



**ALFRED L.
DUPOUNT**

**THE MAN &
HIS FAMILY**

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is competing with the Du Pont Brandywine mills when everyone knows that it is simply a subunit of Du Pont?

The issue was referred to the Executive Committee of the Du Pont Company. By this time, Haskell and Barksdale were willing to concede that most of the recently acquired companies, with their distinct product lines and individual marketing agreements, should be dissolved, but as former presidents of Laflin & Rand and Repauno, they continued to hold out for allowing a few exceptions to the general policy of consolidation. The Executive Committee vote proved interesting. Pierre and Moxham, of course, voted for consolidation with no exceptions. They were joined by Francis I. du Pont, Frank Gurney's eldest son, who now held a seat on the governing board. Surprisingly, Coleman voted with Haskell and Barksdale to allow exceptions, and even more surprisingly, Alfred cast the deciding vote on the same side. Alfred was still torn between modernization and preservation; he was still fighting to keep the ancient name and integrity of the Brandywine mills. Exceptions to total consolidation would be allowed, but Moxham and Pierre had the last word when they obtained an agreement from the majority that exceptions would be allowed only after a careful consideration of each individual case by the Executive Committee. Ultimately, Pierre and Moxham had the final victory. Exceptions were consistently disallowed and consolidation eventually became the totality that they had sought.²⁵

The resolution of the issue of consolidation in their favor was critical to the plans that Pierre and Moxham had already drawn up for the organizational structure of the new E. I. du Pont de Nemours Powder Company. Pierre could now put into effect the rational departmental structure he had already sketched out on paper, establishing administrative and operating departments comparable to the ministries in the French centralized state. The administrative departments consisted of Treasury, headed by Pierre; Sales, directed by Haskell; and Development, with Moxham as its head. The operating departments were Black Powder, directed by Alfred; Smokeless Powder under Francis I., who in 1904 became head of the new experimental station and was succeeded by Henry Baldwin, another brother-in-law of Coleman; and High Explosives (dynamite), headed by Hamilton Barksdale. Each of the department heads was responsible for the operation of his specified activity. He was to organize and set one departmental policy that would prevail throughout the many separate units of the company. He would delegate to the individual plant managers and administrative agents the responsibility for carrying out the policies and operational methods decided upon, ensuring uniformity throughout the organization. There would be, for example, one operational policy and method for making Du Pont black powder, whether that powder was made in the Hagley Yards

on the Brandywine or at the Sycamore plant in Tennessee. Gone were local, autonomous sales agents like Elliot S. Rice, who had for decades run his sales office in Chicago like a private fiefdom. Now a single sales force operated under directives issued from Haskell's office in Wilmington.

Not everyone adjusted easily to tightly centralized control. Moxham, reporting to Coleman, who was in California during the first few months that the new organizational structure was in operation, wrote: "In the main Haskell has been the greatest disturbing element, his past method having been to attend to very minute matters to such an extent that practically no one under him was a free agent." Barksdale, too, wanted to interfere in the policies of departments not under his direction. Apparently it was not easy for a former president to accept the lesser position of cabinet minister. On the other hand, Alfred, although he was vice-president in charge of all production, seemed willing to allow the heads of the departments of high explosives and smokeless powder to run their own shows. Moxham was pleased to report that "as far as organization is concerned, [Alfred] is in no way a disturbing element, but in every way an aid."²⁶ Moxham should not have been surprised. Alfred had argued for this kind of rationality in company organization for twenty years.

Each department head was a member of the Executive Committee, which in effect served as President Thomas Coleman du Pont's cabinet. The Executive Committee was to deal with "only the big questions. . . . We have to learn to leave details to Heads of Departments instead of trying to make them subjects of executive action," Moxham repeatedly counseled.²⁷ It was precisely this advice that Haskell and Barksdale found difficult to accept.

Over the president and the Executive Committee was the Board of Directors. Pierre had insisted on preserving this organizational remnant of the old corporate structure as a means of keeping the du Pont family's connection with the new company.²⁸ On the Board sat the family elders; Henry A., and, until their deaths in 1904, Cousins Frank and Alexis I., along with Coleman, Alfred, and Pierre. Although many able outsiders—men like Moxham, Barksdale, Frank Connable of the Chattanooga Powder Company, and Haskell—had been brought into the organization, it remained a Du Pont Company, owned and managed by the du Pont family. Pierre, like Alfred, believed in preservation, if only in form. But the du Pont elders knew very well that it was largely form, not function. The real executive power lay not with the Board of Directors but with President T. C. du Pont and the Executive Committee. The du Ponts still owned their company, but only because Alfred, Coleman, and Pierre had been brash and able enough to take over.

The family's third generation could only watch in bewilderment as the

Alfred's part that would justify the full board in removing Alfred as general manager of production.

Alfred provided the opportunity for an attack early in 1910, when he authorized, as part of his overall expansion program, a new black powder facility at Wilpen, Minnesota, to be built at a cost of \$350,000. Pierre made sure that his objections to the proposal were recorded. Eventually, Pierre was proved right and Alfred wrong. Black powder, which had once been the be-all and end-all of Du Pont production, was by 1910 running a distant second to dynamite in its share of company sales. A new black powder plant had not been needed, and the Wilpen facility never paid for the cost of its construction.

It had long been axiomatic within the Du Pont Company that Alfred was a black powder man and, like his Uncle Henry before him, regarded dynamite as being, at best, but a necessary evil in the explosives trade. Alfred had no quarrel with this statement. He always had been and always would be a black powder man. However, he would never accept the additional charge that he was totally ignorant of the high explosives field or that he was so set in his ways as to be unalterably opposed to new developments within the industry. The letters still extant, particularly his correspondence with Connable, show how knowledgeable Alfred was of all forms of high explosives manufacture, and how interested he was in chemical research. In 1904 he had been very instrumental in setting up the first experimental station exclusively devoted to the advancement of chemical research. It was at his urging that his cousin, Francis I. du Pont, was placed in charge of the facility, and the close bonds of friendship that had long existed between these two cousins were further strengthened by Alfred's keen interest in Francis's research. Alfred might not care much for dynamite or smokeless powder as explosives, but he was fascinated by the prospects that experimentation with cellulose provided for the possible future development of synthetic fabrics. Yet so assiduously has the theme of Alfred's obsolete anti-quarian interests been pushed, that in time it has become accepted even by the historians and biographers who are the most sympathetic to Alfred's career.³¹ Black powder became as much a part of the Alfred I. du Pont legend and as limiting to his true historical significance as stub candles and goose quill pens were to the Boss Henry du Pont story.

Even more than Alfred's eagerness to expand the black powder facilities, his response to the antitrust suit that the United States government brought against the Du Pont Company in 1907 provoked his two cousins' displeasure, bringing to a head their determination to remove Alfred from his position in charge of production. This protracted and momentous trust-

busting suit had a somewhat trivial beginning in a civil suit brought by a former employee of the Du Pont Company.³² Robert S. Waddell had begun his career in the explosives trade as a salesman for Du Pont powder in Ohio. With his flashy manners, glib talk, and grandiose promises, Waddell was exactly the type of salesman who would appeal to Coleman. To the disgust of old-time sales personnel like E. S. Rice, Coleman, soon after taking over the presidency of the company, made Waddell general manager of the Sales Department. In this influential position Waddell was able to obtain a great deal of information regarding the inner workings of the company, including trade agreements with its own subsidiaries and with supposedly active competitors, both domestic and foreign. Waddell learned how much it cost Du Pont to produce a pound of smokeless powder (47¢) and how much it cost the U.S. military forces to purchase a pound of this vital material (69¢), over the manufacture of which Du Pont had a virtual monopoly. A profit of 22¢ per pound was not a bad return. All of this information Waddell carefully filed away for future use.

In 1903, Waddell left Du Pont to become president of his own company, the Buckeye Powder Company. The move came as a surprise to Coleman, since Buckeye was a small, inefficient operation that had no possible chance of success in the powder industry, but the game its former general sales manager was playing soon became clear to the Du Pont Company. Waddell offered his company for sale to Du Pont at a price that would return to him a very handsome profit. His was one of the many "spite companies" created solely for the purpose of being bought out which Alfred had adamantly opposed buying. This was a spite company with an added punch, however, for Waddell had accurate information that could prove very damaging to Du Pont if made public. And Waddell had every intention of going public if Du Pont did not meet his price. It was a plain case of blackmail, and even Coleman agreed this time with Alfred that here was one small competitor that should not be bought. To yield to Waddell's blackmail attempt would be sheer folly.

At first, neither Coleman nor Pierre took Waddell's threat seriously. Both men underestimated the importance of the data that Waddell had been able to collect and to take with him when he left the company. Both, moreover, clearly failed to appreciate the climate of the times. The year 1906 marked a high point of antitrust sentiment in the United States. Teddy Roosevelt in the White House was swinging his very big stick and speaking not softly, but very loudly indeed, about the "malefactors of great wealth." The press, with the Hearst papers in the vanguard, was screaming for action by the federal government against the evil trusts that were extorting their ill-gotten pelf from a helpless consumer public. Roosevelt, ever

would indulge himself in this particular sentimental journey. Turning to Maloney he said, "I won't be here much any more. I won't feel like coming. But I intend to keep track of the Brandywine people. Maloney, if I ever hear of one of them being in need and neglected, I'll hold you responsible. When anyone needs help come and see me."⁵⁰

With that final instruction, Alfred turned and hurried back to the Hagley gates, where a car was waiting to take him into Wilmington. Thus ended his farewell to the Brandywine.

It must also have seemed to him that the day marked the end of the long power struggle of one du Pont against two du Ponts. Alfred had no illusions that his change of position within the company meant a promotion for him. Coleman and Pierre had wanted him out of production, where his authority was real and meaningful, and they had won out. As vice-president without portfolio Alfred did not expect to carry much weight on either the Executive Committee or the Finance Committee, and he wasn't at all sure how he would manage to fill up a normal work day.

Much to Alfred's surprise, however, he quickly discovered that he was not as bored or as isolated in some inane bureaucratic limbo as he thought he would be. Frank Connable was considerate enough to keep Alfred personally informed of developments within the Black Powder Department and was not too proud to consult occasionally with his former boss on issues where his advice could prove valuable.

Alfred now had the time to make an intensive study of high explosives. He quickly learned enough about the technology of dynamite and smokeless powder manufacturing to be able to evaluate and pass judgment on various mechanical inventions that were submitted to the company for consideration. Most of these so-called improvements proved to be worthless, but Alfred kept waiting for a genius to come along who could translate some of Alfred's own imaginative dreams of chemical breakthroughs into patentable realities.

Alfred fully expected that that genius would be his younger cousin, Francis I. du Pont, now in charge of the experimental station Alfred had built in 1904. The two men had along ago discovered themselves to be kindred spirits within both the company and the family, but never had they been as close as they became in these years immediately following Alfred's removal from the Black Powder Department.

Alfred and Francis frequently talked over some of the visionary schemes they shared, and one that stood foremost in their minds was the possibility of extracting nitrates from the air. This idea was not unique to them, of course. Other powdermen had the same tantalizing dream. What a boon it would be to the industry if it no longer had to be dependent on the nitrate fields of such distant places as India and Chile for potassium or sodium

nitrate. Since 78 percent of the earth's atmosphere consists of nitrogen, an inexhaustible source of this indispensable product would be available if only a way could be found to "fix" the atmospheric nitrogen gas, that is, to combine it with either hydrogen or oxygen to produce nitric acid and ammonia. Some of the lowest and simplest forms of life on the planet, certain soil bacteria, either free-living within the soil or attached to the roots of legume plants, such as alfalfa and peas, have this capacity to fix nitrogen and convert it into amino acids essential for all life, but no laboratory had been able to duplicate this remarkable feat.

Francis turned his attention to the task of fixing nitrogen, and eventually he actually succeeded, in a very primitive fashion, in extracting nitrates from the air—but not in sufficient quantity to make it seem commercially practical. It would take World War I and the British blockade of Germany to provide a necessity compelling enough to mother the invention of the process that would fix nitrogen in order to provide the nitrates essential for Germany to manufacture explosives and wage war without benefit of the Chilean nitrate fields.

Other fascinating possibilities for chemical research kept occurring to Alfred during these years. There was the problem of the waste products that the manufacture of high explosives left as noxious residue to pollute the land and streams of New Jersey where the plants were located. Alfred kept urging others to find methods for recycling these chemical wastes which would be of immense benefit to both the company and the environment, but he elicited little interest or cooperation from the plant personnel. Production was industry's only concern. A concern for conservation and environmental protection lay far in the future.

Alfred also became increasingly interested in the question of diversification. There was a limit to the market for explosives in industry and sport—only so many tunnels to blast out of solid rock, only so many hunters to take aim and fire on only so many ducks. There was, to be sure, that other market that had in the past so often proved to be a source of rich profits for the Du Pont Company—the military. The major powers of the world in this first decade of the twentieth century were feverishly building up great navies and stockpiling vast quantities of ordnances for possible future wartime use. Alfred's concern was that Du Pont and other powder-makers were too dependent upon the military market, which might become even more limited in its demands for explosives than the commercial industrial market. For if the first decade of the new century was a time of battleship building and inflammatory jingoism, it was also paradoxically a moment when the ancient dream of international peace seemed to be not an utopian illusion but a practical and attainable reality. No one who was as intelligent and as careful a reader of newspapers and journals as Alfred

was in the years between 1900 and 1914 could fail to be impressed by such developments as the establishment of a World Court at the Hague in 1902, by President Taft's arbitration treaties of 1911, or by the millions Andrew Carnegie spent in the hope of purchasing world peace. Crazy as it might seem, perhaps the pacifists who were now confidently asserting that the last Great War had already been fought were right.

These were airy and heady speculations, but they led to a very down-to-earth conclusion. Du Pont needed to explore the possibility of diversification of its products. The nineteenth-century amateur pioneers in chemical research, men like John Hyatt and James Brown in England and Count Henri de Chardonnet in France, had already shown that cellulose nitrate could be used to produce something other than a big bang—celluloid billiard balls and a new synthetic filament that Alfred's friend, Edison, found to be exactly right for his incandescent lamps.⁵¹ A whole brave new synthetic world was waiting to be spun out of cellulose nitrate, and the Du Pont Company would be well advised to work on developing products that would attract customers other than military officers, construction engineers, and hunters.

Unfortunately, Frances I. du Pont could not offer either his scientific facilities or his laboratory to further Alfred's interest in diversification. Francis was required by the terms of his employment with the company to utilize his time and his facilities only for experiments that were directly applicable to the development of explosives. Thus being deprived of both Miller Hutchison's medical expertise and Cousin Francis's chemical research, Alfred had to strike out on his own to explore the entirely new field of scientific research that had suddenly attracted his attention.

In his autobiography Henry Adams wrote of the effect that this new science, or "vis nova" as he called it, had on his own thinking. Any "man of science," he wrote, "must have been sleepy indeed who did not jump from his chair like a scared dog when in 1898, Mme. Curie threw on his desk the metaphysical bomb she called radium. There remained no hole to hide in."⁵² Alfred was no "sleepy scientist." He did indeed jump from his chair when he first read of Madame Curie's discovery. The strange new force that she had extracted from pitchblende seemed to defy all the well-established laws of an orderly Newtonian universe. Alfred jumped, not like "a scared dog," but like an eager pointer who has just got the scent of an exotic new game. He was not seeking a hole to hide but rather to dig in.

In 1911, Alfred entered into a partnership with Dr. Howard Kelley, a Baltimore surgeon and member of the Johns Hopkins medical faculty, who promised to do research on cancer treatment if Alfred would furnish the radium. Alfred proceeded to do just that. He hurried out to Colorado and

bought, for the bargain price of \$15,000, four uranium mines near Central City that his geologist friends believed to contain "the highest grade of pitchblende yet discovered." The *Wilmington Morning News*, belatedly reporting on this new venture, stated on 11 October 1913 in an editorial titled "Important Work for Humanity," that "medical and other scientific men will be greatly interested in the hope expressed by Mr. Alfred I. du Pont of this city that radium will be produced in sufficient quantities so that it can be utilized in the ordinary treatment of disease. . . . Mr. du Pont's plan for the development of the mines is of world-wide importance and significance, and the spirit that has prompted him in the undertaking deserves and will receive the highest commendation."⁵³

Over the next few years Alfred invested \$80,000 in the four uranium mines, and 140 tons of pitchblende were extracted, of which about 15 tons were of a sufficiently high quality to produce radium. He was able to present Dr. Kelley with one gram of radium for his medical experiments.

Other interests and concerns crowded in to demand Alfred's attention, however, and in the summer of 1914, just prior to the outbreak of the Great War, Alfred sold his mines to a German company that, interestingly enough, was sponsored and supported by the German government.⁵⁴ Whatever may have been the motivation for the Germans' taking over the American uranium mines in 1914, Alfred's interest seems to have been entirely humanitarian. He had proved to his own and to the medical profession's satisfaction that America had the natural resources and the technical capability to produce a gram of Madame Curie's strange new force, which, he hoped might prove to be the "magic bullet" with which to shoot down cancer.

Henry Adams had been more correct when he called the newly discovered element "a metaphysical bomb." It took thirty more years of highly theoretical speculation and intensely technical experimentation, however, before Einstein, Fermi, Urey, and Oppenheimer could convert the abstract metaphysical into the terrible physical bomb with which to destroy Hiroshima. Certainly, Alfred had no idea, on the proud day when he presented Dr. Kelley with the gift of radium, that out of the same ore which they hoped would prove to be an elixir of life there would also come another element that had the potential to destroy all life. Alfred would not live long enough to appreciate the grim irony that lay in the fact that he, a du Pont, had been one of the first men in America to promote the development of uranium mining that would produce the substance to make even the high explosives of the Du Pont Company seem, by comparison, like the puny pops of a child's cap gun.

With this catholicity of interests that led him from the waste dumps at