

John Harvey Kellogg: His Role in American Science

by Donald J. Ortner

The life and professional career of John Harvey Kellogg span many of the most crucial years in the development of American science and medicine. Kellogg completed his training as a physician in 1875 at the age of twenty-three. However, he already had been editor of the journal *Good Health* since 1872 and had authored a book titled *The Proper Diet of Man* published in 1873. Throughout his life, he was a prolific writer contributing to a broad range of subjects primarily related to medicine and surgery. Anthropology and eugenics are two areas where Kellogg's interest in science brought him into contact with many of the leading scientists of his day. His interest in these topics provides the focus for reviewing one aspect of Kellogg's relationship with the American scientific community.

In 1917, Kellogg began what was to become an active correspondence with Aleš Hrdlička, the first curator of physical (biological) anthropology at the Smithsonian

Donald Ortner, curator of anthropology at the National Museum of Natural History, the Smithsonian Institution, has recently authored *Identification of Pathological Conditions in Human Skeletal Remains*. A graduate of Columbia Union College, he received his Ph.D. from the University of Kansas.

Institution. Hrdlička was the dominant force in establishing physical anthropology as a discrete discipline in the American scientific community. He was one of the founding members of the American Association of Physical Anthropologists and was the founder and first editor of the *American Journal of Physical Anthropology*, which today is still the leading journal on the subject of biological anthropology. The correspondence between Hrdlička and Kellogg is archived in the Smithsonian's National Anthropological Archives. It provides insight into Kellogg's relationship with the scientific community of his day and is the major source of information for this essay.

My own interest in this aspect of Kellogg's life goes back several years to my earliest experience as a young physical anthropologist at the Smithsonian Institution. While checking some bibliographical references in the second volume of the *American Journal of Physical Anthropology* (1919), I noticed the name of John Harvey Kellogg listed as one of the associate editors of the journal. As editor of the journal, Hrdlička chose the first associate editors, including Kellogg. Since Kellogg's name is not known in physical anthropology today, the reason for this choice was not apparent. The corre-

spondence between Kellogg and Hrdlička suggests that Kellogg's appointment was based more on his ability to provide funds needed to establish the new journal than on his knowledge of human biology. To the extent that the correspondence typifies Kellogg's relationship with the broader scientific community, his role in science appears to have been restricted to coordinating marginally scientific conferences and stimulating research rather than conducting original research himself.

Kellogg's interest in, and contributions to, anthropometry and eugenics appear to have been the initial point of professional contact with Hrdlička, who himself had considerable interest in these areas. In a letter to Kellogg,¹ Hrdlička thanks Kellogg for his hospitality during Hrdlička's visit to Battle Creek Sanitarium, of which Kellogg was superintendent. Hrdlička states that this visit enabled him to satisfy a long-standing wish to know Kellogg personally. Previously, Kellogg² had indicated that he had known of Hrdlička's work for many years.

Despite this long-standing commonality of professional interests, correspondence between the two men was initiated by Hrdlička³ when he was attempting to generate financial and scholarly support for publishing the *American Journal of Physical Anthropology*. Kellogg⁴ suggests that the Race Betterment Foundation, the eugenic organization of which he was president, might be interested in the publication of the journal as a vehicle for publishing some of the data Kellogg had been gathering for several years on the subject of eugenics.

After visiting Battle Creek, Hrdlička wrote Kellogg a letter⁵ containing a caveat regarding the generally substandard quality of much of the research in eugenics and stating that such research could not be seriously considered for a scientific journal of the class he was trying to establish. This somewhat oblique put-down of Kellogg's research and that sponsored by the Race Betterment Foundation did not prevent Hrdlička from again requesting financial support for the journal. Indeed, Kellogg contributed several

hundred dollars over the next three years, apparently from his own resources and not from those of the Race Betterment Foundation. In addition, Kellogg used his considerable influence with wealthy patients in persuading them to contribute additional funds to get the fledgling journal established.

In early 1918, Hrdlička⁶ thanked Kellogg for his pledge of \$100 a year for three years and invited Kellogg to be an associate editor, stating that "it would be, besides other things, a slight recognition of your good lifework which bears such a close relation to applied anthropology." In the same letter, however, Hrdlička lists the other associate editors. At least one, and probably two or more of these associates, had made substantial financial contributions to the journal. While most of the associate editors had solid scholarly credentials, apparently a significant financial contribution may also have been an important criterion in being chosen an associate editor. Kellogg's involvement with the journal appears to have been limited to the role of financial patron.

While Kellogg provided support for scientific endeavors through personal financial contributions and by encouraging wealthy friends to follow his example, he also was involved in data collection. For example, he collected a considerable amount of data on his patients including anthropometric measurements, data of racial and family background, and medical histories which probably included information on the health of parents. Hrdlička recognized the research potential of such data if collected in a careful and systematic manner and suggested the possibility of collaborative research.⁷ He proposed that a female physician undertake this work, apparently since much of the research would be conducted on children.⁸ At that time, Kellogg had ten female physicians working at the sanitarium.

In June of 1918, Hrdlička spent four days at the Battle Creek Sanitarium training one of the female physicians in anthropometric techniques. During this visit, Hrdlička lectured the staff on "Man's evolution, past, present and future." In September 1919, he paid another brief visit to the sanitarium to have a physical checkup and to review the

progress of the research. Apparently, little progress was made, for Hrdlička visited the sanitarium again in December of 1920 and initiated collaboration with Dr. Wilhelmina Key. None of these efforts appear to have produced any published results.

However, in this context, there is an interesting exchange of letters between Kellogg and Hrdlička. In the first of these,⁹ Kellogg asked Hrdlička's opinion of Dr. Key and whether or not she would be able to carry on the research Hrdlička proposed. Hrdlička responded,¹⁰ indicating a favorable opinion of Dr. Key, but noting that her lack of interest in anthropology prevented her enthusiastic involvement in the research. He added that "she would of course do what you [Kellogg] told her, but I should like to have her undertake whatever work we may eventually decide upon largely on her own initiative [sic], and for her own scientific benefit."

The suggestion in this exchange of letters is that Kellogg's enthusiasm about anthropological research was not transmitted to his staff, who, of course, would have had to do the actual work. Hrdlička wisely appears to have sensed this and emphasized the importance of having the research interest arise from the initiative of the scholar and not be something imposed on them.

Although Kellogg himself claimed¹¹ that "nothing interests me so much as anthropology," it is quite clear that this interest was limited to subjects immediately related to his own professional interest in race betterment (eugenics) and that, most often, he was interested in seeing the research done, but not in doing it himself.

Another of Kellogg's research interests was diet and its importance to health. In this context, Kellogg engaged in a rather low-key debate with Hrdlička regarding the merits of a vegetarian diet. The correspondence on diet began in 1920, when Kellogg¹² asked for information regarding the foods of the American Indians, "particularly about the different plants, fruits, nuts, roots and greens of various sorts which they employed as food." After his return from an extended trip to the Far East, Hrdlička¹³ replied: "On the whole,

it may be said that none of the Indians, either tribally or individually, are vegetarians any more than they are obliged to be by the available supplies of game and fish." Hrdlička's comment directly contradicted the often repeated idea of Kellogg that primitive peoples had a more natural, and thus better, diet.¹⁴

Hrdlička, in a subsequent letter, twisted the scholarly knife a little more by citing a reference¹⁶ indicating that both the chimpanzee and gorilla eat small mammals and birds in addition to berries, fruit and roots. Kel-

"Uncontrolled research is completely inadequate for scientifically supporting any opinion, but it probably reflects Kellogg's own concept of research, in which one reaches a conclusion and then collects data to support it."

logg¹⁷ rather acidly responded: "I suppose that the big apes under some circumstances find it necessary to resort to flesh eating just as men under some circumstances find it necessary to resort to cannibalism. I think, however, there is no question in the minds of biologists that the primate as a class are frugivorous rather than omnivorous."

In 1924, Kellogg¹⁸ wrote Hrdlička about the possibility of collecting data on blood pressure in American Indian tribes, particularly from "those who still adhere pretty closely to their ancient modes of life, if there are such." Hrdlička,¹⁹ remembering Kellogg's interest in vegetarianism, replied that "the only tribes that would be suitable for the purposes expressed in your letter of February 11 are the Pueblos in New Mexico and Arizona. These are the most vegetarian of all our tribes in the United States with the exception of a few small tribes in the Sierras." Hrdlička even volunteered to go with Kellogg if their schedules were compatible. As with other proposed collaborative ventures,

this one failed to materialize, in part due to the complex and busy schedules of the principals.

The exchange of views and suggestions on diet between Kellogg and Hrdlička continued in subsequent correspondence with neither conceding anything. The last comment on the subject came from Kellogg,²⁰ written from Algiers, Africa. While there at a nature preserve, he conducted his own experiment on the eating habits of "apes." (Undoubtedly, he was referring to the Barbary "ape," which is a macaque, one of the Old World monkeys.) Kellogg took with him on his visit to the preserve a variety of foods, including bread, turnips, carrots, spinach, apples, oranges, chestnuts and beefsteak. He reported to Hrdlička that the baboons readily ate everything except the meat, which "they would not even touch. They turned away from it in disgust and threatened to go away, so I had to coax them back by offering them other foods." This type of uncontrolled research is, of course, completely inadequate for scientifically supporting any opinion, but it probably reflects Kellogg's own concept of research, in which one reaches a conclusion and then collects data to support it. There is no evidence that Hrdlička responded to this letter.

Another attempt at collaborative research was initiated in May 1922. Hrdlička was preparing a book on "Old Americans," whom he defined as Americans "whose parents as well as all four grandparents were born in this country."²¹ The purpose of this book was to characterize the biological changes which distinguish "Old Americans" from their predominantly European ancestors. For the study, large amounts of anthropometric data were necessary, particularly of long-established American families. Battle Creek Sanitarium, because of its prominent clientele, was a likely place to find such people. However, despite Kellogg's support for extracting such data from hospital records, there is no indication in subsequent publications by Hrdlička that any research was accomplished.

In 1927, Kellogg invited Hrdlička to participate in the Third National Conference on Race Betterment held at Battle Creek, Mich.,

in January 1928. Hrdlička²² was probably reluctant to participate in view of his ambivalent attitude toward eugenic research, but agreed "for the sake of our old friendship." The organization of the conference appears to have been deficient, and Hrdlička complained of this in letters written in December 1927. Hrdlička²³ was indignant that a reference to his participation had been omitted from a preview of the meeting published in the journal, *Science*. Finally, on December 26, 1927, he was notified by telegram that his paper was scheduled for the afternoon of the last day of the conference (January 6, 1928).

Although Hrdlička contributed a paper titled, "Race deterioration and destruction with special reference to the American people," which was published in the proceedings, he did not attend the conference. His letter to Kellogg²⁴ clearly reveals his annoyance at being scheduled at the end of the conference. Hrdlička attributed his absence to a bad cold, yet while this may have been a factor, his pique over the real or imagined snub by the conference planners may have been equally important.

Reports at the Race Betterment Conference²⁵ focused on subjects such as improvement of life through better nutrition, the detrimental effects of alcohol and tobacco, the prevention of reproduction by so-called human defectives, and the evil eugenic effects of war. Racial mixture and the presumed detrimental effects of race mixture were also topics. The content of some of these reports and discussions was patently racist. Furthermore, Hrdlička's paper is guilty of the same loose thinking that he had earlier attributed to much of the research done in eugenics. For example, his paper²⁶ concludes, "races, especially the further distant ones like the white and the negro, if the accumulated observations of anthropology count for anything, are not equipotential, or equally effective, or able, or resistant, and the results of their union will be the strengthening of the weaker, as seen in many of our mulattoes, but the weakening of the stronger constituent." The "accumulated observations of anthropology" certainly do not support Hrdlička's opinions today and probably did not in 1928.

With this brief look at the relationship between two remarkable men as a background, I should like to offer some observations on the nature of Kellogg's scientific contributions.

It is clear from the correspondence and the conference proceedings that Kellogg was known and respected by many, and probably most, of the leading American authorities in scientific disciplines related to medicine. What needs further clarification is whether this respect was for Kellogg's acknowledged organizational and fund-raising ability or his ability as a scholar. Many of the participants in the Race Betterment Conference were well-known American scientists and scholars. However, Kellogg's relationship with Hrdlička reveals that his contributions to science were largely limited to fund raising for scientific causes and in stimulating research by others through his enthusiastic support.

Kellogg's own contributions to science are primarily in the areas of technique rather than in rigorous controlled experimentation or innovative scientific ideas. The modern and somewhat invidious term applied to such people in scientific circles is "entrepreneur," but it may be too harsh to apply to Kellogg. Significant support for research by the federal government was still in the future. For example, the extramural research grant program at National Institutes of Health was established in 1946, while the National Science Foundation was not established until 1950. The role of scientifically curious people such as Kellogg in influencing wealthy people to support research before the existence of government support was undoubtedly very significant in the development of science. Furthermore, Kellogg's statements on eugenic problems, although largely intuitive, probably are as well founded as many of

the generalizations made by acknowledged scientists of his time.²⁷

In view of the several attempts at collaborative research between Hrdlička and Kellogg, a brief comment on the failure of such initiatives is appropriate. Both men were well established and undoubtedly set in their own way of working at the time they first began direct communication. Failure to collaborate partially reflects conflicting schedules, but probably of greater significance were fundamental differences in their conception of scientific research. Although Hrdlička was undoubtedly influenced by the prevailing ideas of his time and occasionally did slip into some poorly conceived modes of scientific thinking, there is little doubt that his approach to research was substantially more rigorous than Kellogg's. In addition, Hrdlička was directly involved in doing his own research. Kellogg, at least in his relationship with Hrdlička, demonstrates great enthusiasm for research, but little capacity to actually become directly involved.

The quantity of Kellogg's publications is impressive. Some of his opinions and observations were published in the most reputable medical journals of his day. However, in evaluating his publication record, it should be emphasized that most of his publications are reports of surgical procedures, essays on diet and eugenics reflecting his personal opinions and are not reports of scientific research. Furthermore, most of his publications were printed in journals he edited.

Clearly Kellogg's role in the scientific community of the early twentieth century is of considerable interest to our understanding of the history of American science. I would encourage a young scholar with more than my very modest skills in historiography to engage in a more careful and comprehensive analysis of this aspect of Kellogg's career.

NOTES AND REFERENCES

1. Letter from Dr. Aleš Hrdlička to Dr. John Harvey Kellogg, August 20, 1917.
2. Letter Kellogg to Hrdlička, July 25, 1917.
3. Letter Hrdlička to Kellogg, July 13, 1917.
4. Letter Kellogg to Hrdlička, July 25, 1917.
5. Letter Hrdlička to Kellogg, August 20, 1917.
6. Letter Hrdlička to Kellogg, January 28, 1918.
7. Letter Hrdlička to Kellogg, April 13, 1918.
8. Letter Hrdlička to Kellogg, April 18, 1918.

9. Letter Kellogg to Hrdlička, January 24, 1921.
10. Letter Hrdlička to Kellogg, January 31, 1921.
11. Letter Kellogg to Hrdlička, December 9, 1925.
12. Letter Kellogg to Hrdlička, March 23, 1920.
13. Letter Hrdlička to Kellogg, May 6, 1920.
14. For example, letter Kellogg to Hrdlička, December 9, 1925.
15. Letter Hrdlička to Kellogg, June 23, 1920.
16. T. Wingate Todd, *An Introduction to the Mamma-*

lian Dentition (St. Louis: C. V. Mosby Company, 1918).

17. Letter Kellogg to Hrdlička, July 1, 1920.
18. Letter Kellogg to Hrdlička, February 11, 1924.
19. Letter Hrdlička to Kellogg, February 16, 1924.
20. Letter Kellogg to Hrdlička, December 9, 1925.
21. Hrdlička, *The Old Americans* (Baltimore: Williams and Wilkins, 1925).
22. Letter Hrdlička to Kellogg, November 21, 1927.
23. Letter Hrdlička to Kellogg, December 26, 1927.
24. Letter Hrdlička to Kellogg, January 13, 1928.
25. *Proceedings of the Third Race Betterment Conference* (Battle Creek, Michigan: The Race Betterment Foundation, 1928).
26. Hrdlička, "Race deterioration and destruction with reference to the American people," *Proceedings of the Third Race Betterment Conference* (Battle Creek,

Michigan: The Race Betterment Foundation, 1928), pp. 82-84.

27. The inclusion of what are racist statements (at least from a present-day viewpoint) in the proceedings of the Race Betterment Conference raises a question regarding Kellogg's own attitudes about the biological and social significance of racial variation. I am not sufficiently familiar with the entire scope of Kellogg's medical publications and personal life to evaluate this question. However, the fact that he had several female physicians on his staff and also had close relationships with disadvantaged children of different races, even taking them into his home, suggests a high degree of tolerance at a professional and personal level at a time when such attitudes were most unusual. See Richard Schwartz, *John Harvey Kellogg, M.D.* (Nashville: Southern Publishing Association, 1970), p. 152.