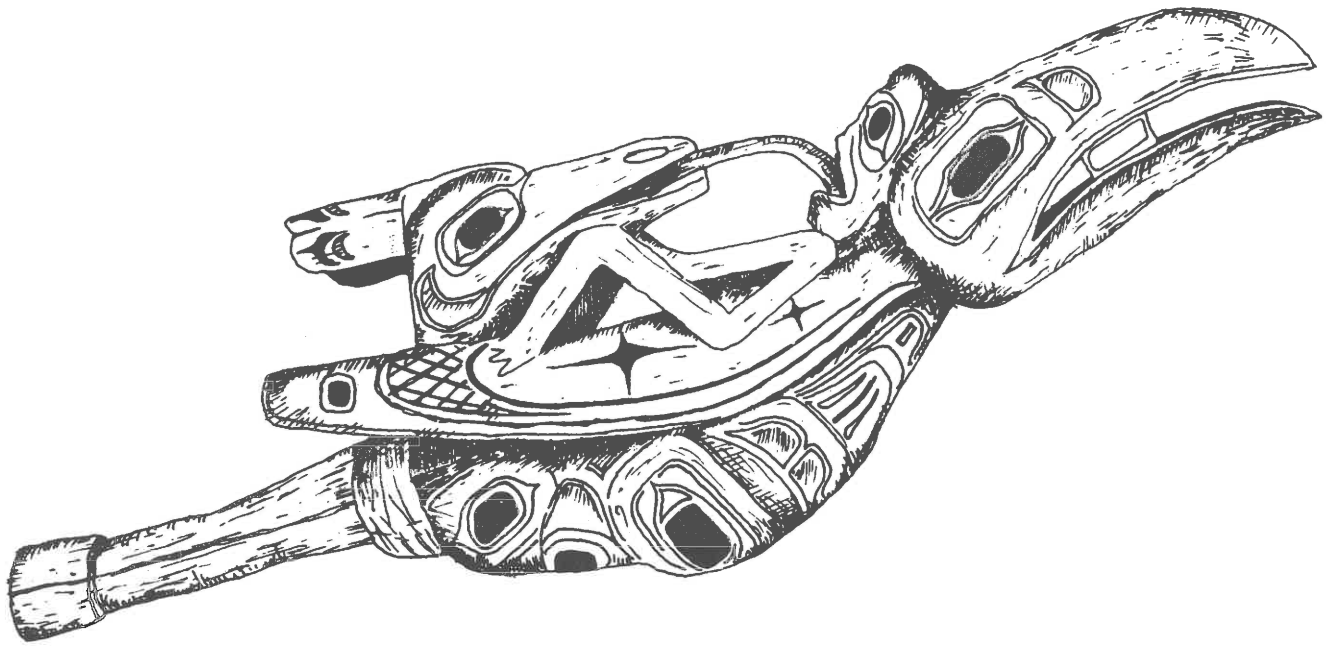
TAN

TEACHING ANTHROPOLOGY NEWSLETTER

NO. 18 SPRING 1991



IN THIS ISSUE . . .

TEACHING ANTHROPOLOGY NEWSLETTER

Every year, precollege anthropology is taught more often and in more places. Anthropology is now part of many history, science and social studies curricula.

Teaching Anthropology Newsletter (TAN) promotes precollege anthropology by providing curriculum information to teachers, creating a forum for teachers to exchange ideas, and establishing communication between teachers and professors of anthropology.

TAN is published free-of-charge semiannually in the Fall and Spring of each school year by the Department of Anthropology, Saint Mary's University, Halifax, Nova Scotia B3H 3C3. Items for publication should be submitted to Monica Lewis, Circulation Manager, or Paul A. Erickson, Editor. Deadlines for submission are October 1 for the Fall issue and March 1 for the Spring issue. News, reviews and articles are solicited!

Need Help With Evolution?

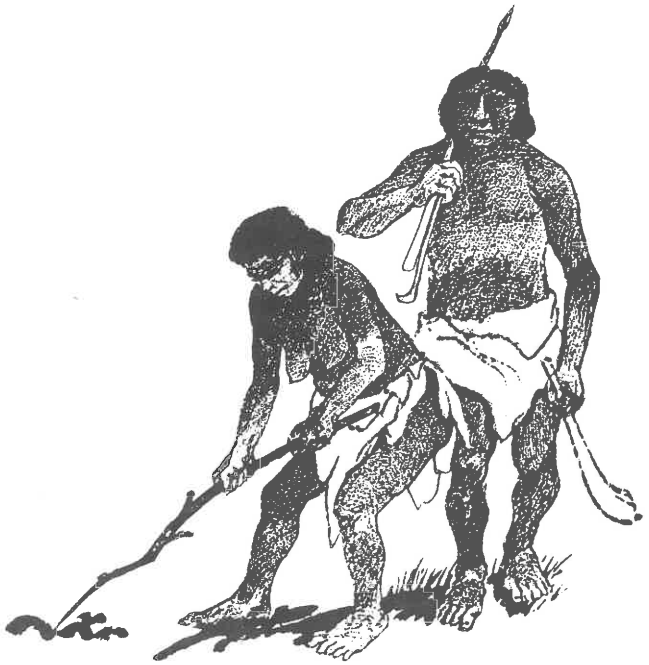
You're in luck.

The National Center for Science Education (NCSE) has formed a network of scientists to advise precollege teachers. *TAN* readers who want to join the network or receive advice from one of its members should write to Eric Meikle, NCSE, 2107 Dwight Way, #105, Berkeley, CA 94704. NCSE also publishes a bimonthly *Report* on the evolution/creation debate and lengthier articles in its quarterly *Creation/Evolution Journal.* In cooperation with People for the American Way (PfAW), it recently published *Biology Textbooks 1990: The New Generation,* an evolutionary "report card." Annual subscriptions to the *Report* are $10 in the United States and $15 elsewhere; to the *Journal,* $16 in the US and $19 elsewhere. Annual membership in NCSE, which includes the *Report,* is $15 in the US and $20 elsewhere. Write to the NCSE, P.O. Box 9477, Berkeley, CA 94709-0477.

The Ontario Association for the Support of Integrity in Science Education (OASIS), a NCSE affiliate, publishes a quarterly *Newsletter* for Canadians. Some items from recent issues: A long Canadian "newswatch" column; a first-hand account of the 1990 International Conference on Creationism; and an assessment of a recent Ontario court decision prohibiting religious indoctrination in schools, with implications for teaching evolution. A Newsletter supplement, *Biological Evolution: An Overview of Mechanisms and Evidence,* is designed especially for teachers. To subscribe to the *OASIS Newsletter* ($10 per year), write to Editor Richard J. Wakefield, 385 Main Street, Beaverton, ON L0K 1A0.

Lucy Comes to Nova Scotia

The Physical Anthropology Laboratory of Saint Mary's University (SMU) has acquired casts of the 76-piece, 3.5 million year old *Australopithecus afarensis* fossil Lucy. Discovered by Donald Johanson in the Afar Triangle region of Ethiopia in 1974, Lucy became an overnight sensation and a major bone of contention between Johanson and Mary and Richard Leakey. The new casts were manufactured at The Institute of Human Origins in Berkeley, California. They are available for study by teachers and students. To make an appointment, contact the SMU Anthropology Department, Halifax, NS B3H 3C3 (Tel. AC902-420-5628).



Human Evolution
A Challenge for Biology Teachers
by Martin K. Nickels

Two primary goals of any high school biology teacher should be to provide students with the most important concepts and ideas of the discipline today and to convey to students a sense of their own biological nature.[1] One such concept is evolution, but in recent years this most essential of all biological ideas may have been given little or even no coverage in some biology classrooms. Even in those courses where evolution is accorded its rightful place in modern biological thinking, many teachers may miss a golden opportunity to increase student interest in the subject. Ironically, this opportunity actually involves the study of the single most controversial — but also the most interesting — organism to study biologically: humans.

This article is both a proposal and a challenge for biology teachers to study human evolution using the most basic of methods. But before I describe this method, let me discuss three reasons why coverage of human evolution may be omitted in at least some high school biology courses. My focusing on these three reasons is based on conversations with teachers in schools I have visited as a guest lecturer and also those teachers I talked with during the course of my presentation of a workshop entitled "The Classroom Study of Human Evolution" at the 1985 convention of the National Association of Biology Teachers. I make no claim with respect to the actual number of teachers who omit or curtail coverage of human evolution for these reasons (or others).

Reasons Teachers Avoid Human Evolution

The first reason is that many teachers simply run out of time. This is because textbook coverage of the subject is inevitably at the end of the section or chapter dealing with the broader subject of the history of life on earth. Those teachers who already have spent more time than originally intended on the subject may simply curtail study of those species with more recent evolutionary histories. This, of course, includes humans, who are among the youngest of the species. (The biology teacher's predicament in this situation is similar to that of the American history teacher at the end of the year who finds that there is insufficient time to cover World War II and the Korean Conflict adequately and so merely assigns these last chapters of the textbook to be read for the final exam.)

To avoid this problem, why not *begin* with humans? Beginning with humans is virtually guaranteed to interest even the most initially unenthusiastic students in the study of evolution. I hope that the method described in this article will encourage teachers to use humans as the first rather than the last case study in their coverage of evolution.

A second reason for failing to include humans in the study of evolution is probably the fact that many biology teachers are less knowledgeable about this topic than others. This, in turn, is related to the fact that probably few biology teachers studied human evolution to any real extent even during their own college careers. After all, the omission of human evolution from college biology courses because of a shortage of time may be even more prevalent than in high school because of these courses' shorter duration (usually one semester). In many institutions, the subject is considered more appropriate for anthropology courses anyway, but, if enrollment in my own courses at Illinois State University for more than 10 years is any indication, few biology students take such courses. Consequently, as teachers themselves, they feel unprepared to teach the subject adequately in their own classes. The information in this article should help these teachers feel at least a little more confident when covering this subject.

One other reason for omitting the study of human evolution is more difficult to justify but is just as easy to understand as is simply running out of time. Unfortunately, more frequently than not, this reason may be the real motivation for not teaching the subject: the concern for the almost certain controversy it will create. After all, it is one thing to discuss the evolution of life forms such as plants and fish that only the most sensitive of students will have any emotional involvement with, but it is quite another to include ourselves in the discussion! And the controversy is hardly limited to lively sessions in the classroom, either. It may well escalate into a situation involving parents and administrators.

It is easy to sympathize with the teacher who decides it is the better part of valor to avoid confrontations that are usually detrimental to the emotional and mental well-being of everyone concerned. But it is also true that such a decision helps perpetuate the unscientific belief that the process underlying the origin of humans is somehow different from that of other species.

Figure 1. Side (lateral) views of gorilla (top) and human (bottom) skulls.

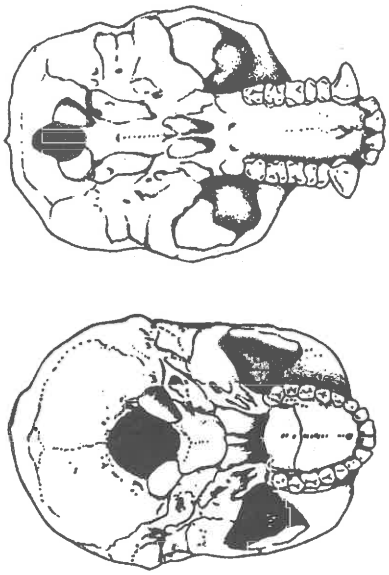


Figure 2. Bottom (basal) views of gorilla (top) and human (bottom) crania.

This belief, in turn, is the basis for the all-too-widespread and potentially disastrous attitude that humans are a species "apart from" rather than "a part of" the natural world and the processes affecting it. Surely none of us desires to contribute to the spread of either of these ideas, but failing to emphasize the natural (evolutionary) kinship that humans share with other species does just that.

I submit that there is a way to approach the study of evolution in general — and human evolution in particular — that may well avoid serious controversy. Even if it does not successfully head off objections, at least the students — even those who most oppose the idea — will have a better understanding of the kind of evidence and reasoning that scientists use to conclude that humans have indeed evolved.

A Proposed Solution

There is nothing especially novel about the method proposed here. Indeed, it is probably the earliest method of studying and describing the differences and similarities of species ever devised. It is certainly one of the easiest to learn, with its degree of application and detail limited only by the knowledge of the user. In fact, it is so easy to learn and use that students need know nothing special beforehand. It is the method of comparative morphology or anatomy.

This method of comparative anatomy has been utilized by evolutionary biologists for well over a century and is based on the principle that the similarity of structural features in different species is based on a common genetic heritage derived from their descent from a shared ancestral form. Structurally similar features are termed homologies and constitute one of the principal categories of evidence for inferring patterns of evolutionary kinship between both living and fossil forms. Although originally developed in conjunction with comparative anatomical studies — such as in this article — the principle has been extended to the biochemical and molecular level in recent years. Here some of the most precise and amazing assessments of structural similarity have been made, involving not only proteins (which are direct genetic products) but also the genetic molecule itself — DNA. The overwhelming pattern of consistency between the biochemical data and the anatomical data gathered over many years has confirmed virtually every major evolutionary relationship that had been determined on the basis of the earlier anatomical data alone (see, for example, Lewin 1984 and Stein & Rowe 1982).

There are two principal reasons why the method of comparative anatomy is especially useful and effective when applied to hominoids (humans and apes). The first reason is that it is extremely simple to use because it is based prim-

arily on the examination and description of physical features such as those found on the skull. There is no need for either extensive technical language or complicated instruments when examining these features; they are prominent and easily understood. At its least expensive level of use, the only materials needed are pictures or accurate drawings (which may be put on overhead transparencies) of the skulls of modern humans, either or both of the African apes (the gorilla and chimpanzee), and three or four examples of fossil humans and prehumans. There are numerous publications (see References) that have such depictions, or they may be specially drawn for use in the classroom. Without question, though, the most effective materials to use with this method are life-size reproductions or casts of these hominoid forms. These are available commercially from laboratory supply companies (see Julie L. Cormack's article "Casting Anthropology" in *TAN* 15 [Fall 1989]) and are preferable to drawings or pictures because of their three-dimensional character and hand-on appeal. It is not necessary that each student have her/his own cast. Casts can be shared, or a single cast of each form can be shown to the entire class and then passed around for closer individual examination by the students. The casts now available are extremely well made and sturdy enough that they will last for years even when handled extensively.

The second reason that the comparative morphology method is so effective when applied to the study of hominoids and other primates is that students are studying *themselves.* There is simply no other species of plant or animal that students more easily relate to or possess a more innate interest in than themselves and the most human-like non-humans in the world, gorillas and chimpanzees. This is hardly a surprising observation, but I suspect few biology teachers take advantage of this fact to promote greater interest in the study of the evidence for organic evolution. Since students are studying their own biological attributes with this method, it is as though they are gazing into a mirror instead of having to peer down a microscope.

Making the Comparison

There are two steps in the use of this method to study the nature and extent of ape and human affinities. First, students describe the differences that exist between modern apes and humans. Second, this knowledge is applied to fossil forms in order to determine their nature.

In the first step, students should focus on the physical features of the skull and describe how modern apes and humans differ with respect to them. This may be done collectively and orally with the teacher listing the differences on the blackboard or each student making an individual assessment and writing the differences on a sheet of paper. It is not necessary that the functional significance of the differences be discussed, but it does make the activity more interesting if such discussion is included.

In the second step, the fossil forms are observed in reverse order of their age, i.e., the youngest or more recent specimen is examined first and the oldest or earliest ones examined last. Starting with a more recent but nonmodern form such as an archaic *Homo sapiens* or Neanderthal specimen and proceeding on to earlier *Homo erectus* and still earlier gracile and robust australopithecines, requires students to make ever more difficult assessments about the nature of specific features as well as overall specimens. The teacher need only ask "Is this feature or specimen more ape-like, more human-like or intermediate?"

The Discovery Process

The typical sequence of events in my own classes or when I visit secondary schools is this: Despite clearly not being modern in appearance, the Neanderthal specimen (I use La Chapelle) is seen as definitely human even though the shape of the brain case is longer and flatter than that of modern humans. *Homo erectus* (the reconstruction from Zhoukoudian) is a little more difficult to classify but is seen usually as more human-like than ape-like because of its larger brain size and smaller front teeth than those of apes.

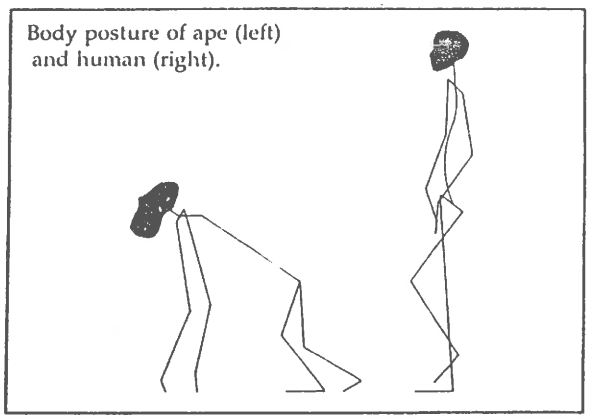
The most perplexing specimens are the australopithecines. (The robust form is best represented by the "Zinj" specimen from Olduvai Gorge and the gracile form by KNM-ER 1813 from Lake Turkana or STS-5 from Sterkfontein. While the 1813 specimen technically may belong in the *Homo habilis* category, it still illustrates the overall gracile pattern and is more illustrative because it retains some teeth, which STS-5 does not.) While both australopithecine forms have obviously ape-size brains (400-500 cubic centimetres) and the robust form has extremely large jaws and prominent jaw muscle attachments, they also show more human-like reduced front teeth and the adoption of erect bipedalism (as reflected in the more forward position of the foramen magnum on the base of

the skull). Their ape-sized brains also are somewhat deceptive because, in fact, they are relatively larger for their body size than those of the African apes.

It is the realization that the australopithecines are neither ape nor human but, in a sense, both that requires the students to explain just how such specimens might be related to modern apes and humans. Given that even earlier middle Miocene-age fossil hominoid forms are distinctly more ape-like in their appearance, the students usually conclude that while the australopithecines do differ from both modern apes and humans, they are different in the direction of being human since no apes show such relatively large brains, small front teeth, and erect bipedalism. In other words, the australopithecines are the sort of intermediate and transitional forms that one would expect to have existed if, indeed, humans did evolve from earlier, more ape-like creatures. *Homo erectus* and archaic or early *Homo sapiens* forms (including Neanderthal) demonstrate the continuation of the pattern of ever more human-like attributes appearing through time during the evolution of our genus.

What of those students or others who might object that this pattern is really only evidence of variation within a specially created "kind" or even the result of a series of separate creations of similar but different forms through time? Of course, the same objections can be made to any fossil sequence, not just that of humans and proto-humans. The response of the instructor to such objections should be to point out at least the following: First, the fossil sequence in successively older geological levels for both human and other forms is entirely consistent with the scientific interpretation that organisms have evolved through time. Any other pattern would be evidence against an evolutionary explanation. One might rhetorically ask why such a pattern — if it is indeed the result of special creation — should also be so suggestive of, and consistent with, the view that descent with modification has occurred. After all, the special creation of successive forms could just as easily form no pattern whatsoever.

Second, the instructor should acknowledge readily that special creation of these and other fossil forms could be the "true" account of their origin. Indeed, it is impossible to disprove such an explanation. And that is the very reason such an explanation is unscientific in nature. It cannot be refuted because there is no possible


Body posture of ape (left) and human (right).

empirical evidence that one could discover to disprove it. Such a process as special creation is by its very nature beyond the realm of natural processes and, so, is outside the province of scientific investigation. Furthermore, one of the fundamental assumptions of science is that natural events are the result of natural processes and as long as natural processes (such as mutation, selection, isolation, etc.) exist and are sufficient to account for natural events (like descent with modification), then supernatural accounts are unnecessary. For all of these reasons, the instructor is justified in maintaining that special creation should not be considered a valid, alternative scientific explanation for the fossil pattern under discussion.

Third, the point of this classroom demonstration is not to prove that evolution has occurred. It is to introduce students to the study of the evidence for evaluation by utilizing specimens that they can readily relate to and better understand.

Conclusion and Challenge

It is virtually impossible for any student to fail to see the continuity and gradation of form evident in these fossil specimens that is entirely consistent with the conclusion that there has in fact been descent with modification, i.e., evolution. This pattern is apparent even when using only three or four fossil specimens. It becomes even more obvious when additional fossils that fill in the temporal gaps are used, but these are not absolutely required to demonstrate the point. (What is seldom appreciated is just how substantial the fossil record of human evolution over the last four million years really is. While it is true that at present, complete fossils are relatively rare from the time period of 8 or 10 to 4 million years ago, there are numerous cranial and post-cranial remains to document the pres-

ence of forms which may have evolved into the australopithecines.)

Thus, not only should biology teachers stop omitting humans from the study of organic evolution, but they would do well to *start* with this example when they begin that section of the course. After all, if there is sound, reliable, well documentated evidence that humans among all species have evolved, then it is more likely that students will accept evolutionary explanations for the origin of other life forms. Given the nature and extent of the hominoid evidence and the almost innate curiosity and interest students have when it is presented, there is simply no justification for excluding humans from the study of evolution in secondary school biology classes.

For more information, teachers can write to me c/o Anthropology — Edwards Hall, Illinois State University, Normal, IL 61761.

Note

[1] This article is revised and reproduced with permission from *The American Biology Teacher,* Vol. 49, no. 3, March 1987.

References

Aiello, L. 1982 *Discovering the origins of man.* New York: Stonehenge Press and The American Museum of Natural History.

Campbell, B. 1988 *Humankind emerging,* 5th ed. Glenview, IL: Scott Foresman & Co.

Ciochon, R. L. & Corruccini, R.S., eds. 1983 *New interpretations of ape and human ancestry.* New York: Plenum.

Johanson, D. & Edey, M. 1981 *Lucy: the beginnings of humankind.* New York: Simon and Schuster.

Kennedy, G. E. 1980 *Paleoanthropology.* New York: McGraw-Hill.

Larsen, C. S. & Matter, R. M. 1985 *Human origins: the fossil record.* Prospect Heights, IL: Waveland Press.

Leakey, R. 1981 *The making of mankind.* New York: E.P. Dutton.

Lewin, R. 1984 *Human evolution.* New York: W.H. Freeman.

Pfeiffer, J. E. 1985 *The emergence of man,* 4th ed. New York: Harper and Row.

Stein, P. L. & Rowe, B.M. 1982 *Physical anthropology,* 3rd ed. New York: McGraw-Hill.

Wolpoff, M. H. 1980 *Palaeoanthropology.* New York: Alfred A. Knopf.

Help Wanted

Pam Wheat of Houston, Texas, is collecting information about science fair projects involving archaeology. She wants to show how high-quality scientific work can be done with archaeological data. *TAN* readers with relevant information are asked to send it to her at 1901 Bolsover, Houston, TX 77005.

Our Readers Write . . .

Gaynell Stone, Director of the Suffolk County Archaeological Association/Nassau County Archaeology Committee, wants *TAN* readers to know that her organizations sponsor workshops for elementary students on Long Island culture, native life and archaeology. For information, write to her at P.O. Drawer AR, Stony Brook, NY 11790.

The Rice Lake Museum of Archaeology in Port Hope, Ontario, is a new organization that educates the public about 11,000 years of local human habitation. Museum membership, $10 per year, can be arranged by writing to Lori Stephenson, Rice Lake Museum of Archaeology Membership Chair, 14 Lavinia St., Port Hope, ON L1A 2A6.

New from Documentary Educational Resources

Documentary Educational Resources (DER) is a nonprofit producer and distributor of anthropology videos and films. A few years ago DER began expanding into the precollege market, converting and editing 16mm classics into videos for classroom use. Collaborating with teachers, DER has produced three new videos for elementary and secondary schools: *The !Kung San: Traditional Life; The !Kung San: Resettlement;* and *Yanomamo of the Orinoco.* All are just under 30 minutes long.

DER has a wide range of anthropology titles for sale and rent in both the United States and Canada—and a free preview policy. For more information, write to Judith Nierenberg, DER, 101 Morse Street, Watertown, MA 02172.

A Simulated Archaeological Dig for High School

by David Williamson

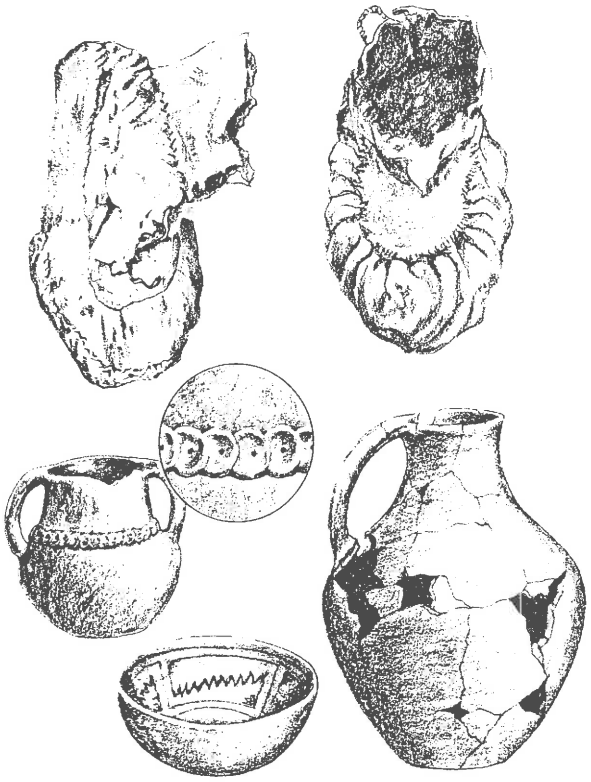
In October, 1990, anyone passing by Halifax West High School would have seen something unusual. Thirty-four students of History 532 (Archaeology) were digging two strange-looking holes at the rear of the school parking lot. They were participating in a simulated archaeological dig.

History 532 (Archaeology) was originally designed as an alternative to the standard course in grade 10 Ancient History. It has been taught for 10 years now, with field trips to archaeological sites normally included in the curriculum. During 1989-90, the students visited an archaeological project of the Canadian Parks Service in Halifax Citadel National Park. The benefit of being involved in a real dig is something that can never by duplicated in a classroom. But, field trips to real digs cannot be guaranteed available every school year.

So, in 1990-91 I decided to simulate a dig outdoors. The class was divided into two groups with the intent that each group would create an archaeological pit, bury artifacts in it and then switch pits to excavate. During the first week of class, the students were told that they would be creating their own cultures together with the artifacts to represent them. They were able to meet this challenge because they had completed Ancient Studies, a course that deals with the components of culture and with the earliest cultures of the Middle East, Greece and Rome.

The first major consideration was picking a suitable time to dig. Before starting, the students had to have some background information on excavation methods, but the dig also had to take place before the weather turned too cold. Spring was ruled out because by the time the ground in Nova scotia would have been suitable for excavation, the school year would have been almost over. We settled on the last week in October.

We spent one month going over the basic techniques of archaeological excavation while the students created their cultures. Their first task as groups was to develop cultural scenarios and create the relevant artifacts. This task took several class periods as well as some out-of-class time. Every student in the group shared responsibility for creating the group's artifacts. Once the scenario was developed, the next task was to have the groups set themselves up as archaeological teams and assign members jobs like digging, screening, recording and photographing. The students provided their own shovels, wheelbarrows, boxes, masking tape, pens and plastic bags; the school woodworking shop provided materials for stakes and frames for grids; the maintenance department provided buckets for washing artifacts; and the art department gave advice on artifact creation.



Within several weeks, each group had developed its cultural scenario. Group A developed a burial scenario that included the mummified body of a child, personal possessions and toys and gravegoods indicating that the culture had been agricultural. Among Group A's artifacts was a "Rosetta Stone" indicating that their people had traded with the Greeks. Group B developed the scenario of a primitive culture that had evolved from the hunting/gathering stage through some form of civil war into a culture dominated by women (this group had a large number of females). Their artifacts included a "Code of Hammurabi" as well as intricate pottery tablets depicting religious ceremonies and the war in which the women had gained control. Working so close together, there was a strong possibility that one group might find out what the other group was planning. Owing to student effort, this did not occur.

The actual dig took two full days, during which time the students were excused from all other classes at the school. The first day was devoted to digging pits and burying artifacts. Each group prepared a master plan that contained the placement of every artifact. I kept a copy of the plan for reference and evaluation of group performance. To save time, the size of each pit was limited—no larger than three meters square and one meter deep. All went well — despite cold weather!

On the second day, the students traded pits and began the task of excavation. The previous day's rapid pace of work with picks and shovels was replaced by a slow, methodical pace with trowels, small brushes and dust pans. As the pits started to take shape, the uncovering of artifacts began, and with it, the jobs of recording, photographing, cleaning, washing and cataloguing. (We could have used another day to dig, but the students were unable to miss another day of classes.)

When the excavation was completed, the second phase of the project began: artifact interpretation. Six regular class periods were set aside for this phase, with any uncompleted work to be done on the students' own time. Before digging had begun, each group had produced drawings and descriptions of the artifacts it had created. Now the other group had to draw and describe these same artifacts and then compare their interpretations with the originals.

Our two days "in the field" had memorable moments, some of which were recorded on film. Hard labor from 8:30 am until 3:30 pm produced many sore muscles and, judging from parents' reports, many tired teenagers those two evenings. Although our digging methods were sometimes primitive (one group dug right through two strata in Heinrich Schliemann fashion), our results were rewarding. The students wrote creative and competent reports, including interpretive drawings, excavation plans and photographers' contact sheets and enlargements. They cooperated with a minimum of intervention, so I acted mainly as advisor and resource person. They gained an appreciation of what field archaeology is like, making their studies for the rest of the year much more meaningful. And, perhaps just as important for learning, they enjoyed themselves!

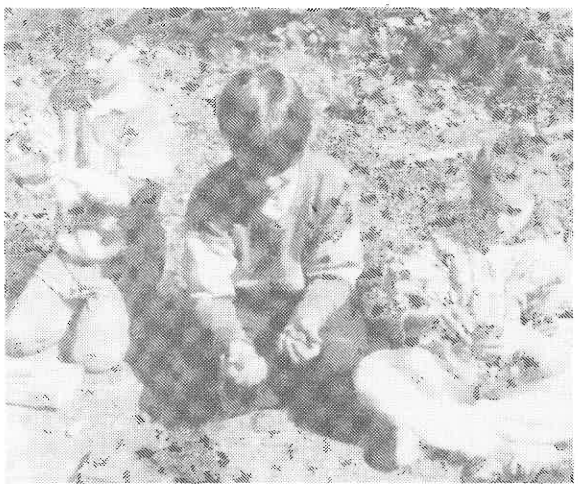
TAN readers who want more information about our simulated archaeological dig for high school can contact me at Halifax West High School, 3620 Dutch Village Road, Halifax, NS B3N 2S3.

Need Help With Archaeology?

You're in luck again.

The Archaeological Assistance Division (AAD) of the United States National Park Service publication *Federal Archaeology Report* (Vol. 3, no. 7 [Dec. 1990]) lists university training courses in archaeology open to students and teachers. The *Report* also describes three new precollege archaeology resources:

Archaeologists at Work: A Teachers's Guide to Classroom Archaeology (Guide) has been developed by Alexandria Archaeology and the Junior League of Washington, D. C. for use in the third grade. It features archaeological information, teaching resources, classroom activities and a bibliography of archaeology books in Alexandria-area libraries. Copies can be borrowed or purchased from Joanna T. Moyar, Education Coordinator, Alexandria Archaeology, 105 N. Union St., Alexandria, VA 22314.



Clues from the Past: A Resource Book on Archaeology is a 208-page instructional manual developed by the Texas Archaeological Society for use in the third grade and up. It suggests ways to teach archaeology as both history and science, with examples drawn from the prehistory and early history of Texas. Copies can be ordered for $17.95 from Hendrick-Long Publishing Company, P. O. Box 12311, Dallas, TX 75225.

AAD's own comprehensive *Listing of Education in Archaeological Programs: LEAP CLEARINGHOUSE* describes and cross-refer-

ences more than 1200 governmental, educational and private-enterprise archaeology programs with articles, brochures, classroom activities, curricula, exhibits, films, interviews, press releases, public service announcements, tapes and tours. Copies can be purchased for $13 from the *LEAP* Coordinator, AAD, National Park Service, P. O. Box 27127, Washington, DC 20013-7127.

The Society for American Archaeology (SAA) Public Education Committee's Newsletter (see *TAN* 17 [Fall 1990]) describes three additional resources:

Illinois Archaeological Resource Materials With Annotated Bibliography for Teachers by Joyce A. Williams of the Illinois Historic Preservation Agency can be purchased for $3 from the Agency's Archaeology Section, Old State Capitol, Springfield, IL 62701.

Intrigue of the Past: Investigating Archaeology is a curriculum for grades four through seven developed by the Utah Interagency Task Force on Cultural Resources. In June, 1991, the Utah Bureau of Land Management (BLM) and the Utah Museum of Natural History will use *Intrigue* as the centerpiece of an archaeology institute for teachers and social studies specialists from all school districts in the State. Teachers will be taught archaeological activities like table-top digs, flintknapping and laboratory analysis. Two fieldtrips will be included. For information about the curriculum and institute, contact Shelly Smith or Jeanne Moe, BLM, 2370 South 2300 West, Salt Lake City, UT 84119.

In April, 1991, at its annual meeting in New Orleans, the SAA sponsored a workshop that brought archaeologists and educators together to pilot a curriculum called *Project Archaeology: Saving Traditions (P.A.S.T.)*. Anyone interested in *P.A.S.T.* should contact Ed Friedman, Bureau of Reclamation, P.O. Box 25007, D-5530, Denver, CO 80225-0007.

The January-February, 1991, issue of *Archaeology* (Vol. 44, no. 1), journal of the Archaeological Institute of America (AIA), devoted a special section to archaeology and precollege education. In her section introduction, AIA President Martha Sharp Joukowsky muses, "So you're young and you want to be an archaeologist. Your parents frown on the idea. 'Do you really want to be an archaeologist?' they ask. 'Why not become a doctor or a lawyer?' " Joukowsky's response is that *everyone* has the right to become an archaeologist. Read this journal to find out how.

AAA Precollege Anthropology Report Available

A 42-page report on the status of precollege anthropology in North America has been prepared by the American Anthropological Association (AAA) Task Force on Teaching Anthropology in Schools. The report — compiled by Paul Erickson (Saint Mary's University), Serena Nanda (City University of New York), Sally Plouffe (University of New Mexico) and Patricia Rice (West Virginia University) — examines the role of anthropology in precollege teacher training, certification and curricula, in every Canadian Province and American State. Included is a mini-ethnography of a precollege classroom in New York City. The report is eye-opening and provocative. A summary will be published in *Anthropology Newsletter* or a future issue of *TAN*. In the meantime, copies can be obtained from Charles Ellenbaum, Secretary, AAA Task Force on Teaching Anthropology in Schools, College of Dupage, 22nd Street and Lambert Road, Glen Ellyn, IL 60137.

Dances With Wolves: A Review

by James R. Jaquith

Kevin Costner co-produced, directed and starred in *Dances with Wolves,* a three-hour, superbly photographed film reflecting two consecutive phases of 19th-century American history. The first was the Civil War in which viewers are introduced to between-engagement boredom, high levels of fear, spitting, swearing, the exquisite agony of wounds, treatment for which was M*A*S*H-less, and death. We are also introduced to John Dunbar, a Union lieutenant portrayed brilliantly by Costner. In a scene of dream-like improbability, he rides unarmed toward Rebel lines where he is fired upon repeatedly and at short range, emerging unharmed. As though in a myth, Dunbar's general observes from a nearby hilltop. This is important, since the general interprets his lieutenant's foray as an act of sublime heroism from which two story-significant events emerge. One is that attention from the general's personal surgeon renders unnecessary the amputation of one of Dunbar's legs (from a wound suffered earlier). The second is that the general decorates Dunbar for his "heroism," the principal reward being that the lieutenant would be allowed to choose his next posting. His choice was the "frontier," at that time almost anywhere on the Great Plains.

Posted to a Fort Sedgewick in Dakota Sioux territory, Dunbar makes the trip on a mule train operated by a crude frontiersman named Timmons, a role designed to contrast with Dunbar's relatively gentle and sensitive persona. The "high point" of the mule driver's performance likely was a scene in which he bends over and ... you got it ... farts.

Upon arrival at the fort, Dunbar discovers it to consist of two small, broken-down buildings and to be completely abandoned. Supplies unloaded, Timmons is reordered back to where they had commenced their westward trek. On the return trip, he is severely wounded by five arrows and then scalped to the accompaniment of his own screams.

After two or so months of isolation, Dunbar is visited by a group of Sioux marking the onset of the central dramatic phase of the film.

Initial inter-language frustrations aside, Dunbar gets on well enough with the Sioux band, camped nearby awaiting the arrival of herds of buffalo (*Bison*), so necessary for food, skins and culture-ideal fulfillment. Meanwhile, a wolf visits the fort daily, staring at Dunbar from a distance, an almost childlike sequence of interactions adumbrating, perhaps, the anxiety and potential tragedy of contact between peoples of different cultural backgrounds and nature itself. One day Dunbar and the wolf are more or less playing together within sight of his new friends who decide that Dances with Wolves would be his Sioux name.

In a truly awe inspiring, wonderfully photographed sequence heavily laden with the legend-dream-myth-like qualities that characterize the whole film, Dunbar joins his Sioux friends in a bison hunt. Spirits are dampened with the discovery of twenty or so just-killed animals, slaughtered by whites apparently for the sole purpose of claiming the hides and the tongues (these being regarded as a gastronomic delicacy). After a time, the main herd is found and just as many animals are killed as the Sioux can transport on their travois. Dunbar, in a scene rife with different orders of symbolism, joins with a Sioux companion in eating a freshly-cut, uncooked tongue.

What about romance? A female member of the band (played by Mary McDonnell) is, biologically, not Sioux at all, but white, having been captured as a very small girl. An influential member of the band persuades her to try out her almost extinct English on Dances with Wolves. The Sioux want information about the nature, numbers and timing of large-scale white invasions of their territory. The woman, whose Sioux name is Stands with Fist, gathers information, improves her English and teaches Dunbar Sioux. The two fall in love and are married in Dakota fashion.

By now the inevitable, bloody, bitterly ethnocidal chain of events was launched. The Civil War having ended, whites in their tens of thousands were hastening westward, unstoppable in their passion for "free" land. Thus, a small human society was doomed to imprisonment on a government-chosen and government-controlled reservation; doomed to deculturation, hopelessness and a few pathetic ventures into what anthropologists call revitalization movements; doomed to witness the death of their nomadic traditions, their religion, their innermost sense of personal and group identity — in short, most of what made them human.

The poster in the theatre where I saw the film proclaimed "Some material may be inappropriate for children under 13." The caution could not have been for the movie's sexual content

which consisted of the most modest and disguised of hints. It must have been for the violence, of which there was considerable. Still, it was not gratuitous. On the contrary, it was perfectly congruent with the story line and with history.

Dances with Wolves garnered seven of the twelve Academy awards for which it had been nominated. See it! When it comes out in video, have your students see it! I saw it twice because what it has to say and the sterling artistry with which it is presented make it too valuable to miss.

Notes on Contributors

James R. Jaquith is Professor of Anthropology at Saint Mary's University. His reviews of books and movies have appeared in previous issues of *TAN*.

Martin K. Nickels is Associate Professor of Anthropology at Illinois State University. With David Hunter and Phillip Whitten, he is co-author of *The Study of Physical Anthropology and Archaeology* (1979, Harper and Row).

David Williamson teaches archaeology at Halifax West High School in Halifax, Nova Scotia. He is an active member of the Nova Scotia Archaeology Society with a special interest in underwater archaeology.