

The Tincal Trail

A History of Borax

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Abbreviations

The following are abbreviations in the references and relate to documents in the archives of Borax House, Carlisle Place, London S.W.1, used as primary sources:

- M.D. These copies of letters written by the Managing Directors of Borax Consolidated, Ltd. from London between 1902 and 1960 are bound in 58 volumes numbered serially.
- R.C.B. These are letters in files containing the incoming letters to R. C. Baker (the Managing Director of Borax Consolidated, Ltd) from 1899 to 1929, originating from centres of borax activity, particularly North and South America, Europe and Turkey.
- F.M.S. A collection of letters written by F. M. Smith, mostly in manuscript and between the years 1898 and 1904. Other F. M. Smith letters used are in the archives of U.S. Borax in Los Angeles.
- F.M.S. Ann. Rep. These are Annual Reports written by F. M. Smith as Joint Managing Director of Borax Consolidated, Ltd covering the activities of the Company in the United States from 1900 to 1912.
- P.C.B. Pacific Coast Borax – a collection of files containing letters exchanged between the management in the United States and that of Borax Consolidated in London between 1911 and 1960.
- Minute Book Refers to Minutes of Board Meetings of Borax Consolidated, Ltd except when stated otherwise.

*On 16 May 1919, while discussing a current case, Frank R. Wehe, a lawyer advising Pacific Coast Borax Co., summarized part of the judgment in *Duffield v. San Francisco Chemical Co.* (205 Fed. Rep. p. 480) as follows: 'The Court then discussed the definitions of placer and lode deposits, which hold that all rocks in place or deposit whether solid or broken, between walls are lode deposits and that placer deposits are superficial deposits, and [by this] is meant ground within defined boundaries which contains mineral within its earth, sand or gravel, ground that includes valuable deposits not in place – that is, not fixed in rock but which are in a loose state. . . .' Making a claim to a new discovery under the correct definition of 'placer' or 'lode' has usually been of vital importance to subsequent ownership assertions.

- CH 3 P, 44 FOOTNOTE

Colemanite rivalries in the USA

The acquisition of Coleman's borax interests in 1888 and the change from 'cottonball' to colemanite as the raw material had for the moment left no serious rivals to Smith's borax empire in the USA. The home market was expanding, and the Bayonne and Alameda refineries were in a position to supply its demands, in the East and West respectively, with the help of sales offices in New York, Chicago and San Francisco. Moreover, Smith had some able assistants to rely on to keep the business running smoothly, while he devoted much of his time to his other interests, and to the expensive private pursuits that his wealth laid open to him.

Following the departure of Mather senior in 1896, Smith's first move had been to transfer Steve Mather to New York from the Chicago sales office, where Thomas Thorkildsen was left in charge. Steve Mather was well entrenched in Chicago with many interests outside his business, and he made it clear to Smith that after he had indoctrinated a successor for New York he wished to return to Chicago. As future events were to prove, Mather was a man of exceptional ability, and recognized as such by Smith, but they were not of similar outlook, and there is nothing that indicates that Smith wanted him close at hand on a permanent basis. For this Smith chose one of the small group that came from the Candelaria area of Nevada, who had served him so loyally in the West, and within a year Chris Zabriskie had moved to New York and been trained by Steve Mather, who then returned to Chicago. However, this was not before the direct exposure of Thorkildsen to Smith had provided a further change in the organization.¹ Thorkildsen was a tall, self-opinionated young man who had come from the San Francisco office and had some mining background. He despised Smith, considered him mean (a 'tight-wad'), and made a poor job of concealing his feelings, as was shown by his correspondence. A final scene, when Smith suggested that Thorkildsen was favouring certain customers, brought his resignation and a resolve to enter the borax business in competition, to which Smith is said to have replied characteristically, 'I'll wipe you out,' an objective he never achieved.

In the following year, 1898, Thorkildsen called on Steve Mather to tell him that a new colemanite deposit had been found at Frazier Mountain in Ventura County,

California, and suggested they went into business together. Mather was undoubtedly restless under Smith, but felt it was not the right time to move; he watched Thorkildsen build a refinery in the Union Stock Yards at Chicago assisted by ore supplies from Stauffer's Frazier Mountain Mine and he stayed with Smith for another five years. However, in 1903 overwork brought about illness and a nervous collapse,² and Mather entered a sanatorium in Wisconsin in June, where he was under treatment for six months and during which he received no salary. Early in the New Year he felt well enough to send Smith his resignation and to join Thorkildsen, a move which Smith had probably been expecting for some time. The Thorkildsen & Mather Company was in business, and they were both on the way to becoming wealthy men.

In 1900 the net profit of Pacific Coast Borax had passed the magic million-dollar mark, but by 1903 a decade of easy expansion was over, and there was a dramatic decrease in total sales of borax and boric acid in America.³ This was true in particular for Smith's company, due to the campaign and adverse reports about the use of these substances in the preservation of meat, which culminated in their prohibition by law as food preservatives in January 1907. In addition, a contract which had run for seven years to supply Stauffer with colemanite ended in November 1901, following their entry into borate-mining as serious competitors.

Smith's answer to these adverse factors was to concentrate on the sale of borax for use in the home, and it was in this context that he made the fighting remark 'I'm going to place a fourth pound of package borax in every house in New York.'⁴ He thus became increasingly enthusiastic about this subject, as well as about the introduction of borax soaps. The amounts spent on advertising escalated, and he forecast that their growing package trade was a line that could be held, whatever future discoveries of borate ores by others might do to their bulk trade in borax and boric acid.⁵ He therefore proposed spending 150,000 dollars on extensive advertising of 'Twenty Mule Team' package borax during 1903, and supported enthusiastically the idea of taking a live twenty-mule team on a tour of the main cities.

When Smith wrote to Baker in 1903⁶ he mentioned that Zabriskie and Ryan had been to St Louis to arrange for 'our animated trade mark' to drive over the World's Fair grounds daily:

My idea is then to drive them through overland to New York with a good press agent in charge, salesmen, etc., driving them through the most thickly populated districts and making an attempt to drive them down Broadway, New York. If they stop us from doing this, we will at least get a good ad.

Over the next few years this team manoeuvred down the crowded streets of many large cities, amid great public interest and with rewarding results to the company and its distributors, although exposure to a world and cities which these men from the desert had never expected to see proved in certain cases to be a somewhat intoxicating experience. 'Borax Bill' Parkinson, who drove and trained the mules for these performances, became such a prima donna, insisting on a team of 'swampers' to wait on him, that sadly he had to be recalled. It was an expensive exercise, and at the end of 1906 Smith wrote⁷ 'As soon as it reached New York and had a fling down Broadway, I thought it best to take it off the road. The mules were sold and the wagons shipped to Ludlow, California.'

As regards the borax soap project, it was 1905 before the plant started, and things then went unhappily. The motive behind the new venture, said Smith, was that the soap would be popularizing borax as well as marketing it.⁸ This shrugged

off the fact that the market was already dominated by established soap-manufacturers. In order to sell borax, the borax content of the first soap produced was pushed as high as 10 per cent. This was a rosin soap for laundry use, named 'Boraxaid', but the overdose of borax caused it to form crystals on the surface, and it also contained a high proportion of cottonseed oil, so that many of the first batches turned rancid. This would be enough to make the average entrepreneur hesitate, as over ten thousand dollars had been spent on the new soap plant, and Smith had informed Baker in June 1904 that no less than thirty-one salesmen were already on the road 'mainly preparing for the soap business'.⁹

Smith, however, pushed on undaunted. The proportion of borax was halved, and a saleable product was produced.¹⁰ A 'semi-toilet' soap, 'Queen of Borax', 'Boraxaid Soap Powder', 'Washing Machine Soap Powder' and 'Twenty Mule Team Soap Chips' all met with little success. A better answer was found with the introduction of 'Boraxo' (perfumed) and its variant 'Grime Off' (unperfumed); these started as bath powder alternatives to bath salts, but were later established as successful hand-cleansers, a role which 'Boraxo' maintains to this day. Since they contained about 75 per cent powdered borax, they also made their contribution to increasing borax sales.

Smith was not sure that they would make a great deal of money out of soap directly, but he explained that the circulars put out with the soap advertised the package borax, which should expand sales. However, the Board away in London had by now learnt that they must keep this particular segment of Smith's activities under close observation, and by March 1906 they had noted that annual advertising expenditure on borax soap and packaged borax had reached the large figure of \$300,000, and that although volume had increased this had resulted in a loss of about \$140,000 on the soap business and a smaller loss of about \$17,000 on the packaged borax business.¹¹ They also noted with satisfaction Smith's statement that he proposed to reduce the advertising to less than \$100,000 in the following year, but in spite of this cut sales in this sector were maintained, and profits soon began to be made.

Annual sales of packaged borax increased from 500 tons before 1902 to over 3,000 tons four years later, and although there was a decline in bulk borax sales, total refined borax sales of Pacific Coast Borax increased during this period from 10,500 to 12,500 tons annually (thanks to the use of borax in the home).¹² At the end of 1907 Smith reported that he had spent a quarter of a million dollars on the soap factory with little to show for it.¹³ Nevertheless, packaged borax sales continued to grow as a profitable activity, and Smith's judgement about this aspect of the business was vindicated. Much has happened in advertising since the era of radio and television began, but for their day the methods initiated by Mather and carried on by Smith and his sales force, which succeeded in making the '20 Mule Team' trade mark known in American homes from coast to coast, showed great originality.

There was a further setback to borax sales in the United States in 1907, following what Smith referred to as 'The Financial Panic' (recession, in today's terms), but packaged borax held up well. In reviewing sales for 1910 Smith reported that out of a total of 16,000 tons of borax and boric acid, 25 per cent was now used as packaged borax; industrially, enamel accounted for another 25 per cent of the market; and medical uses of boric acid and borax had risen to almost the same level. Borax Consolidated had decided to start production of boric acid at Bayonne in 1900,¹⁴ and this proved a well-timed decision in competing with

boric acid imported from Italy. Rival borax-refiners such as Stauffer and Pfizer were manufacturing a whole range of chemicals and Smith arranged that a Mr Parker should be brought out from England to study diversification.¹⁵ He recommended a long list of substances, such as nitric acid, soda ash, hydrochloric acid and at least twenty more, for production at the company's Alameda works. Smith started by wishing his company to be '*the* chemical concern on the West Coast', but his enthusiasm took only four weeks to evaporate. The trouble was not only the high capital cost at a time when sales were static, but it was also an inappropriate moment at which to inflict a chemical factory on the Alameda neighbourhood, where the vegetable-growers in particular were already complaining about acid fumes from the pyrites used in the Pyne copper-smelter on a site adjoining Alameda works, a smelter in which Smith was financially interested. So the idea of diversification into chemicals on the west coast died.¹⁶

However, worries for Pacific Coast Borax also lay in other directions in the form of financial and mining problems, preoccupation with which occupied much of the unflagging energy of Smith and his associates. In 1899, around the time of the London merger, Smith obviously thought that he had the colemanite supply position in the USA more or less taped and that in any case nothing more need be feared from the old marsh borax deposits.¹⁷ He had wisely bought all the dwindling borax production from these old cottonball Nevada deposits in order to avoid the depressing effect this might have had on market prices. Ben Edwards – an early member of Smith's old Nevada team and still in Candelaria, where he ran the local store – organized this activity, which continued for a surprisingly long time. It was not until 1910 that the last seventy odd tons was shipped and Smith commented that at the current price of borax it was no longer an economic occupation even for Chinamen.¹⁸ Indeed, the future appeared to lie entirely with colemanite, which in America had been discovered in three main areas of California – Death Valley; the Calico Mountains some 120 miles south of it; and, more recently, in Ventura County farther west, and near the Pacific Coast.

In 1900 Pacific Coast Borax's sole source of production of colemanite was still the Borate mine at Calico, but soon afterwards it was realized that its life would perhaps not exceed four years.¹⁹ Although the largest bodies of ore were found to be at the lowest levels, the mine was already down 600 ft at one place, and this revealed a decline in the quality of the ore,²⁰ as it contained a higher proportion of silica and calcium sulphate, much of which could not be upgraded to economic values by roasting.

The short life of the mine was the subject of persistent rumours, and as sole source of supply to a company which was making great efforts to increase its market, the position was clearly becoming risky. By good fortune new underground discoveries continued to be made and production was increased to meet the existing market, which needed between 25,000 and 30,000 tons a year;²¹ but by April 1904 Smith reported that there was only about one year's satisfactory supply left, though the road to the new mine in Death Valley, Lila C., would be ready within that time.²²

However, the transport problems associated with man's conquest of Death Valley (which were already a legend) were not to be so easily overcome, and it was just as well for the salvation of Pacific Coast Borax that Billy Smitheran – Superintendent at Borate – found, mined and shipped another 55,000 tons of colemanite in the further twenty-four months that preceded the final closure of Borate in October 1907.²³

At the time of the London merger Smith's experience of borate-mining stretched back nearly thirty years, and although he was now a well-established city dweller, with a growing reputation in finance and commerce, he retained his flair for the rough and dirty game of outwitting rivals in mining and mining claims, and he retained all the old instinct for the signs of a likely prospect. Immediately after his return from London in January 1899 he had set off on an extended tour of the Death Valley region and of the claims staked out there nearly fifteen years before by Coleman's men, and reported in great detail on what he had found.²⁴ He came away well satisfied that nothing of importance could be obtained by others outside his company's boundary lines; if anything were still to be found, he believed it would be confined to odd ledges of colemanite in the hills. To make certain of this he established a permanent company camp on a good supply of water eight miles from Amargosa, and left a trustworthy watchman there. He was much impressed with a hill of borate called Monte Blanco, which he described as a 'quarry' proposition; but he came out of the place which he later described as 'dubbed with that gruesome name "Death Valley"'²⁵ by an easterly route through the Funeral Mountains. This he did specifically to look at Coleman's Lila C. claim, which he had not seen before, and which he mentioned as being on the east side of Furnace Creek not far from a place known as Ash Meadows. The mine was 'an exceptionally good one', and he measured the 'croppings' in three different places, and found 24 ft in width of what appeared to be very superior ore.²⁶ He suggested also that in case this property should become exhausted at any time it would not be a serious problem to extend the road from this point around through another divide into the upper part of the Furnace Creek range, where the company had any number of good properties.

In these few sentences Smith had – perhaps unwittingly – laid down the mining policy that his company was to follow for the next quarter of a century. His reports and letters show, however, that he was already fully aware of the transport problems involved if the Lila C. area were to be used, and this may also have been the real reason for his confidence that others were unlikely to wish to disturb his claims to those remote areas. But transport problems apart, it was as well that Smith established and maintained a firm programme for future mining development so soon after the merger, as without that and his company's inherited hold on Death Valley colemanite deposits rivals could have made life even more difficult than it became in the course of the next few years. Indeed, rivalry and a static market from about 1905 onward had a noticeably depressing effect on borax prices in the USA.

By 1900 competition centred mainly round the two firms Charles Pfizer and Co. and the Stauffer Chemical Company. They had both come into borax at the chemical-manufacturing end – unlike Smith, who had come in at the mining end – and their requirement was raw material at the lowest possible cost. The only other borax-refiners of consequence in North America were one at New Brighton, Pennsylvania, associated with the American Borax Company's mine at Calico, and Thorkildsen's Chicago refinery dependent on Stauffer's mining activities,²⁷ but these formed a relatively small part of the market. In these early days of colemanite discovery in the USA, however, it could be all too easy for refiners to obtain their own 'captive' mines, and Smith was anxious to prevent such moves, at considerable cost if necessary. He wrote to Pfizer in April 1898 that he (Smith) was keeping them out of ownership of borate properties in the USA where they most desired them, and would be most likely to invest.²⁸ It should therefore be an

easy matter to keep them out of borate properties in South America, especially at a period when there was such a high protective tariff. Pfizer in fact had leanings towards the Arequipa deposit in Peru, but Smith got young Pfizer on his hook instead with a long-term supply contract.²⁹

The Stauffer Chemical Company was a tougher proposition, and Smith's efforts to pin them down to dependence on Pacific Coast Borax for all their ore requirements never succeeded. As a step towards influencing their policy he was able to obtain a one-thirtieth interest in their closely guarded share capital, which in April 1904 he bought in his own name from John Howard.³⁰ The only other shareholders were a wealthy Frenchman called de Guigne, who owned the majority 66 $\frac{2}{3}$ per cent interest (4,000 shares) and Stauffer and Wheeler, who each owned 900 shares against Smith's 200. Stauffer was acknowledged by all, including de Guigne, to be the driving force in the company. On Smith's own admission, Stauffer was not friendly to him;³¹ Smith's shares were transferred to Pacific Coast Borax, but his hopes of influencing the company's policy by increasing this shareholding never materialized, and he sold the shares three years later. Stauffer & Co. had a number of chemical works 'on the Bay' (i.e., at San Francisco) and their letter heading shows that they were manufacturing quite a long list of chemicals apart from boric acid. These included sulphuric acid and other sulphur products, muriatic acid and nitric acid. They had started boric-acid production in 1895 in the Potero at San Francisco, and for the first seven years there was a tolling arrangement, by which Pacific Coast Borax supplied the ore and sold the boric acid and the two companies shared the profit.³²

Meanwhile, Pacific Coast Borax's successful colemanite mine at Calico attracted considerable interest and activity by others. Smith wrote to Baker as early as 1898: 'There are so many low-grade propositions that if we undertook to get them all we would have to invest more money than it would warrant us in doing and, secondly, when it comes to tariff legislation, these outside companies are of great assistance in securing high tariff.'³³ Smith remained cautiously optimistic, and after visiting Daggett in March 1899 he wrote that he saw nothing in these outside properties that looked like serious competition, as the ore was too low-grade.³⁴ Smith, however, knew enough about mining to be cautious where he might have been more optimistic over sales and finance. He was 'favourably impressed' with the Gem borate property belonging to his former Nevada borate rivals, the Calm brothers, situated five miles south of Daggett. In fact they discovered little of value in that area, and soon moved elsewhere. The Calms – Max and Charles – were another group with a firm intention of 'downing the Borax combine', and had well-established markets in the east.³⁵

The second largest operation in the Calico area (see map VI, p.61) which later became the American Borax Company, was based on a process started by a Dr Humphries and developed by a chemist Henry Blumenberg.³⁶ In a break with tradition the process made crude boric acid from low-grade borate ore which was readily available close to Daggett, consisting of a silicious mud shale, in layers green, blue and purple in colour, the blue being the best. It contained between 2 and 10 per cent boric oxide (B_2O_3) but averaged less than 4 per cent. This was treated in 20,000-gallon digesters with sulphurous acid (obtained by burning sulphur) and the borate ore was thus converted to boric acid. This was leached out in solution and the liquors were concentrated by solar evaporation in ponds covering an area of about eight acres, from which crystals of a crude boric acid containing about 49 per cent boric acid were 'harvested'.

The American Borax Company, which was founded in 1900, was managed by Blumenberg and owned by his former employers, Dawes and Myler, who also owned the Standard Sanitary Company, which manufactured bathtubs and the enamel for them.

They also owned a borax refinery in New Brighton, Pennsylvania, to which the American Borax Co. shipped the crude boric acid. During their years of production – mainly 1904 to 1907 – they obtained their ore from the Columbia mine about seven miles north-west of Daggett, where it was brought by narrow-gauge railway to the processing plant. Solar evaporation confined operations to the months May to September and the most crude boric acid they produced in a year was 640 tons. They fought hard in trying to compete with the colemanite mining, but the cost advantages of colemanite were difficult to match. Another company, the Western Mineral Co., started similar operations to make crude boric acid at the Bartlett Mine just south of Calico, and there were two other patented claims just south of Borate, the Centennial mine and the Palm Borate Co., but none of these produced anything of significance.

Elsewhere in 1899 new discoveries of colemanite were made in the Frazier Mountain area of Ventura County, California.³⁷ Stauffer were the pioneers in this area, and formed the Frazier Borate Mining Company, which in 1902 had begun mining and shipping high-grade ore (about 34 per cent B_2O_3) by traction engine to the nearest railroad at Bakersfield about sixty-five miles away, and thence to their refinery in San Francisco and to Thorkildsen's in Chicago. Then in 1904 the Calm Bros (Columbus Borax Co.) started a second mine about two miles north-east of Stauffer, having abandoned the Calico area.

However, in spite of the deteriorating grade of ore at Borate, Smith remained unimpressed with this alternative Ventura area. On a visit there in 1904 Smith and Corkill examined the Weringer property which was situated between the Stauffer and the Calm properties, and they decided it was not worth even a tenth of the \$45,000 demanded.³⁸ At the same time they took the opportunity to find out something about the other mines. The Calm mine (Columbus Borax Co.) was barred to visitors, but they heard that little ore of any consequence had been shipped. They succeeded in gaining access to the Stauffer mine (Frazier Borate Co.), and Smith shrewdly surmised that, although the mine was shipping about 4,000 tons of colemanite a year and evidently making a profit owing to the proximity of cheap timber, the flat location of its vein made it unlikely that it would be able to produce for many years longer.

Apart from American Borax Co. in Calico, the future seemed to lie with Pacific Coast Borax's Lila C. mine in Death Valley, which would soon be ready to open, and where seven years' supply of ore was already in sight. Smith could in fact afford to brace his nerves and hang on until transport to and from Death Valley was available, which is what he set out to do. Meanwhile, although the borax price had maintained a steady $7\frac{1}{4}$ cents per lb for nearly five years it started to decline in 1905 under the pressure of competition, particularly between Pacific Coast Borax and Stauffer, and it stood at 6 cents in 1907. Then, as soon as the new railroad to Lila C. was completed, in August 1907, the price declined dramatically to $4\frac{1}{2}$ cents, and following the Democrats' cut in the tariff in 1909 it sank to the all-time low of 3 cents in 1910.³⁹ The borax mines were to be badly hit by these price-changes. In 1907 both Western Mining and America Borax closed down their operations at Daggett, and output had started to decline at Stauffer's Frazier Mountain mine, as Smith had forecast, and mining ceased the following year.⁴⁰

For a brief few months Smith and the Lila C. mine seemed to be about to have it all their own way.

However, in August 1907 two old-time Western prospectors, Shepherd and Eppinger, were working near Lang in Tick Canyon, some forty miles from Los Angeles, trying to wrest a living from an old Spanish gold-mine. Shepherd found some glistening white crystals, of which a sample was sent to Blumenberg at Daggett. Blumenberg identified them as high-grade colemanite, and hopped on the first train to Lang. The bush telegraph brought 'Wash' Cahill⁴¹ from Smith's company stationed at Ludlow fast on his heels, with John Ryan soon to follow, but Blumenberg got there first, and lode claims* were staked out.⁴² In addition, Thorkildsen was also soon on the scene, and he used the earlier placer claims of two prospectors called Cook and Hopkins to challenge Blumenberg and establish his own claim. The prospectors each sold their interest on a basis of deferred payment, Shepherd and Eppinger through Blumenberg to the American Borax Company⁴³ (whose principal shareholders were Dawes and Myler), while Cook and Hopkins sold to Thorkildsen.⁴⁴ A battle between Blumenberg and Thorkildsen ensued; but after some months it seems that Thorkildsen's placer claim to the mineral rights was accepted, and an agreement to form the Sterling Borax Company emerged on 15 January 1908. This now included a 40 per cent interest for Stauffer, 40 per cent for Dawes, Myler and Blumenberg (American Borax Co.) and 20 per cent for Thorkildsen and Mather.⁴⁵

Stauffer was back in borax-mining, and this made a strong combination of raw-material miners, refiners and end-users of borax in the enamel trade. Thorkildsen was elected president and general manager in charge of the mine, and as an ex-employee of Smith's with a chip on his shoulder, he set out to make life difficult for his old employer and for the Lila C. mine. This was quite an easy objective, as the Lang mine was only five miles from a branch of the Southern Pacific railroad, leading straight to Los Angeles and the coast, and the freight cost per ton was six dollars less than from Lila C. Smith, of course, had his spies out, and thought that Lang was yet another mine that might cut out suddenly, but instead it survived and prospered. By 1910 output had reached 12,500 tons a year of good-quality colemanite, which represented about 30 per cent of the American market.⁴⁶ Once the hideout of the bandit Tibercio Vasques, who was hanged in 1875, Lang again became active as a mining camp. It housed as many as a hundred miners during its peak, and continued to produce until 1922, after which it provided many a setting for Western movies.

Since they got together in 1904, Thorkildsen and Mather had been successfully developing their business, and it was said that Mather never wearied of poaching on Pacific Coast Borax's sales preserves. Through their mining interests in California, first with Stauffer at Frazier Mountain in Ventura and later at Lang near Los Angeles, they always managed to obtain sufficient ore for their refining needs without having to depend on their former company. In October 1908 Dawes and Myler bought out Blumenberg's small interest in the Lang mine and made a deal with Thorkildsen and Mather to sell them their 40 per cent interest in Sterling Borax Company, together with their refinery.⁴⁷ Mather and Thorkildsen thus held a 60 per cent interest in Sterling Borax Co. and they had two refineries, one at Chicago and the one at New Brighton, Pennsylvania – now called

*See footnote in Chapter 3 (p.44).

the Brighton Chemical Company – while the selling organization remained the Thorkildsen and Mather Company. The Lang mine was by now a serious threat to Smith's company, and Sterling Borax were showing a lively interest in selling to some of the larger European customers at that time supplied by Borax Consolidated, as well as supplying the German refinery which Stauffer had built in 1909 at Gernsheim in Worms.

In the context of the financial troubles which confronted Borax Consolidated, arising from the new railroad to the Lila C. mine, there was an urgent need to control the situation. Borax Consolidated, Limited were therefore eager to negotiate with the Sterling Borax Company, but it was not until the autumn of 1911 that they found (perhaps surprisingly) that the parties concerned were in a mood to sell. The further decline in the price of borax in 1910 had diminished the importance in Stauffer's eyes of being basically in borax, and Thorkildsen, who had been in close touch with Zabriskie and Ryan for a number of years and had played hard to get, probably now convinced himself and Mather that it was a good time to sell.

At the end of 1911 separate agreements were made with the two shareholders for Borax Consolidated to acquire their holdings in Sterling Borax for a total sum of \$1.8m.⁴⁸ Stauffer received \$125,000 in cash and a further half-million dollars in the form of notes repayable over five years and carrying interest of 5 per cent. There was also a contract to supply them with ore, including supplies to their refinery in Germany. The agreement with the Thorkildsen and Mather Co. provided for the payment of \$1,175,000 over an extended period, and again there was a contract to supply their refineries with ore and Thorkildsen remained President of Sterling Borax. To the outside world the change in ownership passed unnoticed and the company continued to function as before. Even Roy Osborne, the Superintendent at the Lang mine, did not know about it until some years later.

The Calm brothers (Columbus Borax Co.) had high hopes of selling their colemanite mine at Ventura and small refinery in New Jersey to Pacific Coast Borax. In January 1907 Max Calm told Zabriskie that they could mine 1,000 tons a month, and had blocked out thirty years' supply of ore reserves.⁴⁹ They would be prepared to sell for \$1.25m., and he asked that Smith – who was in the West Indies – should be told that their properties were not on the market, but the 'offer was only due to the pleasant relations between us these many years'. Actually the mine was producing at a rate of about 150 tons a month, and after a visit by Ryan and Corkill, Pacific Coast Borax were not inclined to make an offer. By 1909 the mine closed, and was later reported flooded.⁵⁰

There were some other scares and threats to the supremacy of the Lila C. mine. In 1907 Blumenberg turned up in Death Valley, where he reported the discovery of a fifteen-foot ledge of colemanite in Furnace Creek Wash, and after trying unsuccessfully to sell the deposit to German bankers he started working it;⁵¹ but in the face of falling prices he did not succeed.⁵² Once Stauffer became interested in the Lang Mine production at Frazier Mountain had declined rapidly, and it closed in 1909. In December 1911 a German financier called de Fries (not the Borax Consolidated director) floated the National Borax Company, which acquired the Calms's Columbus mine and business (now called the US Borax Company) with the intention of reopening the mine and later combining it with a mine belonging to W. H. Russell, about half a mile south-west of the Calms's property and near the township of Stauffer.⁵³ The new enterprise planned to supply a refinery in Germany. However, the Russell mine closed at the end of

1912 owing to mining difficulties, the plans of the National Borax Company did not materialize, and through failure to meet payments the Columbus mine reverted to the US Borax Company.⁵⁴ In August 1913 Borax Consolidated approved the purchase of the US Borax Company from the Calm brothers for about \$240,000, thus acquiring a closed colemanite mine, a small refinery which they closed later, and a small share of the market.⁵⁵ Owing to a legal dispute, completion was delayed until 1915, when it was financed by a dollar issue of 6 per cent gold bonds. The Russell mine was acquired by Stauffer at the end of 1913, but it was never reopened.⁵⁶

Thus Borax Consolidated had won the battle of the colemanite mines, but, as both Sterling Borax and The Calms Company had been bought mainly with loan money,³⁷ it all became part of a heavy burden of debt in difficult circumstances to be outlined in the next chapter.

REFERENCES

1. Thorkildsen–Mather letters 1897 (US Borax files).
2. Shankland, Robert: *Steve Mather of the National Parks* (Alfred Knopf, 1970), p.37.
3. F.M.S. Ann. Reps. between 1900 and 1907.
4. F.M.S. to R.C.B., 9.11.04.
5. F.M.S. to R.C.B., 17.10.02.
6. F.M.S. to R.C.B., 28.10.03.
7. F.M.S. Ann. Rep., 1905/6.
8. F.M.S., 16.8.03.
9. F.M.S. to R.C.B., 2.6.04.
10. F.M.S. Ann. Reps., 1903–10.
11. Minute Book, and F.M.S. Ann. Rep., 1905/6.
12. F.M.S. Ann. Reps., 1901–5.
13. F.M.S. Ann. Rep., 1906–10.
14. Zabriskie to R.C.B., 27.2.1900.
15. F.M.S. to R.C.B., 25.5.01, 10.3.04.
16. F.M.S., 20.6.03.
17. F.M.S., 1.12.1900.
18. F.M.S. Ann. Rep., 1909/10.
19. F.M.S., 3.11.99.
20. F.M.S., 16.2.1900.
21. F.M.S., 25.5.01; F.M.S. Ann. Rep., 1901/2.
22. F.M.S., 27.4.04.
23. F.M.S. Ann. Rep., 1906/7, also Smitherman's Annual Mining Report for 1906/7.
24. F.M.S. to R.C.B., 7.4.99.
25. F.M.S., 28.11.03.
26. F.M.S. to R.C.B., 21.4.1900.
27. Yale, C. G.: 'The Production of Borax in 1904', in *US Geological Survey* p.9 (Washington, 1905).
28. F.M.S., 26.4.98.
29. R.C.B. to F.M.S., 26.4.98.
30. F.M.S. to R.C.B., 6.4.04.
31. F.M.S., 1.9.03.
32. Steiss, A. J. and O'Donnell, V. H.: *Stauffer Chemical Company – Work in Borax 1956* (Revised).
33. F.M.S. to R.C.B., 24.3.98.
34. F.M.S. to R.C.B., 2.3.99.
35. F.M.S., 12.3.98.
36. (i) 'American Borax Company – Mines and Plant' by Fred Corkill, 3.1.06. Borax Hse archives.
(ii) Yale, C. G.: 'The Production of Borax in 1903', in *US Geological Survey* pp.11–14 (Washington, 1904).
(iii) Bailey, G. E.: 'The Saline Deposits of California', in *Cal. State Mining Bur. Bull.* 24 (1902), p.39 and pp.69–70.

37. (i) Yale, C. G., *op. cit.*, p.10.
 (ii) Struthers, J.: 'The Production of Borax in 1902', p.8 in *US Geological Survey* (Washington, 1903).
38. F.M.S., 27.4.04 and 12.5.04.
39. M.D., 6 and 13.11.07; F.M.S. Ann. Repts., 1906-10.
40. Yale, C. G.: *US Geological Survey: Mineral Resources 1908*, pp.604-5 (Washington, 1909).
41. Cahill, W. W.: 'Recollections' - Notes by Ruth Woodman (US Borax archives).
42. Ryan to F.M.S., 2.9.07.
43. Ryan to F.M.S., 26.3.08.
44. Ryan to F.M.S., 2.1.08.
45. Ryan to F.M.S., 10.2.08. Zabriskie to F.M.S., 23.9.08 (gives shareholdings).
46. F.M.S. Ann. Rep., 1909/10.
47. Ryan to F.M.S., 19.9.08.
48. Minute Book, 26.9.11 and 24.10.11.
49. M. Calm to Zabriskie 28.1.07, and Zabriskie to Ryan 19.2.07.
50. F.M.S. Ann. Repts., 1909/10 and 1910/11.
51. Ryan to F.M.S., 19.9.08.
52. M.D. to Zabriskie, 14.4.08.
53. M.D., 16.12.11 and 8.1.12.
54. M.D., 21.1.13, also Yale and Gale, 'The Production of Borax in 1913, in *US Geological Survey*, Part II, p.522 (Washington, 1914).
55. M.D., 13.8.13 and Minute Book, 6.1.14 and 27.4.15.
56. Yale and Gale, 'The Production of Borax in 1914', p.287, in *US Geological Survey* (Washington, 1915).
57. Minute Book, 26.9.11, 24.10.11 and 18.2.13.