

The doctor's art collection

Paid for by silver

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The author (AQA, Harvard Medical School, 1962) is editor of *The Pharos*. He recently visited the Barnes collection, and was inspired to write this essay, which was sent for review under a *nom de plume* to avoid influencing the reviewers.

He was unique; his life and character were a maze of confusing contradictions. Though usually blunt and honest to a fault, he repeatedly claimed that he made his millions through the discovery of Argyrol when, in truth, another chemist discovered the medication and Barnes made his fortune by promoting it. His Foundation was meant to be an example of democracy at work, yet he ruled over it like a monarch and banished all those who defied his wishes. He collected paintings in order to educate the masses, but he rarely allowed anyone the privilege of entering his gallery.

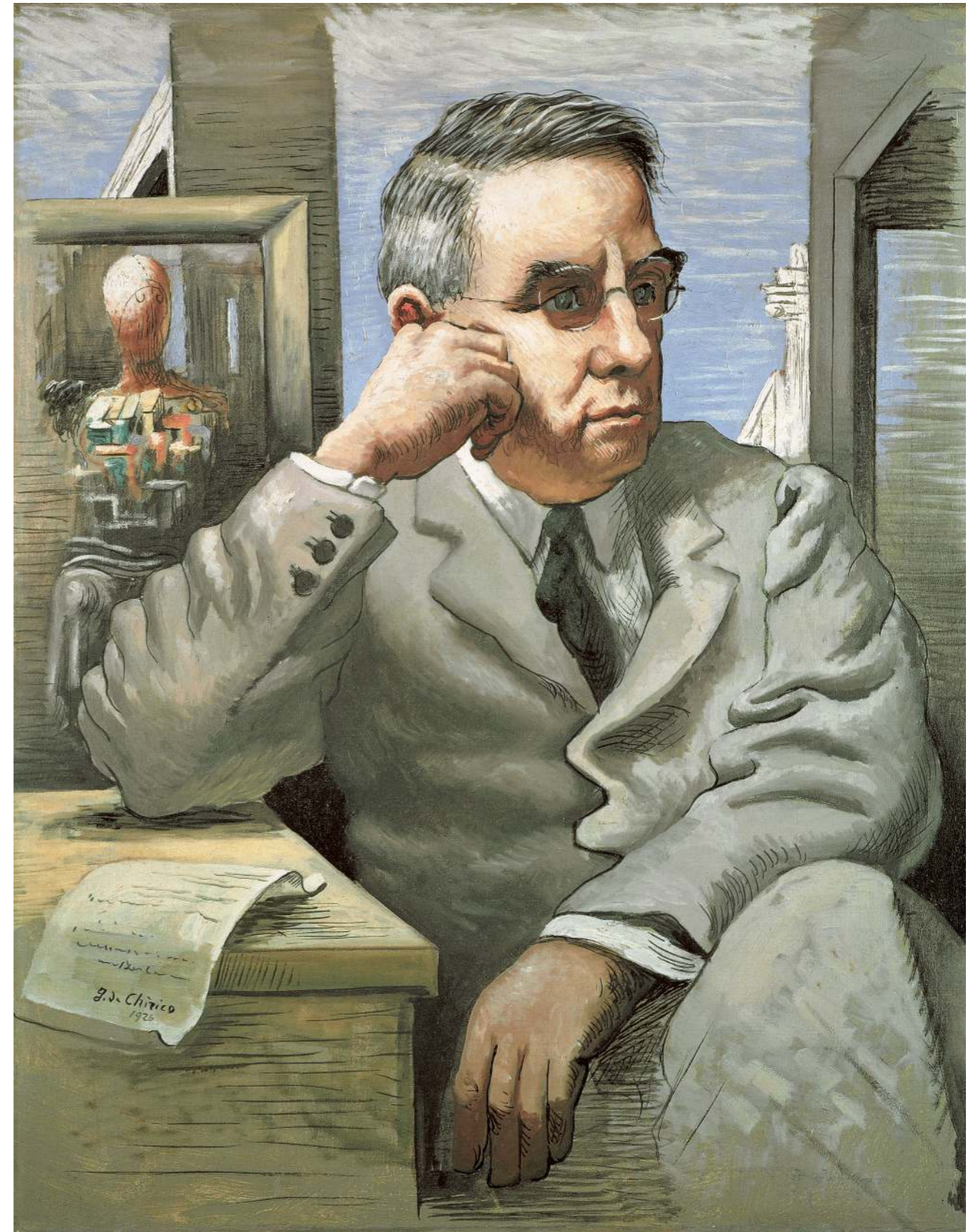
—Howard Greenfeld
The Devil and Dr. Barnes^{1p3}

In the summer of 1900, at age 28, eight years after receiving his M.D. from the University of Pennsylvania, Albert Coombs Barnes paced along the Neckar River in Heidelberg, Germany. His mission: to convince a Ph.D. student about to defend his dissertation in chemistry to come to the United States and join him “in the search for a medicine with a good benefit-to-risk and benefit-to-cost ratio”^{2p11} that would earn them a lot of money.

Barnes's beginnings: Poor but determined

Barnes grew up in the poor and often violent Kensington section of Philadelphia. Survival there depended on use of fists, and he became an adept fighter. Even as a youth, however, he had an interest in different cultures and art. He was able to pass the stiff entry exam for the all-male Central High

“Dr. Albert C. Barnes,” Giorgio de Chirico, 1926. BF #805.
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School, the best by far in Philadelphia's public education system for the "promising poor."

After graduating from Central High, Barnes matriculated at the University of Pennsylvania School of Medicine in the fall of 1889, and earned his M.D. there in 1892. There is no evidence from his writings or actions that he was at all interested in, or had the temperament for, diagnosing or treating sick patients. He was, however, curious about psychology and psychiatry, and served an internship at a state hospital for the insane in Warren, Pennsylvania. His primary talents and interests were in chemistry. During several trips to Germany during the 1890s, Barnes became fascinated with the potential of experimental therapeutics and with how clever chemistry might yield drugs for treatment of the sick. It was during that decade that Felix Hoffman's company, Bayer, synthesized acetylsalicylic acid, the compound to which patients are returning for relief of inflammation and pain now that the reputation of selective COX-2 inhibitors has become tarnished. Aspirin was the first mass-marketed drug in the world, and joined heroin, morphine, and quinine as members of a tiny pharmacopeia that doctors could dispense to their patients.

During that period, Barnes worked intermittently for the H.K. Mulford Company, the reputable developer of diphtheria and tetanus antitoxin and a smallpox vaccine that was eventually bought by Merck.^{2p10} It was during this period that Barnes' entrepreneurial instincts blossomed. If Hoffman at Bayer could succeed with such a simple compound, why, so could he!

Colloidal silver is a success

The promises of wealth and scientific excitement dangled before Hermann Hille were sufficient to convince him to join Barnes. Throughout 1900, Barnes and Hille, employed during the day by Mulford, set up a laboratory in a converted stable in downtown Philadelphia. Barnes was the idea man, Hille the chemist. In that pre-antibiotic era, few compounds were known to be active against bacteria. One of these was silver nitrate: a few drops placed in the eyes of newborn babies infected in utero with *Neisseria gonorrhoea* could prevent blindness. Unfortunately, however, silver nitrate irritated mucous membranes. Silver in its various forms had been used for

centuries. The Greeks kept water in silver vessels to prolong its freshness, and pioneers in the North American West found that silver coins in wooden casks of water retarded contamination. Barnes knew that European chemists had experimented with attempts to bind silver to proteins, and he and Hille began work on the same project. Mary Ann Meyers, in her book, *Art, Education, and African-American Culture: Albert Barnes and the Science of Philanthropy*, tells us,

Barnes [and Hille] extracted gliadin, a protein found in wheat and rye, and, through a process involving evaporation, dehydration, drying, and heating, converted it into a vitellin, a protein occurring naturally in egg yolks and in certain plants. To a salt solution of vitellin, they gradually added [a] concentrated (30 percent) solution of silver nitrate [to final concentrations of 19 to 23 percent silver].^{2p14}

After drying, the final material appeared as brown or black brilliant flakes or granulated powder, slowly soluble in water, and insoluble in alcohol or ether. In this form, it could be sold to druggists, who reconstituted it in water or glycerin for use by patients. Not much more is known about the preparation because Barnes and Hille never applied for a patent, a process that would have required them to disclose the manufacturing process and the exact chemical composition. They did, however, register their name for the compound, Argyrol, as a trademark, on November 18, 1902.

The partners' next steps were to increase production and to convince others that Argyrol was useful. Dr. Edward Martin, then chair of Urology at Penn, found that catgut impregnated with Argyrol reduced cutaneous infection after suturing. Another urologist at Penn reported Argyrol to be "the best silver compound ever offered to the [medical] profession for the treatment of gonorrhoea."^{2p14} Professors of obstetrics recommended using it in the eyes of every newborn child instead of silver nitrate.

Barnes traveled abroad to promote Argyrol, and by 1904, sales offices had opened in London and Sydney. In 1903, a series of 24 cases was reported in the *Lancet*; using 2.5 to 5.0 percent solutions in urethral irrigation, gonorrhoea was symptomatically cured, and eight successful cases were reported in detail from New Zealand.³ Argyrol, this nontoxic bactericidal compound for topical or intra-urethra use, was a phenomenal success. By 1907, the net annual profit for Barnes and Hille was

more than \$186,000,^{1p111} thanks in part to aggressive legal action against cut-rate sellers of imitation Argyrol. Textbooks of ophthalmology of the time strongly recommended Argyrol for acute conjunctivitis and ophthalmia neonatorum, and some circumstantial evidence supports the belief that the disappearance of trachoma in Australia sometime between 1915 and 1930 was related to the abundant use of Argyrol.⁴

The breakup of Barnes and Hille

In 1907, Barnes and Hille, after long and contentious legal battles, broke up. A judge ruled that the two should negotiate for the best price of buying the other out of the business; Barnes agreed to pay the higher amount and became sole owner of A.C. Barnes Company. Hille left for Chicago, where he set up a thriving chemical business of his own, and the two men had no more interactions with each other. Each took full credit for conceiving and developing Argyrol. We know little about Hille's personality, but that of Barnes' was difficult at best. Howard Greenfeld, in his book, *The Devil and Dr. Barnes*, describes him as

stubborn, strong-willed, doggedly opinionated, and totally unwilling to compromise. Then, as later, he found it impossible to see two sides to any question. He never doubted he was right, and those who disagreed with him were more than merely wrong—they were his enemies.^{1p23}

Argyrol remained successful for Barnes, a good administrator and businessman, until he sold his company in 1929 for \$6 million, just months before the crash of the stock market.

Prescribed learning for the Argyrol workers

Despite Barnes's unyielding nature, he was consistently generous in thought and deed to the underprivileged, although somewhat dogmatic in his opinions of what was best for them. The black men and white women he employed in his enlarging enterprise worked at their jobs only six hours each day. During the remaining two hours of their workday they were required to read philosophy, history, novels, and plays—all selected by Albert Barnes. One of his associates was given the challenge each day of "unpacking" the complex ideas of William James, John Dewey, and George Santayana, and presenting them to the minimally educated workers.^{2p20} Pragmatism, the belief developed by the three philosophers that there are no foregone conclusions in life, was dominating American philosophy. Barnes wanted each of his employees to appreciate these ideas, rooted in a belief that mankind could manipulate its environment.

The art collection

Overshadowing the success of Argyrol, and the disputes concerning its origins and efficacy, is Barnes's art collection. With the help of one of his Central High classmates, William

Glackens (also an accomplished artist), Barnes began, at about the time World War I was precipitated, to purchase paintings of the Impressionists in Europe. One of his first acquisitions was van Gogh's "Joseph Etienne-Roulin" (also known as "Postman"). By 1920, Barnes had acquired more than 100 paintings by Renoir and hundreds of others by Cezanne, Monet, Soutine, Matisse, Picasso, Seurat, El Greco, van Gogh, Modigliani, Manet, Degas, and Rousseau. There was no room to hang them in his house in Lower Merion, a comfortable suburb of Philadelphia, but Barnes purchased a 12-acre property, an arboretum across Latch Lane from his house. Barnes recruited Paul Phillipe Cret to design for him within the arboretum a French Renaissance-style structure with many galleries illuminated by natural light. The building, named the Barnes Foundation, was opened in 1925, and John Dewey gave one of the inaugural addresses. Barnes prescribed the location of each picture in each gallery, and added chairs, tables, and wall hangings.

The bylaws

The bylaws of the foundation were drawn up in 1922, and with clever legal help Barnes was able to fashion a document acceptable to the Commonwealth of Pennsylvania, stating that the charter would be granted to an educational institution and not to a museum, and that Barnes himself would have full control of the foundation, even after his death. The bylaws stated that the collection could not be changed or added to after his death, nor could pieces be moved from the places chosen by Barnes, nor could any picture ever be loaned.

For the next four years, Barnes pursued his goal of linking the future of his foundation with his alma mater, the University of Pennsylvania. His final offer, in May 1926, was a plan whereby Penn would "ultimately have control of all of the Foundation's resources, with an income ample to support it in perpetuity, provide instruction, and award scholarships."^{1p121} This offer was essentially ignored by the University. Unpleasant exchanges between Penn and Barnes (as well as with the Philadelphia Museum of Art) continued over the next 25 years. At one point, in a fit of pique, Barnes changed the bylaws of the foundation to stipulate that no one associated formally with Penn could ever serve as a trustee of the Barnes Foundation. The bitter disputes with the University of Pennsylvania, with Bertrand Russell (whom he had invited to give lectures at the foundation in a five-year contract),⁵ with the city of Philadelphia, and so many others, are summarized well in the books of Mary Ann Meyers and Howard Greenfeld.^{2,1} Barnes instead forged a relationship with Horace Mann Bond, president of Lincoln University, distinguished for educating Thurgood Marshall, Langston Hughes, and many other distinguished African-Americans. Having no children to benefit from his estate, Barnes gave Lincoln the power to nominate, after his death and that of his wife, four-fifths of the trustees. Shortly after making this decision, and



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"Joseph Etienne-Roulin," Vincent van Gogh, 1889. BF #37. Photograph © reproduced with the permission of The Barnes Foundation™. All rights reserved.

perhaps preoccupied with one conflict or another, in 1951 the 78-year-old Barnes ran a stop light while driving his Packard and was killed instantly when a ten-ton tractor-trailer hit him broadside.

The future of the collection

Today, those who wish to see the unique collection at the Barnes Foundation, with its 170 Renoirs, 55 Cézannes, 20 Picassos, and many other works, or the surrounding 12-acre arboretum, must telephone well ahead to reserve a time for admission because, in an agreement with Lower Merion commissioners, only 1200 visitors are allowed each week. The foundation's attempts to raise revenue by increasing public access have met with hostility from the neighbors. These restrictions have inexorably dragged the foundation toward bankruptcy, despite the collection's estimated value of more than \$1 billion.

Fortunately for art, culture, and horticulture lovers, in a case that attracted broad interest for three years, on December 14, 2004, Judge Stanley R. Ott of the Montgomery County Orphans' Court ruled that the Barnes collection could be moved from Lower Merion to downtown Philadelphia into a new building that would be constructed to recreate the current Barnes galleries. The move, unless impeded by appeals, will be backed by pledges of \$150 million from the Annenberg Foundation, the Lenfest Foundation, and the Pew Charitable Trust. Opposition from Lincoln University was withdrawn after it was assured continued high representation on the board of the foundation. Admission to see the collection will increase fourfold, and the price is likely to be doubled, although, in keeping with what might have pleased Albert Barnes, only 100 visitors will be allowed into the galleries at any given time.

The fate of Argyrol

But what of Argyrol? Its commercial success was clear: Barnes sold his company in 1929 for \$6 million, 17 years after introducing Argyrol. My own Baby's Record includes this entry:

August, 1938 (age 13 months). He seemed to be on the borderline of a cold. Dr. Hergesheimer suggested olive oil, camphorated oil, and Argyrol, for ears, chest, and nose, respectively. Probably kept him in the lake too long on Sunday.

I recovered! But not long after this, sulfonamides and, six years later, penicillin became available. Non-antibiotic therapy for eyes, ears, and noses gradually dropped out of use. In 1985, a paper published in the *Australian and New Zealand Journal of Ophthalmology* stated, "Argyrol has now disappeared."^{4p393}

In 1999, at a hearing about whether or not to add "mild silver protein" to the "bulks list" of the Pharmacy Compounding Advisory Committee of the FDA, Dr. Wiley Chambers reported that a number of studies, including one from as early as 1928, suggested that Argyrol was not an effective product.⁶ The creation of a protein-silver complex produced less mucous membrane irritation, but its relative insolubility in water made it less effective. In a study that compared Argyrol with other compounds, the silver-protein complex was a less effective bactericidal drug than even thiomersal. Argyrol lost out even to silver nitrate, the compound it was created to replace. Silver nitrate is once again used in neonates' eyes.

But Argyrol is not gone. An opportunity for Argyrol entrepreneurs came in 1998/99 when the FDA, citing the Dietary Supplement Health and Education Act, stated that it would no longer review food supplements, and colloidal silver compounds were declared to be among these. Today, it is not difficult to find and purchase Argyrol on the Internet. Advertised as a "breakthrough," the compound is claimed to be "Effective against 650 infectious agents; no known disease-causing organism can live in the presence of silver." Unfortunately, these ads imply that Argyrol might help to cleanse body systems if given by mouth. The result has been more frequent reports of argyria, the generalized cutaneous discoloration caused by silver salt deposition in basement membranes of sweat glands and dermal elastin. One man, who had been ingesting colloidal silver protein for a year to ward off colon cancer and dandruff, had serum silver levels of 76.9 nmol/L (normal: 0 to 2.8 nmol/L).⁷ A similar and sad case was reported as a Medical Mystery in 2004. A poignant photograph shows a very dusky grey young man, 16 years old, sitting beside his very fair mother, who is holding him with a combined look of love and guilt; she had given him the colloidal silver "to prevent everyday infections." His silver level was 209 ng/ml (normal: 0 to 14 ng/ml).⁸ Fortunately for these patients, internal organ involvement is uncommon (in contrast to iron overload syndromes such as hemochromatosis), but the grey pigment caused by deposition silver salts and stimulated melanin formation persists.

What is important about all of this? Not whether or not the University of Pennsylvania and the Barnes Foundation trustees speak to each other, nor whether Argyrol advertisements on the web are declared unethical. The important challenge is to provide a new home for the Barnes Foundation collection in a new and spacious site so that more and more art lovers can view this unmatched collection. Whatever the outcome—thank you, Argyrol!

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"Girl with Pink Bonnet," Pierre-Auguste Renoir, early 1890s. BF #118. Photograph © 1992. Reproduced with the permission of The Barnes Foundation™. All rights reserved.