

Remnants of an

IN the 1980s, plant closures are major news, but the story itself is not new. Out in the rural landscape of Western Pennsylvania, the remnants of many bygone industries tell tales of changed fortunes. For more than 15 years, we have been exploring these sites on foot, trying to understand the industrial culture created in the late nineteenth century, and ebbing now in the late twentieth.

We came upon Langeloth by surprise.

On a May afternoon, we parked our car in Burgettstown, 30 miles west of Pittsburgh, and started walking. Our immediate objective was a deserted mine site along the Conrail tracks a couple of miles west of town.

It was not pleasant walking. It was hot (October through April is the best season for hikers), and the railbed had been recently renewed with large-cut gravel — hard on the feet, even through vibram-soled boots. When we finally got there, we found that the mine site indicated on our topographic map was not only abandoned, it was obliterated. All that remained was a small brick building and a barren landscape recontoured by a bulldozer.

We swung up the hill, away from the tracks. On the other side, we found a huge pile of slate: the best visible evidence left of the mine we'd originally set out for. We circled the mound for a few minutes, taking pictures, then followed a country road for a mile or so, past farms and modest suburban homes, and climbed the hill into the little village of Langeloth.

So far the walk had been unspectacular and disappointing, though we paused to examine a deserted company store in Langeloth, and to admire, briefly, a modern hilltop plant that makes molybdenum, a metal used to harden steel.

From Langeloth, we headed down again, past a row of old-fashioned company houses (with the usual barrage of barking dogs) into the next hollow, where we knew there *had* to be an old mine. Still we couldn't find anything much — some coal dust and evidence of a few building foundations, but mostly weeds.

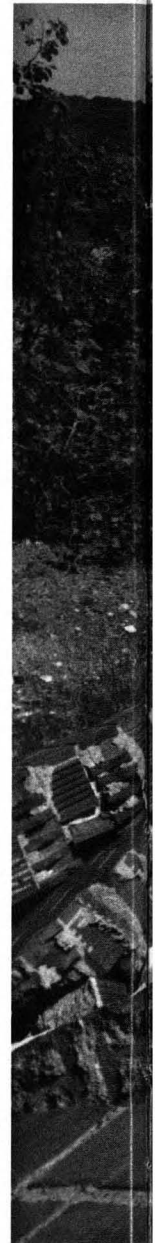
It was after we climbed the abutment of a railroad trestle and started east along the tracks that our "discovery" began.

The tracks were old but clearly still used occasionally. As we moved along, we could see a modern tippie and coal-sorter to our right: perhaps another small company processing the tailings of a mine. Up to our left were increasingly large slate dumps from an earlier operation.

We moved off the tracks and began to climb through the dumps. Gradually the panorama unfolded: first a set of concrete ruins, the foundations of a small building, then a series of concrete piers advancing up the hillside. Around us was a vast expanse of heaped slate, the remnants, we felt, of a large mining operation. The glare of the sun, now low on the horizon, made the piles incredibly black.

But we were still below the hillcrest. When we reached the top, we were on a plateau. The scene that stretched out before us, two dozen acres across, looked like a capital city devastated in some ancient war. Or was a more apt image a German industrial site, circa 1945?

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Industrial Landscape

By David Demarest and Eugene Levy



Industrial ruins, Langeloth, Pa., 1989.

Strewn out ahead of us were house-sized chunks of concrete, mounds of brick and steel rails, steel beams tossed here and there. In a hillside to our left several tunnels, clogged with rubble, were dripping water. Two hundred yards straight ahead were the hulks of buildings: ragged roofs, broken windows, large saplings grown up through gaps in the walls.

Our assumption that this was a mine site quickly changed as we examined the rubble. The tunnels were too small and numerous to be mine entries. A series of large, rectangular concrete pits (now filled with water) evidently had been part of a yardrail system for unloading materials, but they had only slight resemblance to arrangements we'd seen at mines.

The most intriguing feature was a set of oven-like structures concentrated at the far side of the site, built into the rim of a man-made cliff. The ovens looked like broken towers. Circular window-like openings near their tops were ringed with decorative brick. Tunnel entries at their bases seemed designed, perhaps, for fuel. Around the ovens was debris of brick and broken ceramic materials glazed over from intense heat.

As we looked back across the bulldozed open stretches of the site (toward the towering smokestack of the modern molybdenum plant half a mile away), the desolation was complete — and, we could see, deliberate. Not only a bulldozer had done its work; dynamite had been applied to many of the structures. Three immense tanks sat smashed, like a row of hats hit on the crowns by a giant fist.

It was a weekday, during working hours, but no one was working here — not anymore.

The date we could find on ruined rail tracks, 1920, confirmed our sense that here was an industrial site that had had its heyday more than half a century ago. But what had it been?

We left the row of ovens and headed toward the town of Slovan in the hollow below, climbing through the rubble of huge concrete stanchions blasted down the hillside. At the foot of the hill we noted a small mine entry with "1914" pressed into the concrete above the portal. We crossed a right-of-way laid out for two sets of tracks. Rusted rails trailed off toward Burgettstown.

Later we learned that the industrial bones we had stumbled across that warm spring day in 1980 were the remains of a zinc plant which had prospered in its time, then ceased to be, quickly and finally. *Zinc* in Western Pennsylvania? Not steel, not coal?

As we began to investigate, it grew clear that the forces that brought this strange monument to zinc into being and caused its end were the same forces that produced similar histories elsewhere in Western Pennsylvania, and more broadly throughout industrial America.

THE NEW ZINC SMELTER AT LANGELOTH

A new zinc-smelting works near Pittsburgh, Penn. is about to be put in operation. The plant is right over a coal mine which supplies the fuel. The gas producers, roasting furnaces and smelting furnaces are of the Hegeler type. The methods of handling materials in the works are chiefly mechanical. — *Engineering and Mining Journal*, Dec. 5, 1914

EXTRA —

ZINC PLANT TO CLOSE
STOP ORDER HERE TODAY

— *Burgettstown Enterprise*
June 26, 1947

The American Zinc and Chemical Co., a subsidiary of American Metal (now Amax), came into being in 1914 for several reasons. It was accessible to a prime

zinc market. Only 30 miles from Pittsburgh, the new plant was even closer to the steel mills of the Ohio River Valley, which would use its product to galvanize steel. Transportation was convenient. The main trunk of the Pennsylvania Railroad passed through Burgettstown, just two miles away, and spur lines could be extended around the plant site to bring zinc ore in from Missouri mines and carry off finished slabs.

Most important, beneath the leveled hilltops on which the plant was built lay large coal deposits, the famous Pittsburgh seam: cheap fuel for the retort furnaces. The Langeloth works honored a basic axiom of heavy industry: Get as close to the energy source as possible.

Finally, there was the region's cheap immigrant labor, mostly Eastern and Southern Europeans, though, for particular historic reasons, zinc smelting also attracted Spaniards. On an adjoining hillcrest, American Zinc would build "Langeloth," a company town (named after Jacob Langeloth, chairman of American Metal) to house its workers.

CAESAR PRADO — Spaniards in Langeloth

Prado worked in the zinc plant from 1929 until a few months before it closed in 1947. In an interview at his home in 1981, we asked him about his family background.

I was born here in this country, but my people came from Spain.

What happened is quite a story....

There was a zinc factory in northern Spain, and they went on strike. Of course, at that time you didn't talk about unionism in Spain. But, on their own, the men struck the damn plant. So they fired them all.

There was an English engineer who was in Spain, helping to take some of the bugs out of this plant, and he got to know some of the workers there. That engineer then came here to this country and helped put up a plant out west, near St. Louis somewhere, and he started looking for workers.

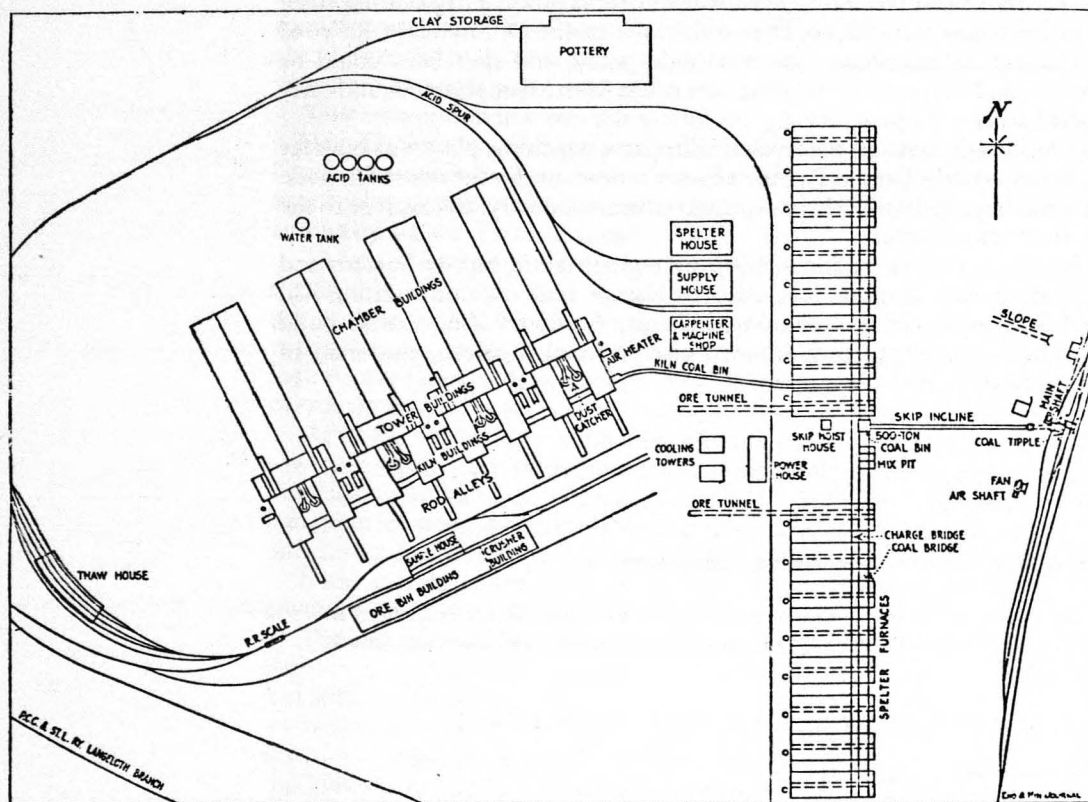
Now after those guys in Spain got fired, most of them went to Cuba to make their fortunes — it's a Spanish-speaking country. So this engineer went to Cuba and spotted them on the street, and after hellos, told them, "Hey, I'm down here looking for workers. You guys out of work?" He paid their fares to go to America, out west there.

So afterwards, after they got out there, they sent to Spain for more of their friends. That's how they all came. They put all these Spaniards on one furnace, and knowing the work the way they did, why naturally they outproduced the others.

Then they started drifting off. That's how we came here — we heard that Langeloth was opening up a zinc works.

The Spaniards more or less stayed together — they couldn't speak American. My mother couldn't say hello in American 10 years after she got here. She had been left a widow in East St. Louis, with three children. My oldest brother was 5 years old; I was 3; and my youngest brother was 18 months.

So that's when we came here. That was back in 1915 — I was born in 1912. So the plant must have opened in about 1914. We heard about it by word of mouth.



GENERAL PLAN OF WORKS

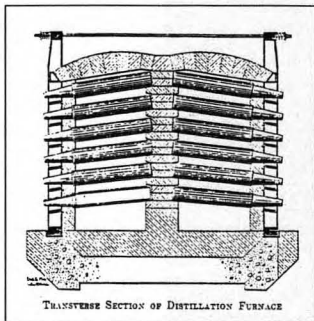
On our first visit, we had entered the plant site at its southwest corner. The plant's rail tracks seemed to begin where we were standing, and to move east. In fact, we were at the spot where zinc ore entered the site, shipped from the Midwest and later from South America via Baltimore. The roofs over the ore storage bins are now gone; some are filled with water; others are clogged by rubbish.

To extract the sulfur content, the ore was moved by conveyor belts across the plant yard to two roasting furnaces. Perhaps 70 feet high, these were composed of seven large hearths (each 6 feet by 80 feet) stacked one above the other. It was an "extraordinarily massive construction," according to a 1914 article in *Engineering and Mining Journal*.

Today, only the foundations, with their under-tunnels, exist. Imagining the massive roasters is an intellectual exercise. The three giant battered tanks we observed on our first visit were the sole remains of the operation that transformed the sulfur dioxide freed from the ore into sulfuric acid, the plant's most important by-product. Since the process used large lead-lined chambers, American Metal dismantled Langeloth's acid plant with particular thoroughness to salvage the lead. Today, even the tanks are gone, "victims" of soaring scrap prices.

The ore itself, reduced to zinc oxide, was moved from the roaster, by hopper

car, 100 yards farther east, then hoisted to a set of tracks that ran across the tops of Langeloth's eight distilling furnaces. For us, exploring the plant in the 1980s, it was this climactic step, the smelting itself, that most engaged us. Starting with our first visit we were intrigued by the architecture of the furnace area. The rubble of four wall-like structures stretches out from east to west, each about 90 feet long, about 100 feet between them. In the best preserved spots along the heat-scarred walls, the butt ends of large ceramic retorts are set on shelf-like ridges. The debris piled nearby is a blend of broken ceramics and hundreds of bricks, with a variety of names set in them, "St. Louis," "Laclede," "Phoenix."



We learned that the charred walls were the center walls of the furnaces. Ceramic retorts, about 5 feet long and 8 inches in diameter, were anchored in rows to both sides of these walls, suspended horizontally in a slight down-tilt, and supported at their front ends by a brick facade, where a conical ceramic condenser was attached during the smelting. On each side of the center wall, the retorts, stacked several rows high, were enclosed at the top by an arched brick roof. In effect, the furnace was a long tunnel.

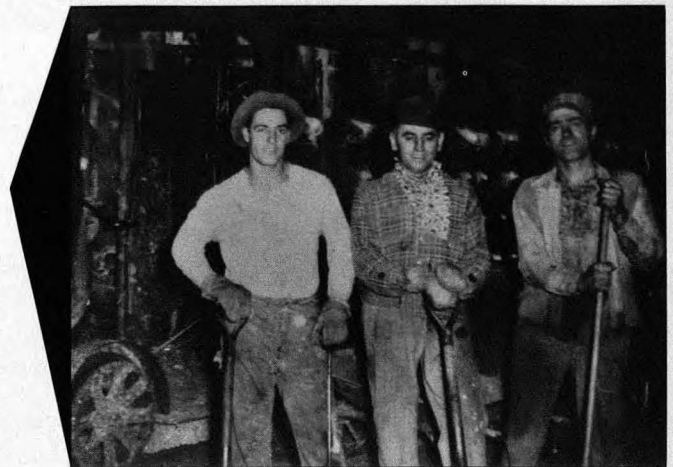
At Langeloth, the smelting furnaces were located at the hilltop edge nearest the coal mine in the hollow below. Hoisted on an incline several hundred feet long, the coal was converted into gas, combusted, and blown by fans down the length of the distilling furnaces. At either end of the units, tower-like structures (which we'd first thought of as ovens) were part of a continuous flue system that drove the ignited gas.

Much of the appeal of the site, for us, was aesthetic. We were struck by the beauty of the brick, whether strewn about in a rubble of many colors, or still set carefully in structures. Brick, an ancient building material, was the architectural staple of the industrial era. Brick is human sized, laid by individual workers. It suggests skill and craftsmanship. Even as we began to "read" the meaning of the furnace ruins, the statement made by the architecture stayed vividly in mind: Here was a technology intimately dependent on the activity of human workers.

According to ex-workers we talked to, the dozen or so men per shift who ran each furnace moved the materials by hand; they monitored the process — the temperature level, the readiness of the zinc for drawing — by eyesight, from experience. The tools they used were startlingly simple, designed with long handles to let the men stand back a few feet from the intense heat. Tools had graphic names: "charging scoop," "blow out hose," "connie boy's bumper."

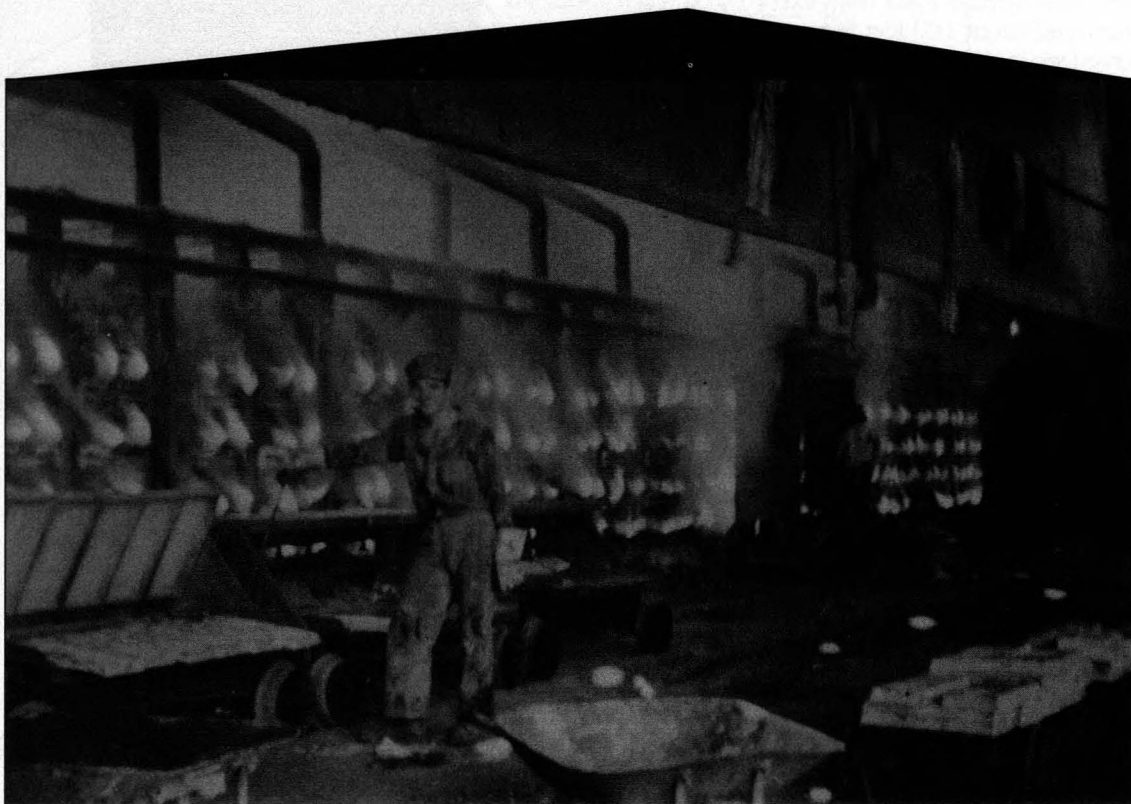
The work was heavy, hot and dirty, potentially dangerous. Emissions of sulfur and particulate made it, to some unmeasured degree, unhealthy. The zinc plant in Donora, some 40 miles away, built in 1916 and dismantled in the early 1960s, used the same technology as Langeloth and was a notorious polluter, but it was located in a river valley. Langeloth's hilltop site, open to the winds, may have helped, though nearby slopes still show the scars of chemical fallout.

Caesar Prado, a young man when he worked on the furnaces, recalled his rapid heartbeat and the heaviness of his lungs at the end of the shift. He also



remembered running the half mile home from work, and feeling fine by the time he got there.

As the workers sweated through their clothes, they took off their shirts and hung them on pipes in the furnace shed. Prado told us that in hot weather, when they were finished for the day, the men would strip naked before walking across the plant yard to the shower building.



CAESAR PRADO AND JOE ABATE — “The beautiful part about the work up there...”

Abate worked in the zinc plant from the early 1930s to its closing. Prado was an officer of the local union until the final months.

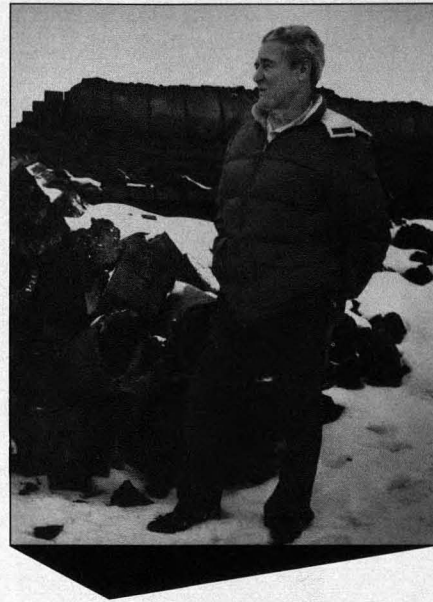
Prado: The beautiful part about the work up there — those were the “good young days” for us — was that you had to be there at 4 o’clock....

Abate: That’s 4 o’clock in the morning — right after midnight: *that* 4 o’clock!

Prado: Right, because that’s when it was cool. Those furnaces were one solid damn wall of red hot fire. Five minutes after you started work, water was squishing in your shoes. You were soaked (that kept you from burning up too, which was good). The whistle would blow at 5, and we’d get the furnace ready to draw — tear it down, clean it out, and charge it back up. We’d do that in three and a half hours, and then we’d go home. So in effect we got paid for eight hours of work, and we worked maybe four hours. That wasn’t simply because the workers wanted it that way. It benefited the company. It gave them a longer smelting period. It was a 24-hour schedule, and if we took eight hours to charge the furnaces, let’s face it, they’d have only 16 hours to smelt that ore. They’d have to burn a helluva lot of it, instead of taking it easy, cooking it. So it actually benefited them to have us finish in four hours: they’d have 20 hours in which to smelt that ore.

Abate: Most of the work was what we'd call piece work. It was "Do your job, and then get the hell out of here and go home, you're done." It would be nothing for four men to unload 200 ton of ore out of the boxcars, starting at 7, and be done by 11 or 12 o'clock in the morning. It would be nothing for the zinc loaders to load 200 or 300 ton of zinc from 5 o'clock in the morning till 10 o'clock. It was a good system, it worked.

After the plant went down, four of us went down to Koppers in Monaca. We needed a job. I'll never forget it. They gave us, four of us, a 50 ton car of rock salt to unload. What did we know? It was our first day on the job. So we took our shovels, and at 10 o'clock we were done! They'd never seen anything like that. "Are you people crazy? This is a two-day job!" What did we know? So after the first wave went down there, they couldn't hire enough people from up here. After we worked there a little while, they had ways of slowing you down.

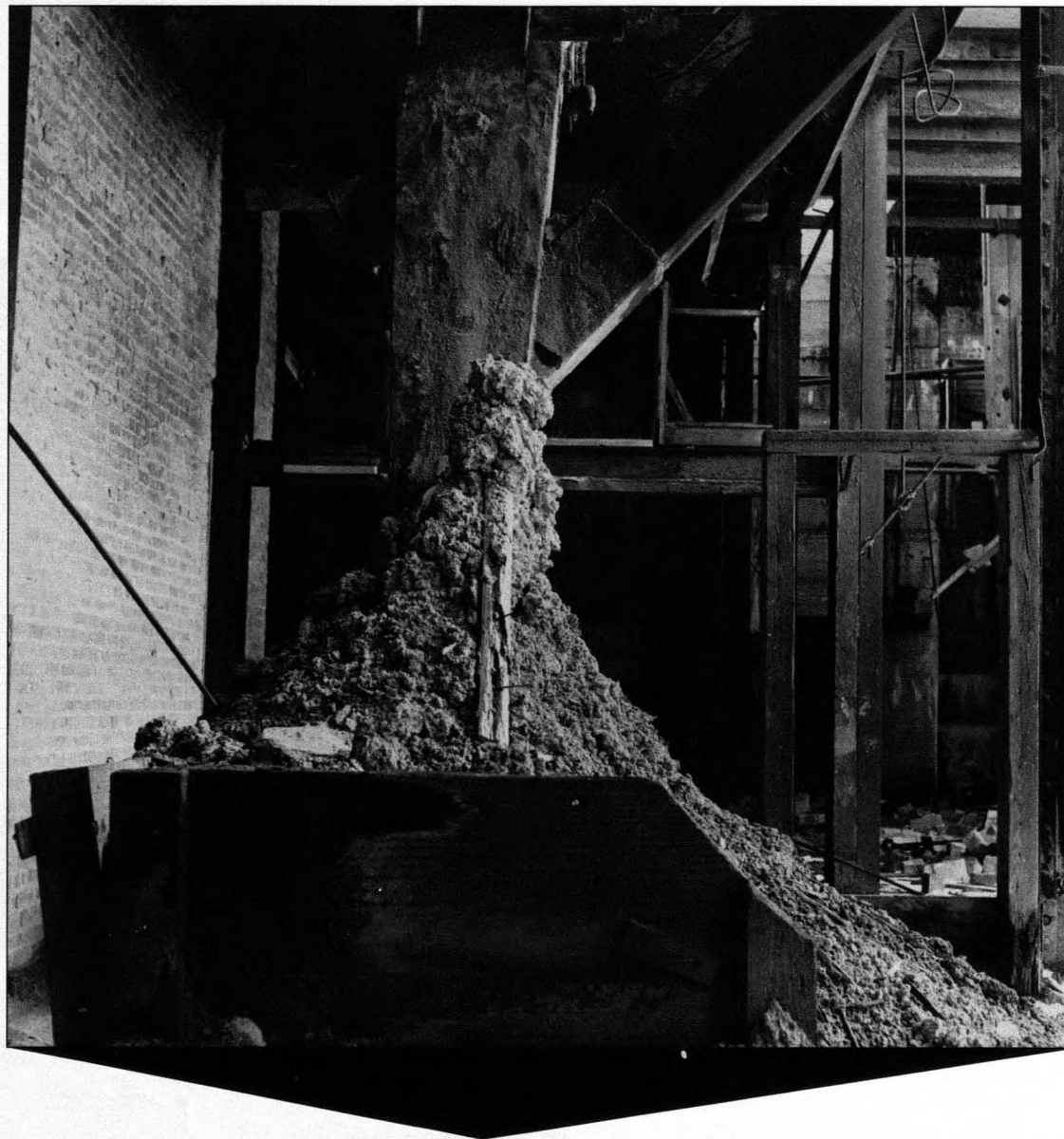


We returned to Langeloth a number of times, in all seasons. Once in January, with Caesar Prado as guide, we hiked the site during a heavy snow squall.

Weeks later, with a scattering of snow still on the ground, we explored for the first time the pottery, a now roofless brick structure, many of its floors fallen in — some of it (in 1989) partially torn down. The building's central space had evidently housed the ceramics workshop, where retorts and condensers were fashioned. On either side, in flanking wings, were storage chambers.

One spring in the early 1980s, we approached across the blue-green slag dump of the operating molybdenum plant and examined the pottery's innards at leisure. It had that strange look of suspended animation we'd seen at other abandoned plants and mines in Western Pennsylvania — as though work had stopped in the middle of a shift, and people had simply walked away.





A mound of clay stood under a chute, like a stalagmite. Nearby lay the bit of a large machine, used for boring out the retorts. In one of the side chambers, hundreds of finished condensers were heaped, some broken, where they had fallen when a floor above had given way. The pottery, showing the prominence of ceramics in the whole zinc smelting process, seemed to summarize the Langeloth operation. In a quite literal sense, it was *basic* industry: earthy, primary.

We also visited the village of Langeloth. Located on the hill ridge one-half mile north of the plant, it had been intended as a “model town” by founder Jacob Langeloth. During the zinc era, the company built the houses, supplied electricity from the plant, ran the water works, and supported the elementary school. Residents we spoke to recall the services as better than those in nearby towns. They remember the low rents and the company’s free supply of home improvement materials.

Langeloth’s neighborhoods divided ethnically. “English,” or “Americans” — the managers — had homes along the hill ridge on the north side of the main

street. "Biscuit shooters," workers who had migrated from Appalachia, lived across the street; next to them were a couple of blocks of Spaniards. Down the hill were Italians, Greeks and some Mexicans. Caesar Prado said there was a good deal of kidding between the groups, but they got along "like one big family."

The only retail outlet in Langeloth was the company store. The town was dry. There was a Protestant church; Catholics, the majority group, traveled to Burgettstown, two miles away. Workers who wished to buy or build homes lived in Slovan, in the hollow just east of the plant, where the population became predominantly Eastern European. Judging by the storefronts (some now closed) along its main street, Slovan was a more characteristic mill town than Langeloth. One old-timer told us, "It was like a frontier town. There were taverns up and down the street. It was open all night."

The zinc works at Langeloth operated for 33 years. Creating in mind's eye its technology, we had come to see it as typical of the Pittsburgh region's historic industries: labor intensive, and thus dependent on cheap labor; built literally on coal as the energy source.

On June 24, 1947, American Zinc and Chemical announced it was shutting down, and in the plant's closing, we found another typical story. Labor cost was one obvious element. The plant was unionized in the 1930s, and like workers in most of America's unionized industries, members of the Smeltermen's Local 95 started a post-war push to improve wages and benefits. The company took the line that new wage demands and strikes would spell the end. When union and management could not agree on a contract in the spring of 1947, the company made its decision. Those who wished to blame the union for the Langeloth shutdown could, and did. One industry analyst summed up:

An example of the end result of super-unionism and low worker productivity is evidenced by the case of the zinc smelter located at Langeloth, Pennsylvania, which shut down operations permanently in December 1947. The damaging effect of compounded labor inefficiency had increased the cost of producing zinc to such an extent that this smelter could no longer sell its product at a competitive price. — C.M. Cotterill, "Technology and Logistics of Zinc Smelting," *Industrial Plant Location*, 1950.

But other factors may have been more decisive. The plant needed new investment for repairs, particularly in the acid facility, which had been badly damaged by use. More fundamentally, such evidence as we found (in the absence of detailed financial statements) suggests that the plant was never particularly profitable. It may never have achieved the market projected by its developers. The Depression went on for nearly one-third of the plant's life, and during that time the plant operated at only a fraction of capacity. Ex-workers recall how zinc slabs were stockpiled in nearby hollows until they loomed above the level of the plant itself, and then were sold immediately at the start of World War II. An ex-manager of American Metal, Erwin Weil, suggested to us in a phone interview that if not for the war, the plant would have been shut down sooner.

Langeloth's horizontal retort technology, developed in the 1870s, was also obsolescent. An electrothermic vertical retort furnace, offering better labor efficiencies, was installed by another company in nearby Monaca in the 1930s. By the 1940s, new plants built in America were using an electrolytic process. Situated in the northwestern states, these facilities could capitalize on cheap hydroelectricity. In the Southwest, even the old horizontal retort technology profited from cheap natural gas. Coal had lost its comparative advantage as a fuel. Moreover, in the West, the industry could often employ cheaper non-union labor.

In a front page editorial on June 26, 1947, the *Burgettstown Enterprise*

lamented the plant's closing in terms that have become familiar in northeastern America:

The die is cast! The dire threat that has been stifling trade and progress in this Community for a quarter of a century today becomes a fact.

When the powers that be of the American Zinc and Chemical Company announced to the salaried employees and members of the Langeloth Smeltermen's Union this morning at 10 o'clock that operations at the hill plant will be stopped and the plant dismantled ("in an orderly fashion, it is hoped") a blow was hurled at this community that it will be hard to recover from.

Pulling our biggest industry, employing a thousand men, and cessation of a payroll that ran well into the millions of dollars simply is verification of "scare" rumours that have stifled the community many, many years.

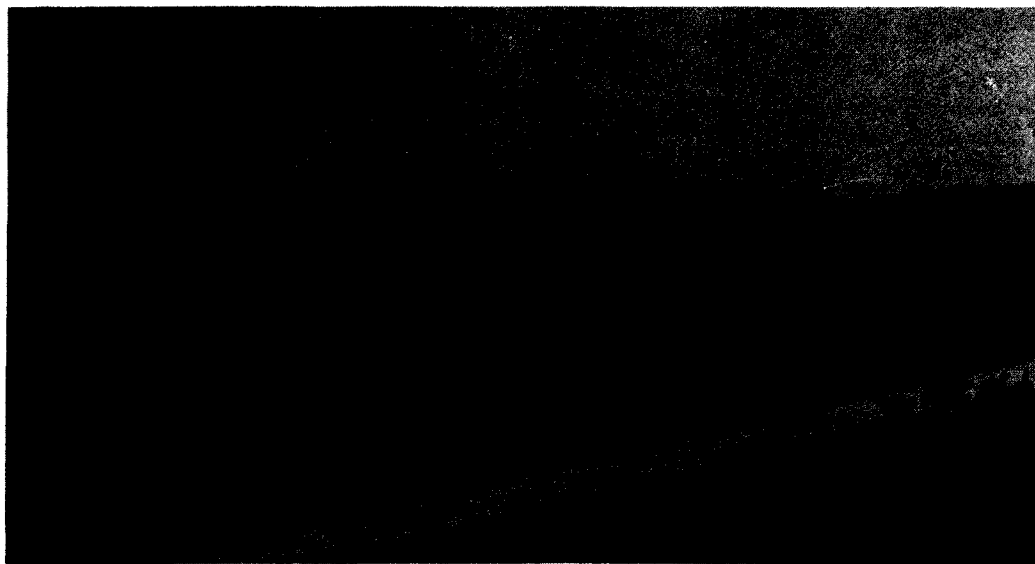
Today the bitterness seems gone. "It was a good company to work for" was the summary comment offered to us most often.

Langeloth still has the look of a rural village. The houses on its hill ridge, managers' homes in the zinc era, are well kept. The street grid slopes off into an undeveloped hollow — a railroad station was once there — then resumes on the hill to the south: Miners Hill, where the zinc plant's coal miners lived. Some of the houses on the lower slope and on Miners Hill are in disrepair, but in general the town is clean and pleasant.

Across from Climax Molybdenum, on the crest of the hill, is the house of Gus Barbush, the former operator of the company store. With the demise of American Zinc and Chemical, Barbush bought the Langeloth Townsite Co. and eventually sold off the former company houses to local residents. His own home, decorated in red, was once the residence of the zinc plant's superintendent. Barbush, a Greek immigrant who settled in Langeloth by 1920, died in Spring 1989, at age 90.

Caesar Prado and Joe Abate — our major sources of first-hand information — still live nearby. Retired from his own Burgettstown appliance business, Prado has a suburban home just outside of Langeloth. Abate, who managed the Robinson Township Municipal Authority for many years, is also retired and lives in a small house in Slovan — in fact, the house he was raised in.

Both men enjoy talking about the zinc works. ■



View of zinc works from Slovan, c.1945