

# **CALOMEL IN AMERICA**



# CALOMEL IN AMERICA

Mercurial Panacea, War,  
Song and Ghosts

Richard M. Swiderski



BrownWalker Press  
Boca Raton

*Calomel in America:  
Mercurial Panacea, War, Song and Ghosts*

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It has clearly tended to extravagance in remedies and trust in remedies, as in everything else. How could a people which has a revolution once in four years, which has contrived the Bowie-knife and the revolver, which has chewed the juice out of all the superlatives in the language in Fourth of July orations, and so used up its epithets in the rhetoric of abuse that it takes two great quarto dictionaries to supply the demand ; which insists in sending out yachts and horses and boys to out-sail, out-run, out-fight, and checkmate all the rest of creation ; how could such a people be content with any but "heroic" practice? What wonder that the stars and stripes wave over doses of ninety grains of sulphate of quinine,<sup>a</sup> and that the American eagle screams with delight to see three drachms of calomel given at a single mouthful? <sup>b</sup>

Oliver Wendell Holmes  
from *Currents and Counter-Currents in Medical Science*  
An Address Delivered before the Massachusetts Medical Society  
at their Annual Meeting, May 30, 1860



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## PREFACE

I have never knowingly consumed calomel. My first encounter with the drug was with its name in a song. I was researching nineteenth century American parlor songs when I came across “Go fetch the Doctor...” and wondered what calomel was to inspire such resigned contempt. This was before the labyrinthine resources of the Internet made it tempting to delve into the connections of a key word. I had no ready access to good research libraries at the time, so I contented myself with learning that calomel is a chlorine salt of mercury at one time used medicinally.

Years passed, and I occasionally encountered the word, often associated with American historical events, technology and health practices. Before there was a “Cocaine Blues” or a “Lucy in the Sky with Diamonds” there was the calomel song, far more negative about its subject drug than these later songs were about their drugs.

As I wrote a book on mercury I accumulated many more references to calomel, most of them American. That book completed and accepted by a publisher, I turned to this peculiar relationship of a drug and its name to a forming nation.

I wish to thank Amaranth Press for providing an electronic copy of the original song sheets of The Calomel Song as sung by the Hutchinson Family, and the American Antiquarian Society for providing copies of two early nineteenth century pamphlets from their collection: *An Illustration...* (1828), containing the fullest lyrics of The Calomel Song, and Fredr'k Fact, *Stop Thief!!!* (1834), beginning with an account of King Calomel's assault upon the Boston Botanical Hospital. Many of the illustrations used are courtesy of the U.S. National Library of Medicine, the Library of Congress Prints and Photographs Division and the rich collection of late nineteenth-early twentieth century newspapers in the Library's Chronicling American digital resource. Any documentation of America from the colonial period to the 1950's is certain to include a reference to calomel.



# INTRODUCTION

“Bitter calomel under the thin sugar of love’s exaltation.” By the time F. Scott Fitzgerald used this taste image to describe the disillusionment of his fictional counterpart Amory Blaine, calomel, like the love of Blaine’s youth, persisted only in projected illusions and a shadow economy. Many would have thought of syphilis when they saw calomel and love in the same sentence. It was several decades before penicillin would still that remaining echo.

You don’t need to know anything about calomel to catch the bittersweet import of Fitzgerald’s metaphor. Even when people were acquainted with calomel it was in images like this. The shared knowledge of calomel contributed to images balancing wordplay. Calomel and caramel and camel and calumets and Calvinism. Also hell. Around the same time Fitzgerald’s surrogate was biting through to the calomel of love, the Marx Brothers were bandying the word about in one of their films. The suspicious euphony of “calomel” made it good in the mouth for a moment only, like the drug it named. Then it was likely to turn into something else.

Calomel did name a drug. The interplay of drug and word is the subject of this book. Therein lies a mystery you will have to read on to solve. It will not entail consuming calomel, only passing over pictures of people and places, mostly American.

The mystery of calomel became an American mystery. Not a glib association between the restless American temper and a chemical that quickly cleaned out what was inside leaving a sense of health and superficial happiness. Why calomel figured so prominently in the health and power-seeking of nineteenth and early twentieth century Americans cannot be found in a slogan or a song. Both slogans and songs do abound in America’s calomel.

Calomel is one of many mercury compounds found adorning the interior of natural mercury deposits but never in great quantities. It was imported into America as were techniques for mass-producing it. These techniques could have come originally from India or China, where calomel was manufactured since early times. Along with the name “calomel” the techniques of its manufacture came from Europe, quite specifically from England, where the word first began to be used in the mid-seventeenth century.

That is where the mystery begins. There is no clear reason why a preparation of this chloride of mercury should be called “calomel”. There is no clear definition of what “calomel” meant to those who applied it to a compound

made by combining mercury with salt. Over time, reasons are given for the word applied to the substance. It was said to be sweet, though its sweetness was the result of impurities or the sugar or honey that accompanied it into the body.

Naming mercurous chloride (with accidental or deliberate lead compounds in the mix) by the word calomel made it seem much more specific than it actually was. Calomel put to one side its compositional twin corrosive sublimate, often mingled with it, into which and from which it was regularly transformed. The word was the forerunner of suggestively sounding names for drugs with effects learned from others, anticipated by the taker and not due to the drug itself.

From the start of its presence in America, calomel was given to people by authoritative practitioners who asserted their mastery by insisting on calomel.

Before there was a political entity called "The United States of America," a new disease in the New World, according to one doctor trained in the Old World, was healed by the calomel he brought from the Old World. His gesture was repeated several times by other doctors battling different epidemics. Together with drawing blood from patients it formed a depletive therapy that could force out the fever. Skeptics of that style showed that the treatment killed more than fever itself.

Calomel could be given as a purgative, in one large single dose meant to clear out of the body all obstructions and the noxious matter that accumulated there, causing the bile and blood to flow freely once again. Or it could be given in smaller doses repeated over a period of time to allow it to infiltrate the stagnant channels and bring them back to life. The large dose proponents believed that small doses poisoned the recipient without accomplishing any results. The small dose proponents thought large doses destroyed the interior without healing. Treaters in America tended toward the decisive large dose practice, which made them susceptible to challenges from advocates of milder medications.

Moving generally outward from centers of medical education, the calomel practice named a species of doctor who deployed the remedy against all ills, a routine show of his profession's power over the wilderness. This same power was exercised by doctors against the wilderness in other English colonies, but never so persistently as in America. In the hands of determined medical graduates, and of skilled slaves where there were no doctors, calomel became a mainstay of the plantation economy and of the American South as a region. Hell, calomel and the Democratic Party was another of its word sets.

The recipients of calomel were not entirely grateful for its effects, nor were all members of the medical profession certain that it had a positive effect. Calomel was a convenient label for those who used it in preference to any other means of treatment. Vocally opposing calomel and its agents was a way to distinguish oneself as the prophet of a new form of healing. The "ca-

lommel song” spread by a pioneer singing family was the first American popular composition to ridicule a medical practice and its proprietors. But it also helped instill an amused tolerance of its inevitability, a kind of precocious calomel cool in the face of death that had to be blamed on someone.

Dissent from its use and affirmation of its healing power coexisted in the common knowledge of calomel during America’s first century. Writers such as Ralph Waldo Emerson, Herman Melville and Walt Whitman needed only to use the word to make their meaning understood. A general hesitancy to describe body functions served the shared and allusive mystery of calomel. When Melville forbears to relate his anecdotes of sailors standing watch after taking their customary large doses of calomel the reader joins in the secret without enduring the details. Whitman listed the anti-calomel song among the popular pieces he heard in Manhattan, and wrote in his journal about taking calomel pills, but never used the word in a poem.

The Mexican War and then the Civil War it briefly forestalled brought out the extremes of dependence and rejection inherent in the practice of calomel. Common soldiers and generals alike demanded it in quantities that could not be satisfied by the quartermaster corps North and South. Calomel certified an impetuous drive to battlefield risk-taking in some, while it formed the basis for invalidism in others. In the North the Surgeon General of the Army was court-martialed after he struck it from the supply table (a move celebrated, condemned and disregarded).

Calomel made the transition from the professional gesture of a physician to an article of consumption and a subject of civilian contracting for the military. The discovery of an application of calomel supposedly able to reduce the danger of contracting syphilis after exposure made it potentially a prophylaxis to decrease the rates of manpower lost to chronic disease in the navies and armies as they drove the global ambitions of Europe and America. Underlying the reduction of disease there also was a reduction of mixed-race births that was the aim of some sanitarians.

An American Secretary of the Navy drew the line at using it as a preventive on the grounds that it would encourage immorality among sailors. As with an earlier calomel order it was ridiculed, loudly debated and mostly ignored. Sales of packaged prophylaxis tubes manufactured by civilian enterprises continued on Navy ships and in the towns near bases. They remained part of the ambience of navy bases evoked in novels, “neon-lit drug stores where sailors buy condoms and Sanitubes and occasionally ice-cream cones,” as William Styron put it in a novel. When Jack Kerouac referred to Sanitubes in a 1956 letter he was writing from Mexico City and the prostitutes he patronized there.

Divided into small regular doses, calomel packaged as sweet coated pills was offered commercially as a sustainer of health and mood. The shared assumption of its intestinal and anti-venereal workings that earlier generations maintained by hints drifted into a general sense of well-being associated with

calomel consumption. It might raise up ghosts; it might banish them. It might build and keep a sunny mood; it might make the teeth go loose and abscesses appear in the mouth.

Aspirin and much later penicillin, their names sleeker than the old ornamental calomel, placed drugs of genuine efficacy where calomel just meant a change. It vanished slowly, leaving artifacts and a biomass of mercury still circulating in the absence of any deliberate production and use. That echo is heard in the name. It is the echo around the sweetness of love's exaltation. For the sake of metaphor Fitzgerald set the content wrong. No one tasted calomel; they swallowed it whole.

In one of his stories set in gold-rush era San Francisco Bret Harte wrote,

In those days the "heroic" practice of medicine was in keeping with the abnormal development of the country; there were "record" doses of calomel and quinine, and he had incurred the fury of local practitioners by sending back their prescriptions with a modest query.

Harte's nineteen year-old protagonist, Reuben Allen, may be bored by the pharmacy where he works, but he knows enough to ask a doctor if he really means a patient to take so much calomel or quinine.

The distance between Harte's profligate calomel and Fitzgerald's hidden and bitter calomel and beyond that Kerouac's Mexico City is the subject of this book. Within that distance "the abnormal development of the country" goes on.

## Sources

"Tireless passion, fierce jealousy, longing to possess and crush-these alone were left of all his love for Rosalind; these remained to him as payment for the loss of his youth-bitter calomel under the thin sugar of love's exaltation." Fitzgerald (1920: 263).

Emerson used the phrase "the calomel of culture" for the rote memorization-recital system of education he deplored (in his essay "Education").

Poe wrote in his letters of taking calomel but never used the word in a story. Mark Twain did use the word in stories and in his autobiography. Uses by Whitman, Melville and Oliver Wendell Holmes are noted in the pages that follow. Fitzgerald was the last major American writer to mention it by name in a non-historical novel.

Sanitubes in Mexico City. Kerouac (1995: 591)

"neon lit drug stores..." Styron (1951: 314)

"In those days..." The story "How Reuben Allen "Saw Life"" in Harte (1906: 115-16).



## A NOTE ON DOSAGE

Where the quantity of a dose of calomel is given at all it is in the apothecaries' measure of grains and drams for dry substances. A 1 grain (gr.) dose was set equal to 64.8 milligrams (64.8 mg.) in the Metric System. A dram (drachm, abbreviated dr.) equaled 60 gr. or about 3.89 grams. Calomel is not soluble in water or alcohol, and had to be washed down, taken in an emulsion or consumed in pills and tablets. Like any other drug the measured calomel content was only a portion of the powder or pill consumed: emulsifying agents such as soap, sweeteners such as sugar or molasses, other more active purgatives such as jalap and colocynth, and acid-neutralizing agents such as sodium bicarbonate were among the other ingredients of a dose of calomel. One of the reasons calomel was taken was its density. It supposedly forced its way through body blockages. At 7.15 grams per cubic centimeter it was over three times the density of table salt (sodium chloride), at 2.16 grams per cubic centimeter. This meant that a full dram of pure calomel, a large dose even during the heroic period of calomel dosage, the early nineteenth century, was slightly larger than one half cubic centimeter. The excipients, sweeteners and other ingredients, none of which was as dense as calomel, tended to reduce the density of the dose and thus its weight per volume. The main component of calomel, the element mercury, was often adulterated with the addition of lead, which mercury dissolves in an amalgam. The calomel compound itself could also be adulterated with presumably inactive ingredients to preserve a white appearance. The upshot of all this adding ingredients and adulterating was that a dose of calomel was unlikely to be as dense as pure calomel, but it certainly was palpably heavier than the equivalent volume of another drug. A 1-gr. calomel tablet could be significantly smaller in size than a 60 mg. aspirin tablet sold over the counter today. Toward the end of the nineteenth century the mechanization and standardization of pill manufacture led to the ability to make pills in quantity in a range of fractional doses:  $\frac{1}{2}$ -gr.,  $\frac{1}{4}$ -gr., even  $\frac{1}{8}$ -gr. tablets were advertised. This marked a shift from single large doses to smaller doses repeated on a regular basis, probably the result of the influence of homeopathy on the preparation and prescription of medications.



## • I •

# MAKING CALOMEL

Calomel was made by its name.

At the beginning of the entry on calomel in his compendious *materia medica* of 1839, Dr. Jonathan Pereira gave a brief explanation of the name. He wrote that it referred to Dr. Theodore de Mayerne's black servant, who was so skilled in preparing the drug that Mayerne called it "beautiful black" in praise of both drug and servant (Greek "kalos-melanos"). Pereira hastily added that the name might also take into account the black bile body humor that calomel controlled.

Pereira's unreferenced black servant story was repeated in many accounts of the origin of the calomel name, sometimes coupled with the claim that Mayerne meant it as a joke. Pure calomel is beautiful white in appearance, not black.

Neither Mayerne himself nor anyone who wrote about him or about "sweet mercury" in the years before Pereira's publication had anything to say about a black servant making calomel. For an 1821 article on the origins of the name "calomel" W.R. Whatton examined numerous seventeenth and eighteenth century sources including Mayerne's own writings and never mentioned Mayerne's assistant or the "beautiful black" interpretation of calomel's name (see Appendix to this Chapter).

Pereira's story answered a need to understand why so capable a chemist as Mayerne would call a chemical black when the object of chemists was to render it as white (pure) as possible. Pereira's invention fostered attempts to explain why an apparently white substance was called black.

Many chemical experimenters of the past did not record their use of manual laborers to perform the work of synthesis. Skilled laborers were there in the workshop but seldom were recalled in the experimenters' writings. The anonymous assistant is like a figure in alchemical allegory whose skin color changes are crucial stages in a process of chemical transformation but who then disappears. The "black" element of calomel's name set up a contrast with the white of its body. It had to be a riddle in the manner of the alchemists.

The reference to black was explained as a step in the production of calomel no longer visible to most people. A filler paragraph in an American newspaper of 1905 identified the black in the name as the color of the prod-

uct when mercury is rubbed with corrosive sublimate as a preliminary to making calomel, which simply is not true.

In 1854-55 the Reverend Isaac Holton, lecturing in chemistry at the Columbia University College of Physicians and Surgeons, touched a sample he wanted to analyze for the presence of calomel to a piece of potassa (potassium oxide). The sample turned a deep black, causing Holton to conclude that the “calo” of calomel was the Greek “kali” or “potash.” Holton thus switched calomel’s Greek name away from the reference to black while confirming it chemically.

Others found that the spirit of hartshorn (ammonium hydroxide solution) would turn calomel a deep black. The chemical potential for black in calomel’s white projected the secret process contained by its name. Or at least it was a good test for the presence of calomel.

“Calomel” is a very convenient word. It narrows down many names to one attractive label which conceals the mercury content of the drug. Knowing there was mercury in what they were taking could make patients apprehensive. For speakers of European languages the word has undertones of beautiful or white (“kalos”) honey (“melas”) whatever story is told about its origins. The name hints at calomel’s supposed sweet taste and not the taste of mercury. “Calomel” is a promotional slogan in a capsule. Pereira finished the packaging of the medicine that Mayerne began.

Mayerne (1573-1655) was a chemist and a physician; he also was a gastronome known for his love of good food.



**Figure 1**

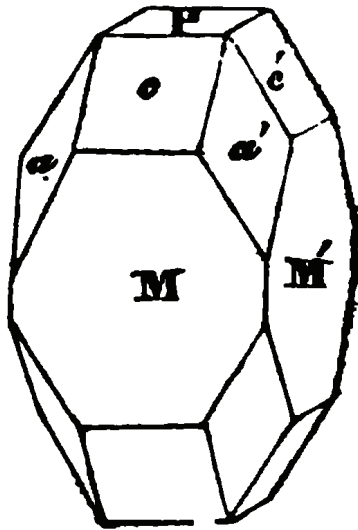
Theodore de Mayerne

Courtesy of the National Library of Medicine

Rare among physicians of his time, he kept case notes on his patients describing signs, diagnosis and treatment. He was a Swiss-French Protestant who fled to England where he could practice his healing craft unmolested. He occasionally acted as an emissary for the English Crown. The historian Hugh Trevor-Roper found in Mayerne's career an epitome of a diverse Europe in the early seventeenth century. He noted the multiplicity of variants of Mayerne's name (Maherne, Mayard...) that concealed Mayerne in contemporary documents.

In his own writings Mayerne used "pulvis calomelas" and other phrases incorporating the "calomel-"element to designate a specific recipe for making "submurius hydrargyri," "submuriate of mercury." The submuriate prefix indicated a lesser proportion of acid than in the muriate of mercury, also known as corrosive sublimate. As Whatton speculated, "he seems to be feeling his way in the use of a new formula."

The method of production that Mayerne took from the cryptic German alchemist Oswald Croll was to add mercury to warmed sulfuric acid (vitriol) then stir in brine, heavily salted water, and collect the crystals that form on the cooler part of the vessel. "The corrosive spirits of vitriol and salt are killed in sublimated mercury," as Croll put it. In 1609 Croll had been one of the first to publish a way to make medicinal sweet mercury. Mayerne avoided citing authoritative Parisian sources for the formula, given his early battles with the medical faculty of the University of Paris.



**Figure 2**  
Crystal of Calomel  
From Phillips (1831: 119)

Mayerne wrote the chemical part of the *London Pharmacopeia* of 1618, and George Urdang found a copy of the second edition in the British Museum with handwritten notes by the author. At the head of the formula for making “mercurius dulcis,” Mayerne noted in Latin, “obtained by sublimation and today in use.” After giving the steps just outlined, the printed text added that the more times calomel is sublimated, the better medicine it is. The corrosive spirits are killed by repeated sublimation, which dulcifies the compound, making it sweeter with each step. Calomel makers and consumers continued to believe this until the early twentieth century.

The *London Pharmacopeia* entries that Mayerne composed did not use any form of the word “calomel” paired with “mercurius dulcis.” It was not until 1720 that “calomelas” appeared in the *Pharmacopeia*, and not until some time later that it began to show up in the titles of medical monographs and journal articles as “calomel.” If Mayerne originated the word he did not make its promulgation a priority.

Another synonym for sweet mercury or calomel was “draco mitigatus,” “the dragon subdued,” the dragon being the acid-salt combination, a chemical treatment which could tear apart the flesh if taken internally. Croll, Mayerne and other iatrochemists hoped to tame and harness the corrosive qualities of the minerals by introducing them into the soft fluid penetrating body of mercury. Heating the mixture to raise the calomel above the noxious residues led to a progressively more docile calomel dragon.

An able technician formed this black-white, sweet acid-salt with repeated exercise of force and energy just as an able trainer domesticated a wild animal carefully step by step. The process was easy to describe and the ingredients not difficult to come by, but the fine finger work of skill made the difference between a useless poison and a medicine. The result improved in proportion to the dexterity exercised in each step of the process. Medicinal purpose guided the chemical refinements.

Medication is a matter of dosage: giving enough of a drug to have an effect and not so much that the dangerous elements of the compound assert themselves. Mayerne’s chemical writings list the dosage expected to be active without harm for a number of mercury compounds including one identified as “theriac calomelanici sublimati dulcis,” “remedy of sweet calomelanic sublimate,” which means that the precipitate was sublimated until fully sweet.

“Calomel” designated a practice of sublimating the combination of mercury and murias, the active component of salt, until it could be given in measured doses. The hard insoluble crystals of the sublimate had to be rendered palatably fine. Sharp crystals could harm the body’s interior. Repeated sublimations and condensations rendered them purer and finer and readied them to be powdered by manual grinding.

This preparation successfully conveyed the constituent acids and mercury past the sensitive exterior of the patient and into the interior where they

could exercise a predetermined influence over the content and flow of bodily fluids.

The preparation process did accomplish what was intended sufficiently well for it to be remunerative to manufacture calomel on a scale greater than artisanal production could allow. The many repeated sublimations that gave calomel its sweetness and name were the most time-consuming and costly, and the most likely to be abbreviated in the interest of profitable quantity production. A lot of calomel might be lost to the repeated heating and condensing needed to improve the quality.

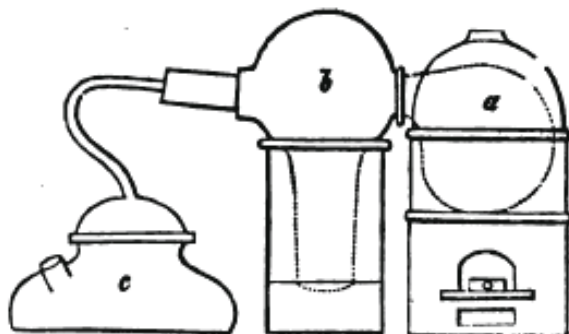
Another production method allowed the crystals to precipitate from the mercury-acid-salt solution, crushed the white crystals of the precipitate in water (trituration), and drew off the water while the lighter crystals were still floating, allowed them to settle in a separate vessel, and repeated the process until the entire precipitate mass was a fine powder that could be dried and ground on a marble surface until finer still (levigation).

This trituration-levigation process, also derived from the early methods of small-scale calomel making, was as labor and energy intensive as sublimation. It could be the sole method of calomel refinement, or one step in a sequence that also included sublimation. By the end of the eighteenth century there were several calomel production methods each incorporating these elements. The aim was to make the greatest amount of usable calomel from the ingredients.

The acid tamed might be sulfuric, nitric, hydrochloric, separate or mixed, and the salt could be added dry or in solution, but it was understood early in the history of calomel production that limiting the amount of mercury caused another compound to form very unlike the desired calomel. This was corrosive sublimate, a severe poison resulting from the same ingredients that produced calomel but with a lesser proportion of mercury.

Its name came from its appearance together with the sublimated calomel but distinct from it in its destructive effect on living tissue. Unlike calomel, corrosive sublimate is soluble in water and alcohol, which property allows it to come into contact with a wider surface area. Washing the precipitate as it was crushed eliminated some of the corrosive sublimate, and as the calomel powder grew finer with levigation, further washings could carry the corrosive sublimate away entirely.

The extraction of corrosive sublimate added to the reasons the precipitate of the acid-mercury-salt reaction was best made as fine as possible. When Joseph Jewell in 1807 described his patented method of condensing vaporized calomel into an “impalpable powder” by passing it over cool water in an enclosed vessel, he still advised washing the powder “to rid it of any coarser particles” which meant both larger particles of calomel and corrosive sublimate.



*Henry's Modification of Jessell's Apparatus for preparing Calomel by Steam (Hydrosublimite of Mercury).*

- a. Furnace, containing an earthen retort (having a wide and short neck), in which the ingredients for making calomel are placed.
- b. An earthen receiver, having three tubulures: one communicating with the retort, a second dipping into water in an earthen jar, and a third connected to a steam-pipe.
- c. Steam-boiler.

### Figure 3

From Pereira (1852: I, 797)

Conversely, it was possible to make calomel from corrosive sublimate by adding more mercury. After the nitric acid-mercury-salt precipitation method, this was another way to manufacture calomel “on the great scale” according to Dr. Andrew Ure’s 1844 dictionary of manufactures:

The second manner of manufacturing calomel is to grind very carefully 4 parts of corrosive sublimate (bichloride of mercury) with 3 parts of quicksilver, adding a little water or spirits to repress the noxious dust during the trituration. The mass is then introduced into a glass globe, and sublimed at a temperature gradually raised. The quicksilver combines with the deutochloride and converts it into the protochloride, or calomel.

Humphry Davy’s 1810 naming of the gaseous element chlorine was quickly followed by the discovery that chlorine in set combinations with mercury was the only other irreducible ingredient in both corrosive sublimate and calomel. This gave calomel a new range of names—protochloride of mercury, mercurous chloride—to distinguish it from the deutochloride or bichloride, mercuric chloride, corrosive sublimate.

The acid and salt were no longer the dragon tamed in calomel. Rather, the dragon always in danger of being born with or out of calomel was corrosive sublimate. The co-presence of this deadly poison with gentle calomel was the central problem in making the drug in quantity. At the same time, like



most poisons, corrosive sublimate had its medical uses. As antiseptics were being sought to destroy newly discovered bacterial causes of disease, solutions of corrosive sublimate were tenuously recruited for that function.

One explanation for calomel's healing power once inside the body was presumed transformation into corrosive sublimate by contact with stomach fluids and food being digested. This illusion also could be used to write off the occasional calomel poisoning, which would be due to poorly washed sublimate, or a change into corrosive sublimate within the body.

Alfred S. Taylor, a forensic toxicologist, tested the mutability of calomel in contact with substances it might encounter in the body, and found that only minute amounts of corrosive sublimate resulted. This did not entirely discredit the corrosive sublimate explanation of calomel's poisoning episodes, in part because calomel was too valuable a drug to be accepted as a poison in itself. Calomel's poisoning was mercury poisoning which for a long time was viewed both as lethal and healing.

Both mercury-chlorine compounds could be produced by suffusing a cloud of mercury vapor with chlorine gas. The high temperatures required for the reaction—350 to 660 degrees Fahrenheit—brought the deadly potential of the result back to the formation itself. But nineteenth century descriptions of industrial processes rarely take the worker into consideration. The worker's experience of making calomel has only a few records, such as that of James Jacobs, in 1827 a slave employed at a Maryland chemical plant, who was switched to the "calomel room" after he missed 8 days of work in two weeks. He then promptly missed 12 days in a row.

As large quantities of calomel were being made to satisfy demands, individual physicians largely ceded making calomel and other synthesized remedies to the apothecaries, who formed enterprises to produce batches then distributed by prescription under a proprietary label. One of the methods of manufacture described in manuals is that of Apothecaries' Hall in London.

Fifty pounds of mercury was boiled with 70 pounds of sulfuric acid and the result was combined in phases with 62 pounds of salt, 40 ½ pounds of mercury and 34 more pounds of salt to yield 95-100 pounds of calomel, noxious gases, and a quantity of corrosive sublimate and other by-products to be washed away.

Some cities had their own Apothecaries' Hall, where drugs were made in bulk, put into consumable form and packaged in doses.

It was efficient for calomel to be one of the chemicals made in factories. An 1864 survey of England's workshops attributed the rising volume of mercurial agents manufactured to the great increase in their consumption as medicines. The chemical factory generated the precursor chemicals for other purposes and imported mercury for the synthesis of its compounds. As the demand for mercurials grew, the factories increasingly turned their resources to making them.