America, and minerals from around the world. A reference collection, classified according to the Dana System, is again to be featured in the museum. Mining artifacts, historic photographs, and other ephemera are also integrated into the displays.

New to the museum is a 1,000-ft^2 education/demonstration facility. Visitors will be allowed to make personal explorations into earth science phenomena with hands-on exhibits. Mineral products, fossils, and rocks will be featured in displays and exercises in the demonstration facility.

Mineralogic reference, petrologic, and gemological materials not on display are stored in the warehouse, along with a modest paleontological collection and a small micromount collection. The latter is to be expanded to include all mineral species reported from New Mexico. These materials are available to researchers or the curious by contacting the museum director in advance. Use of the reference collections is encouraged and is a vital part of the museum's service to the research community.

The museum preparation area includes two lab facilities: a 200-ft^2 "dirty" lab that houses rock saws, polishers, a fume hood, rock crushing and splitting equipment, and chemicals. All sample preparation, trimming, and chemical treatments are done in this ventilated area. A 530-ft2 "clean" lab houses the computerized card catalog and other curation materials. A small closet area is used for storage and a photography lab.

Since 1994, all activities in the museum have been governed by adherence to a comprehensive policies and procedures manual. All museum cataloging, conservation, and curation procedures are outlined, and specific instructions presented. The continuity of collections care is paramount in the new facility; the legacy of New Mexico's mining and mineral history depends on it.

Friends of the museum

The support and goodwill of many friends and benefactors is as essential now as it was during the very early years, and it would be remiss not to mention a few of them. We have seen how the new collection began with the C. T. Brown acquisition and grew very slowly over the years with occasional donations by the alumni. The first large donation came in 1964 when, through the good graces of Charles E. Stott, general manager of the Tsumeb Corporation, South West Africa, an excellent suite of Tsumeb mine minerals was acquired. Donations really picked up during the 1980s beginning with a fine suite of Brazilian material given by Jack Lowell. This was followed by the Mont St. Hilaire collection of Bill and Peg Marble, three excellent world-wide collections from Roger Maynard, the Virginia Chapman Schulz collection that included the Phillip Argyle apple-green Kelly smithsonite as well as several fine Bisbee pieces, and many superb New Mexico pieces very kindly provided by Donald Moore.

The largest collections received to date are those of Mahlon Everhart in 1990 and Jack Adams in 1996. The Everhart trove included several hundred mineral specimens, including much magnificent Kelly material, as well as a small suite of fossils, complete with original Ward's Scientific Establishment labels of the late 19th and early 20th centuries. Mahlon had

acquired much of this historic material from the Asa B. Fitch family during the 1930s. Also included is considerable material from the Apache and other mines in the Hachita district collected by Mahlon Everhart.

The Jack Adams collection, comprising nearly 1,700 pieces, is notable for its pegmatite and rare-earth minerals. The former includes many excellent specimens of beryl, topaz, and tourmaline. Jack spent more than 20 years with the U.S. Geological Survey investigating pegmatite deposits throughout the United States. He collected or acquired a multitude of superb, and in many cases extremely rare, mineral species.

Other significant benefactors over the years have been Rusty Craft, Ramon DeMark, Tim Hanson, Charles Maxwell, and Al and Betty Tlush to name but a few.

New to the museum is the permanent endowment fund. Established in December 1989 through the efforts of the Chaparral Rockhounds in Roswell, New Mexico, and then mineralogist Marc Wilson, the fund provides a growing amount of income for the purchase of display and other material. The curator is permitted to use up to 90% of the interest; however, no funds have been used to date and will not be used until the annual interest is sufficient to purchase quality material. Major donors include Mrs. Frida Gruninger, Tom and Jean Merson, Chaparral Rockhounds, Rollin' Rock Club, Clovis Gem and Mineral Society, New Mexico Association of Gem & Mineral Societies, and Earl and Linda Hoffman.

Visions and reflections

Today the museum provides displays for the world-renowned Tucson and Denver Gem and Mineral Shows as well as several similar in-state events and will continue to provide material for research in the earth sciences. However, because the museum is primarily a part of the educational outreach program of the New Mexico Bureau of Mines and Mineral Resources, it no longer enters into competitive displays as it did during its early history. Regardless, the museum has been well rewarded for its educational efforts and possesses an extensive array of ribbons, banners, and other awards.

The first 100 years of the museum in Socorro have seen many changes—changes in the Institute, the student body, the curriculum, and most often, the location (at least eight to date). People, places, and events may come and go, but it is our desire that the mineralogical and geological wonders in "Coronado's Treasure Chest" remain long into the future.

Dedication and acknowledgments

This article is dedicated to the Directors of the New Mexico Bureau of Mines and Mineral Resources, without whose support the collection could well have been packed up and sold long ago: Eugene Callaghan, Alvin J. Thompson, Donald Baker, Frank Kottlowski, and Charles Chapin; and to all those earth scientists who so carefully nurtured the collection and helped to make it what it is today: Edgar Wells, Clay Smith, Edward Bingler, Jacques Renault, Joseph Taggart, Robert North, and Marc Wilson. The museum is a lasting monument to their efforts.

We wish to extend thanks not only to the NMIMT faculty and Bureau staff but to all the past alumni and friends of NMSM /NMIMT (some of whom are acknowledged in the text) who have shared their thoughts with us over the years. Specifically for this article are: Gerald U. Greene (class of 1923, now deceased), Robert H. Weber, Jacques Renault, Frank Kottlowski, Robert Bieberman, and Richard Chavez. Special thanks to Avery J. Smith of San Diego, California, and Tim Blevins of Rio Grande Historical Collections, New Mexico State University, Las Cruces, who dug through newspaper files for clippings on the Panama–California Exposition and the Coronado Cuarto Centennial. We also wish to thank Frank Kottlowski, Robert Weber, Jacques Renault, and Clay Smith for reviewing and critiquing the manuscript.

References

"A Building " ca 1957, Unpublished pamphlet prepared by NMIMT as part of proposal for a "Mineral Industries Building" for the New Mexico Bureau of Mines and Mineral Resources, not dated, not paginated.

Albuquerque Journal, 1939, issue of October 28, n. p.

Albuquerque Tribune, 1939, issue of October 28, n. p.

Chieftain, The Socorro (a.k.a. "The Chieftain"), the "official newspaper" of Socorro County, New Mexico, published more or less continuously since 1884; issues cited are generally on microfilm at NMIMT Library or in the Rio Grande Historical Collections, Socorro Historical Society Collection, New Mexico State University, Las Cruces.

Christiansen, P. W., 1964, Of Earth and Sky, a history of New Mexico Institute of Mining and Technology, 1899-1964: University of New Mexico Press, 107 pp.

Eveleth, R. W., 1992, C. T. Brown, The New Mexico School of Mines' best friend and benefactor; *in* Lite Geology, Fall 1992: New Mexico Bureau of Mines and Mineral Resources, Socorro, NM, n. p.

Laws of New Mexico, 1927, Chapter 115, sec. 2(2), approved March 14, 1927.

Los Angeles Times, newspaper, Los Angeles, California: no. vol. cited.

New Mexico School of Mines (NMSM), official catalogs of; issued most years since 1895. Publication dates were rarely indicated on title page; thus most dates are inferred from the contents.

New Mexico School of Mines (NMSM), Biennial Report, 1948; for the years 1947-1949; 152 p.

Porphyry (The), 1925, (first) yearbook of the New Mexico School of Mines, 148 pp.

Regents, Board of, 1938; unpublished minutes; voucher #5705 issued February 4, 1938 shows a disbursement to T. (Tom) C. Brown, Cony T. Brown's then surviving son, in the amount of $200, the only such voucher to a member of the Brown family.

Renault, J., Bonem, R. M., and Riese, R., 1970, Computerization of the New Mexico Bureau of Mines Mineralogical Museum: New Mexico Bureau of Mines and Mineral Resources, Circular 111, 49 pp.

San Diego Union, newspaper, San Diego, California: no vol. cited.

Twitchell, R. E., 1917, The leading facts of New Mexico history, vol. V: The Torch Press, Cedar Rapids, Iowa.