

The Benjamin Ives Gilman Collection Recorded at the 1893 World's Columbian Exposition at Chicago (1893)

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Benjamin Ives Gilman was among the first people to attempt to transcribe music from ethnographic field recordings—in fact, he may have been the first person ever to take this task seriously enough to theorize about it and test its technical limits. At the World’s Columbian Exposition of 1893 in Chicago, he recorded a remarkable set of cylinders of music performed by representatives of “exotic” peoples on display there from around the world, mostly in “villages” spread out along the Midway Plaisance. He appears to have done little with these particular recordings himself once he’d made them, but they survive today as the oldest known audio documentation of multiple musical traditions, including gamelan.

Back in 1890, when Jesse Walter Fewkes had obtained his groundbreaking cylinders of Passamaquoddy songs and stories and was looking to get their content into print, he’d transcribed the spoken material himself, but for the musical transcriptions he’d turned to Simeon Pease Cheney, a composer and singing teacher best known for his efforts to transcribe birdsong into standard musical notation. Fewkes had apparently felt that “wild” or “natural” birdsong and the songs of the Passamaquoddy were sufficiently similar to qualify Cheney for the job, but in the end Cheney’s transcriptions had turned out not to be particularly detailed or complex—like his transcriptions of birdsong, they resemble ordinary prescriptive song notations.¹ But Cheney had died later that same year, forcing Fewkes to find another collaborator to help him with his investigations of Zuni and Hopi music—and that’s when Gilman had entered the picture.

Unlike Cheney, Gilman—an up-and-coming academic specialist in the psychology and aesthetics of music—aimed to create musical transcriptions that would do justice to the unprecedented level of detail and accuracy the phonograph seemed capable of offering. But he didn’t want to take the machine’s abilities for granted, so he first made some recordings of notes played on a microtonal harmonium to test whether the phonograph could reproduce them accurately. He concluded that a phonograph run by treadle (like the one Fewkes had used for his Zuni recordings) was accurate within a quarter tone, while

a phonograph run by electric battery (like the one Fewkes had used for his Hopi recordings) was accurate within an eighth of a tone.² Encouraged by these findings, he felt justified in noting minute distinctions of pitch in the music he transcribed from Fewkes's cylinders and treating them as evidence that Zuni singing was based on intervallic relationships independent of the Western scale. He also tried his hand at making a few field recordings of his own, starting with some Chinese musicians in New York City in March 1891,³ and wrote to Thomas Edison seeking technical advice about how to get better results.⁴

Today it's well accepted that musical scales vary from culture to culture, but back in the 1890s Gilman's conclusions about the nuances of Zuni intervals proved controversial. The most vigorous counterargument came from John Comfort Fillmore, a musicologist who claimed that Native Americans recognized the same musical intervals as Europeans but, like Europeans, frequently sang off pitch. In Fillmore's view, the proper object of study was not what singers *actually* sang, mistakes and all, but what they *meant* to sing, which was why he preferred to transcribe Native American songs by hand from the mouths of live singers who could be asked about their intentions (for his own transcriptions, he even went so far as to supply harmonies he felt were implicit in the sung melodies). In a scathing review published in November 1893, Fillmore argued that Gilman's hyper-detailed transcriptions had succeeded only in making the Zuni songs musically unintelligible: "Indeed, if he had gone deliberately to work with the intention of obscuring the tonality and the harmonic relations of these melodies as much as possible, it is difficult to see how he could have succeeded better."⁵ He opened by chiding Gilman for not using standard time and key signatures (for instance, the transcriptions consistently show sharps rather than flats, regardless of key): "Is it possible that he imagined that these songs had no tonality, i.e., were not music at all, and that he looked on the task he had undertaken as merely a problem in acoustics?"⁶ Pulling no punches, Fillmore expressed his overall verdict as follows:

It is matter for regret that so much laborious work as has evidently been expended on these songs should have been so completely misdirected; and still more that science should fail of having now before it an adequate version of this interesting folk-music. Happily, the cylinders are still in existence, and in a place where hundreds of competent musicians are easily accessible; it ought not to be difficult to find one or more, both able and willing to transcribe these songs grammatically and intelligibly so as to make them accessible to students in really authentic shape. In the present version, it must be reluctantly confessed, they are of little or no use to anyone.⁷

Gilman's eventual response—published some years later—was to defend his transcriptions as "notations of performance and not of pieces of music," a difference involving "no less than a distinction than that between facts of observation and theories upon them.... A musical performance is a real event open to observation like any other; a piece of music is an ideal of event which any given performance more or less completely realizes."⁸ In his vision, the phonograph was more than just a convenient tool for recording the same data one might otherwise have recorded by hand. Instead, it furnished an entirely new object of study, and he was determined to explore it.

So that was the background Gilman brought to the field recording project that is the focus of this essay. It's worth noting, though, that the project itself may not have been his own idea. An early published reference to it states that Mary Hemenway—the philanthropist patron of the Hemenway Southwestern Archaeological Expedition and its associated "Journal of American Archaeology and Ethnology"—had "commissioned Mr. Gilman to make a collection of phonographic records of exotic music at the

Columbian Exposition in Chicago.”⁹ This wording makes it sound very much like the initiative for the project had come from Hemenway, and if so, that would establish it as part of a single continuous undertaking to which Fewkes’s earlier Passamaquoddy, Zuni, and Hopi projects had likewise belonged. Surviving correspondence shows that Hemenway and her secretary Sylvester Baxter had already made arrangements with Thomas Edison by August 1888 to obtain two phonographs for use in anthropological fieldwork once regular production began. When Fewkes had taken over the leadership of the Hemenway Expedition from Frank Hamilton Cushing in 1889, the groundwork for phonographic experiments had already been laid, so carrying them out had arguably just been part of his job description.¹⁰ Fewkes, too, had thus been “commissioned” by Hemenway to make his groundbreaking recordings, so to speak; and Gilman himself had already been drawn into the Hemenway fold by 1891, with his controversial Zuni publication appearing in the Hemenway Expedition’s own journal. It may not be too much of a stretch, then, to consider Gilman’s work in Chicago in 1893 as a continuation of the series of phonographic experiments Hemenway had launched under her sponsorship all the way back in 1888.

Whatever Hemenway’s role in initiating the project may have been, it was still up to Gilman to make specific arrangements for carrying it out. He accordingly wrote to Edison on September 14, 1893, asking for help, and received a letter of introduction over the inventor’s signature in reply, dated September 20th and addressed to the North American Phonograph Company’s general manager, Thomas Lombard:

This letter will be presented to you by Mr. Benjamin Ives Gilman, Curator of the Museum of Fine Arts, Boston, who visits Chicago for the purpose of securing phonographic records of the music of various semi-civilized or savage races now represented on the Midway Plaisance. Mr. Gilman wishes to obtain the loan of a phonograph for this purpose, and he is also desirous of obtaining some intelligent assistance in taking the records. I commend Mr. Gilman to your kind consideration and will appreciate any courtesies which you may extend to him.

He has already conducted some interesting experiments with the Phonograph, the results of which have been published, and his work in this connection is undertaken solely in the interests of science.¹¹

Armed with this letter, Gilman evidently got his hands on what he needed in time to put in a full day’s work in two “villages” towards the east end of the Midway Plaisance on Saturday, September 23rd. He started at 10:30 AM with the Samoan Village, which—despite its name—also included Fiji and Wallis Island (Uvea) within its scope. There he obtained ten cylinders of songs and dances, although partway through the session a European band tuned their instruments and began performing right outside, much to his annoyance. He then proceeded to spend the afternoon across the avenue at the Java Village. The spoken announcement on the first record he obtained there begins: “On the following cylinders, we propose to take the 1:30 performance in the Javanese theater.” By “we,” he probably meant himself and “Mr. Parker,” whom his notes from later in the day identify as operating a second phonograph. This was most likely Jesse M. Parker, an employee of the North American Phonograph Company in Chicago who had just given a presentation on “Special Entertainments” at the annual convention of the National Phonograph Association the day before.¹² Parker’s services may have been volunteered by way of the “intelligent assistance” requested in Gilman’s letter of introduction, but his presence also enabled the two of them to take turns while recording longer performances to avoid losing any content while fully-recorded cylinders were being switched with fresh blank ones. As the performance

unfolded, Gilman made occasional remarks into the “phonographic tube” (as he later described it) to explain what was happening on stage: “Exit of blue-faced man,” “Dance of red man and clownish person,” and so forth. Afterwards, he enlisted the performers’ aid in making a few additional records, including some that documented the individual pitches of the gamelan—presumably intended to support further investigations into non-Western musical intervals. In all, Gilman’s visit to the Java Village netted him thirty-four cylinders of Javanese and Sundanese content. Then, at 7:30 PM, he and Parker were back at the Samoan Village, where between the two of them they captured three successive performances on thirty more cylinders. The evening crowds were curious what Gilman was up to and peppered him with questions. *What was that gadget of his, a calcium light? Was it somehow helping those people on the stage?* Gilman took Sunday off, as far as we can tell, but he was on the job again bright and early at 8:45 AM on Monday, September 25th, recording nine cylinders’ worth of musical performances and instrument tunings at the Turkish Village, a little further west along the Midway Plaisance from where he’d been on Saturday.¹³

The recording sessions I’ve described so far all took place on the Midway Plaisance, and through them Gilman captured what are generally believed to be the earliest recordings of each of the traditions involved. But one group of recordings he made in Chicago in 1893 has yet to be accounted for—the group which Mary Hemenway, as sponsor of his project, would probably have found most gratifying, given her longstanding interest in Native American anthropology. These are the eighteen cylinders of what Gilman and his colleagues identified at the time as Kwakiutl or Vancouver Island Indian songs, although the preferred and more appropriate name for the culture group in question is Kwakwaka’wakw. In contrast to the other cases we’ve considered, Gilman’s notes don’t specify where these recordings were made, or when. Given that all his other Chicago recordings were obtained in the “villages” along the Midway Plaisance, some have speculated that the Kwakiutl cylinders were probably recorded there too, in the “Indian Village.”¹⁴ There was indeed such a “village,” but the Kwakiutl at the Exposition weren’t part of it. Instead, they occupied a pair of cedar-plank houses that had been shipped from the Pacific Northwest to Chicago and reassembled near the Anthropology Building—at the southeastern tip of the grounds, about as far removed from the Midway as it was possible to get—as part of a Northwest Coast exhibit arranged by anthropologist Franz Boas.¹⁵ Not only does this exhibit seem more likely as a recording location, but it also underscores that Gilman would have had to approach Boas for permission to record there. Boas must have agreed, but it seems he also decided he wanted to get in on the action himself, as Gilman’s session notes reveal: “Dr. Franz Boas is getting these [songs] for himself and for Prof. J. C. Fillmore.”¹⁶ In other words, Boas had allowed Gilman to make the recordings he wanted, but at the same time he arranged to make a duplicate set of recordings for himself and John Comfort Fillmore to study.

Yes, *that* John Comfort Fillmore. It’s true that Fillmore’s dismissive review of Gilman’s work on Zuni songs had yet to see print at this point—it was to appear in the November 1893 issue of “Music”—but even so, if Gilman had an arch-rival in the making, a Moriarty to his Holmes, it was surely Fillmore. At the Congress of Anthropology held on the Exposition grounds roughly a month before, Fillmore had presented a paper on “Primitive Scales and Rhythms” in which he had laid out his ideas about the universal character of Western harmony, asserting that his studies of Kwakiutl songs at the Exposition had reinforced the conclusions he’d taken away from his earlier work on Omaha songs and adding that his “study of the music of the South Sea Islanders, the Dahomeyans, the Javanese and the Chinese, so far as it has gone, confirms the conclusions reached in my study of the Omaha music and of the Vancouver songs. *It is all plainly harmonic in character.*”¹⁷ It would be hard to imagine a point of view more diametrically opposed to Gilman’s than this. And so the joint Kwakiutl recording session,

wherever and whenever it actually took place, may have been an unpleasantly tense occasion with these two rival interests facing off against each other, each collecting cylinders of the same exact songs to use in support of their opposing arguments. That said, it's not clear whether Fillmore himself was present during the session or not.¹⁸ But if I were a scriptwriter charged with dramatizing the scene for a TV mini-series, I'd take the artistic liberty of putting both Gilman and Fillmore into it, just so they could stare daggers at each other.

After Gilman had left with his eighteen cylinders, Boas—with or without Fillmore—continued recording more Kwakiutl songs on the phonograph until he had filled 119 cylinders in all, presumably over several days.¹⁹ Then, once the fair had closed, Boas and Fillmore set about collaboratively transcribing and analyzing this material and managed to get some results into print by 1897.²⁰ Their correspondence about the project, preserved at the American Philosophical Society, suggests that the cylinders themselves were technically the property of the Exposition Association,²¹ but in practice at least some of them ended up in Boas' custody at the American Museum of Natural History in New York and eventually made their way to the Archives of Traditional Music at Indiana University.²²

By contrast, Gilman never ended up publishing anything based on his Chicago recordings, whether the Kwakiutl ones or any of the others. His sponsor, Mary Hemenway, died in March 1894, and without her active support, it ended up taking him fourteen years to get even his transcriptions and analysis of Fewkes's earlier Hopi cylinders into print in a much delayed fifth and final volume of the "Journal of American Archaeology and Ethnology." That came out in 1908, which was the same year Gilman pulled together the rough notes on his Chicago recordings that form the basis for much of what we know about them today; apparently, he was making a general effort at the time to tie up loose ends. The cylinders themselves ended up accompanying Fewkes's to the Peabody Museum and, later, to the Library of Congress. For many years they languished in obscurity, only to be "rediscovered" in the course of the Federal Cylinder Project during the 1970s.

In the end, the first person to make use of Gilman's Chicago recordings for research purposes—as far as I've been able to ascertain—was gamelan scholar Sue Carter-De Vale. The gamelan played at the Columbian Exposition in 1893 had later become part of the collections of Chicago's Field Museum of Natural History, and in 1978, Carter-De Vale compared its then-current pitches to Gilman's recordings and determined that they hadn't changed at all in eighty-five years. She wrote: "The Javanese believe it takes from twenty-five to thirty years for the tuning of a bronze gamelan to stabilize. This information was essential to dating the gamelan as it proved the gamelan could not have been manufactured after 1865."²³ Considering how much Gilman's own arguments had hinged on the phonograph's ability to record and reproduce minute distinctions of musical pitch, I imagine he'd have felt vindicated by the results of this study so many years later.

In spite of what you might assume, Gilman's recordings were *not* the first to have been made at a World's Fair. The phonograph had already featured prominently in the Paris Exposition of 1889, and a number of recordings made there survive today, including several recorded atop the recently-built Eiffel Tower.²⁴ Nevertheless, Gilman *was* probably the first person to take advantage of the cosmopolitan attractions of a World's Fair to collect recordings from representatives of different culture groups for preservation and study—a scheme that was later to be carried out more prominently and methodically by Léon Azoulay at the Paris Exposition of 1900.²⁵

And there's at least a slight possibility that Gilman's collection could also be linked to another interesting "first." When I originally agreed to write this essay—a few years ago now—I hoped I'd be able to pin down some conclusive information on this point before telling the story of the collection, but I've delayed far too long already, so for now I'll have to leave it as an unresolved question. We know that Gilman and Boas both made recordings of Kwakiutl songs on the same occasion, and a comparison of the lists of contents of their two collections shows that they recorded the same songs in the same order. The question is whether they made these recordings simultaneously or took turns. Back in the 1980s, staff at Indiana University's Archives of Traditional Music tried to find out, judging from a typewritten report:

Aural comparison of recordings in the Gilman collection with those in ATM accession Pre'54-121-F [*i.e.*, *the Boas collection*] by Carol Inman and Sally C. Childs Helton revealed that performances in these two collections differed despite similarities in the written documentation of the two collections (see letter of inquiry on this issue from Dorothy Lee of the Federal Cylinder Project dated 9 April 1984 in the ATM correspondence files).²⁶

They may have been right. But determining whether a pair of cylinders was recorded simultaneously from the same performance can be pretty challenging, as I know from my own experience working with pairs of cylinders of Chinese traditional music and opera recorded simultaneously by Berthold Laufer in Shanghai in 1901.²⁷ Recordings that seem quite different at first can suddenly "agree" once they're properly aligned with the use of digital editing tools. So I think this question would be worth revisiting. Apart from the light which further experiments might shed on how things unfolded during that historic recording session in Chicago back in 1893, if the recordings *did* turn out to have been made simultaneously, it might be possible to synchronize them and play them back together in stereo. And that would be exciting, if only because no other "stereo" recording in this sense has ever been confirmed to survive from the nineteenth century.

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¹ Fewkes refers to "the following song, which has been written out from the phonographic record by Mr. Cheney" (Jesse Walter Fewkes, "A Contribution to Passamaquoddy Folk-Lore," *Journal of American Folk-Lore* 3 [Oct.-Dec. 1890], 257-280, at 268) and later writes: "One of the songs, said to be a salutation, which was sung on the cylinders, has been written out from the phonograph by the late Mr. S. P. Cheney. The words, as nearly as I can make them out, are as follows" (Fewkes, "Contribution," 276). See also a letter by Fewkes describing Cheney's role in Simeon Pease Cheney, *Wood Notes Wild: Notations of Bird Music* (Boston: Lee and Shepard, 1892), 172-3.

² Benjamin Ives Gilman, "Zuñi Melodies," *Journal of American Archaeology and Ethnology* 1 (1891), 65-91, at 65-70. On the use of the treadle machine, see Jesse Walter Fewkes, "A Few Summer Ceremonials at Zuñi Pueblo," *Journal of American Archaeology and Ethnology* 1 (1891), 1-64, at 58; and on the use of the battery machine, see Benjamin Ives Gilman, "Hopi Songs," *Journal of American Archaeology and Ethnology* 5 (1908), 45-6.

³ Benjamin Ives Gilman, "On Some Psychological Aspects of the Chinese Musical System," *Philosophical Review* 1 (Jan. 1892) 54-78; "On Some Psychological Aspects of the Chinese Musical System II," *Philosophical Review* 1 (Mar 1892), 175-178.

⁴ Benjamin Ives Gilman to Thomas Edison, April 29, 1891, <https://edisondigital.rutgers.edu/document/D9143AAQ>

⁵ John Comfort Fillmore, "The Zuni Music as Translated by Mr. Benjamin Ives Gilman," *Music* 5 (1893-94), 39-46, at 45. See also H. E. Krehbiel, "The Phonograph and Primitive Music," letter dated Aug. 15, 1891, *New York Tribune*,

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- Sept. 1, 1891, often quoted from the reprint in *Ethnomusicology* 2 (Sept. 1958), 116-7; and the rebuttal from Edward D. Easton, "The Phonograph as a Reproducer of Music," letter dated Sept. 2, 1891, in *New York Tribune*, Sept. 23, 1891; also reprinted in the *Phonogram* 1 (Oct. 1891), 223.
- 6 Fillmore, "Zuni Music," 41.
- 7 Fillmore, "Zuni Music," 46.
- 8 Gilman, "Hopi Songs," 26.
- 9 Gilman, "Hopi Songs," 231.
- 10 For sources and further details, see Patrick Feaster, "The Origins of Ethnographic Sound Recording", *Resound: A Quarterly of the Archives of Traditional Music* 20:1/2 (Jan./Apr. 2001), <https://scholarworks.iu.edu/journals/index.php/resound/issue/view/1804>, 1, 3-8, at 3-5.
- 11 Thomas Edison to Thomas R. Lombard, Sept. 20, 1893, <https://edisondigital.rutgers.edu/document/LB058130>; see also Alfred Ord Tate to Benjamin Ives Gilman, Sept. 20, 1893, <https://edisondigital.rutgers.edu/document/LB058129>, referring to Gilman's letter of the 14th.
- 12 *Proceedings of the Fourth Annual Convention of the National Phonograph Association of the United States, Held at Chicago, Sept. 20, 21, and 22, 1893* (Milwaukee: Houtkamp & Cannon, [n.d.]), 12, 112-13. For Parker's affiliation with the North American Phonograph Company in Chicago during this period, see "New Start and Stop Device," *Phonogram* 3:1 (January 1893), 306.
- 13 Details of these recording sessions have been drawn from Dorothy Sara Lee, ed., *The Federal Cylinder Project: A Guide to Field Cylinder Collection in Federal Agencies, Volume 8: Early Anthologies* (Washington: American Folklife Center, Library of Congress, 1984), 3-29, *passim*.
- 14 "Although Gilman did not specify where the cylinders were recorded, it is probable that the performances took place at the Indian Village on the Midway Plaisance" (Lee, *Federal Cylinder Project*, 1).
- 15 For details, see Paige Raibmon, "Theatres of Contact: The Kwakwaka'wakw Meet Colonialism in British Columbia and at the Chicago World's Fair," *Canadian Historical Review* 81:2 (June 2000), 157-192.
- 16 Lee, *Federal Cylinder Project*, 30.
- 17 John Comfort Fillmore, "Primitive Scales and Rhythms," in C. Staniland Wake, ed., *Memoirs of the International Congress of Anthropology* (Chicago: Schulte Publishing Company, 1894), 158-175, quotation at 170, emphasis added.
- 18 In Franz Boas, *The Social Organization and the Secret Societies of the Kwakiutl* (Washington: Government Printing Office, 1897), some relevant transcriptions are labeled as "RECORDED BY J. C. FILLMORE AND FRANZ BOAS," but the term "recording" appears to be used elsewhere in the same work to refer to transcription *per se*, so this strikes me as inconclusive.
- 19 I base this conclusion on the observation that Boas' lowest-numbered cylinders match Gilman's in content, while the higher-numbered cylinders—presumably recorded later—are the ones that differ.
- 20 Boas, *Social Organization*.
- 21 John Comfort Fillmore to Franz Boas, Dec. 29, 1893, Franz Boas Papers, American Philosophical Association Library, <https://diglib.amphilsoc.org/islandora/object/text%3A44862>
- 22 Archives of Traditional Music (ATM), Indiana University, accession 54-121-F (note that the identification by Boas of the "locality" as "Ft. Rupert" in an old cylinder inventory may refer to the performers' place of origin rather than the place of recording). The status of some galvanoplastic duplicates of Boas Kwakiutl cylinders from the Berlin Phonogramm-Archiv in accession 83-917-F is less clear. Correspondence from the early 1930s between Boas and Erich Moritz von Hornbostel in the Franz Boas Papers at the American Philosophical Society shows that Boas had sent a set of more recently recorded Kwakiutl cylinders to Berlin during that period, but a more recent Phonogramm-Archiv cylinder list dates their "Boas Kwakiutl" collection to "1893 (?)" ; see Susanne Ziegler, "List of the Berlin Phonogramm-Archiv's Cylinder Collections," in Artur Simon, ed., *The Berlin Phonogramm-Archiv 1900-2000* (Verlag für Wissenschaft und Bildung, 2000), 228-237, at 232. Correspondence between Fillmore and Boas in the Franz Boas Papers at the American Philosophical Society includes references to Fillmore working on many cylinders with numbers now missing from ATM accession 54-121-F.
- 23 Sue Carole De Vale, "Foreword," in Lee, *Federal Cylinder Project*, vii-ix, at viii-ix. See also S. C. De Vale, "The tuning of a Sundanese (West-Javanese) *gamelan*: 1893 and 1977," *Journal of the Acoustical Society of America* 64 (1978), S150; and Sue Carter-De Vale, "The Gamelan," *Field Museum of Natural History Bulletin* 49:1 (1978), 3-12.
- 24 For details, see Ron Cowen, "Archaeologist of Sound," *Science* 335 (Jan. 20, 2012), 278-280; Carlene E. Stephens, "'Speculative Imaginations': Listening to 1889 Then and Now," *Journal of the Gilded Age and Progressive Era* 22 (2023), 452-474.
- 25 Richard Bauman, "'Better than any monument': Envisioning Museums of the Spoken Word," *Museum Anthropology Review* 5:1/2 (2011), 1-13, at 3-4.
- 26 "Summary Report" for accession 54-121-F, Archives of Traditional Music, Indiana University.

²⁷ “Berthold Laufer’s Chinese Stereo Recordings of 1901,” <https://griffonagedotcom.wordpress.com/2020/04/28/berthold-laufers-chinese-stereo-recordings-of-1901/>

*The views expressed in the essay are those of the author and may not reflect those of the Library of Congress.