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Infectious insanities, surgical solutions: Bayard Taylor Holmes, dementia praecox and laboratory science in early 20th-century America. Part 2*

RICHARD NOLL**
DeSales University

Part I of this article on Bayard Taylor Holmes (1852–1924), a Chicago physician and surgeon, detailed his laboratory research on dementia praecox and his presumed discovery in 1915 of evidence in support of a focal infection theory of its aetiology. In May 1916 he began to experiment with a rational therapy based on this theory: abdominal surgery and daily irrigations of the colon. He operated first on his own son, who had been afflicted with dementia praecox since 1905, but he died four days later. Part II deals with Holmes’ continued surgical treatment of dementia praecox patients and the outcomes of the operations. It also describes how Holmes set up the short-lived Psychiatric Research Laboratory of the Psychopathic Hospital at Cook County Hospital in 1917, and discusses the dismissal of a key research colleague, H. M. Jones, whose experimental results directly contradicted those of Holmes.

Keywords: autointoxication theory in psychiatry; Bayard Taylor Holmes; dementia praecox; focal infection theory in psychiatry; surgical treatments in psychiatry

Chicago as the epicentre of autointoxication theory in American medicine

The aetiologic theory of dementia praecox proposed by Holmes was highly congruent with theories of self-infection, autointoxication and focal infection in medicine and psychiatry which were peaking in popularity during World War I. Perhaps the most significant validation for his autointoxication theory

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** Address for correspondence: Psychology Department, DeSales University, Center Valley, PA 18034-9568, USA. Email: Richard.Noll@desales.edu
came from a prominent Chicago physician whom Holmes knew personally, Frank Billings (1854–1932). Billings, the Dean of the Faculty at Rush Medical College and a past President of the American Medical Association (1902–04), generated publicity for his focal infection theory of disease after giving a series of lectures on the topic at the Stanford University Medical School in September 1915 (Billings, 1916). His theory proposed that the primary focus of infection in the body was the mouth where rotting teeth, inhaled tonsils and bad oral hygiene produced toxic bacteria that were inhaled into the lungs or swallowed or otherwise entered the blood stream and caused systemic diseases such as rheumatoid arthritis, endocarditis and nephritis. As a founder and President of the Board of Trustees of the Otho S. A. Sprague Memorial Institute since its inception in 1909, Billings was instrumental in funding and, at times, directing laboratory research on focal infections as they relate to systemic disease (Hirsch, 1966).

The new publications of Holmes and Retinger in primarily local or regional medical journals, and the promotion of the new autointoxication theory of dementia praecox by Holmes at various Chicago medical and charitable societies, attracted the attention of Billings, who was interested in extending his focal infection theory to psychiatry. It also attracted state and local officials excited by the prospect of finding new treatments for insanities, and thus empty institutional beds. In October 1915, Holmes began negotiations with H. Gideon Wells, the Director of the Sprague Institute, and the alienist George Zeller of the Board of Administration of the State of Illinois, to establish a 'Cooperative Research Laboratory' at the Chicago State Hospital at Dunning, to conduct research into his focal infection theory of dementia praecox and to develop possible cures for this disease. The Board approved the idea in a resolution dated 15 October 1915, and, with the endorsement of Wells, Billings and his Board of Trustees of the Sprague Institute voted to fund the project in a meeting on 17 December 1915. Holmes and Retinger accordingly began slanting their publications to signal their approval of Billings and his ideas.

The 'Contract of the Cooperative Research Laboratory at Chicago State Hospital' was modified, extended and then signed on 3 April 1916. The Board of Administration ordered the emptying of patients from an isolated building known as 'Ward W', and blueprints were drawn up to divide the building into five laboratories, including an experimental treatment unit. But this never happened. The Sprague Institute suddenly balked at further cooperation with Holmes. The building remained vacant for eight months and then, due to the crowded conditions at the Chicago State Hospital, the building was re-occupied by patients. Holmes was furious. 'The contract failed . . . because of the neglect of the director of the Sprague Institute, Dr. H. Gideon Wells, or of the trustees of the institute behind him.'

"The Sprague Institute abandoned the undertaking without notice or apology", he continued to fume, years later (Holmes, 1922b: 133).

Why did Wells, Billings and the Sprague Institute distance themselves
from Holmes and his work on dementia praecox after April 1916? Perhaps it had something to do with the sudden shift in focus from basic research to radical treatment that followed the signing of the contract for the proposed Cooperative Research Laboratory by the newly emboldened, and temperamentally incautious, Bayard Taylor Holmes.

April 1916: ‘I intended to act upon the rational indications without delay’

April 1916 was the high-water mark of the career of Bayard Holmes. He had articulated an autointoxication or focal infection theory of dementia praecox that was congruent with current medical thinking and had conducted primary research that, he believed, provided compelling evidence supporting it. He had received the blessing of the powerful Sprague Institute and was promised financial backing for a complex of laboratories to be devoted solely to work on his discoveries, a dream of his since 1911. And it was in this month that Holmes submitted for publication the paper he regarded as his most significant contribution to science, ‘The relation of caecal stasis to dementia praecox’. Holmes underwent a personal transformation in his thinking at this time. The careful laboratory researcher had become impatient, and the physician/healer in Holmes now supplanted the cautious scientist. As he himself later noted when reflecting back on his career, ‘[this article] was offered for publication in April 1916. The facts it contains seemed to me irrefutable at the time and I intended to act upon the rational indications without delay’ (Holmes, 1921a: 137). And so he did. As the months of stalling by the Sprague Institute dragged on, Holmes refused to wait for the opening of the Cooperative Laboratory to conduct further research before trying out experimental treatments: ‘It has been forced upon me as a conviction that in a condition so desperate, treatment should be begun even before absolute scientific demonstration of a theory could be reached’ (Holmes, 1918c: 48).

Caecostomy or appendicostomy followed by daily irrigations of the caecum would be the new rational treatment of dementia praecox. If the irrigations were performed daily to prevent faecal stasis in the caecum, the toxaemia symptoms of dementia praecox should diminish or disappear entirely. For Holmes, this treatment was rational in two senses. First, it followed logically from his theory of the cause of dementia praecox. And second, it was consistent with contemporary medical practice. Surgical removal of teeth, tonsils, sections of organs or other bodily tissue had long been the only effective treatment available to believers in the focal infection theory of Billings and others, such as the surgeon William Arbuthnot Lane (1856–1943), who believed that colectomies were appropriate to treat constipation and to prevent autointoxication arising from faecal stasis (Dally, 1996). In Britain, autointoxication due to intestinal stasis is still known as Sir Abuthnot Lane’s Disease. As the medical historian Roy Porter (1997: 601)
pointed out, focal sepsis was a ‘fashionable interwar diagnosis’ that led to numerous medical misadventures. But it was literally cutting-edge medical science in 1916. Abdominal surgery had already been conducted on psychiatric patients, primarily women, who suffered the removal of their ovaries or uterus in an attempt to cure neurasthenia or hysteria. Only relatively recently (Kraepelin, 1896), dementia praecox had been described as a diagnostic entity, and there was no body of medical literature on the efficacy of surgical interventions. If dementia praecox was a true physical disease caused by a focal infection in the caecum, it made perfect sense to Holmes – a specialist in abdominal surgery who had written a textbook on the subject in 1904 and who knew and was influenced by the work of the famous Lane – that surgical intervention was a rational response. Like many surgeons, Holmes had an almost fetishistic fascination with one specific bodily structure, in his case the appendix, which he considered ‘the most mournfully interesting and unique structure in the body’ (Holmes, 1904: xv).

In May 1916 Holmes proceeded with his rational treatment, carrying out the first operation on his own son, Ralph (aged 28) who had been ill since 1905, but he died 4 days later. However, Holmes never admitted this in print, and he lied about the history of his radical new procedure: ‘The first patient that I performed appendicostomy upon was a boy of 20 who had been sick only two years.’ (Holmes, 1922c: 80). This patient, ‘A.H.’ was in fact the second patient to have the operation, conducted by Holmes on 25 July 1916 at Lakeside Hospital in Chicago, despite the fact that his first experience with this technique had ended in tragedy.

A very small incision was made as if for an appendectomy, and the appendix brought into the wound. No gross pathology was observed in this region. The appendix was rather large but not inflamed. About two-thirds of the mesentery of the appendix was ligated and cut away. The cecum was stitched to the peritoneum and fascia of the abdominal wall on both sides of the wound. The short incision was then closed around the appendix in layers with fine lasting catgut. The skin was closed and last of all the protruding portion of the appendix was cut off a quarter of an inch from the skin, one half at a time, and fastened open with silk stitches holding the mucosa and serosa together and fastening both to the skin. (Holmes, 1922c: 80–1)

Penetrating the resulting stoma with a glass-tipped rubber hose, Holmes performed an irrigation of the caecum using water with magnesium sulphate, and then later taught the patient and his father how to do the daily irrigations.

During the following six months his father irrigated the colon through the appendix with water, in which a small amount of magnesium sulfate was dissolved. The patient sat on the stool in the bath room. The ten-quart pail was hung about five feet above the stool and connected by an ordinary rubber tube with a dull glass point to the appendix. When the irrigation was begun the father read aloud to his son, thus passing the time profitably.
According to Holmes, the patient was less delusional and much improved after the operation even five years later, though there remained a ‘pronounced mental defect’ (Holmes, 1921b: 233).

Holmes eventually came to believe his treatment would work best and perhaps even cure dementia praecox if it was performed either before or directly after the first psychotic break. Patients who had been sick for many months or years – such as his son Ralph – would probably not be helped very much by the procedure. Like Henry A. Cotton, Holmes believed that early surgical intervention could prevent the chronic course of the illness (Scull, 2005: 45–6, 57).

Holmes operated on a third dementia praecox patient, a 21 year-old male, on 3 October 1916 at Lakeside Hospital. The young man had become ill in March 1915 and was removed from Elgin State Hospital in Illinois for the experimental surgery; on recovery he was returned to the hospital. No improvement in his condition occurred until 5 months of daily irrigations had taken place. After being released in March 1917, the patient continued the irrigations himself at home and made a full recovery. (Holmes, 1919a, 1922c: 82). Holmes enthusiastically used this patient as living proof of the correctness of his new treatment, mentioning his case in many of his later writings and encouraging him to give testimonials of his cure at professional meetings to Holmes’ medical colleagues. Holmes would routinely publish the names, addresses and intimate details about the lives of the patients who received this experimental treatment so that others could verify his new treatment and possible cure of dementia praecox.

Shortly after operating on this young man, Holmes rushed into print, in late October 1916, a description of his new rational treatment for dementia praecox, claiming prematurely that he had operated on two patients and that they were both ‘apparently improved’ (Holmes 1916: 702). Holmes began to convince his colleagues of the soundness of the new experimental treatment. Two more dementia praecox patients were operated on for Holmes at Cook County Hospital by Wyllis Andrews, M.D. In all, by 31 December 1916, Holmes reports that five patients had received this experimental treatment.

Two of the operated patients are now at the Elgin State Hospital where the irrigations are being continued. Three of them are at home. The first patient was operated on in July, the last one in December. All of them have improved in weight, and the blood pressure has approached normal. The mental condition is said to be better.4

The Psychopathic Research Laboratory, 1917–18

Holmes had carried out the operations after his work with Retinger was abruptly halted on 1 April 1916 when private funds ran out and all their laboratory equipment was taken from the Psychopathic Hospital space and returned to Cook County Hospital.
After the demise in late 1916 of Holmes’ dream of the Cooperative Research Laboratory, he lobbied hard for a new laboratory and convinced the following to approve his proposal: Joseph Miller, M.D., the medical director of Cook County Hospital; John Nuzam, M.D., the head of the clinical laboratories at Cook County Hospital; Adam Szwajkart, M.D., the Director of the Psychopathic Hospital; and the Board of Commissioners of Cook County, Illinois. On 18 April 1917 the top floor of the Psychopathic Hospital in Chicago was formally designated the Psychopathic Research Laboratory of the Psychopathic Hospital, Cook County Hospital. The space contained a full hydrotherapy suite with four continuous tubs, but the facility had never been used. Holmes and his colleagues covered the tubs with tall laboratory tables that were to be worked at while standing. One large room was filled with ten beds for experimental subjects with dementia praecox. Other large rooms became laboratories for bacteriology and physiology, and a smaller one became a ‘blood laboratory’. An ‘animal house’ was constructed on the roof (Holmes, 1922c: 87–8).

The Psychopathic Research Laboratory remained open for only ten months, until February 1918. The entry of the USA into the war in Europe in 1917 led to the reallocation of funds by Cook County and disruptions in medical and nursing staff. Holmes served as its Director, and Retinger was hired full-time as its biochemist. The remainder of the clinical staff were: Horry Matthew Jones, bacteriologist, who had received his PhD in bacteriology from Northwestern University in 1916; Walter Ford, M.D., psychiatrist; H. C. Stevens, PhD, M.D., psychologist; James Henderson, blood morphologist; Paul Headland, clinical assistant; and Leola Sexton, A.B., entertainment and re-education. During its brief existence, the laboratory admitted 30 patients to its experimental research inpatient unit, but 10 remained only a few days before being discharged or sent elsewhere because they were not suffering from dementia praecox or because permission for experimental treatments could not be gained from parents or guardians. Of the 20 genuine dementia praecox patients treated, 10 were discharged as ‘recovered’ or ‘greatly improved’, 3 were committed to state hospitals at the request of the researchers, and 7 were still residing in the laboratory when it closed.

Three experimental treatments were tested. The first consisted of administering calcium lactate with meals to bolster calcium levels in the body. Holmes had read clinical reports that indicated a lack of calcium led to muscle spasms, including those in the intestines such as spasms of the sphincter known as the ‘ring of Cannon’ that Holmes had come to believe was causing the caecal stasis in dementia praecox patients. No improvement was ever found with this treatment. A more promising remedy was intravenous injections of saline, which led to improvements in the symptoms of 2 of 18 dementia praecox patients on whom it was administered. But the third and most effective treatment was, of course, appendicostomy and daily irrigation of the
caecum and colon. Eight patients underwent this surgery and procedure, and all were among the 10 discharged as ‘recovered’ or ‘greatly improved’ (Holmes, 1918d).

But right from the start, all was not well in the laboratory. During the official opening night reception Sidney Kuh, a powerful physician with Cook County Hospital, made remarks critical of Holmes and his research programme and this emboldened others who were irritated by Holmes’ fiery temperament. Prominent among these was Julius Retinger, who began to resent Holmes. Two months into the operation of the laboratory, Holmes wrote Retinger an emotional letter (4 June 1917), confiding at first, ‘You know that I love you like a son and admire you and your splendid intellect.’ But Holmes then issued a sharp rebuke for the ‘very many deficiencies’ in Retinger’s work ‘due to neglect’ and ended with a threat: ‘You must be more attentive to your own work, less conspicuous elsewhere, or I shall be obliged to terminate our business relations and I shall do it on June 30.’ The chill in relations between the two men progressed to the point that Holmes fired Retinger in December 1917. ‘My laboratory has had a sort of revolution and Retinger is discharged’, Holmes wrote to one of his most generous financial backers, George Fuller. ‘The trouble began in what Dr Kuh said the night of the opening Apr. 18, Dr. Retinger took his cue from that and began intriguing for my displacement and his own elevation.’

Retinger also did not get on with the newly hired bacteriologist, Horry M. Jones. On 5 September 1917 Holmes wrote to Adam Szwajkart, the director of the Psychopathic Hospital, that ‘During the past three months there has been a constant condition of petty quarrelling between Dr Retinger and Dr Jones and it has been necessary for me to take them aside and discuss matters with which the laboratory has absolutely nothing to do.’ Holmes then asked Szwajkart to dismiss Jones and keep Retinger. But there may have been another reason for Holmes writing this letter: Jones had participated in the same research as Holmes and Retinger, but had arrived at entirely different interpretations of the data. Furthermore, Jones had been vocal in raising serious methodological questions about the scientific soundness of their work. Jones was dismissed in September 1917 and replaced by Enrico Ecker. Stunned, Jones wrote to Adolf Meyer for guidance. The letter is worth quoting in its entirety:

Dear Doctor Meyer:—I have just been summarily dismissed from the Cook County Hospital Psychopathic Laboratory by Dr Bayard Holmes for my inability to agree with him and his chemist regarding their theory on the etiology of Dementia Praecox. However, during the investigation, I have collected a mass of data and observations, which I am anxious to publish, although directly opposed to every phase of their theory. For example, some XRaygraphs to which I have access, entirely disprove Dr Holmes statements in regard to the cecal-stasis caused by the constriction of the ring of Cannon. This statement although not fundamental to their
theory has been made so often, and if true, ought easily to be proved by them with actual X-rayographs, instead of Dr. Holmes’ free-hand drawings.

Early in the investigation I made a comparison of the bacterial flora of the stools of normal controls and of Dementia praecox patients. Among the organisms isolated for study was found one which I later proved was able to produce histamine from histadine and which proved to have all the ear-marks of a B. aminophilus intestinalis of Berthelot and Bertrand, an organism which Dr. Holmes now refers to so freely as being a constant inhabitant of the intestinal tracts of Dementia Praecox patients. This organism, which, as my daily records will show, was isolated from the stool of the Chemist himself, was then mixed in definite proportions with feces and plated on a specially prepared or selective medium and found to be easily recovered and recognized directly on the plates. (In all the specimens examined, thirty-eight counting the controls, no other organism was found which in pure culture produced detectable quantities of histamine from histadine.) This selective medium was then used for direct plating of the stool of the patients, and in no case was it possible to recover a single colony of this organism on plates showing as high as five hundred colonies per plate with ten plates to each sample of stool. In other words, I tried hard to find the organism. The chemist, however says he finds histamine in the stools of the patients but I am able to say positively that since I have been here he has not examined one single specimen from normal controls to see if it may not also be found in persons other than Dementia Praecox patients, in spite of the fact that I detected in a normal stool and demonstrated in his presence a substance giving the Pauly reaction and the oxytocic reaction of tyramine, a substance produced by the same peculiar action of the histamine producing organism.

At present I am looking for a position where I shall not be forced to pervert my laboratory findings to fit some preconceived theory, but I am writing to you primarily to learn your opinion of the worth of this theory in the light of your knowledge of the disease, and also for your advice as to how I can get the data I have accumulated into print.

Very sincerely,
[signed] H. M. Jones

Meyer’s response – if any – has not surfaced. Jones quickly composed a scientific paper that has stood the test of time as the only serious attempt at scientific criticism of the research of Bayard Holmes (Jones, 1918). The editors of the Journal of Infections Diseases received the paper from Jones on 5 October 1917, less than a month after he was dismissed. By early 1919 he had found a position in the Department of Pathology and Bacteriology, University of Illinois, College of Medicine, in Chicago. But it is clear from the information contained in this letter that Holmes’ own dictum, ‘the laboratory will show up a false teacher in the shortest time’, had come back to haunt him.
The Yankton experiment

Ignoring the serious scientific objections to his theory of dementia praecox, Holmes continued to dispense his cure. In the autumn of 1917 he received a request for a consultation from Leonard C. Mead, M.D., the Superintendent of the Yankton State Hospital in South Dakota. He wrote concerning the misfortunes of the Lauer family who had a son and two daughters in his hospital, all with dementia praecox. Holmes offered to go to Yankton and help any way he could. In the latter half of November 1917 Holmes lectured to the medical staff of Yankton State Hospital on his theory of dementia praecox and his therapeutic successes reached through surgery and irrigation of the caecum. Impressed by these apparent medical breakthroughs, Mead and his medical staff agreed to co-operate in a grand experimental test. Seven dementia praecox patients underwent the appendicostomy: the three afflicted members of the Lauer family, and four other patients. In a two-year follow-up assessment of the treatment, the results were mixed. Of the members of the Lauer family, one (the son) died from peritonitis following the operation, one made no improvement whatsoever, and the third, who had just been admitted for the first time, completely recovered and by September 1919 only took an ‘occasional irrigation’. Of the four unrelated patients, one female recovered after 8 months and was working and doing well; one male recovered after 9 months and was also working and doing well; another female showed no improvement, and a final female improved after 18 months but was still not well and had to be taken care of at home (Holmes, 1919b).

By the time of the closing of the Psychopathic Research Laboratory in February 1918, Holmes or other surgeons who had been instructed by him had performed appendicostomies on at least 21 dementia praecox patients. Neither Holmes nor his colleagues performed any more surgical procedures on dementia praecox patients after this date. However, Holmes instructed a surgeon in Orlando, Florida, to conduct one last surgical treatment in 1919, bringing the total to 22 patients.9

Just a few months later, in July 1918 at the Trenton State Hospital in New Jersey, Henry A. Cotton conducted the first of 645 major surgical procedures (laparotomies, colectomies, hysterectomies, thyroidectomies, and so on) over the next 14 years, one-third of them on dementia praecox patients, one-third on manic-depressive patients, and one-third on patients with milder psychiatric illnesses (Scull, 2005: 308). By Cotton’s own reckoning, 25–30% of these procedures resulted in the death of the patient. Of the 22 dementia praecox patients operated on by Holmes or his colleagues, only two died from complications following surgery, confirming the claim by Holmes that his surgical treatment for treating mental illness was superior to that of Cotton’s, which ‘crippled’ his patients:

A small number of cases have been treated by this method [appendicostomy] under favorable conditions, but too many have been ‘operated
on’ and then left without carrying on the months long irrigation of the colon and years long re-education of the crippled patient. (Holmes, 1921a: 137).

‘A sad fate fulfilled ... a factor in the great call for more knowledge’

‘I shall be at Fairhope, Ala., for the next few months’, Holmes writes to the editor of Medical Life, Victor Robinson, on New Year’s Day 1923. ‘I have been quite sick and must lay up.’ He revealed he had been suffering from a ‘toxic myocarditis’ for quite some time. In fact an infection of his left hand had developed into an inflammation of his heart and had rendered him a semi-invalid by August 1922. Holmes knew the end was near. He gathered his personal papers relating to his scientific and political careers and donated them to the John Crerar Library at the University of Chicago. He also wrote a farewell address for those interested in his research programme on dementia praecox that was published posthumously. ‘And so it has come to this. I can personally do no more. Spiritually and physically I am disheartened ... I am down and out, but not melancholy’ (Holmes, 1924: 235).

While Cotton of Trenton State Hospital in New Jersey had, due to his own self-promotion, become a medical celebrity in the popular press in America for his surgical treatment of the focal infections that caused the insanities, Holmes followed the traditional ethical path of physicians of his era and resisted such a strategy. Despite his keen knowledge of the power of the press, which he had used to his advantage in his political campaign for mayor of Chicago and his public health crusades, Holmes did not seek out journalists to sell his cure. But sticking to the tried and true path of aiming his publications at medical colleagues ultimately failed him. As his life neared its end, Holmes suffered intensely from the fact that his own major medical contributions – his hypothesized cause and its rational treatment for dementia praecox – had been resoundingly ignored by the scientific community. The fact that Cotton never referenced him in any of his publications, nor gave him credit for the priority in developing surgical treatments for dementia praecox, must have particularly galled Holmes.

Holmes became weaker, and he eventually died at his Alabama home on 1 April 1924. He was buried in the cemetery in Fairhope. On the front page of The Fairhope Courier (11 April 1924), an article ‘Dr Bayard Holmes Passes to Rest’ is prominent. It contains a description of a memorial service held at his home. ‘No man ever gave more than he gave – no one ever loved more than he loved his son – no one served better than he served’, said Mrs John O’Connor, a friend and neighbour from Chicago. ‘His ambition had been centered in this son, so he retired from his practice to minister to him in the home they had built together – a great man – who had made the great sacrifice in the eyes of the world’ A letter to the editor from a Fairhope
neighbour also identified the agony of the father with the fate of the lost son. ‘I knew Dr Bayard Holmes in Fairhope, Ala., know his beautiful home, and know him by sight only. There was something sad about it all, and it must have been the “mental” illness of his son that made of him a “reclus” in Fairhope.’

But perhaps it was not the mental illness of his son, but the gnawing memory of how it had ended, that had eventually driven Holmes to retreat into his Alabama sanctuary. Ralph had died one month after his father’s decision ‘to act upon the rational indications’ of his theory of dementia praecox ‘without delay’. One week after Ralph’s death, Adolf Meyer had composed a letter of condolence to Holmes. ‘A sad fate fulfilled – unlike many others, having been a factor in the great call for more knowledge’, he wrote. We can only wonder if, at the end of his life, when reflecting on Ralph, Holmes may have wished for a more patient temperament and moderation in his quest for more medical knowledge. Martyred by his father, the son cannot tell us if the ‘great sacrifice’ was worth it.

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Notes

1. ‘Contract of the Cooperative Research Laboratory at Chicago State Hospital’, document dated 3 April 1916. Crerar Ms. 093, Special Collections Research Center, University of Chicago Library, Chicago, IL [hereafter SCRC].
2. Bayard Holmes to David Galloway, 14 April 1917. Crerar Ms. 099, SCRC.
3. See: ‘The Laboratory for Psychiatry’ in Holmes (1911: 135–146). In this proposed framework for such a laboratory, Holmes is highly critical of existing laboratories in institutions for the insane: ‘One institution of more than 1,000 patients did not have a functioning microscope for several months. One psychopathic institute did not have a microscope, a manometer or an urinalysis outfit in the institution. It was as devoid of diagnostic instruments of precision as a Christian Science temple.’ (p. 138).
4. Bayard Holmes, ‘Second Annual Report of Dementia Praecox Studies Conducted by Dr Bayard Holmes at the Psychopathic Hospital, Chicago, Under the Direction of Dr
5. Bayard Holmes to Julius Retinger, 4 June 1917. Crerar Ms. 099, SCRC.
6. Bayard Holmes to George Fuller, 23 Dec. 1917. Crerar Ms. 099, SCRC. Within a year after his termination, Retinger found a biochemist position in Chicago at the Durand Hospital of the John McCormick Institute for Infectious Diseases. See Julius Retinger to Adolf Meyer, 1 Nov. 1918. Adolf Meyer Collection, The Alan Mason Chesney Medical Archives of the Johns Hopkins Medical Institutions, Baltimore, MD [hereafter AMC].
7. Bayard Holmes to Adam Szwajkart, 5 Sept. 1917. Crerar Ms. 099, SCRC.
8. H. M. Jones to Adolf Meyer, 7 Sept. 1917. AMC.
9. This estimate is based on the initial May 1916 experiment that killed Ralph Loring Holmes, the 5 appendicostomies or caecostomies Holmes reported he and others had performed between July and December 1916, the 8 dementia praecox patients operated on during the tenure of the Psychopathic Research Laboratory from April 1917 to February 1918, the 7 persons operated on as part of the ‘The Yankton Experiment’ in November 1917, and a single case of the 24-year-old male operated on in Orlando, Florida, by surgeon Clyde Brady on 1 Aug. 1919 under instructions from Holmes.
11. ‘Dr. Bayard Holmes passes to rest’. The Fairhope Courier (Fairhope, Alabama), 11 April 1924, front page. Bayard Taylor Holmes Papers, History of Medicine Division, National Library of Medicine, Bethesda, Maryland.
13. Adolf Meyer to Bayard Holmes, 30 May 1916. Draft of the letter on Meyer’s personal stationery, with stenographic shorthand. AMC.

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