

SIMON FRASER UNIVERSITY

S.76-191

MEMORANDUM

To Members of Senate

From Dean of Graduate Studies Office

Graduate Calendar Changes -  
Subject Department of Archaeology

Date December 21, 1976

MOTION I:           That Senate approve the Graduate Calendar  
Changes in the Department of Archaeology.

MOTION II:           That Senate approve the following new courses:  
Arch 840-3, Arch 872 (Non-credit) and Arch 876-5

These changes were approved by the Senate Graduate Studies Committee on  
December 13, 1976 and the Executive Committee of the Senate Graduate  
Studies Committee on December 20, 1976.

  
Jon Wheatley  
Dean of Graduate Studies.

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## CALENDAR SUBMISSION

1977-78

Archaeology

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AREA OF STUDY

Change in Description: From: "The department offers specialization in Archaeology, Physical Anthropology and Ethnology. Students are expected to gain a broad theoretical knowledge in the discipline and engage in one or more areas of specific research."

to: "The department offers specialization in Archaeology, Physical Anthropology, Ethnology, Archaeometry and Zooarchaeology. The student is expected to gain a comprehensive understanding of the discipline. In so doing, he/she should strive to acquire a general knowledge of world prehistory, physical anthropology and archaeological theory and method, in addition to obtaining knowledge and expertise in particular areas of research interest."

Rationale: The revision offers a better description of the current program.

DEGREE REQUIREMENTS

Change in Requirements: From: "A graduate student's main concentration will be on a thesis and not on formal course work. For the M.A. degree, minimum requirements are four one-semester courses and a thesis. For the Ph.D. degree, requirements are one course and a thesis, excluding seminars. This course may extend beyond one semester's duration and is designed particularly to equip the candidate for his/her research and thesis."

Although the Department recognizes that a knowledge of languages other than English is desirable, it does not have any prescribed language requirements. However, where it is evident that a language knowledge is necessary for the candidate's field work or reading, she/he will be required to attain the necessary language proficiency."

to: "A distinction is made between students who are enrolled in the programme and students who have been formally advanced to degree candidacy. A candidate is a student who has successfully completed the requirements for advancement to candidacy (defined below). Normally it is expected that advancement to candidacy will take place by the time the University residence requirement is fulfilled but not later than the end of the 9th semester after admission for Ph.D."

students, not later than the end of the 6th semester for M.A. students.

### M.A. Programme

Course requirements: In addition to the thesis the normal course requirements for the M.A. degree consist of a minimum of <sup>two</sup> one semester courses including at least 12 semester hours of graduate course credit.

Advancement to Candidacy: The requirements for advancement to candidacy are:

1. Preparation of thesis prospectus and completion of at least three courses. The purpose of the prospectus shall be to discuss the proposed research and general background relevant to the research. The prospectus is expected to be submitted to the supervisory committee and approved before Step 2 is undertaken.
  2. After approval of the thesis prospectus, and after consultation with the Supervisory Committee, either a) or b) shall take place:
    - a) the student will present a seminar, the topic of which shall be the substance of the prospectus, or
    - b) the student may take a set of written exams on the area of proposed research and related topics.
- a) above is not to be considered a defense of the prospectus, per se, but a means whereby the student may benefit from the collective expertise of the department.

Thesis: After steps 1 and 2 above are completed, the student will be advanced to candidacy and will proceed to complete and defend the thesis. The topic of the defense should be the thesis itself, and related matters.

### Ph.D. Programme

Course requirements: Course requirements for the Ph. D. degree are to be determined in consultation with the student's supervisory committee. In addition, students must take ARCH 872.

Advancement to Candidacy: Formal advancement to candidacy shall take place when the following have been completed:

1. The student shall prepare a prospectus and hold a departmental colloquium on the thesis topic

as described in the M.A. programme above.

2. A second colloquium shall center upon a secondary area of interest.

Topics and scheduling of these colloquia will be determined in consultation with the student's supervisory committee.

Thesis: After the above have been accomplished, the student shall be advanced to candidacy and will proceed to complete and defend the thesis. The topic of the thesis defense should be the thesis itself and related matters.

Although the Department recognizes that a knowledge of language other than English is desirable, it does not have any prescribed language requirements. However, where it is evident that knowledge of a language is necessary for the candidate's field work or reading, she/he will be required to attain the necessary language proficiency."

Rationale:

- a) The distinction between "candidate" and "student" has been formulated so that the student has a scale for ongoing progress through the programme.
- b) A thesis prospectus will be required so that students formulate their thesis research plans before, not after, completing field work.
- c) It is proposed that M.A. students present a department seminar and Ph.D. students hold two colloquia. These seminars and colloquia will provide a forum wherein the student may obtain feedback on his/her research goals, strategies, etc.; they will also promote a broader awareness of graduate research projects.
- d) Course requirements for the M.A. are unchanged. Experience has shown that course requirements for the Ph.D. student is best determined on a case by case basis.

P. 43 ARCH 840  
ARCH 872  
ARCH 876

NEW COURSE PROPOSAL (APPROVED BY F.A.G.SON NOV. 4)  
NEW COURSE PROPOSAL (SEE APPENDIX A)  
NEW COURSE PROPOSAL (SEE APPENDIX B)

SIMON FRASER UNIVERSITY  
New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Archaeology Course Number: 840  
Title: Seminar in Zooarchaeology  
Description: Intensive examination of certain key topical areas of faunal studies in archaeology.  
Credit Hours: 3 Vector: \_\_\_\_\_ Prerequisite(s) if any: \_\_\_\_\_

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 5 - 10 When will the course first be offered: 77 - 3  
How often will the course be offered: once every one or two years

JUSTIFICATION:

The course will permit detailed in-depth examination and discussion of specialized areas of faunal studies within an archaeological context.

RESOURCES:

Which Faculty member will normally teach the course: Dr. R. Casteel  
What are the budgetary implications of mounting the course: existing faculty member's time

Are there sufficient Library resources (append details): The library resources are excellent

- Appended: a) Outline of the Course  
b) An indication of the competence of the Faculty member to give the course.  
c) Library resources

Approved: Departmental Graduate Studies Committee: [Signature] Date: Oct 6/76  
Faculty Graduate Studies Committee: [Signature] Date: \_\_\_\_\_  
Faculty: [Signature] Date: Nov. 9 /76  
Senate Graduate Studies Committee: [Signature] Date: 22 Dec 1976  
Senate: \_\_\_\_\_ Date: \_\_\_\_\_

ARC 840 (Seminar in Zooarchaeology)

Reserve Reading: See attached.

Course Outline:

- 1-2 Discussion of early approaches to Zooarchaeology
- 3-4 Microscopic Examination
- 5 Ethnographic Data and Archaeological Experiments
- 6 Estimation of Weight
- 7 Cultural vs. Natural Bone
- 8 Minimum Number of Individuals
- 9 Reconstruction of Human Population Sizes
- 10 Seasonal Dating
- 11 Environmental Reconstruction
- 12 Problems in Domestication

Office of the Dean

OCT 18 1976

Faculty of Arts

## ZOOARCHAEOLOGY

### OLDER WORKS:

Hargrave, L.L. 1938. A plea for more careful preservation of all biological material from prehistoric sites. *Southwestern Lore*, 4(3): 47-51.

Wintemberg, W.J. 1919. Archaeology as an aid to zoology. *Canadian Field Naturalist*, 33: 63-72.

Wyman, J. 1869. On the fresh-water shell-heaps on the St. John's River, eastern Florida. *American Naturalist*, 2: 393-403, 449-463.

Cook, S.F. and A.E. Treganza. 1947. The quantitative investigation of aboriginal sites: comparative physical and chemical analysis of two California Indian mounds. *American Antiquity*, 13(2): 135-141.

\_\_\_\_\_. 1950. The quantitative investigation of Indian mounds with special reference to the relation of the physical components to the probable material culture. *University of California Publications in American Archaeology and Ethnology*, 40: 223-261.

### APPROACHES TO FAUNAL ANALYSIS:

Chaplin, R.E. 1965. Animals in archaeology. *Antiquity*, 39: 204-211.

\_\_\_\_\_. 1971. *The Study of Animal Bones from Archaeological Sites*. Seminar Press. New York.

Daly, P. 1969. Approaches to faunal analysis in archaeology. *American Antiquity*, 34(2): 131-145.

### FRAMEWORKS FOR INTERPRETATION:

Read, C.E. 1971. Animal bones and human behavior: approaches to faunal analysis in archaeology. Ph.D. dissertation, U.C.L.A.

Flannery, K.V. 1968. Archaeological systems theory and early Mesoamerica. In B.J. Meggers (ed.), *Anthropological Archaeology in the Americas*: 67-87. Anthropological Society of Washington.

### GENERAL WORKS:

Mori, J.L. 1970. Procedures for establishing a faunal collection to aid in archaeological analysis. *American Antiquity*, 35(3): 387-389.

Olsen, S.J. 1959. The archaeologist's problem of getting non-artifactual materials interpreted. *Curator*, 2(4): 335-338.

## GENERAL WORKS (Continued):

- Grimes, W.F. 1969. On co-operation. In P.J. Ucko and G.W. Dimbleby (eds.), *The Domestication and Exploitation of Plants and Animals*: xxii-xxvi. Aldine. Chicago.
- Meighan, C.W., D.M. Pendergast, B.K. Swartz, and M.D. Wissler. 1958. Ecological interpretation in archaeology: part I. *American Antiquity*, 24(1): 1-23.
- Koloseike, A. 1970. Costs of shell analysis. *American Antiquity*, 35(4): 475-480.
- Olsen, S.J. 1968. Fish, amphibian, and reptile remains from archaeological sites. Part I. Southeastern and southwestern United States. *Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University*, 54(2).

## MICROSCOPIC EXAMINATION:

- Kishinouye, K. 1911. Prehistoric fishing in Japan. *Journal of the College of Agriculture University of Tokyo*, 2: 328-382.
- Fitch, J.E. 1966. Additional fish remains, mostly otoliths, from a Pleistocene deposit at Playa del Rey, California. *Los Angeles County Museum Contributions in Science*, 119.
- Pannella, G. 1971. Fish otoliths: daily growth layers and periodical patterns. *Science*, 173(4002): 1124-1127.
- Hibbard, C.W. 1949. Techniques of collecting microvertebrate fossils. *University of Michigan Museum of Palaeontology Contributions*, 8(2): 7-19.
- Chartkoff, J.L. 1966. Appendix I: evaluating a midden sampling technique at the Big Tujunga site (LAN-167). In J. Ruby (ed.), "Archaeological investigations of the Big Tujunga site (LAN-167)". *University of California Archaeological Survey, Annual Report*, 8: 123-135.
- Samuels, R. 1965. Parasitological study of long-dried fecal samples. In B.S. Katz (ed.), "Contributions of the Wetherill Mesa archaeological project". *Society for American Archaeology, Memoirs*, 19: 175-179.
- Dunn, F.L. and R. Watkins. 1970. Parasitological examinations of prehistoric human coprolites from Lovelock Cave, Nevada. In R.F. Heizer and L.K. Napton (eds.), "Archaeology and the prehistoric Great Basin lacustrine subsistence regime as seen from Lovelock Cave, Nevada". *Contributions of the University of California Archaeological Research Facility*, 10: 176-185.
- Radovsky, F.J. 1970. Mites associated with coprolites and mummified human remains in Nevada. In R.F. Heizer and L.K. Napton (eds.), "Archaeology and the prehistoric Great Basin lacustrine subsistence regime as seen from Lovelock Cave, Nevada". *Contributions of the University of California Archaeological Research Facility*, 10: 186-190.
- Pike, A.W. and M. Biddle. 1966. Parasitic eggs in medieval Winchester. *Antiquity*, 40: 293-296.

## BIASES IN FAUNAL SAMPLING:

- Lyon, P.J. 1970. Differential bone destruction: an ethnographic example. *American Antiquity*, 35(2): 213-215.
- Casteel, R.W. 1971. Differential bone destruction: some comments. *American Antiquity*, 36(4): 466-469.
- Casteel, R.W. 1972. Some biases in the recovery of archaeological faunal remains. *Proceedings of the Prehistoric Society*, 38: 382-388.
- Sparks, B.W. 1961. The ecological interpretation of Quaternary non-marine Mollusca. *Proceedings of the Linnean Society of London*, 172: 71-80.
- Greenwood, R.S. 1961. Quantitative analysis of shells from a site in Goleta, California. *American Antiquity*, 26(3): 416-420.
- Struever, S. 1968. Flotation techniques for the recovery of archaeological remains. *American Antiquity*, 33(3): 353-362.
- Shock, J.M. 1971. Indoor flotation - a technique for the recovery of archaeological materials. *Plains Anthropologist*, 16(53): 228-231.
- Payne, S. 1972. Partial recovery and sample bias: the results of some sieving experiments. In E.S. Higgs (ed.), *Papers in Economic Prehistory*: 49-64. Cambridge University Press. Cambridge.
- Watson, J.P.N. 1972. Fragmentation analysis of animal bone samples from archaeological sites. *Archaeometry*, 14(2): 221-227.
- Olsen, S.J. 1961. The relative value of fragmentary mammalian remains. *American Antiquity*, 26(4): 538-540.

## ETHNOGRAPHIC DATA AND ARCHAEOLOGICAL EXPERIMENTS:

- Brain, C.K. 1967. Hottentot food remains and their bearing on the interpretation of fossil bone assemblages. *Scientific Papers of the Namib Research Station*, No.32.
- Issac, G.Ll. 1967. Towards the interpretation of occupation debris: some experiments and observations. *Kroeber Anthropological Society Papers*, No.37.

## ESTIMATION OF WEIGHT AND RELATIVE DIETARY INDEX:

- Thomas, D.H. 1969. Great Basin hunting patterns: a quantitative method for treating faunal remains. *American Antiquity*, 34(4): 392-401.
- White, T.E. 1953. A method of calculating the dietary percentage of various food animals utilized by aboriginal peoples. *American Antiquity*, 18(4): 396-398.
- Casteel, R.W. 1974. A method for estimation of live weight of fish from the size of skeletal elements. *American Antiquity*, 39(1): 94-98.
- Parmalee, P.W. and W.E. Klippel. 1974. Freshwater mussels as a prehistoric food resource. *American Antiquity*, 39(3): 421-434.
- Noddle, B.A. 1973. Determination of the body weight of cattle from bone measurements. In J. Matolcsi (ed.), *Domestikationsforschung und Geschichte der Haustiere*: 377-390. Akademiai Kiado. Budapest.

## CULTURAL VS. NATURAL BONE:

- Shotwell, J.A. 1955. An approach to the paleoecology of mammals. *Ecology*, 36(2): 327-337.
- Shotwell, J.A. 1958. Inter-community relationships in Hemphillian (mid-Pliocene) mammals. *Ecology*, 39(2): 271-282.
- Wilson, R.W. 1960. Early Miocene rodents and insectivores from northeastern Colorado. *University of Kansas Paleontological Contributions, Vertebrata*, art.7: 7-12.
- Thomas, D.H. 1971. On distinguishing natural from cultural bone in archaeological sites. *American Antiquity*, 36(3): 366-371.

## MINIMUM NUMBER OF INDIVIDUALS:

- Clason, A.T. 1972. Some remarks on the use and presentation of archaeozoological data. *Helinium*, 12: 139-153.
- White, T.E. 1953. Observations on the butchering technique of some aboriginal peoples No.2. *American Antiquity*, 19(2): 160-164.
- Perkins, D., Jr. 1964. Prehistoric fauna from Shanidar, Iraq. *Science*, 144: 1565-1566.
- Flannery, K.V. 1967. The vertebrate fauna and hunting patterns. In D.S. Byers (ed.), *The Prehistory of the Tehuacan Valley, v.1: Environment and Subsistence*. University of Texas Press. Austin.
- Krantz, G.S. 1968. A new method of counting mammal bones. *American Journal of Archaeology*, 72(3): 286-288.
- Bökönyi, S. 1970. A new method for the determination of the number of individuals in animal bone material. *American Journal of Archaeology*, 74: 291-292.
- Chaplin, R.E. 1971. *The Study of Animal Bones from Archaeological Sites*: 69-75. Seminar Press. New York.
- Grayson, D.K. 1973. On the methodology of faunal analysis. *American Antiquity*, 38(4): 432-439.

## RELATIVE FREQUENCY OF SPECIES: by weight

- Greengo, R.E. 1951. Molluscan species in California shell middens. *University of California Archaeological Survey, Report No.13*: 1-29.
- Gifford, E.W. 1916. Composition of California shellmounds. *University of California Publications in American Archaeology and Ethnology*, 12(1).
- Koloseike, A. 1969. On calculating the prehistoric food resource value of molluscs. *University of California Archaeological Survey, Annual Report*, 11: 143-160.

by MNI x average weight

- Cleland, C.E. 1966. The prehistoric animal ecology and ethnozoology of the Upper Great Lakes region. *University of Michigan Museum of Anthropology, Anthropology Papers*, 29.
- Perkins, D., Jr. and P. Daly. 1968. A hunter's village in Neolithic Turkey. *Scientific American*, 219(5): 97-105.
- Munson, P.J., P.W. Parmalee, and R.A. Yarnell. 1971. Subsistence ecology of Scovill, a terminal Middle Woodland village. *American Antiquity*, 36(4): 410-431.

Freeman, L.G. 1973. The significance of mammalian faunas from Paleolithic occupations in Cantabrian Spain. *American Antiquity*, 38(1): 3-44.

BUTCHERING TECHNIQUES:

Wood, W.R. 1968. Mississippian hunting and butchering patterns: bone from the Vista shelter, 23SR-20, Missouri. *American Antiquity*, 33(2): 170-179.

White, T.E. 1952. Observations on the butchering technique of some aboriginal peoples: I. *American Antiquity*, 17(4): 337-338.

Gilbert, B.M. 1969. Some aspects of diet and butchering techniques among prehistoric Indians in South Dakota. *Plains Anthropologist*, 14: 277-294.

RECONSTRUCTION OF KCAL (MAN-DAYS):

Wheat, J.B. 1972. The Olsen-Chubbuck site. A paleo-Indian bison kill. *Society for American Archaeology, Memoirs*, 26.

Shawcross, W. 1967. An investigation of prehistoric diet and economy on a coastal site at Galatea Bay, New Zealand. *Proceedings of the Prehistoric Society*, 33: 107-131.

Shawcross, W. 1972. Energy and ecology: thermodynamic models in archaeology. In D.L. Clarke (ed.), *Models in Archaeology*: 577-622. Methuen. London.

Ascher, R. 1959. A prehistoric population estimate using midden analysis and two population models. *Southwestern Journal of Anthropology*, 15: 168-178.

Glassow, M.A. 1967. Considerations in estimating prehistoric California coastal populations. *American Antiquity*, 32(3): 354-359.

Cook, S.F. 1946. A reconsideration of shellmounds with respect to population and nutrition. *American Antiquity*, 12(1): 50-53.

Isaac, G.L.L. 1971. The diet of early man: aspects of archaeological evidence from Lower and Middle Pleistocene sites in Africa. *World Archaeology*, 2(3): 278-299.

SEASONAL DATING: by species present

Cleland, C.E. 1966. (see entry under "relative frequency of species" above).

Bökönyi, S. 1972. Zoological evidence for seasonal or permanent occupation of prehistoric settlements. In P.J. Ucko, R. Tringham, and G.W. Dimbleby (eds.), *Man, Settlement and Urbanism*: 121-126.

Clark, J.G.D. 1952. *Prehistoric Europe: the Economic Basis*. Methuen. London. (with reference to Upper Paleolithic).

Gilbert, B.M. and W.M. Bass. 1967. Seasonal dating of burials from the presence of fly pupae. *American Antiquity*, 32: 534-535.

by age structure of thanatocoenosis

Higgs, E.S. and J.P. White. 1963. Autumn killing. *Antiquity*, 37: 282-289.

Ewbank, J.M., D.W. Phillipson, R.D. Whitehouse, and E.S. Higgs. 1964. Sheep in the iron age: a method of study. *Proceedings of the Prehistoric Society*, 30: 423-426.

Nimmo, B.W. 1971. Population dynamics of a Wyoming pronghorn cohort from the Eden-Farson site, 48SW304. *Plains Anthropologist*, 16(54): 285-288.

## by annular structures

Weide, M.L. 1969. Seasonality of Pismo clam collecting at Ora-82. *University of California Archaeological Survey, Annual Report*, 11: 127-142.

Coutts, P. and C. Higham. 1971. The seasonal factor in prehistoric New Zealand. *World Archaeology*, 2(3): 266-277.

Saxon, A. and C. Higham. 1969. A new research method for economic prehistorians. *American Antiquity*, 34(3): 303-311.

## by other methods

Clarke, J.G.D. 1939. Seasonal settlement in upper Paleolithic times. *Proceedings of the Prehistoric Society*, 5(2): 268.

## INCREMENTAL GROWTH STRUCTURES: mammals

Morris, P. 1972. A review of mammalian age determination methods. *Mammal Review*, 2(3): 69-104.

Jonsgard, A. 1969. Age determination of marine mammals. In H.T. Andersen (ed.), *The Biology of Marine Mammals*: 1-30. Academic Press. New York.

Klevezal', G.A. and S.E. Kleinenberg. 1967. *Age Determination of mammals by layered structure in teeth and bone*. Fisheries Research Board of Canada, Translation Series No.1024.

Gustafson, C.E. 1968. Prehistoric use of fur seals: evidence from the Olympic coast of Washington. *Science*, 161(3836): 49-51.

## reptiles

Senning, W.C. 1940. A study of age determination and growth of *Necturus maculosus* based on the parasphenoid bone. *American Journal of Anatomy*, 66: 483-495.

Peabody, F.E. 1958. A Kansas drouth recorded in growth zones of a bullsnake. *Copeia*, 1958(2): 91-94.

Peabody, F.E. 1961. Annual growth zones in living and fossil vertebrates. *Journal of Morphology*, 108(1): 11-62.

## invertebrates

Clark, G.R., II. 1968. Mollusk shell: daily growth lines. *Science*, 161: 800-802.

Clark, G.R., II. 1974. Calcification on an unstable substrate: marginal growth in the mollusk *Pecten diegensis*. *Science*, 183(4128): 968-970.

Barker, R.M. 1970. Constituency and origins of cyclic growth layers in pelecypod shells. *University of California, Space Sciences Laboratory Series* 11, Issue 43.

Olsen, D. 1968. Banding patterns of *Haliotis refescens* as indication of botanical and animal succession. *Biological Bulletin*, 134(1): 139-147.

Pannella, G. and C. MacClintock. 1968. Biological and environmental rhythms reflected in molluscan shell growth. In D.B. Macurda, Jr. (ed.), "Paleobiological aspects of growth and development - a symposium". *The Paleontological Society, Memoir* No.2: 64-80.

- Rhoads, D.C. and G. Pannella. 1970. The use of molluscan shell growth patterns in ecology and paleoecology. *Lethaia*, 3: 143-161.
- Evans, J.W. 1972. Tidal growth increments in the cockle *Clinocardium nuttalli*. *Science*, 176: 416-417.
- Berta, A. 1976. An investigation of individual growth and possible age relationships in a population of *Protothaca staminea* (Mollusca: Pelecypoda). *PaleoBios*, No. 21.
- Hall, C.A., Jr., W.A. Dollase, and C.E. Corbato. 1974. Shell growth in *Tivela stultorum* (Mawe, 1823) and *Callista chione* (Linnaeus, 1758) (Bilvalvia): annual periodicity, latitudinal differences, and diminution with age. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 15: 33-61.
- Kennish, M.J. and R.K. Olsson. 1975. Effects of thermal discharges on the microstructural growth of *Mercenaria mercenaria*. *Environmental Geology*, 1: 41-64.
- Nelson, D.J. 1967. Microchemical constituents in contemporary and pre-Columbian clamshell. In E.J. Cushing and H.E. Wright (eds.), *Quaternary Paleocology*: 185-204. Yale University Press.
- Coutts, P.J.F. 1970. Bivalve-growth patterning as a method for seasonal dating in archaeology. *Nature*, 226(5248): 874.
- Coutts, P.J.F. and K.L. Jones. 1974. A proposed method for deriving seasonal data from the echinoid, *Evechinus chloroticus* (Val.), in archaeological deposits. *American Antiquity*, 39(1): 98-102.
- Koike, H. 1975. The use of daily and annual growth lines of the clam *Meterix lusoria* in estimating seasons of Jomon period shell gathering. In R.P. Suggate and M.M. Cresswell (eds.), *Quaternary Studies*: 189-193. The Royal Society of New Zealand. Wellington.

#### ENVIRONMENTAL RECONSTRUCTION:

- Flannery, K.V. 1966. The postglacial "readaptation" as viewed from Mesoamerica. *American Antiquity*, 31(6): 800-805.
- Coe, M.D. and K.V. Flannery. 1964. Microenvironments and Mesoamerican prehistory. *Science*, 143: 650-654.
- Fitzhugh, W.W. 1972. Environmental archaeology and cultural systems in Hamilton Inlet, Labrador. A survey of the central Labrador coast from 3000 B.C. to the present. *Smithsonian Contributions to Anthropology*, No. 16.
- Bökönyi, S. 1970. Animal remains from Lepenski vir. *Science*, 167: 1702-1704.
- Snow, D.R. 1972. Rising sea level and prehistoric cultural ecology in northern New England. *American Antiquity*, 37(2): 211-221.
- Reed, C.A. 1962. Snails on a Persian hillside: ecology, prehistory, gastronomy. *Postilla*, 66: 1-20.
- Trigger, B. 1971. Archaeology and ecology. *World Archaeology*, 2(3): 321-336.

- Shawcross, W. 1975. Some studies of the influences of prehistoric human predation on marine animal population dynamics. In R.W. Casteel and G.I. Quimby (eds.), *Maritime Adaptations of the Pacific*: 39-66. Mouton. The Hague.
- Lundelius, E., Jr. 1964. The use of vertebrates in paleoecological reconstructions. In E.R. Smith (ed.), "The reconstruction of past environments": 26-31. *Fort Burgwin Research Center*, No. 3.
- Smith, B.D. 1974. Middle Mississippi exploitation of animal populations: a predictive model. *American Antiquity*, 39(2): 274-291.
- Smith, B.C. 1974. Predator-prey relationships in the eastern Ozarks: A.D. 1300. *Human Ecology*, 2(1): 31-43.

## DOMESTICATION:

- Anonymous. 1970. Bone from domestic and wild animals: crystallographic differences. *MASCA Newsletter*, 6(1): 2.
- Drew, I.M., D. Perkins, Jr., and P. Daly. 1971. Prehistoric domestication of animals: effects on bone structure. *Science*, 171(3968): 280-282.
- McConnell, D. and D.W. Foreman, Jr. 1971. Texture and composition of bone. *Science*, 172(3986): 971-972.
- Drew, I., D. Perkins, Jr., and P. Daly. 1971. Texture and composition of bone: reply to McConnell and Foreman. *Science*, 172(3986): 972-973.
- Daly, P., D. Perkins, Jr., and I.M. Drew. 1973. The effects of domestication on the structure of animal bone. In J. Matolcsi (ed.), *Domestikationsforschung und Geschichte der Haustiere*: 157-162. Akademiai Kiado. Budapest.
- Anonymous. 1973. Technique for determining animal domestication based on study of thin sections of bone under polarized light. *MASCA Newsletter*, 9(2): 1-2.
- Bökönyi, S. 1969. Archaeological problems and methods of recognizing domestication. In P.J. Ucko and G.W. Dimbleby (eds.), *The Domestication and Exploitation of Plants and Animals*: 219-230. Aldine. Chicago.
- Simoons, F.J. 1971. More on Higham's study of bovine bones. *Current Anthropology*, 12(3): 405.
- Higham, C.F.W. and B.F. Leach. 1971. An early center of bovine husbandry in Southeast Asia. *Science*, 172: 54-56.
- Berry, R.J. 1969. The genetical implications of domestication in animals. In P.J. Ucko and G.W. Dimbleby (eds.), *The Domestication and Exploitation of Plants and Animals*: 207-218. Aldine. Chicago.
- Collier, S. and J.P. White. 1976. Get them young? Age and sex inferences on animal domestication in archaeology. *American Antiquity*, 41(1): 96-102.
- Chaplin, R.E. 1969. The use of non-morphological criteria in the study of animal domestication from bones found in archaeological sites. In P.J. Ucko and G.W. Dimbleby (eds.), *The Domestication and Exploitation of Plants and Animals*: 231-246. Aldine. Chicago.

Higgs, E.S. and M.R. Jarman. 1969. The origins of agriculture: a reconsideration. *Antiquity*, 43: 31-41.

Ducos, P. 1969. Methodology and results of the study of the earliest domesticated animals in the Near East (Palestine). In P.J. Ucko and G.W. Dimbleby (eds.), *The Domestication and Exploitation of Plants and Animals*: 265-276. Aldine. Chicago.

Vita-Finzi, C. and E.S. Higgs. 1970. Prehistoric economy in the Mount Carmel area of Palestine: site catchment analysis. *Proceedings of the Prehistoric Society*, 36(1): 1-37.

NEWER PROBLEMS:

Bowen, J. 1975. Probate inventories: an evaluation from the perspective of zooarchaeology and agricultural history at Mott farm. *Historical Archaeology*, 9: 11-25.

Klein, R.G. 1975. Middle stone age man-animal relationships in southern Africa: evidence from Die Kelders and Klasies River mouth. *Science*, 190 (4211): 265-267.

Bützer, K.W. 1975. The ecological approach to archaeology: are we really trying? *American Antiquity*, 40(1): 106-111.

NOTE: under "Domestication" following ref. to Anon. 1973 please add:

Pollard, G.C. and I.M. Drew. 1975. Llama herding and settlement in prehispanic northern Chile: application of an analysis for determining domestication. *American Antiquity*, 40(3): 296-305.

CURRICULUM VITAE

Richard W. Casteel

Professional Articles:

- Casteel, R.W. 1970. Core and column sampling. *American Antiquity*, 35(4): 465-467.
- Casteel, R.W. 1970. Areal distribution of the native freshwater fish fauna of California. *Center for Archaeological Research at Davis*, 2: 10-26.
- Casteel, R.W. 1971. Differential bone destruction: some comments. *American Antiquity*, 36(4): 467-469.
- Casteel, R.W. 1972. Some biases in the recovery of archaeological faunal remains. *Proceedings of the Prehistoric Society*, 38: 382-388.
- Casteel, R.W. 1972. Two static maximum population-density models for hunter-gatherers: a first approximation. *World Archaeology*, 4(1): 19-40.
- Casteel, R.W. 1972. Some archaeological uses of fish remains. *American Antiquity*, 37(3): 404-419.
- Casteel, R.W. 1972. A key to the scales of the families of California freshwater fishes. *Proceedings of the California Academy of Sciences*, ser. 4, 39(7): 75-86.
- Casteel, R.W. and J.H. Hutchison. 1973. *Orthodon* (Actinopterygii, Cyprinidae) from the Pliocene and Pleistocene of California. *Copeia*, 1973(2): 358-361.
- Casteel, R.W. 1974. A method for estimation of live weight of fish from the size of skeletal elements. *American Antiquity*, 39(1): 94-98.
- Casteel, R.W. 1974. The scales of the native freshwater fish families of Washington. *Northwest Science*, 47(4): 230-238.
- Casteel, R.W. 1974. Identification of the species of Pacific salmon (Genus *Oncorhynchus*) native to North America based upon otoliths. *Copeia*, 1974(2): 305-311.

- Casteel, R.W. In press. A preliminary investigation of fish remains in midden material from northern Chile. In C.W. Meighan (editor), *Prehistoric trails of Atacama*. Southwest Museum.
- Casteel, R.W. 1974. On the remains of fish scales from archaeological sites. *American Antiquity*, 39(4): 557-581.
- Casteel, R.W. 1974. On the number and sizes of animals in archaeological faunal assemblages. *Archaeometry*, 16(2): 238-243.
- Casteel, R.W. In press. A sample of northern North American hunter-gatherers and the Malthusian thesis: an explicitly quantified approach. In D. Browman (editor), *Sub-Arctic paleoanthropology and prehistoric cultural adaptations in western North America*. Mouton. The Hague.
- Casteel, R.W. 1974. A method for back-calculating the size of fish from the size of their bones. *Zoologischer Anzeiger*, 193(1/2): 12-16.
- Casteel, R.W. 1975. Estimation of size, minimum number of individuals, and seasonal dating by means of fish scales from archaeological sites. In A.T. Clason (editor), *Archaeozoological Studies*: 70-86. North-Holland. Amsterdam.
- Casteel, R.W. 1974. Use of Pacific salmon otoliths for estimating fish size with a note on the size of late Pleistocene and Pliocene salmonids. *Northwest Science*, 48(3): 175-179.
- Casteel, R.W. 1975. An early post-glacial record of the Pacific sardine, *Sardinops sagax*, from Saanich Inlet, Vancouver Island, British Columbia. *Copeia*, 1975(3): 576-579.
- Casteel, R.W. 1974. Growth rate of *Ptychocheilus grandis* in central California, 4000 - 1600 years ago. *Wasmann Journal of Biology*, 32(2): 281-296.
- Casteel, R.W. In press. A comparison of methods for back-calculation of fish size from the size of scales found in archaeological sites. In D.R. Yesner and J.E. Yellen (editors), *Quantitative Faunal Analysis*. University of Arizona Press.

- Casteel, R.W. In press. Incremental growth zones in mammals and their archaeological value. *Papers of the Kroeber Anthropological Society*.
- Casteel, R.W. and M.J. Rymer. 1975. Fossil fishes from the Pliocene or Pleistocene Cache Formation, Lake County, California. *United States Geological Survey, Journal of Research*, 3(5): 619-622.
- Leney, L. and R.W. Casteel. 1975. Simplified procedure for examining charcoal specimens for identification. *Journal of Archaeological Science*, 2(2): 153-159.
- Casteel, R.W., D.P. Adam, and J.D. Sims. 1975. Fish remains from Core 7, Clear Lake, Lake County, California. *U.S. Geological Survey, Open-File Report* 75-173.
- Casteel, R.W. and D.P. Adam. In press. Pleistocene fishes from Oak Knoll, Alameda County, California. *United States Geological Survey, Journal of Research*,
- Casteel, R.W. 1976. Comparison of column and whole unit samples for recovering fish remains. *World Archaeology*,

## Papers Under Review:

- Casteel, R.W. Identification of the native California cyprinids based upon their basioccipitals. *Paleo-Bios*.
- Casteel, R.W. and D.P. Adam. Pleistocene fishes from Oak Knoll, Alameda County, California. *U.S. Geological Survey, Journal of Research*. (Accepted for publication).
- Casteel, R.W., D.P. Adam, and J.D. Sims. Late Pleistocene and Holocene remains of *Hysterochampus traski* (Tule perch) from Clear Lake, California, and inferred Holocene temperature fluctuations. *Quaternary Research*.
- Casteel, R.W. Human population estimates for hunting and gathering groups based upon net primary production data: examples from the Central Desert of Baja California. *Human Ecology*.

## Books:

- Casteel, R.W. and G.I. Quimby (editors). 1975.  
*Maritime Adaptations of the Pacific*. Mouton. The Hague.
- Casteel, R.W. In press. *Fish Remains in Archaeology and Paleoenvironmental Studies*. Academic Press. London.

## Professional Papers:

- 1969 "The recovery of fish remains from archaeological sites". Paper delivered to joint meeting of Society for California Archaeology and Center for Archaeological Research, Davis. October 26. Sacramento, California.
- 1970 "Fish and Indians in the Delta Area". Paper delivered to California Fish and Game Department, Inland Fisheries Branch. February 27. Sacramento, California.
- 1970 "Fish remains and their archaeological potential. Paper delivered to joint meeting of Society for American Anthropology and Society for California Archaeology. March 26. Asilomar, California. Paper received honorable mention.

- 1971 "The archaeological utilization of ichthyological data". Paper delivered as part of symposium on late Pleistocene and Holocene environmental changes and their human ecological implications. May 7. Norman, Oklahoma.
- 1972 "Seasonal dating using the remains of freshwater fishes". Paper delivered at annual meeting of the Southern California Academy of Sciences. May 6. University of California, Los Angeles. Paper received award for most outstanding student paper presented.
- 1973 "The relationship between population size and carrying capacity in a sample of North American hunter-gatherers". Paper delivered as part of symposium on man's adaptability to new and difficult environments in the circumpolar regions. IX International Congress of Anthropological Ethnological Sciences. August 27 - September 8. Chicago, Illinois.
- 1973 "Malthus and northern hunters and gatherers". Invited honorarium. January 23. University of British Columbia.
- 1973 "Assessment of live weight and minimum number of individuals of fishes found in the archaeological context." Paper presented at the 38th annual meeting of the Society for American Archaeology, San Francisco, California, 5 May.
- 1974 "The use of fish scales in archaeological investigations". Paper presented at the Groningen Archaeo-zoological Conference 1974, Groningen, The Netherlands, 22-26 April.
- 1974 "Some uses of sub-fossil fish remains in archaeology, paleontology, and fisheries." Paper presented at United States Geological Survey, Menlo Park, California, 22 March.
- 1974 "A comparison of the methods for estimation of fish size from archaeological remains". Paper presented at 39th annual meeting of the Society for American Archaeology, Washington, D.C., 4 May.
- 1974 "A re-examination of environmental factors and hunter-gatherer tribal areas". Paper presented at the 20th annual Great Basin Anthropological Conference, Carson City, Nevada, 13 September.

1975 "Fish studies in geology: applications in western North America". Paper presented to U.S. Geological Survey, Menlo Park, California, 14 January.

1975 "Environmental reconstruction in archaeology and geology". Paper presented at Stanford University, 12 February.

1975 "Man and environment: some predictive models of human carrying capacity". Paper presented at the University of California, Santa Cruz, 28 April.

1975 "Comparison of column and whole unit samples for recovering fish remains". Paper presented at the 40th annual meeting of the Society for American Archaeology, Dallas, Texas, 8 May.

Fellowships and Research Grants:

1. NDEA IV 1970-1972, University of California, Davis.
2. Chancellor's Patent Fund Research Grant, June 1970-June 1971, University of California, Davis.
3. Graduate Student Research Funds 1969, 1970, 1971, 1972, University of California, Davis.
4. Graduate School Research Fund, Physical Sciences and Engineering Section, University of Washington, 1973.
5. Graduate School Research Fund, Arts, Humanities and Social Sciences, University of Washington, 1973.
6. N.S.F. Travel Grant GS-41921, Groningen, The Netherlands, 1974.

Foreign Languages: Russian, German, Spanish, French

SIMON FRASER UNIVERSITY  
New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Archaeology Course Number: 872

Title: Graduate Seminar in Archaeology and Prehistory

Description: A seminar on selected problems in archaeological science and prehistory

Credit Hours: Non credit Vector: \_\_\_\_\_ Prerequisite(s) if any: Graduate Standing

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 15 When will the course first be offered: 77-3/ 77-4

How often will the course be offered: Semesters 1 and 3 annually.

JUSTIFICATION:

A forum is needed for sophisticated, in depth examination of current problems, concepts and empirical research in Archaeology.

RESOURCES:

Which Faculty member will normally teach the course: \_\_\_\_\_

What are the budgetary implications of mounting the course: \_\_\_\_\_

Are there sufficient Library resources (append details): Yes

- Appended: a) Outline of the Course (Example appended)
- b) An indication of the competence of the Faculty member to give the course.
- c) Library resources

Approved: Departmental Graduate Studies Committee: [Signature] Date: Nov 16 1976

Faculty Graduate Studies Committee: [Signature] Date: \_\_\_\_\_

Faculty: [Signature] Date: Nov. 30/76

Senate Graduate Studies Committee: [Signature] Date: 22 Dec 1976

Senate: \_\_\_\_\_ Date: \_\_\_\_\_

## OUTLINE

The graduate students have in fact been running an informal, weekly seminar. We wish to formalize and expand it as a valuable component of the programme (which it has been and continues to be).

The range of potential topics for this course is so wide that any outline would be misleading. Topics covered this far in the informal forum are given below:

### 76-1

1. Australian ethno-archaeology
2. Concepts of cultural-historical unit in Northwest Coast Archaeology
3. Archaeology of the Gulf Islands
4. Ecological approaches to the study of fossil hominids
5. Quantitative consideration of the distribution of Eskimo Groups
6. Values: a model for human evolution
7. Historic archaeology in the Peace River District
8. Prehistory of Northeastern North America
9. Method in salvage archaeology
10. Pictographs and petroglyphs in the B. C. Interior
11. Archaeology in Montana

### 76-3

1. Contract archaeology
2. Human dentition and growth patterns
3. Models in archaeology
4. Archaeology of the Canadian East Coast
5. Stochastic process models and archaeological method
6. Bureaucratic archaeology
7. Archaeology as archaeology

SIMON FRASER UNIVERSITY  
New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Archaeology Course Number: 876

Title: Selected Topics in Archaeological Method

Description: Seminar focussing on examination of archaeological method from historical/mathematical/statistical perspective.

Credit Hours: 5 Vector: \_\_\_\_\_ Prerequisite(s) if any: \_\_\_\_\_

Graduate standing and one of ARCH 376, MATH 101, PSYC 210, or equivalent

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 10 When will the course first be offered: 77-3

How often will the course be offered: annually

JUSTIFICATION:

Use of mathematical and statistical models in archaeological research is becoming commonplace. Thorough grounding in these matters is undeniably important to sound graduate training.

RESOURCES:

Which Faculty member will normally teach the course: Jack D. Nance

What are the budgetary implications of mounting the course: none

Are there sufficient Library resources (append details): yes

- Appended:  a) Outline of the Course
- b) An indication of the competence of the Faculty member to give the course.
- c) Library resources

Approved: Departmental Graduate Studies Committee: \_\_\_\_\_ Date: \_\_\_\_\_

Faculty Graduate Studies Committee: J. Nance Date: Nov. 25/76

Faculty: J. M. Munro Date: Nov. 30/76

Senate Graduate Studies Committee: J. M. Munro Date: 22 Dec 1976

Senate: \_\_\_\_\_ Date: \_\_\_\_\_

SAMPLE COURSE OUTLINE

- I. General Considerations
  - A. Archaeology: science or natural history?
  - B. The empiricist approach: pattern.
  - C. The deductivist approach: process
- II. Analytic units in archaeological enquiry
  - A. Traditional observational units: temporal/spatial
  - B. Traditional analytic units: temporal/spatial
  - C. Units of observation and analysis in behavioral context: process.
- III. Variety in archaeological variables: measurement and description.
  - A. Variables of a continuous nature
  - B. Variables of a discrete nature
- IV. Description of univariate archaeological phenomena: relating pattern to process.
  - A. Modeling continuous archaeological variables
  - B. Modeling discrete archaeological variables
- V. Multivariate description of archaeological phenomena
  - A. Definition of archaeological "supervariables"
  - B. Multivariate space/time/process models of archaeological phenomena
- VI. Classification and taxonomy in archaeology.
  - A. Polythetic vs. monothetic criteria
  - B. Non-dimensional models of archaeological phenomena
- VII. Archaeological models and archaeological research design
  - A. Time models
  - B. Space models
  - C. Process models
  - D. Sampling models

READING LIST:

Since the proposed course will be a seminar the students will, in practice, compose their own reading list with advice of the professor. A partial list of relevant literature appears below:

- Binford, L. R.  
1968                    An Archaeological Perspective. Seminar Press. London.
- Binford, L. R. and S. R. Binford (Editors)  
1968                    New Perspectives in Archaeology. Aldine.
- Chang, K. C.  
  
Rethinking Archaeology. Random House.
- Clarke, David L.  
1972                    Models in Archaeology. Methuen.  
  
1968                    Analytic Archaeology. Methuen.
- Derman, C., L. J. Gleser, I. Olkin  
1973                    A Guide to Probability Theory and Application.  
Holt, Rinehart, Winston.
- Doran J. E. and F. R. Hodson  
1975                    Mathematics and Computers in Archaeology.  
Edinburgh Press.
- Harris, M.  
1968                    The Rise of Anthropological Theory. Crowell.
- Krumbein, W.C. and F. A. Graybill  
1965                    An Introduction to Statistical Models in Geology.  
McGraw-Hill. New York.
- Meuller, J. (Editor)  
1975                    Sampling in Archaeology. University of Arizona Press.
- Redman, C. L. (Editor)  
1975                    Current Research and Theory in Archaeology. Wiley.
- Rouse, I.  
1972                    Introduction to Prehistory. McGraw-Hill
- Schiffer, M.B.  
1976                    Behavioral Archaeology. Seminar Press.
- Smeath, P.H.A. and R.R. Sokal  
1973                    Numerical Taxonomy. W. H. Freeman.
- Sokal, R.R. and F.J. Rohlf  
1969                    Biometry. W. H. Freeman
- Taylor, W. W.  
1949                    A Study of Archaeology. Illinois.
- Watson, P.J., C.L. Redman and S. Leblanc  
Archaeology: A Scientific Approach, Columbia Univ. Press.

Reading List (Cont'd.)

Willey, G.R. and J. Sabloff

1968

A History of North American Archaeology. University of Chicago Press.

Willey, G.R. and P. Phillips

Method and Theory in American Archaeology. University of Chicago Press.

## Curriculum Vitae

JACK DWAIN NANCE

Born: January 7th, 1942; Paducah, Kentucky, U.S.A.

Marital Status: Married; one child

### Education

#### Undergraduate

1. University of California, Davis  
Fall 1964-Spring 1968 Anthropology  
Bachelor of Arts: June 1968

#### Graduate

1. University of California, Davis  
Fall 1968-Spring 1969 Anthropology  
Master of Arts: June 1969
2. University of Calgary  
Fall 1969-Winter 1971 Archaeology  
Ph.D.: May 1972  
Areas of concentration:
  - a. Theory and method in archaeology
  - b. Quantitative and computer applications
  - c. North American archaeology
  - d. Physical anthropology and human evolutionDissertation: "Classification of Artifacts"

### Research interests

1. Quantitative techniques in archaeology
2. Archaeological systematics
3. Archaeology of North America
4. Physical anthropology

### Employment

1. February 1960-November 1967 United States Air Force
2. Summer 1969 - Instructor, anthropology and geography  
Department of Social Sciences, Boise State  
College, Boise, Idaho.
  - a. Introduction to physical anthropology
  - b. Introduction to physical geography
3. September 1969-April 1970: Teaching assistant,  
Department of Archaeology, University of  
Calgary, Calgary, Alberta.
  - a. Introduction to physical anthropology

4. Summer 1970 - Instructor in anthropology and geography, Department of Social Sciences, Boise State College, Boise, Idaho.
  - a. Introduction to cultural anthropology
  - b. Introduction to physical geography
5. September 1970-April 1971: Graduate teaching assistant, Department of Archaeology, University of Calgary, Calgary, Alberta
  - a. Introduction to physical anthropology
6. Summer 1971: Instructor in archaeology, Department of Archaeology, University of Calgary, Calgary, Alberta.
  - a. Introduction to physical anthropology
  - b. Introduction to archaeological science
7. August-September 1972: Inter-university-TVA coordinator (TVA-Murray State University-University of Tennessee) for experimental history course. Involved directing field excavations employing students in historical research from the University of Tennessee. Associate: Dr. Charles Ogilvie.
8. January 1972 - August 1973: Assistant Professor of Anthropology, Murray State University, Murray, Kentucky
  - a. Introduction to physical anthropology
  - b. Introduction to cultural anthropology
  - c. Introduction to archaeological science
  - d. Archaeological Field experience
  - e. Comparative cultural analysis
9. January 1972-August 1973: Advising archaeologist to the Tennessee Valley Authority, Land Between the Lakes National Recreation Area
10. August 1973-January 1974: Independent research under contract #39558A to Tennessee Valley Authority
11. January 1974-August 1974: Acting Director, Archaeological Survey of Alberta, Edmonton, Alberta
12. September 1974-present: Assistant Professor of Archaeology, Simon Fraser University, Burnaby, B.C.

Fieldwork

1. Excavation of site CA-YOL-17  
Yolo County, California September-October  
1968
2. Excavation of site CA-SAC-43  
Sacramento County, California January-May  
1969
3. Land Between the Lakes Archaeological  
Project, Phase I - Archaeological  
Site Survey January-May  
1972
4. Land Between the Lakes Archaeological  
Project, Phase II - Archaeological  
site survey and excavation. January-May  
1973
5. Land Between the Lakes Archaeological  
Project, Phase III-excavation project. June-August  
1973

Publications

1. Some significant differences in certain foot elements of  
elk and bison. Archaeological Society of Alberta, Newsletter,  
No. 22:3-12, 1969.
2. The methodological basis of archaeological classification.  
Western Canadian Journal of Anthropology, 2:83-91, 1971.
3. Lithic analysis: implications for the prehistory of central  
California. University of California Archaeological Survey,  
Los Angeles, Annual Report No. 12:61-90. 1971.
4. Functional interpretations from microscopic analysis.  
American Antiquity 36: 361-365, 1971.
5. A summary of work and assessment of archaeological  
resources in the Land Between the Lakes. School of Arts  
and Sciences, Murray State University, Murray, Kentucky, 1972.
6. Jackson's Purchase Archaeological Society. Jackson's Purchase  
Archaeological Society, Newsletter, 1, 1973.
7. Ancient Man in Land Between the Lakes. Tennessee Valley  
Authority, Knoxville, 1973.
8. Experiments in sexing human crania by cluster analysis,  
Western Canadian Journal of Anthropology, 5:12-32, 1975.
9. An archaeological survey of the Land Between the Lakes  
National Recreation Area. Tennessee Archaeologist, 31: 62-77, 1975.

Publications (Cont'd)

10. On the theoretical bases of artifact analysis. In: Primitive Art and Technology, B. Loveseth and S. Raymond (Editors). University of Calgary Archaeological Association. pp. 60-71, 1975.
11. Archaeological research in Jackson's Purchase and the lower Tennessee - Cumberland region, a historical account. Kentucky Archaeological Association, Bulletin, 4, pp. 1-18, 1976.
12. Numerical taxonomy and cultural stratigraphy in archaeological sites. In: Canadian Archaeology Abroad, J. Robertson and P. Shinnie (Editors). pp. 261-281, 1976.
13. The Dead Beaver site, an Archaic campsite in Land Between the Lakes. Kentucky Archaeological Association, Bulletin, 4, pp. 19-45, 1976.
14. A preliminary assessment of variability in late Mississippian mortuary customs in the lower Cumberland River Valley. Kentucky Archaeological Association, Bulletin 4, pp. 46-75, 1976.
15. Numerical taxonomy studies of microwear on the Los Tapiales artifacts. American Philosophical Society, Proceedings, (in press).

Papers Currently Under Review.

1. Application of inferential statistics in archaeology. American Antiquity.
2. Aspects of late Archaic culture in the lower Cumberland River Valley. Tennessee Archaeologist.

Works in Preparation.

1. Quantitative method in Archaeology (textbook on use of statistics in archaeology).
2. Principal components analysis of variation in late Mississippian mortuary customs.
3. Models from the mediocre: surface site archaeology in the lower Cumberland River Valley.
4. Sites, samples and surface collections: late Archaic culture in the lower Cumberland region.
5. Probability models and the description of archaeological variables.
6. The Copeland site collection: a late Palaeoindian surface collection from western Kentucky.