The Records of Biological Anthropology

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Research in biological anthropology contributes most effectively to scientific inquiry when it integrates the biological and social sciences. This is often done within the theoretical frameworks of adaptation, ecology, epidemiology, health, or genetics, and it may involve the participation of scientists from a wide array of disciplines. Most biological anthropologists have a firm commitment to biobehavioral perspectives and an ability to conceptualize integrated approaches in biocultural science.

Biological anthropology is built on evolutionary theory as it applies to past and present human populations. When evolution is linked to anthropological theory and concepts, it provides a powerful means for explaining a considerable portion of human biobehavioral attributes and variation. In fact, it is the combination of training and interest in human evolution and in biocultural approaches that distinguishes biological anthropology from related fields such as *medical anthropology* and *nutritional anthropology*, in which some biological anthropologists have research interests. In these fields there is a focus on biocultural factors centered around health, yet research does not usually draw on human evolutionary theory and process. Because biological anthropologists are trained from the dual perspectives of social science and natural science, they can build bridges between these two broad areas of scientific endeavor. This is an important role for biological anthropologists to play in the scientific community, particularly today, in light of dramatic global changes that are directly attributable to human activities and human numbers.

Within biological anthropology, there are several subdivisions that incorporate biocultural and evolutionary perspectives. *Paleoanthropology* centers on the reconstruction and understanding of past human evolution from its earliest primate origins. *Human population biology* focuses on explanation of biobehavioral variation within our species. While a part of human population biology, *anthropological genetics and demography* has become increasingly concerned with the reconstruction of past evolutionary processes. *Skeletal biology* is based on the study of skeletal remains, which are often the only biological evidence from which human history and prehistory can be reconstructed. *Primatology* includes both the biological and

behavioral study of our closest evolutionary relatives: the prosimians, monkeys, and apes. Finally, *forensic anthropology* applies the knowledge of human biological variation to human identification and legal matters, drawing on methods and content from other specialties in biological anthropology.

Each of these subdivisions presents special problems for the preservation of records, for their data are diverse and exist in different forms. In paleoanthropology, for example, along with the photographic and written documentation of the past, there is the need to preserve x-rays, C-T scans, diskettes, and other forms of electronic information. Skeletal biologists must decide what information should be preserved from Native American remains that (by new federal legislation) must be returned to their living descendants. Primatologists have special responsibilities for preservation of their video- and audiotape records of species that are under threat of extinction. Preservation of documents on living subjects poses questions of invasion of privacy and raises legal and ethical issues, including the proper balance between privacy and public access to information and claims to its ownership.

The Value of Preservation in Biological Anthropology

While all records of human endeavors have intrinsic value for succeeding generations. there are specific uses for bioanthropological documents and data, which justify the often considerable expense of preservation. First, they can be used to solve scientific problems. Second, personal papers, correspondence, and other unpublished materials can document individual scientists' lives, as well as the history of the profession. Third, records can be of use in cases of litigation that involve history or prehistory. Fourth, there are circumstances in which data must be gathered and "stockpiled" because of an imminent loss of scientific materials. Repatriation may create such a need, as may interests in recording cell lines and other information on genetic diversity from populations around the world.

Research Based on Archival Sources

A significant body of scholarship makes use of historical materials, both published and unpublished. The physical, biological, and health history of human populations is not easy to document, and records containing impressionistic and subjective statements require critical interpretation. With carefully and creatively designed use of archival materials, however, a kind of human biohistory is gradually developing as scientists learn how to tease valuable, but elusive, facts from such sources.

Longitudinal Health Processes. Archival data are particularly useful in studying longitudinal processes, where changes in health status or other biobehavioral attributes have occurred through time. For example, Tanner (1962:143-155) was one of the earliest to identify what is known as the "secular trend" in the growth of children and adolescents during the nineteenth and twentieth centuries. Increases in height at all ages, particularly in adolescence, and earlier sexual maturation characterized

a trend in Western Europe and the United States that began in the early 1800s and continued to the middle of this century. Tanner derived the information demonstrating these trends largely from published works dating back to 1874.

Others have used archival sources from earlier times to explore ages of menarche and menopause in Classical Greece and Rome (Amundsen and Diers 1969, 1970). One of the most creative studies of this kind dealt with the difficult task of ascertaining puberty in boys. Daw (1970) used inferred voice breaking among members of J.S. Bach's Leipzig Thomasschule choir from 1727 to 1749 as a measure of the transition through puberty. It was found that the estimated age of maturation of these boys was in the late teens and became later during the War of the Austrian Succession (1740-1748), perhaps due to hardships experienced during this period. This work supported Tanner's arguments for a post-industrial revolution trend of earlier maturation.

Additional information on this topic was provided by a comprehensive investigation of health in United Kingdom boys, based on a variety of archival documents (Floud et al. 1990). More than 100,000 heights of boys and young men were drawn from army and marine recruit records and records from military academies in the period 1750 to 1980. The authors found considerable fluctuation in height that appeared to reflect economic and health conditions at specific times. Rapid urbanization and associated poverty and disease contributed to a mid-nineteenth century decline in height. Still another example of longitudinal-process studies is that of British infantrymen in the eighteenth century, based on military records located in the National Library of Canada (Steegmann 1985). These documents indicate that men born in 1749-1753 and in 1775-1778 were considerably taller than men born during the intervening years, a pattern that correlated well with historical evidence of food availability. These observations suggest that the "secular trend" was a short-term phenomenon, and that maturation and size must have shown considerable variation throughout human history and prehistory.

Comparative Follow-Up Studies. The value of archiving unpublished records (including raw data) for comparative studies can be demonstrated by several examples. In 1909-1910, Franz Boas conducted one of the most significant pieces of research in the history of anthropology (Little 1982). This was the study of European migrants to the United States, in which he demonstrated the importance of "environmental plasticity" and the fallacy of invariant body characteristics associated with the concept of "racial purity" (Boas 1911). Recognizing the value of the basic data, which included head measurements and height of more than 10,000 members of migrant families, Boas made arrangements to publish the raw data sheets several years later. In the preface of this document, he stated: "It seemed necessary to make the data accessible because a great many questions relating to heredity and environmental influences may be treated by means of this material" (Boas 1928:VIII).

During the past three decades, there have been numerous multidisciplinary studies of living populations concerned with adaptation, microevolution, ecology, health, and environmental change

(Little et al. 1991). Although most of these projects have produced synthetic publications, several have also permanently archived the basic data and unpublished records for future comparative studies. For example, data from the research on highland Quechua Indians from Nuñoa, Peru conducted in the 1960s (Baker and Little 1976) have been deposited at the University of Massachusetts. These record sets have been used for restudies (Carey 1990; Leonard et al. 1990). Likewise, records from the study of Samoan migrants (Baker et al. 1986) have been archived at the Ohio State University for use by investigators pursuing ongoing research. The Tokelau relocation project (Wessen et al. 1992) has records dating from before 1966, when a disastrous hurricane forced the movement of 1,000 Tokelauans to New Zealand. These materials have been invaluable for studies of changes in health associated with migration to a Western environment.

New Analyses of Old Data. The importance of new analyses of old data is emphasized by the work of Buikstra and Gordon (1981) on restudies of human skeletal series reported in three journals between 1950 and 1980. They found that when old scientific problems were restudied, the conclusions from the original investigations were altered in 62 percent of the cases. When old problems were restudied using new analytical techniques, the altered conclusions increased to 74 percent of the cases. The great utility of restudies, whether based on physical specimens or on archived data, is to contribute to validation.

In 1993 Richard Jantz organized a symposium based on reanalysis of Boas's anthropometric data (Jantz 1995). Much of this research was built on a microfilm and computerized database (located at the University of Tennessee) of anthropometric measurements taken on 15,000 individuals from some 200 Native American and Siberian tribal groups (Jantz et al. 1992). A wide array of topics was discussed in the symposium's thirteen papers, many of them "new problems" that would not have been easily conceptualized during Boas's time. Such topics include post-Beringia land bridge associations (early migration), Siberian population structure (in light of modern demography), heritability of stature and gene flow considerations, secular trends in stature, and multivariate genetic analysis.

In addition to the Boas database, Jantz has developed computerized forensic, dermatoglyphic, and other record sets — including especially valuable longitudinal data — at the University of Tennessee. These resources are available to qualified investigators; some analysis has been initiated by Sledzik et al. (1994).

Other examples demonstrate the potential of archived data for reanalysis. Tanner (1981) has documented several restudies of child growth based on nineteenth-century data. Tanner's own reinspection of Boas's growth data has validated Boas's remarkable insights into human growth processes. In some ways similar to the Boas material, the Steggerda collection, housed at the National Museum of Health and Medicine, consists of anthropometric, psychological, dermatoglyphic, and familial data from more than 8,200 Native Americans, European Americans, Jamaicans, and others (Sledzik et al. 1994).

Individual Biographies and History of the Profession

Biographical studies of biological anthropologists, assessments of their contributions, and research on the history of the profession require sources such as correspondence, papers, photographs, and unpublished (as well as published) records. Documents written at the time are usually much more accurate than information derived from retrospective interviews because of the frailties of memory and recall. As Gould noted: "The timing of events becomes jumbled in retrospect, for we arrange our thoughts in a logical or psychological order that makes sense to us, not in chronological sequence (1989:81)."

If biography is a central feature of historical reconstruction, frequently overlooked are the less well-known scientists, who are nevertheless important parts of the historical picture. Professional organizations might play a more active role in documenting the lives of such individuals by assembling primary biographical materials and bibliographic lists.

Documenting the life of an individual scientist is easier than tracing a history of scientific ideas or the development of a whole profession. In this effort, archived papers of individuals and institutions play a primary role. However, other potential sources of information are often overlooked. For example, old published textbooks are the first things to be discarded from libraries, yet they may reflect the ideas, theories, and knowledge of a profession at the time of their publication and should be saved. The changes in theoretical perspectives in physical anthropology at the midpoint of this century can be seen by comparing textbooks from the 1940s (e.g., Hooton 1946; Montagu 1945) with those from the 1960s (e.g., Harrison et al. 1964; Hulse 1963). A new orientation toward "scientific problems" (Washburn 1951) and an increasing reliance on "evolution" and "adaptation" as paradigms to explain human variation (Baker 1966) are apparent in the later textbooks. A comprehensive list of textbooks in all subfields of anthropology should be compiled for purposes of research into the history of the profession.

Legal Documentation, Inventories, and Data Preservation

In 1989, Public Law 101-185 directed the Smithsonian to inventory its collections of Native American human remains. The objective of this substantial effort was to give tribal descendants the option of claiming or repatriating these remains, principally for reburial. This action was extended through Public Law 101-601 a year later, to include other museums and institutions holding Native American skeletal remains (Buikstra et al., n.d.). The 1990 Public Law, the *Native American Graves Protection and Repatriation Act* (NAGPRA), requires that inventories of skeletal remains be conducted and assessments made of tribal identity from archaeological, historical, ethnographic, and archival sources of information.

It is of great concern to scientists who study human skeletal remains that these materials will no longer be accessible to them for investigation. Some Native American skeletal collections have been studied in detail,

but many other collections have been poorly studied or not at all. Moreover, as noted above, with the development of new analytical procedures, there is the likelihood that new information can be gleaned from skeletal remains that were previously studied. Issues of health, nutrition, disease, environmental effects, genetic disorders, and other human population issues and problems can only be explored in populations from the distant past through studies of skeletal remains. The loss to science of these remains could have profound effects.

In order to deal with this problem, a seminar was convened in 1991 at the Field Museum of Natural History to establish data and documentation standards for collection of osteological and dental remains (Buikstra et al., n.d.). The goal is to gather standardized measurements, x-rays, photographs, and other data to be archived in lieu of preserving the actual human remains. The task of such a "salvage" operation is ambitious, but the value for future scientific analysis is considerable.

Existing Repositories and Records

This section offers an overview of the kinds of archival materials available for research in biological anthropology and their locations. It considers major institutions that house significant collections, specific record sets arising from past projects, the collected papers of individual scholars, and association records.

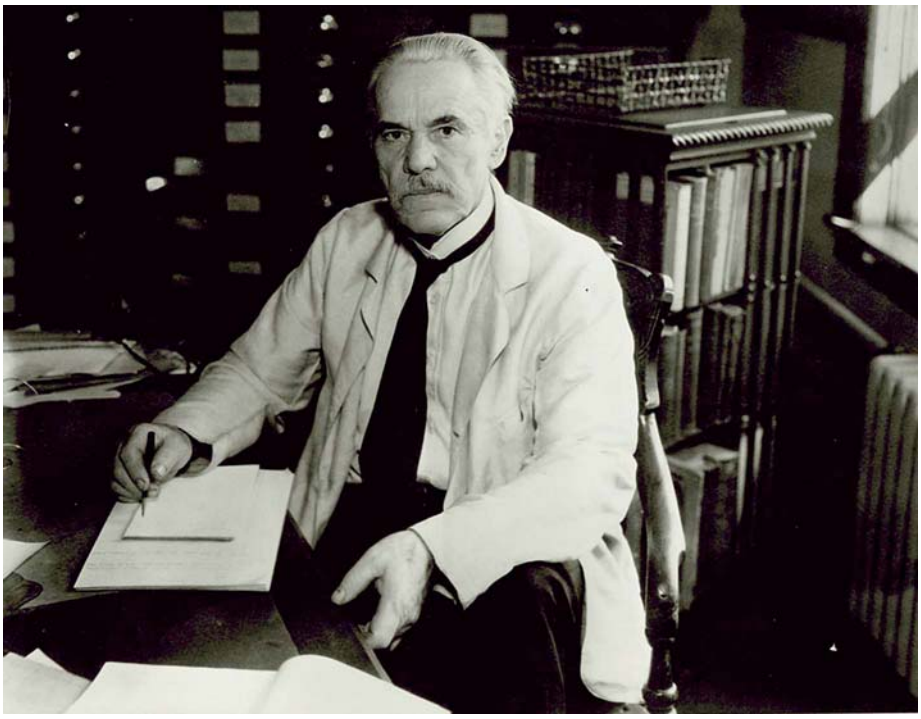
Institutional Archives

National Anthropological Archives. Perhaps the most significant repository of archival materials for anthropology, including biological anthropology, is the National Anthropological Archives (NAA) housed at the Smithsonian. The history and contents of the NAA are described in the chapter by Ruwell.

A number of biological anthropologists have their professional papers archived at the NAA: J. Lawrence Angel (1915-1986); Carleton S. Coon (1904-1981); Marcus S. Goldstein (1906-); Ales Hrdlicka (1869-1943); William A. Lessa (1908-); Marshall T. Newman (1911-1994); Lawrence Oschinsky (1921-1965); Muzaffer Suleyman Senyurek (1915-1961); William H. Sheldon (1898-1977); and T. Dale Stewart (1901-1994). Some of these holdings are quite extensive and provide valuable information on the history of physical anthropology. For example, Hrdlicka's papers cover 133 linear feet of shelf space and contain considerable material on the early history of the American Association of Physical Anthropologists.

Other significant collections in the NAA include: US Army Medical Museum Anatomical Section records (1868-1897); negatives (and supporting measurements) of the U.S. Army Survey of American Male Body Build; Division of Anthropology Collection of Photographs (of bones and people, 1850s-1960s); and Navaho-Cornell Field Health Research Project records (1956-1960). In addition, there are valuable

records among the papers of other anthropologists, collections of photographs of all kinds (including Sheldon's somatotype photographs), and the correspondence of Franz Boas (on microfilm).



Physical Anthropologist Ales Hrdlicka at his desk in the U.S. National Museum. National Anthropological Archives, Smithsonian Institution. Inv. 01026100.

National Museum of Health and Medicine. The National Museum of Health and Medicine in Washington, D.C. was formed from the Army Medical Museum, which was founded at the time of the Civil War (Micozzi et al. 1990). The museum contains some information on individual physical anthropologists, such as the Morris Steggerda collection, but the institution's principal value is for data of interest to paleopathologists and forensic scientists. It also has materials relevant to the history of craniology, as Sledzik (1989) has described. A new building is planned to house the museum and its archival collections.

Project Record Sets

There are many kinds of invaluable data in archival sources, which can be used to reexamine old problems and answer new questions. These include longitudinal data that might be extended through follow-up studies, data that can be reinterpreted with new techniques of analysis, and material in historical records that have never been studied.

Longitudinal Growth Series. There were numerous longitudinal studies of the growth of children that were initiated between 1927 and 1932, partly as the result of the Great Depression and concerns with standards of normal child growth under conditions of poverty (Roche 1992:2; Tanner 1981:312). Each study was directed by a significant figure in

anthropology, public health, or pediatrics, and included serial anthropometric measurements and x-rays.

The Center for Research in Child Health and Development of the Harvard School of Public Health was under the direction of Harold C. Stuart when the study of Boston children began in 1929 (Stuart 1939). About 300 children were measured between infancy and adulthood. Documentation included anthropometric measurements, pediatric examinations, dental examinations, ongoing health histories, nude photographs, and extensive x-rays. Although the project ended in 1954, follow-up studies were still being conducted into the late 1970s (Tanner 1981:316), and most of the records are still available. Unfortunately, the x-rays have been lost, largely through deterioration. Although microfilm copies were made of the x-rays, their quality is too poor to be of use in modern optical densitometry analysis.

Another project, known as the Denver Study, was initiated in 1930 by Alfred H. Washburn at the Child Research Council of the University of Colorado in Boulder (McCammon 1970). It continued up to 1967, and of the 334 subjects included, 179 remained until the final year of the project. Follow-up should still be possible, and would be particular interest since serum cholesterol was measured beginning in 1953.

A third project was initiated in 1929 by Lester W. Sontag at the Fels Research Institute, originally a part of Antioch College and now affiliated with Wright State University (Roche 1992). Of the many scientists who worked on the Fels longitudinal data, about a quarter were trained in physical anthropology. What is most remarkable about the study is that it is still ongoing, with more than 1,000 subjects having participated since 1929 (Roche 1992:14). Since new participants are added each year, subjects range in age from newborn infants to adults over sixty. Data from this project may be viewed as a living archive that is growing annually.

A number of other longitudinal studies were carried out prior to and after the Second World War, including the Brush Foundation Study of T. Wingate Todd and the Bolton Study by B. Holly Broadbent of craniofacial growth, both at Western Reserve University in Cleveland, and the Berkeley Growth Study of Nancy Bailey in California. The serial data from these projects are available. Finally, Nathan Shock established the Baltimore Longitudinal Study of Aging in 1958 (Shock 1984). This and other studies of aging provide valuable data on health changes at the end of the human life cycle.

Anthropometrics of United States Military Personnel. A rich source of data that has been underutilized in the past is the vast series of anthropometric measurements taken over the years on U.S. military personnel (Gordon and Friedl 1993). Some of the data are represented only by summary statistics, as in the post-Civil War surveys conducted by the U.S. Sanitation Committee and the War Office and the post-World War I survey (Davenport and Love 1921). Other data provide considerable detail, particularly the post-World War II anthropometrics of men and women. A survey was done in 1946 of men and women, but only the data on the women have survived. Surveys of Army men were

made in 1966 and of women in 1977, and both men and women are included in the most recent 1987-1988 survey. Until the 1987-1988 Army anthropometric survey, the model for women was the 1967-1968 Air Force study. The Army data, which include thousands of individuals and 130 measurements taken on each, have all been computerized and are available for further analysis. For example, Greiner and Gordon (1992) used Natick Army data to demonstrate ethnic variation in secular trends for a number of body dimensions.

Apart from anthropometrics, there are other data on human body composition and physiology at the U.S. Army Natick Research, Development and Engineering Center (Bell et al. 1991). Human physiological databases should also be available from the National Aeronautics and Space Administration (NASA).

Demographic and Genealogical Sources. Demographic, genealogical, and other population data can be found in church parish, civil, governmental, and a variety of other institutional archives. Of particular value are records of births, marriages, deaths, change of residence (migration), censuses, vital registrations, and surveys (Leslie and Gage 1989). Whereas vital statistics and census data are useful for studies of present populations, these same data from the past are invaluable for the reconstruction of populations and their characteristics, that is, for studies of historical demography. Mielke and Swedlund (1993) have described ways in which historical data from archival sources can be used to explore genetic, demographic, evolutionary, and epidemiological problems. In some cases, vital registrations from church parishes are available from as far back as the sixteenth century. By using the method of isonymy — the study of degrees of relatedness by marriage by couples with the same surname — inbreeding in a population can be estimated from genealogical records (Lasker 1985).

Epidemiology and Health History. Sources of information in libraries, archives, hospitals, government repositories, and international organizations can be applied to studies of health and disease through time and within populations. Health historians are familiar with such sources, and biological anthropologists should also be able to use these data with some assistance and training. The Centers for Disease Control (CDC) in Atlanta is an important source of epidemiological data, including data on specific ethnic or cultural groups (CDC 1993). Although there are certain to be restrictions on access, several data sets at CDC should be of interest to anthropologists studying AIDS and HIV infection. For example, the AIDS Case Surveillance data set includes all reported cases in the U.S., and the HIV Natural History Cohort includes men who were enrolled in the original Hepatitis B vaccine trials in the mid-1970s (Kathleen M. MacQueen, personal communication).

Skeletal Collections Documentation. Collections of human skeletal materials and their associated documentation are located at many universities and museums throughout the United States. These include substantial collections at the American Museum of Natural History, the Academy of Sciences in Philadelphia, the Field Museum, and the Peabody Museum at Harvard. Other skeletal series are the University of Kentucky Indian Knoll Series; the Lower Illinois Valley Series at the Center for

American Archaeology, Kampsville, Illinois, Indiana University, and the University of Chicago; the California Indian Collection at Berkeley; the Terry Collection at the Smithsonian; and the Todd Collection at Case Western University. Repatriation of some of these remains has made the process of documentation and detailed measurement a matter of urgency.

There are also numerous nonhuman primate skeletal collections with associated documentation throughout the United States and Canada. A thorough compilation of these is provided by Albrecht (1982), who was able to identify more than 100 collections of prosimians, monkeys, and apes.

Nonhuman Primate Films. Films are an invaluable source of information on behavior, both human and nonhuman. Studies of nonhuman primates in their natural environments have been enriched by film documentation dating back to the 1930s with Carpenter's (1964) studies of gibbons and howler monkeys. There is a comprehensive collection of primate films at the Pennsylvania State University, which was established by Carpenter in 1944 under the Psychological Film Register (Teleki 1981). Archiving of films, videotapes, and tape recordings of primate vocalizations present special problems of preservation, because these media are particularly prone to deterioration and loss with time. Their value as a resource for both research and teaching amply justifies the cost and attention required.

Multidisciplinary Studies. Of particular interest to anthropology are those records gathered as a part of multidisciplinary and integrated studies, most of which have not yet been archived. Since the early 1960s, there have been nearly twenty multidisciplinary studies of populations around the world dealing with adaptation, microevolution, cultural evolution, ecology, health, and epidemiology (Little et al. 1991). All these projects were directed or co-directed by biological anthropologists; however, considerable ethnographic information was also gathered during the course of the projects, many of which continued for several years. While much of the information has been published, the unpublished records of these projects are extremely valuable, especially because the period covered has seen major transitions in life styles.

Papers of Individual Scholars

The papers of distinguished physical anthropologists have been archived in a variety of locations. Guides to institutional holdings, such as those of the NAA (Glenn 1992), the American Philosophical Society (van Keuren 1986) and the Academy of Natural Sciences (Phillips and Phillips 1963), are useful sources for locating papers. However, there is no general reference that identifies repository locations of anthropologists' papers — a resource that is much needed. To begin to survey the current situation, we contacted senior biological anthropologists and compiled the following listing of archival disposition of personal papers.

Paul T. Baker (1927-): Anthropology Departments, University of Massachusetts, Amherst and Ohio State University, Columbus.

(Includes databases from the high-altitude Peruvian and the Samoan migrant studies.)

Joseph B. Birdsell (1908-1994): South Australian Museum, Adelaide.

Franz Boas (1858-1942): American Philosophical Society, Philadelphia.

Gordon T. Bowles (1904-1991): Monterey, Massachusetts and the Bishop Museum, University of Hawaii. (Arrangements are being made for deposit of his papers, field notes, and other materials at the Bishop Museum and other locations.)

Sheilagh T. Brooks (1923-): Exploring potential archival sites.

Alice Brues (1913-): Exploring potential archival sites.

John Buettner-Janusch (1924-1992): Eagle River, Wisconsin. (The personal and professional papers are held at his family home in Eagle River; archival disposition will be arranged by Robert W. Sussman at a location as yet undetermined.)

C. Raymond Carpenter (1905-1975): Pattee Library, Pennsylvania State University.

W. Montague Cobb (1904-1990): Moorland-Spingarn Research Center, Howard University, Washington, DC.

T. Aidan Cockburn (1912-1981): Detroit (at home of Eve Cockburn).

Earl W. Count (1899-): Department of Anthropology, Hamilton College, Clinton, New York.

Albert A. Dahlberg (1908-1993): To be archived at the University of Chicago Library.

Albert Damon (1918-1973): Peabody Museum Archives, Harvard University.

Charles B. Davenport (1866-1944): American Philosophical Society.

Roland B. Dixon (1875-1934): Peabody Museum Archives, Harvard University.

Theodosius Dobzhansky (1900-1975): American Philosophical Society.

Leslie C. Dunn (1893-1974): American Philosophical Society.

C. Wesley Dupertius (1907-1992): Case Western Reserve University Archives.

Loren C. Eiseley (1907-1977): University of Pennsylvania Archives.

D. Carleton Gajdusek (1923-): American Philosophical Society.

Stanley M. Garn (1922-): National Anthropological Archives (to include radiographs and tapes from the Ten-States Study) and National Institutes of Health, Bethesda (to include the Central America radiographs).

James A. Gavin (1916-1994): Exploring potential archival sites.

William K. Gregory (1876-1970): American Museum of Natural History.

William W. Greulich (1899-1986): National Center for Health Statistics, Bethesda.

Earnest A. Hooton (1887-1954): Peabody Museum Archives, Harvard University.

F. Clark Howell (1925-): Exploring potential archival sites.

William W. Howells (1908-): Peabody Museum Archives, Harvard University.

Frederick S. Hulse (1906-1990): Special Collections, University of Arizona Library.

Edward E. Hunt, Jr. (1922-1991): Pattee Library, Pennsylvania State University.

Wilton M. Krogman (1903-1987): Department of Anthropology, University of Pennsylvania.

Gabriel W. Lasker (1912-): Reuther Library Archives, Wayne State University.

William S. Laughlin (1919-): University of Alaska Library, Anchorage.

Theodore D. McCown (1908-1969): Bancroft Library, University of California, Berkeley.

Ashley Montagu (1905-): American Philosophical Society and University of California, Los Angeles.

James V. Neel (1915-): American Philosophical Society and Texas Medical Center Library, Houston.

Henry Fairfield Osborn (1857-1935): American Museum of Natural History.

Richard H. Osborne (1920-): Port Angeles, Washington. (Papers are held at his home, along with the archival records of the journals, *Eugenics Quarterly* and *Social Biology*.)

Raymond Pearl (1879-1940): American Philosophical Society.

William S. Pollitzer (1923-): Exploring potential archival sites.

Sarah Idell Pyle (1895-1987): Bolton-Brush Growth Study Center, Case Western Reserve University.

Adolph H. Schultz (1891-1976): Anthropological Institute and Museum, University of Zurich-Irchel.

Harry L. Shapiro (1902-1990): American Museum of Natural History.

Elwyn L. Simons (1930-): Section of Fossil Primates, Duke University Primate Center.

Lester W. Sontag (1901-1991): Wright State University.

James N. Spuhler (1917-1992): To be archived at the Laboratory of Anthropology, State Museum of New Mexico, Santa Fe.

Morris Steggerda (1900-1950): National Museum of Health and Medicine.

Lucile E. St. Hoyme (1924-): To be archived at the National Anthropological Archives, Smithsonian.

James M. Tanner (1920-): Department of Anthropology, University of Pennsylvania.

Robert J. Terry (1871-1966): Washington University School of Medicine Library Archives, St. Louis.

T. Wingate Todd (1885-1938): Hamann-Todd Collection, Cleveland Museum of Natural History.

Mildred Trotter (1899-1991): Washington University School of Medicine Library Archives, St. Louis.

Sherwood L. Washburn (1911-): Exploring potential archival sites.

Franz Weidenreich (1873-1948): American Museum of Natural History.

In addition to archival papers, taped interviews have been made of several distinguished biological anthropologists, among them T. Dale Stewart, W. Montague Cobb, Harry L. Shapiro, and Paul T. Baker. It is likely that many more such interviews have been recorded on tape, both audio and video. A compilation of these resources should be prepared.

An important source of biographical information is the Biographical Institute in Providence, Rhode Island, which is operated by G. Erik Erickson. Although this archive is geared primarily to anatomists, it covers a substantial number of members of the American Association of Physical Anthropologists from 1930 onwards. The computerized biographical material includes birth and death dates, education details, places of employment, promotion dates, and other information; it also contains some photographs. A new source of brief biographies of biological anthropologists will soon be available in a new encyclopedia of physical anthropology (Spencer, n.d.). This encyclopedia will be international in scope and will endeavor to identify the location of primary archival material.

Association Records

Several of the professional associations related to physical or biological anthropology have taken steps to archive their documents. The largest of these (2000 members), the American Association of Physical Anthropologists (AAPA), is also one of the oldest professional organizations, having been formed in 1928 (Hrdlicka 1929; Comas 1969). The NAA holds a limited amount of material identified as part of the AAPA, but there is substantial additional information within their Ales Hrdlicka collection. Plans are currently under way to archive more of the recent AAPA materials.

The American Society of Primatologists (700 members) is the primary anthropological organization dealing with nonhuman primate biology and behavior in the United States. The bulk of its records are maintained by Richard Harrison at the Delta Regional Primate Center in New Orleans. The Paleopathology Association (550 members) was formed by T. Aidan Cockburn and continues under the direction of Eve Cockburn, who holds the association records. The Human Biology Association (450 members) has begun to explore institutions for the archiving of its official records and correspondence. Most of the records of the Dental Anthropology Association (325 members) are kept at Arizona State University.

The Society for the Study of Social Biology (300 members) was until 1968 the American Eugenics Society, which published the journal *Eugenics Quarterly* (now called *Social Biology*). Most early records were archived at the American Philosophical Society, while the records of the renamed society are transferred to each Secretary-Treasurer upon taking office. Some records dating back to 1954 are held by Richard H. Osborne in Port Angeles, Washington.

The Paleoanthropology Society (200 members) is an informal organization led by John E. Yellen of the National Science Foundation Anthropology Program, where records of the Society are kept. Within the American Academy of Forensic Sciences, the Physical Anthropology Section has an active membership of about 180. The Academy maintains its files at its main office in Colorado Springs, Colorado. The American Dermatoglyphics Association (150 members) deposits its records at the NAA, which will also archive ongoing collections of dermatoglyphic

prints as a database for future investigators. The Society for the Study of Human Biology (100 members) is based in the United Kingdom but has a significant U.S. membership. Records are kept at the State University of New York at Albany by Lawrence M. Schell. Finally, the American Association of Anthropological Genetics (100 members) is a new organization in the process of incorporating. The Southwest Foundation in San Antonio is likely to be the site for the organization's records.

Summary

- The preservation of records in biological anthropology is important both for the data they contain and for their potential contribution to the history of the field.

- Databases from the past are valuable for a variety of scientific reasons, especially the ability to document historical processes of human and nonhuman primate health, biology, and evolution.

- Biological anthropologists, particularly those approaching retirement, should make arrangements to preserve and archive their unpublished professional papers and any databases with which they have worked.

- Professional organizations serving biological anthropology should arrange for the preservation of their records with an appropriate archival storage facility; such organizations should also promote and facilitate the preservation of biographical information and computerized databases.