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PAUL COLLINS

A. J. PLESONTON'S BLUE LIGHT SPECIAL

Just off the corner of 19th Avenue and Lincoln is a typical San Francisco house, a white Victorian set back slightly from the avenue.

It is easy to miss, wedged as it is between a Chevron station at one end of the block and a Shell station at the other, a house on what is not really a residential block at all; this part of 19th Avenue is, technically, a stretch of US 1, and there is a continual hiss of traffic pouring out of a hole punched into Golden Gate Park.

This house has nothing to distinguish it from innumerable others in the city save for one modification: a front porch that has been glassed in to form a sort of sunroom that one must pass through to enter the house proper. Though there's nothing too strange here— walk around an old college campus back East, like Mount Holyoke's, and you'll find these quaint old sunrooms fading genteelly off at the edge of the old dorms.

But now look up. The top panes of this sunroom are not consistent.

They alternate between clear glass and ancient panes of velvety cobalt blue. It's not much of a design statement, frankly, and yet as the sun slants in through the westward panes in the late afternoon, it does cast the whole sunroom in a rather pretty blue glow.

During the day, when the world is at work, there is little sign of life in the house; it is hard to know anything about its present inhabitants from the outside. But one thing can be known for certain:

in the late 1870s, sitting in that sunroom and watching the horsedrawn traffic on the old avenue, someone sat waiting for a cure to what may have been a grave illness. And, perhaps, they waited in that very sunroom until they died.

THE SECOND HALF of the nineteenth century was a miraculous time for medicine; our era merely gilds its lily. Some of the most basic notions of modern medicine were being formed during this time, and mortality rates went into a free fall as a result. Ether eliminated the agonizing pain of surgery. Forceps lowered death rates in childbirth. Hospitals, where cures had often been more fatal than the ailment, changed dramatically: the theory of sepsis meant that doctors and nurses began to clean their hands and their instruments between operations. French medical professors Xavier Bichat and Charles Louis introduced an empirical approach to examining the effectiveness of medical treatments, and a roaring trade in medical cadavers gave a

rising new generation of medical students an actual understanding of the functions of internal organs.

But where there is hope, there is also false hope. The triumphant march of medical progress left the public believing that nearly anything was possible, and quacks and charlatans sensed an opportunity. Thanks to the rise of a national parcel post, and the ad pages crammed into the backs of the women's and sporting magazines now distributed across the country, you no longer had to work from town to town as a medicine show, always worrying about getting tarred and feathered and run out on a rail; now you could operate anonymously from the huge new urban centers, placing ads and fleecing suckers with impunity from thousands of miles away.

Useless pills and ointments proliferated, often with thinly veiled promises to desperate consumers. A young woman who had—well— made a mistake could find in the back of women's magazines ads for Chichester's Pennyroyal Pills. Pennyroyal is an abortifacient, though there is no mention in the ad of that—no mention, in fact, of what these pills were for at all. But every woman knew what pennyroyal meant.

There was just one problem: there was no pennyroyal in the pills.

And so, inevitably, as the pregnancy came to term—assuming the woman hadn't perished in the meantime from a botched illegal abortion—she could buy herself a bottle of Mother's Friend, which, as the Bradfield Regulator Company of Atlanta promised, "shortens the duration of labor" and "will assist in the safe and quick delivery." The actual ingredients of this secret elixir? Oil and a little soap.

Not only did false nostrums thrive, but so did entire fake medical practices, for diploma mills and shoddy medical schools had sprouted up around the country. One of the most notorious and most durable was the American Health College, run for decades from a building in downtown Cincinnati by an old-fashioned quack named John Bunyan Campbell. After years of granting worthless diplomas, the picturesque old rogue was finally hauled before a judge. The prosecutor's cross-examination of Campbell is ludicrously evasive. ("You have no histological laboratory?" "No, not exactly.") Further examination revealed one by one that every member of the school's faculty was retired or on leave—that, in fact, Campbell was the only faculty member—and that his "vitapathic" treatment largely consisted of applying copper plates to the feet of patients so as to draw the poison out of them.

The cross-examination of Campbell culminated in this masterful display of circular logic about the origins of disease:

Question. —Within the last few years of your practice of vitapathy, what class of cases have you treated?

Answer. —Well, mostly pulling out poisons on our copper plate. We ain't curing disease at all; the person may not have any disease. He is simply full of poison, don't you see?

Question. —What do you consider poisons, doctor?

Answer. —Well, calomel is poison; strychnine is poison; iron is poison.

Question. —Would you consider disease germs poison in the same case?

Answer. —Well, I have a different idea of germs from most everybody else.

Question. —How would you destroy disease germs in the patient?

Answer. —My idea is the germ is not the cause of the disease at all, but the disease is the cause of the germs. You will never get any germs in anybody until there is a separation or decomposition there, something. Put that down, you old doctors, as a fact, that germs don't make disease!

Question. —What would cause the disease, doctor?

Answer. —They didn't have the disease; they simply had the poison, and I pulled it out.

Question. —You say the disease was the cause of the germ?

Answer. —Yes, sir.

Question. —What causes the disease?

Answer. —Well, persons are liable off-hand to disease the world over, of course.

Would-be doctors, some truly and naively well-intentioned, traipsed over to the American Health College to get these pearls of wisdom from Campbell.

The old quack may not have had any lab, or an operating theater, or medical instruments to work with, but he did have an office. In that office, one recruit recalled, was a rather unusual feature:

In the doctor's little office was a pane of red glass and a pane of blue glass. I was curious to know what that was for, and the doctor explained it by saying they would vitalize the remedy they were to give the patient, or sometimes food, depending entirely on the nature of the disease; it would be placed beneath the red glass or blue glass.

And there, thousand of miles away, we see it again: that mysterious pane of blue glass in the window. Why?

TO UNDERSTAND THE blue glass in San Francisco and Cincinnati, first you must travel yet again, this time even farther east to Philadelphia, to the backyard of Brigadier General Augustus J. Pleasonton, the officer in charge of Union forces defending the state of Pennsylvania. In 1861, as the Civil War erupted around him, Pleasonton found himself in the backyard of his Spruce Street home one day, planning and undertaking a mission of massive import to his country, and to the world around him:

He was planting grapes.

To be fair, Augustus already had a respectable military career behind him. Born in 1808 and an eager West Point cadet by the age of fourteen, he spent his youth bouncing around the country in the infantry, then in the artillery, then in helping to map the Western frontier. He resigned his army commission at the age of twenty-eight, studied law, and founded a practice in Philadelphia. There he rose quickly through the ranks of local respectability, briefly serving as the state's paymaster general in 1839, and then as the president of a local railway company. Nor did he ever entirely leave the military behind. He stayed on as a brigade major in the Pennsylvania Volunteer Militia, and was rewarded for his loyal service by a musket ball to his groin, courtesy of an armed mob that he helped to quell in Philadelphia in 1844.

When not catching bullets in his shorts or filing court briefs, Pleasonton had one overriding passion—he read, and read voraciously. He was fascinated by books on physics, galvanism, natural science, and geology. He built up an extensive library, and one well-thumbed volume in particular was Professor Robert Hunt's Researches on Light: An Examination of All the Phenomena Connected with the Chemical and Molecular Changes Produced by the Influence of the Solar Rays (1844). Hunt had just a few years before published A Popular Treatise on the Art of Photography, the first English work on the subject, and his research into the action of light on inorganic chemicals like silver nitrate placed him at the cutting edge of a new medium. But although he is remembered today as a founder of photography, Hunt's work interested Pleasonton for a very different reason: for his other chapters, on how light affected organic materials. Hunt had dug up accounts of experiments that, to Pleasonton, showed that different wavelengths of visible light could accelerate or retard the carbon dioxide production, and the growth rate, of plants. Blue light, it seemed, was especially good at speeding up growth. And it was easy enough to procure blue light, Hunt noted—all you needed was blue glass.

The idea appealed to Pleasonton. For all his civic respectability, he had always been a sky-gazing sort of fellow, someone prone to staring out into the blueness of the sky

above and wondering what it all meant. "For a long time," he later recalled, "I have thought that the blue color of the sky, so permanent and all-pervading. . . must have some abiding relation and intimate connection with the living organisms on this planet."

Pleasonton set himself to designing his own experiment in blue light agriculture, one on a far greater scale than the few straggling seedlings that had been observed in Britain and France. He planned out an enclosed grapery, a sort of greenhouse for his backyard. At more than two thousand square feet in area and sixteen feet high, it would be hard for his neighbors not to take some notice of his work. Ground was broken in the autumn of 1860, and by March the grapery was ready. It looked like a typical large greenhouse, save for one feature—every eighth pane in its roof was of blue glass. This would be, he reasoned, enough blue light to stimulate the plants, but not so much as to lower the temperature of his greenhouse.

That April, like innumerable other gardeners in the city, he planted his vine cuttings, and he tended anxiously to them over the months that followed. All he could really do was prepare, wait, and see what grew out of it.

EVEN IN THE midst of Civil War, General Pleasonton was always ready to make some time for his backyard experiment. One day in September 1861, he received a most important visitor: Robert Buist, a horticulturist and owner of a local plant nursery. It was Buist who had sold the general his vine cuttings that spring, and now he wanted to see how they were coming along. Pleasonton led Buist out into his backyard and opened the door to the grapery; his visitor walked inside and, after some hesitation, carefully examined the vines. Pleasonton watched the expression on the horticulturist's face. Buist was awestruck.

"I have been cultivating plants and vines for the last forty years," Buist marveled. "I have seen some of the best vineyards and conservatories in England and Scotland. But I have never seen anything like this growth."

Buist kneeled down to measure the thickness of the vines near the ground, and then measured their growth from one end to the other. Forty-five feet.

"I visited last week," he continued, "a new grapery near Darby, the vines in which I furnished at the same time as yours. They were of the same varieties, of like age and size, when they were planted as yours. When I saw them last week, they were puny spindling plants not more than five feet long."

Pleasonton was delighted, and when Buist visited again one year later for the general's first harvest of grapes, he was astounded yet again by the luxuriant growth of thick vines all around the greenhouse. He examined the vines again and sized up the grapes on them; then, taking out a pencil and pad, Buist did a few quick calculations.

"Do you know," he turned to Pleasonton, "you have twelve hundred pounds of grapes in this grapery?"

—I had no idea, the general responded.

"You have indeed that weight of fruit, but I would not dare publish it," Buist mused. "No one would believe me."

EACH YEAR THROUGH the 1860s brought thicker and heavier harvests from the greenhouse. Pleasonton leafed through his volumes of Hunt and Becquerel and began to wonder—if animals were built from many of the same basic organic compounds as plants, wouldn't they too stand to benefit from blue light? But how would you test something like that?

In the fall of 1869, Pleasonton built himself a piggery on an outlying farm, arranging the barrows so that on one side a litter of pigs would grow up under a clear glass window, while on the other side another litter of pigs would mature under a pane of blue glass. Under clear glass, four pigs that weighed a total of 203 pounds fattened up in a few months to 530 pounds; under the blue glass, four scrawnier pigs, weighing a total of 167 pounds, fattened to 520 pounds: still lighter, but a significant closing of the gap. Encouraged by these results, Pleasonton took an ailing newborn calf and put it in a chromatic pen, and sure enough, it grew rapidly into a fine specimen.

Word got out among Philadelphians of the strange experiment being conducted by their garrulous neighbor, and Pleasonton was always quick to recommend that others try it—he soon had one neighbor raising chickens with blue light. Inevitably an invitation landed on his doorstep.

1390 Walnut St., April 27th, 1871 My Dear General:

Will it suit you, and will you do us the favor to explain your process of using glass in improving the stock to the Philadelphia Society for Promoting Agriculture, on Wednesday next, the 3rd of May, at eleven o'clock A.M., at their Room, S.W. corner of Ninth and Walnut Streets (Entrance on Ninth Street)? You were kind enough to express to me, in conversation, your willingness to give us the result of your experiments.

Yours, very truly, W. H. Drayton, President

The members of the society got a little more than they'd bargained for; when Pleasonton showed up at their offices the next week, he had a speech that ran to about twenty dense pages.

But as his speech wore on, Pleasonton turned to his audience and launched into another topic that fascinated him just as much: electricity. He had developed some theories that were . .. unique. By Pleasonton's reckoning, just about every natural phenomenon relied on electricity at some level. Diamond formation, planetary rotation, all heat and weather, and all organic processes were directly based on it, as far as he was concerned.

"What do you suppose has produced the giant trees of California?" the bearded old man roared at his startled listeners. "Electricity!"

This is not entirely untrue; any chemical compound relies on a transfer of electrons in order to bond, but this could be called an electrical phenomenon only on the most minute level. Pleasonton was a big-picture man: he was talking about very large amounts of electricity. And, not coincidentally, it turned out that blue light and electricity were intimately connected. Pleasonton explained that light hitting blue glass at 186,000 miles a second, upon which all colors but blue and indigo were stopped, generated a tremendous amount of power:

This sudden impact of intercepted rays on the outer surface of the blue glass with this inconceivable speed, produces a large amount of [electrical] friction. . . . This current of electromagnetism, when allowed to fall upon the spinal column of an animal, is conducted by its nerves to the brain, and thence is distributed over its whole nervous system, imparting vigour to all the organs of the body.

And if such electromagnetic benefits could accrue for plants and dumb beasts, who could imagine the effect on humans?

For a country that had just lost a sizable portion of its young men, General Pleasonton offered a blue future of vitality renewed: a race of true giants, strapping in strength and boundless in energy.

The result would prove to be one of the greatest blessings ever conferred on mankind. What strength of vitality could be infused into the feeble young, the mature invalid, and the decrepit octogenarian! How rapidly might the various races of our domestic animals be multiplied, and how much might their individual portions be enlarged!

Pleasonton walked away from the society meeting with a greater sense of purpose than he had ever had before. He went to the printers and immediately had the speech set into type and printed up as a pamphlet; when it was ready, he carpet-bombed the intelligentsia of the country with copies.

Cases began to pour in. That same summer a friend's wife became gravely ill with a wasting illness. His friend, a doctor, was despondent. Pleasonton went up to see the wife and talk sense into her. What you need, he said, is to go to French, Richards &

Co., buy yourself a big pane of blue glass, and put it right there in your parlor window. And then you need to sit under it for at least two hours a day.

She gave it a try.

When Pleasonton came back a week later, he met a changed woman, as he later recalled:

[She said:] "Do you know that when I put my naked foot under the blue light, all my pains in the limb cease?" I inquired, "Is that a fact?" She assured me that it was, and then added, "My maid tells me that my hair is growing not merely longer on my head, but in places there which were bald new hair is coming out thick."

Her husband was ebullient, and pronounced it as "the greatest stimulant and most powerful tonic that I know of in medicine"—and then wondered aloud whether it might work on cholera.

It certainly was a panacea, for soon afterward, Pleasonton's own son was suddenly lamed by a nerve injury to his hip. The young man was made to sit out under a plate of blue glass each day, bathing his hip and his spine in the cool rays. Three weeks later, he was healed.

The old general was now emboldened enough by his success that his next step became clear: he would patent visible blue light.

PLEASONTON SENT HIS letter to the Patent Office at the Department of the Interior on August 14, and waited patiently for the patent examiner to come visit his experimental garden. Finally, late in the month, Professor Brainerd of the Patent Office arrived in Philadelphia on the one-o'clock train. He examined the general's fabled grapery and went out to his farm to see his piggery and his wondrously restored calves and lambs. It was rare enough for an examiner to pay a personal visit to an applicant, but Brainerd was so impressed that he stayed three days as Pleasonton's guest. The last day he had three agricultural professors reexamine the grapery with him.

"General," Professor Brainerd said as he prepared to leave for Washington, "everything you have alleged on this subject of blue light is confirmed."

Pleasonton swelled with pride.

"If my investigation should establish the verity of your statements, you have made the most important discovery of this century—transcending in importance even that of Morse's Telegraph, which, at best, furnished only a means of communication with distant places, while your discovery could be brought home to every living object on

the planet. . . . Your patent would be one of the most valuable that had ever been issued in the United States."

And with that, he left.

On September 26, 1871, General A.J. Pleasonton of Philadelphia was awarded U.S. patent #119,242 for Improvement in Accelerating the Growth of Plants and Animals.

PLEASONTON'S PATENT PAPERS for a "cerulean process" were passed around the Patent Office with great interest; the commissioner read over them and passed them along to the Board of Public Works, which was planning to build a grapery for President Grant. Pleasonton had already published an article on blue light in the August 1871 issue of Gardener's Monthly, and a reader in France was so impressed that at the next meeting of the Academies des Sciences he had an extract of the article printed in Comptes Rendus; a pirated and unattributed French translation of the Philadelphia Society for Promoting Agriculture speech turned up soon afterward. Requests to Pleasonton for his English-language pamphlet soon came from as far away as South Africa.

But the first enthusiastic adopters of the blue light cure were Pleasonton's fellow Philadelphians. One after another, they traipsed down to the glaziers at French, Richards & Co., requesting blue glass to be fitted into their front parlors and sitting rooms. One man set a lemon tree under the glass, but failed to place it in the full view; the branches that were blue-lit grew lush and heavy with fruit, but the branches that were not withered and died. Another man's ailing canary had stopped singing; placed under blue glass, it commenced singing more strongly and sweetly than ever before. Chickens and lambs raised under blue grass grew faster and fatter than before; friends wrote to Pleasonton telling him of how blue glass had rid them of rheumatism. Pleasonton himself found that a mule, which he discovered after a horse trader had fleeced him to be profoundly deaf and arthritic, could be cured by a few months in a stable with blue glass and clear glass in the transom. "The removal of this deafness," Pleasonton propounded in another speech in 1874, "was produced by an electromagnetic current, evolved by the two lights upon his auditory nerves and exciting them to healthy action."

What topped it all off was a letter attesting that a premature infant, born paralyzed, had gained the power of movement after being set for long periods under some blue glass. Another infant, a one-month-old girl under the care of Dr. William McLaury, had a "tumour about the size of a robin's egg"; after one hour of blue light on the tumor a day, McLaury found that it disappeared in six weeks.

Pleasonton was now convinced that the public at large needed to know about blue light. It was one thing to explain blue light to neighbors and in specialized horticultural magazines; it was another to bring it to the attention of the world. That

would require nothing less than an entire book.

A. J. PLEASONTON'S 1876 volume The Influence of the Blue Ray of the Sunlight and of the Blue Colour of the Sky is one of the most striking medical texts ever written—it is visually arresting, with an appropriate powder-blue binding. Open it up, and you'll see why Pleasonton's long-suffering printers in Philadelphia, Claxton Kensen & Haffelfin-ger, found their author to be something of a challenge. Pleasonton demanded the entire book be printed on tinted paper in light blue ink—because, as he patiently explained, it would "relieve the eyes of the reader from the great glare, occasioned by the reflection of gas light at night from the white paper usually employed in the printing of books." Whatever was used to tint the paper, it oxidized badly over the years—readers today will squint hard to read the faint blue ink stamped on what appears to be wet beach sand.

But it does make for very interesting reading.

Only the first quarter of the volume's 230-odd pages deal directly with blue light; these pages are largely reprints of Pleasonton's lectures, as well as a selection of letters from both astonished colleagues and beseeching invalids. But the rest of the book is filled with speculations on electricity and its effect on everything from glaciers to the buoyancy of ships in water. It is the most remarkably eccentric assemblage of hypotheses ever to make it past a copy editor. Take, for instance, the following passage:

Our sun is simply a huge reflector of light. The gray covering of his nucleus or body is represented in our mirror by the metallic covering we place on the backs of our glasses. . . . rays of light from every luminous object in the universe, mingling together, and reflected from this gray covering of the sun, furnish the white sunlight that illuminates the world.

Heat destroys gravitation . . . Now, if what our astronomers tell us of the inconceivably high temperature of the sun be true, there can be no gravitation towards its centre. . . . Heat disintegrates solids, separates their molecules, destroys their densities, and consequently is opposed to gravitation, which is the attraction of densities. Alas! for poor Sir Isaac Newton and his theory of centripedal and centrifugal forces!

Nor did Pleasonton limit himself to the earth and sky. Just as Puritans saw the providential hand of God in every stone on the ground and every bird in the sky, Pleasonton sees the force of electricity in every living and dead thing—even in the drunken arguments between spouses late at night:

The sexes are oppositely electrified—hence their mutual attraction for each other. Now give them the same electricities, and mutual repulsion immediately results. ... It has been shown that the negative or masculine electricity of the man is reversed, and

becomes positive like that of the woman under excitement of alcoholic stimulants—in other words, for the time being, the man becomes a woman. . . . His attributes become feminine; he is irritable, irrational, excitable by trivialities, and when opposed in his opinions or conduct, becomes violent and outrageous, and if, in this mood, he meets his wife, whose normal condition of electricity is like his present condition, positive, they repel each other. . . .

The logical obverse, just exactly who drunk men would get attracted to while brimming with alcoholic feminine energy, Pleasonton passes over in tactful silence.

Scholars, to Pleasonton's dismay, did not start chucking out their copies of Newton, and barkeeps did not install galvanic batteries to keep their soused customers properly charged up. In fact, most scientific journals didn't bother to review or list his book at all; as is so often the case, serious scientists simply hoped that the obvious absurdities in it would make it go away.

The entire print run sold out.

PLEASONTON'S TIMING WAS fortuitous. Word of a medical study had just arrived from Italy: there, according to an April 22, 1876, article in Medical and Surgical Reporter, one Dr. Ponza had taken violent inmates at his lunatic asylum at Alessandria and placed them in rooms painted either red, blue, or violet. The ones in the red rooms seethed with rage; the patients in the blue rooms recovered. And perhaps, one medical editor speculated, the color of light and inmate clothing chafed at them as sorely as any straitjacket. After all, he added confidently, some people could feel color:

It is a fact that some persons can detect the color of a material by feeling it. Suppose such an one in an insane state irritated by contact with material of a color from which, as the result of a delusion, he has a special aversion: how his case must be retarded unless the very conditions of his mind are recognized, and he is bathed in light of a proper tint.

Such experiments gave Pleasonton's an added luster, no matter how bizarre his theories on electricity sounded—and it is debatable whether any readers even bothered to read that section of his book— his experiments with blue light did seem to have some medical basis. Indeed, days after Ponza's results were published in Europe, other asylums there followed suit; at the Kent County Asylum in England, one homicidal maniac was locked up into a "blue room" by the order of the asylum's superintendent, F. P. Davies, who reported:

The first day he was very noisy; he daubed the walls with feces and destroyed his clothes. At night the room was thoroughly cleansed, recolored, and the next day he was again put into it, and acted just as before. Toward evening, though, a change was noticed in him; he was quieter, and, upon being removed, asked not to be sent back

there again. However... he was put into it for the third time. About noon he begged to be let out of it, complaining of severe frontal headache. . . . From that time he has given us no trouble, and has exercised great control over himself.

The same day as the Medical and Surgical Reporter article on European experiments, as chance would have it, the New York Herald also decided to run an interview with Pleasonton that gave a glowing account of his blue light experiments with pigs. Articles from the Herald and other major New York newspapers, then as now, were often picked up by smaller local papers across the country.

Watching this blue light gospel spread, one scientific journal could hold its tongue no longer. On July 1, 1876, Scientific American sniffed that Pleasonton's book "is more eccentric than we could have believed . . . beyond the sphere of legitimate criticism, and [we] place it among the many melancholy burlesques of science." And yet even as it sneered at the general's bizarre notions, it had published another article that seemed to demonstrate that blood was drawn into capillaries near the skin at different rates depending on the color of light used. And the most efficacious at imparting a healthy rosy glow to test subjects was . .. blue light.

WHEN THE SECOND edition of Pleasonton's book came out in 1877, claiming that cobalt glass could cure everything from gout and spinal meningitis to paralysis and pulmonary hemorrhages, blue light had become a genuine craze. Homeowners were adding sunrooms onto their homes set with blue glass; decorators were snowed under with requests for blue curtains and blue wallpaper. Fashionable health spas in New York City had to scramble to get contractors and glaziers in: not only were patrons demanding sunrooms, they wanted them to be made entirely of blue glass. It was a bonanza for overnight schemes like the Mazarine Blue Glass Company, which sprouted up at 823 Broadway advertising "Imported Blue Glass, Arranged in Frames, Scientifically Constructed According to the Beidler Patent."

H. Mercer Beidler was one of many fellow Philadelphians who had cashed in on Pleasonton's discovery. He'd attempted to patent a striped blue glass pane design, which was then to be "scientifically" set at a fifty-six-degree angle over the user's body. Portable models were available for travelers to use on the decks of ships. Beidler had published his own pamphlet and built a public blue glass parlor at the corner of Ninth and Chesnut, with "Hours for Invalids 10 A.M. to 3 P.M."

Some would-be customers, as a subsequent notice by Beidler in a local paper showed, were not entirely clear on the concept:

We are sorry to disappoint the good people who crowded our parlours all day yesterday, hoping to avail themselves of the first opportunity to enjoy our vitalizing and life-giving Blue Glass Sun Baths: but they will please remember in the future that the Baths can only be administered when the Earth is bathed in the bright sunshine of

heaven.

But on sunny days, at least, the invalid and the merely languid alike now spent their afternoons lounging m a blue haze. "It is now quite common along our streets and avenues." observed Scientific American in April 1877, "to see frames of azure crystals hanging within dwelling house windows: while, on sunny days, the invalid grandfather or other patient, may be noticed basking in the ethereal rays, his countenance rilled with hope, though streaked with blue."

Blue light quickly lumped from America to Europe—it was Belgian factories, after all. that still supplied the world with most of its blue glass. "Blue light baths are. it appears, an infallible remedy for pains in the bones arising from rheumatism or railway collisions." The Times of London enthused. Over in Paris, opticians frantically made a run on "medicated glass"—blue glass—because their customers didn't want the green or smoke-tinted ones anymore. One commentator hoped that this would only prove to be a temporary visual aid. since "offensive colored spectacles or goggles so disfigure the countenance and detract from the natural appearance of our Students. Lawyers. Doctors, and Clergymen."

Inevitably, blue glass began to show up in popular culture. When the American humorist Josh Billings issued his yearly collection for 1877, it was titled Josh Billings' Tnmip Kards: Blue Glass Philosophy — and printed, in a nod to Pleasonton's book, on blue paper. In Philadelphia, the prolific composer Edward Mack published "The Blue Glass March." complete with a cover illustration depicting invalids in a sunroom tossing their crutches aside. Mack, as much as anyone, had a good sense of the pulse of popular culture: he'd previously had hits with novelty-piano tunes that cashed in on the late 1860s craze for bicycles. "Velocipede Gallop" and "The Cyclopede Waltz."

The height of blue glass giddiness came with the publication of an entire book-length spoof: John Carboy's Blue Glass a Sure Cure for the Blues (1877). Carboy, a pen name of humorist John Harrington, was a prolific writer for J. B. Collin & Co., a Manhattan publisher of the cheap humor quickies that sold on railroad platforms and street corners for a quarter each in paperback. Teamed up with his frequent collaborator Thomas Worth, a fine pen-and-ink caricaturist, Carboy gleefully leaped into the blue glass fad.

Like any good satire, Carboy's was based on a thorough knowledge of his subject: he clearly had read Pleasonton's book very carefully, and then proceeded to exalt it to ludicrous lengths. "Blue Glass isn't any of your common quack nostrums, like Jink's Solidified Bug Juice, or Doctor Scrap's Carbonated Extract of Hepisdam," he assures readers. "Blue Glass Cures Constipation of the Obituary Organs!. . . . Cures the Itch Without Scratching. ... As a table-sauce it has no superior, and for polishing furniture it cannot be surpassed." He then dispenses all kinds of handy household hints for the use of blue glass, such as "Square pieces of blue glass weighing six pounds each may

be used for dispersing a cluster of torn cats."

At the center of Carboy's account is one "General Bottleton," who finds that a giant magnifying glass of blue glass makes criminals confess, cures drunkards, vanishes warts, and—most hilariously to Carboy's readers, I'm sure—bleaches black people white.

Carboy could also spoof the testimonial letters in Pleasonton's book with perfect pitch:

Dear Bottleton,

I have been for years afflicted with an amanuensis in the verticle goiture of my left arm, followed by a paragraph of the liver, which left me in a comictoes condition, with a constant suppuration of axminster over the protoxide of my manipulative organs. . . . Dr. Carnochan advised me to have my umbilical cord stuffed, and diet myself upon the farinaceous extract of solidified lightning. I tried his advice; but, alas! my sufferings were in nowise abated. Then, as a last resort, I bought five sheets of Blue Glass. The first sheet brought out my sine qua non, reversed my Crustacea, and expanded my cheek-bones, so that I couldn't close my mouth without lifting my shoulders with a rope and tackle. The second, however, remedied, by removing my secretions, and bringing about a general pulverization of my cardigan coagulations. ... I can now get drunk every day, with no trouble . . . You can publish this for the benefit of all mankind and other afflicted people.

Enriched beyond his wildest dreams by the craze for "bluefied solar rays," General Bottleton soon takes to jaunting about town in a magnificent blue coach, driven by a blue-eyed coachman who lays a blue whip to blue-ribboned horses wearing blue glasses.

In reality, General Pleasonton made very little money from the frenzy that he had sparked. His was an altruistic project, meant to bring the blessings of blue light to all humanity. By 1877, though, seeing quacks and doctors alike profiting off his discoveries, Pleasonton decided to enforce his 1871 patent. He explored a partnership with the Keely Motor Company, which claimed to harness the atomic vibration of water molecules with a "hydro-pneumatic pulsating vacuum engine," a perpetual motion machine invented by founder John Keely in 1872. "The stockholders of Keely Motor," The Manufacturer and Builder magazine dryly noted, "have come to the conviction that blue glass is to be the connecting link between solar power and the machine for the perfection of which they had furnished the funds"— in other words, a sort of solar-powered atomic reactor. Not suprisingly, the Keely Motor Company failed to profit anyone much except, perhaps, John Keely.

Undeterred, Pleasonton then had inserts placed into the second edition of his book reminding readers- "Specific licenses can be procured from me, with directions for the

use of my discoveries, and for the proper kinds of glass to be used." But nobody paid any attention: the blue glass trend was much bigger than Pleasonton now, and the niceties of patent law were hardly any match for the waves of customers demanding cobalt-tinted glass in every shape, size, and form. In fact, it didn't even have to be glass; his competitor Beidler was now also recommending for consumptives in blue parlors "that the body be denuded to the waist, with a cape of of light flannel checked with blue and white preferred, thrown over the shoulder."

Pleasonton, in all likelihood, scarcely saw a penny off his patent.

WHEN THAT RAW medical recruit saw the blue and red panes at the American Health College years later, he was seeing a knockoff of a knockoff of Pleasonton—for as hapless as Pleasonton was at defending his patent, others were all too ready to cash in on blue light. At the height of the frenzy in 1877, Seth Pancoast, a rather colorful figure among medical writers of the time, quickly produced his own guide to light therapy, Blue and Red Light; or, Light and Its Rays as Medicine (1877). Like Pleasonton's book, it was published in Philadelphia. Pancoast expanded on colored light treatments—"the source of all the physical and vital forces in nature"—by including some uses for red light; he even one-upped Pleasonton by printing his book in blue ink with a red border.

Pancoast was not a man to let a few failed experiments get in the way of his belief in colored glass:

Facts are facts; they must and will in the end stand in spite of their defects or faults in the eyes of scientists. Facts are stubborn and do not always yield to "authorities." . . . The "failure" of the most accepted experiments by the most accepted experts, proves absolutely nothing beyond the proof of their failure.

Indeed, for Pancoast the efficacy of light became an article of faith. While Pleasonton made some religious musings in his book, in Pancoast the spiritual element of heavenly light became much more pronounced; by 1883, his medical text had morphed into the theosophical hodgepodge of The Kabbala: Or, The True Science of Light. Nor was he the only writer to make this connection, for just a year after Pancoast's Blue and Red Light, Edwin Babbitt published the quasi-mystical Principles of Light and Color (1878).

Scientific publications, then as now, rolled their eyes at the way the public fervently medicated itself with a hash of quackery, theological hoodoo, and half-understood medical research—following anything, in other words, except the advice of a trained physician. One issue of the journal Railway Surgeon took this potshot at women who dabbled in medical fads:

THE SCIENTIFIC HOUSEWIFE

Give me a spoon ofoleo, ma,

And the sodium alkali,

For Fm going to make a pie, mamma,

Fm going to make a pie;

For John will he hungry and tired, ma,

And his tissues will decompose —

So give me a gramme of phosphate,

And the carbon and cellulose.

Now, give me a chunk of casein, ma,

Fo shorten the thermic fat;

And hand me the oxygen bottle, ma,

And look at the thermostat. . . .

And so forth. Others were less inclined to merely laugh at such trends—and as the blue glass mania reached its height, Scientific American decided that it had had enough.

WHEN ALFRED ELY Beach and his writers decided to shatter the blue glass fad, it was through an almost unprecedented multipart series of articles in its pages, beginning with the three-part "The Blue Glass Deception" on February 24, 1877. Scientific American was a weekly magazine back then, and each week for much of 1877 its readers were treated to public trouncings of the research of A. J. Pleasonton, sometimes two or three times in the same issue.

The magazine immediately hit Pleasonton with the most damning fact of all: standing under blue glass exposed you to less blue light than just standing out in the sun, or under clear glass. A piece of common cobalt blue glass merely diminishes all the rays across the visible spectrum; blue and violet are diminished less than the others, but they are diminished. "Prior to these splendid original discoveries of our contemporary," the magazine sneered on February 24, "we ignorantly believed that blue glass only partially sifted out the orange and yellow rays from the spectrum." And given that what Pleasonton had used was only one pane of blue glass to seven panes of

clear glass, the net composition of his "cure" was this: very slightly shaded ordinary sunlight.

The drumbeat continued the next week with another installment, this time attacking the supposed cures caused by blue light. Pleasonton's sources of experimental information on electricity and blue light had long been disproved, it pointed out. And as for Dr. Ponza's lunatics, the explanation had less to do with blue glass than with the tendency for people to calm down when placed in any kind of shaded or darkened room.

What curative power blue glass had was, the magazine concluded, derived from that most universal of all panaceas: the placebo effect.

The cures produced are ascribable to two causes: first, to the healthy influence of the sun bath, and secondly, to the very powerful influence of the patient's imagination. There are abundant cases known where imagination has so powerfully affected the body as to cause death.

Experiments upon criminals have shown that in one instance, where a person was placed in a bed which, he was informed, had just been vacated by a cholera patient (but which had not), he exhibited all the symptoms of the disease. Another person is reported to have shown all the signs of collapse from loss of blood, from the supposition that he was bleeding to death.

There is something to this. Battlefield medics during the Civil War had already discovered that, at least temporarily, they could "cure" pain and shell shock through what amounted to sleight of hand. As Dr. William Hammond describes in his bizarrely compelling 1883 volume A Treatise on Insanity in its Medical Relations, the Union colonel Charles May used just such a trick to cure one deranged officer "of the belief that he was inhabited by chicken bones."

But General Pleasonton was no mere colonel, and he certainly was not a charlatan. He struck back within days with angry letters to newspapers. He did not have a particularly good rebuttal to Scientific American's point about the nature of blue glass, but he was indignant that the article was titled "The Blue Glass Deception," for the word "deception" implied that he was some sort of scoundrel. When the third part of the series ran on March 10, the editors offered the backhanded apology that "we believe that General Pleasonton deceives both himself and the public." And as for any further offense they caused, the magazine didn't much care: "Our long experience in dealing with circle squarers, perpetual motionists, Keely motor people, and now blue glass adherents, besides all the other deceptions rife in the mechanical and scientific world, enables us to bear such animadversion with unruffled equanimity."

And that, the magazine said, was all it had to say on the subject. Only it wasn't, really,

because as the fad continued to grow throughout 1877, the editors kept inserting new digs at Pleasonton into their pages. In the March 17 issue, this sly poke was inserted as filler at the bottom of one page: "Blue glass will cure a Spitz dog of hydrophobia. Pound it up fine, and mix it with his food." When another medical fad was reported in France the next week—this being the use of Metallotherapy, or the application of cylinders of various metals to cure ailments—the magazine suggested that it might be a good replacement therapy for "when the blue glass believers become tired of their hobby."

Nor did it limit itself to roasting blue glass proponents. A lively trade had started up in urban legends about the dangers of blue glass, as this passage from the New York Evening Post shows:

A gentleman in Brooklyn suffering from weakness of sight was recently led by the advice of well meaning friends to use spectacles of blue glass, such as certain opticians are selling just now. The result was that his eyes, already too weak to be used much in ordinary circumstances, were exposed to a terrible glare and heat, which in less than a week entirely destroyed the eyesight of the sufferer. He is now totally blind . . . the dupe of blue glass enthusiasts.

Scientific American, with a sigh, explained yet again in its June 23 issue that blue sunglasses did not focus the rays of the sun upon the eye— to contrary, they merely shaded it somewhat.

In addition to beratements by The Manufacturer and Builder, which as early as 1871 had labeled Pleasonton's work "absurd," Scientific American's attacks were followed by a series of publications by Thomas Gaffield, collected in a booklet entitled The Blue-Glass Mania (1877). Gaffield had spent years collecting scores of glass panes from around the world and arranging them on the roof of his house in Boston, all in order to observe how different types of glass aged under the sun. He'd already spent fourteen years doing this, and so he understandably considered himself something of glass expert. His Mania articles effectively blew apart any scientific foundation that Pleasonton might have thought he was standing on. He was particularly hard on Pleasonton's lack of control groups in his experiments and on his numerous self-contradictions: his claims, for example, that blue light killed houseflies, but also made silkworms grow more quickly. But when the end did come it was not so much due to hard work of critics like Gaffield as to the simple life and death cycle of any fad.

By 1878, blue glass was over.

LIKE ANY GOOD medical fad, blue glass persisted on in various forms and guises for many years afterward, and never with even a nod to its originator. In the 1890s, John H. Kellogg started a run on "light baths"—enclosed wooden sitting boxes lined floor to ceiling with electric lightbulbs—and so a new generation of desperate consumers was

primed for the return of the notion that colored light might be useful too.

Professor Niels Finsen continued earnest and rather more careful experimentation with colored light at the turn of the century, with results that occasionally seemed to indicate that blue light could stimulate movement in tadpoles. It was fairly inconclusive, though, and he was soon irritated at how charlatans abused his tests—"My name has been used in a way which could not fail to meet with my disapproval," he griped in his book Phototherapy (1901). But under his guidance, doctors were soon dragging powerful marine searchlights into their offices, covering them with enormous blue lenses, and then standing patients in front of them. After a few years with little to show for this, the idea faded away.

The most larcenous of the lot was Dinshah P. Ghadali, founder of the "Spectro-Chromo Institute," who claimed in his promotional materials to have been such a prodigy back in India that he was teaching college mathematics at the age of eleven. His career in the United States, though, seems based largely on the teachings of Rums T. Firefly. xAiter stints as a "medical electrician," an insurance agent, and founder of the "Anti-Forgery Electric Pen Company," he discovered the panacea of colored light. His intensive courses in "Spectro-Chromo Therapy"—just $100 cash in advance, if you please—taught the "restoration of the human Radio-Active and Radio-Emanative Equilibrium by Attuned Color Waves." It was a medical advance so truly marvelous that in 1925 the federal government rewarded him with a generous term in an Atlanta penitentiary.

The strangest variant of chromotherapy, though, came from Roland Hunt of "the Bureau of Cosmo therapy," with his 1940 book The Seven Keys to Colon?' Healing. The book is a mixture of chromotherapy, Eastern religion, Christian mysticism, and some fairly wretched poetry:

In Coolness new, as refreshing dew;

Tone Thou my Speech,

0 Rays of Blue —

And make It True,

And make it True.

Hunt's work is directly descended from Edwin Babbitt's earlier Principles of Light and Colour, but it goes farther than most in its claims. Blue-tinted water ("Ceruleo"), it turns out, also cures dysentery, cholera, and bubonic plague. "The importance of Blue as a saviour of life cannot be over-estimated," Hunt explains with great seriousness. "In Bombay thousands of lives have been saved from succumbing to Bubonic Plague,

by administration of Ceruleo."

AUGUSTUS PLEASONTON HIMSELF died in March 1894, and so he saw few of these travesties of his well-meaning work. He never did give up his belief in blue glass, nor his researches and constant scientific readings; when his estate was auctioned off in Philadelphia, his personal library had grown so large that it needed its own published auction cataloge.

Pleasonton is not an easy man to track down today. There are numerous references in Civil War records to General A. J. Pleasonton . . . except that these are for his gallant younger brother, Albert Pleasonton, who was also a Union brigadier general, but with the Army of the Potomac. Even in his own lifetime, Augustus was always confused with his little brother Albert. Search for Augustus Pleasonton, now, and you will find nothing. After all, he only served on the home front. He did not lead any charges, storm any hilltops, or see action at Antietam.

All he did was try to cure the human race of its mortality.

And to some extent, he succeeded. Writing in The North American Review in 1893, Dr. Cyrus Edson of the New York Health Department admitted that "some of the devotees not only declared themselves benefited by the treatment so long as they believed in it, but were unquestionably so benefited." But temporary placebos do not make for undying medical fame, and Pleasonton's 1894 obituary in The Times of London only briefly mused on "a craze which for some years held a vast number of people, including many on this side of the Atlantic. . . . Invalids of all classes would sit for hours in the blue light from a window pane waiting for a cure."

Not a word has been written on Pleasonton since. Perhaps the last published comment at all on blue glass came three decades later from Henry Collins Brown in his Valentine's Manual of Old New York (1926):

[There used to be] the almost universal belief in the efficacy of blue glass for whatever ailed you. Exactly how this craze began I do not now recall but I do remember that its virtues as a cure-all were on every tongue. The idea spread from a single pane, inserted in the usual window light, till the whole window was blue. . . . The patent medicine men were in a panic. The nostrums which they sold were already guaranteed to cure everything but suicide and a broken neck; but the blue glass crowd went the limit in cures, and made no exceptions whatever.

For years, however, reminders of this strange manifestation remained in the shape of odd looking additions to houses; a lingering pane of blue glass here and there but that was all. . . . The Blue Glass Parlor was undoubtedly the precursor of the light and airy Sun Parlor as we know it today.

The name of Pleasonton had slipped away entirely by now—all that remained were a few enigmatic blue panes. And although all sorts of "heliotherapies" and ultraviolet treatments were pioneered in the early twentieth century to treat rickets, jaundice, and various skin ailments, the use of visible colored light faded from medical practice. In the end, Pleasonton's invention lapsed into eternal obscurity for the same reason that most other experimental medical treatments do. It didn't work.