

Zeitschrift: Schweizerisches Archiv für Volkskunde = Archives suisses des traditions populaires

Herausgeber: Empirische Kulturwissenschaft Schweiz

Band: 68-69 (1972-1973)

Heft: 1-6: Festschrift für Robert Wildhaber zum 70. Geburtstag am 3. August 1972

Artikel: The nature of the new world artifact : the instance of the Dugout Canoe

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DOI: <https://doi.org/10.5169/seals-116784>

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**The Nature of the New World Artifact:
The Instance of the Dugout Canoe**

by *Henry Glassie*, Bloomington, Indiana

At a crucial stage in its progress, the American study of folklore was provided shape and impetus by the publication of Robert Wildhaber's "A Bibliographical Introduction to American Folklife"¹. It outlined the remedy for an old complaint. For years major American folklorists had pled that the European lead should be followed, that material as well as oral manifestations of traditional culture should be accorded serious attention². Guided by Dr. Wildhaber's suggestively constructed bibliography, American students during the past seven years have spent increasingly larger portions of their energy on the study of folk artifacts: now material culture is firmly a part of introductory folklore courses and of the curricula of the major graduate programs in folklore; there are chapters on craft and art and architecture as well as proverb, ballad, and tale in *Folklore and Folklife*, the new inventory edited by Richard M. Dorson³.

In his bibliography, Dr. Wildhaber (as was natural for a scholar from landlocked Switzerland) did not treat folk boats; yet, more perhaps than any other American folk artifact, the boat has been rendered sophisticated taxonomic and historic scrutiny. Partially to supplement Dr. Wildhaber's bibliography, this study of a cluster of boat types which has occupied a special niche in American consciousness since the dawn of European settlement will be offered. Closer to its surface, this study will provide a statement of the complications and potentials inherent in the analysis of New World folk things.

During their millenia of adaptation to the eastern sector of the continent that carries the United States, the Indians had developed two major kinds of small boats. In the part of the land that is now northern New England, southern Canada, and the Great Lakes area, canoes of bark, especially that of the birch were made⁴. South of that area, the

¹ Published first in German in Schweizerisches Archiv für Volkskunde, the influential English translation was published in New York Folklore Quarterly 24, 4 (December 1965) 259-302.

² Wayland Hand, for example, wrote "...the folklore of material culture is one of the most neglected fields of American folklore." American Folklore After Seventy Years: Survey and Prospect. Journal of American Folklore 73, 287 (January-March 1960) 4.

³ Chicago: University of Chicago Press 1972.

⁴ See Edwin Tappan Adney and Howard I. Chappelle, The Bark Canoes and Skin Boats of North America. Washington 1964.

birch tree being absent, canoes were occasionally made of elm bark, but the predominant small craft was the canoe burned out of a single log⁵. The precontact form and construction of these canoes, as may be seen from sixteenth century illustrations⁶ and the commentaries of sixteenth and seventeenth century adventurers, varied nearly not at all: its form was bluffly rounded or squared at each end with both bow and stern lifted out of the water (Fig. 2 A); that form was achieved by controlled burning followed by chopping with minimally altered shell or stone. The captain of an expedition to Virginia described the process in a letter written in 1584:

The manner of making their boates is thus: they burne downe some great tree, or take such as are winde fallen, and putting gumme and rosen upon one side thereof, they set fire into it, and when it hath burnt it hollow, they cut out the coale with their shels, and ever where they would burne it deeper or wider they lay on gummess, which burne away the timber, and by this means they fashion very fine boates, and such as will transport twenty men⁷.

Captain John Smith's description in *The Map of Virginia* (1612) agrees and adds:

Their fishing is much in Boats. These they make of one tree by burning and scratching away the coales with stones and shels, till they haue made it in forme of a Trough... Instead of Oares, they vse Paddles and stickes, with which they will row faster then our Barges⁸.

The dugout log canoe fit neatly in the mysterious and threatening new land the English had come to subdue. From the beginning of

⁵ Carrie A. Lyford, *Iroquois Crafts*. Washington 1945, 55; Paul A. W. Wallace, *Indians in Pennsylvania*. Harrisburg 1964, 44-45; Douglas L. Rights, *The American Indian in North Carolina*. Winston-Salem 1957, 13; John R. Swanton, *Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico*. Smithsonian Institution, Bureau of American Ethnology, 43. Washington 1911, 66-67, 347.

⁶ These are the illustrations from Le Moyne (1564) and John White (1590); the former may be seen in David I. Bushnell, Jr., *Native Villages and Village Sites East of the Mississippi*. Smithsonian Institution, Bureau of American Ethnology, 69. Washington 1919, plate 16; the latter are very commonly reproduced; for example, Oliver La Farge, *A Pictorial History of the American Indian*. New York 1956, 63; see Fig. 2 A.

⁷ From *The First Voyage to Virginia*, in Richard Hakluyt, *The Principal Navigations Voyages Traffiques and Discoveries of the English Nation*. Vol. 8. Glasgow 1904, 303. A comparable description, written by Giovanni Verrazanno in 1524, can be found in the same volume on p. 429.

⁸ This is from pp. 31-32 of the second book of *The Generall Historie of Virginia, New England, and the Summer Isles* (1624), an edition of the *Map of Virginia* (1612); in the earlier book the text on p. 24 is the same, excepting matters of spelling; both are reprinted in Edward Arber and A. G. Bradley, eds., *Travels and Works of Captain John Smith*. Vol. 1. Edinburgh 1910.

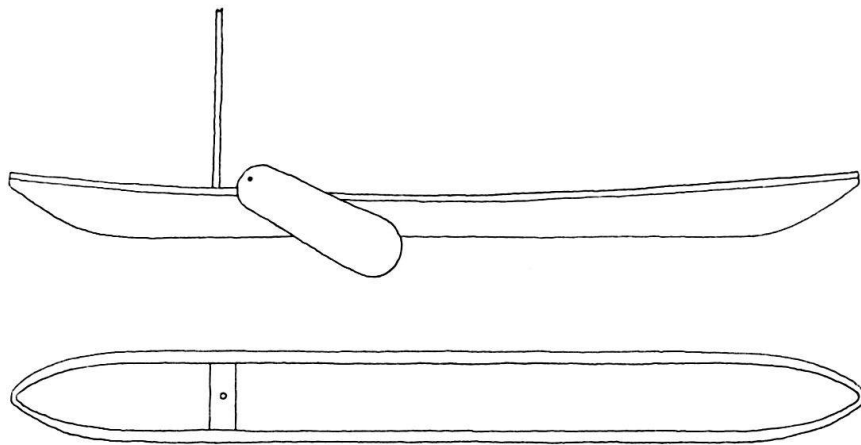


Fig. 1. Connecticut Dugout Canoe. – After Hall, Report on the Ship-Building Industry of the United States, 29. Hall describes a shovelnose canoe (the bow of which would be presumably like that of Fig. 2 A), yet the illustration shows a boat pointed at each end in the European tradition; his description and his illustration would seem to present different steps in the canoe's evolution. This and the other illustrations in this paper are by its author.

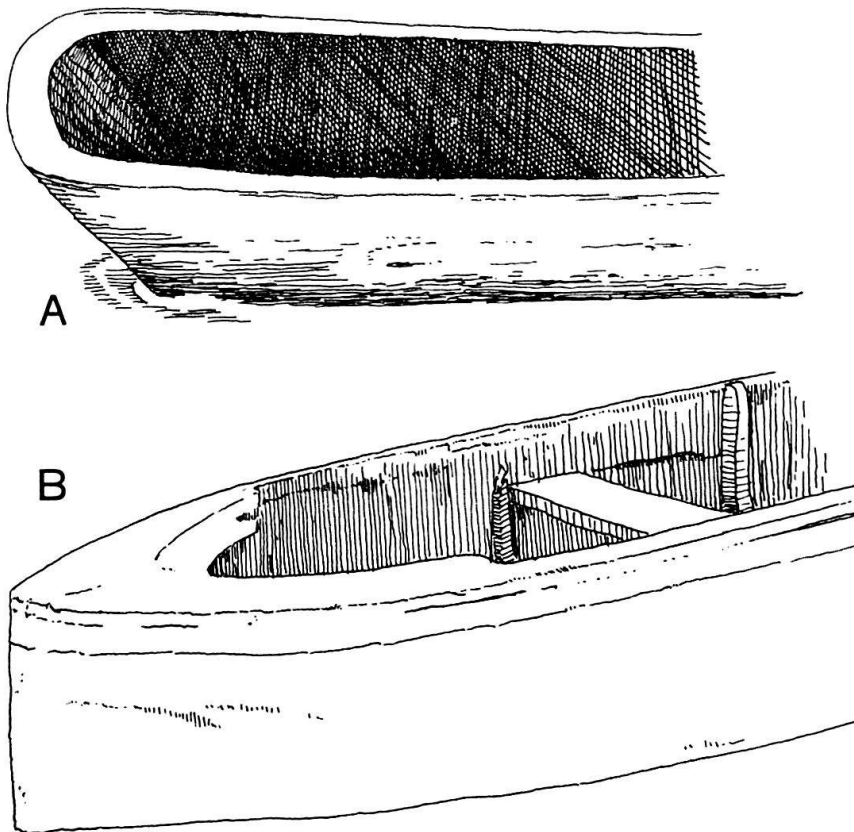


Fig. 2. Comparison of the Bows of Indian and Anglo-American Dugouts. A. The Indian shovelnose bow. This is after John White's frequently reprinted late sixteenth century illustration; see note 6. B. The bow of a mid-nineteenth century pirogue from Savannah, Georgia. The boat is eighteen feet in length with a four foot beam; it has a relatively unusual squared stern. It is pictured in Stackpole and Kleinschmidt, *Small Craft at Mystic Seaport*, 62.

settlement, the Indians and their canoes were hired for transportation on the intricately unknown waterways; in Virginia in December of 1607, "Master Smyth went vp the Ryuer of the Chechohomynties to trade for corne...and, when it was not possible with the Shallop, he hired a Cannow and an Indian to carry him vp further"⁹. Soon the planters were paying Indians to build canoes for them¹⁰. Not all the settlers reacted favorably to the craft; Ebenezer Cook who had left old England to find his fortune in Maryland, returned disenchanted and published in London in 1708 a satirical poem lampooning life in the colonies; as for the canoe:

The *Indians* call this watry Waggon
Canoo, a Vessel none can brag on;
 Cut from a *Popular-Tree*, or *Pine*,
 And fashion'd like a Trough for Swine¹¹.

During his assessment of the considerable Indian contribution to American culture, Harold E. Driver oddly underestimated the log canoe's importance¹²; before the seventeenth century had closed, the new inhabitants of the Indian's land, both black and white, had learned to make the canoe, and it became part of the cultures of many rural communities. The dugout canoe of country America has generally been explained as a modification of an Indian original¹³. If that statement bears truth, it is simplistic still, for the acceptance of the Indian's boat was likely conditioned by its comparability to old concepts as well as its expediency in the new environment: the dugout canoe's distribution was not limited to the southerly part of the New World; found widely across the globe, it was common anciently in Britain and in Africa¹⁴. The dugout canoe passed out of existence in Scotland at an early date¹⁵, but on the inland waters of Ireland, dugouts were

⁹ E. M. Wingfield, *A Discourse of Virginia*. 1608, IXXXV–IXXXVI; another of many examples can be found in *A True Relation*. 1608, 14; both are reprinted in Arber and Bradley, *Travels and Works of Captain John Smith*, vol. 1.

¹⁰ Raphael Semmes, *Captains and Mariners of Early Maryland*. Baltimore 1937, 82; James Wharton, *The Bounty of the Chesapeake: Fishing in Colonial Virginia*. Williamsburg 1957, 31.

¹¹ The poem was titled, *The Sot-Weed Factor: Or, a Voyage to Maryland. A Satyr* (from it John Barth took the title of his recent novel); it is reprinted in Bernard C. Steiner, ed. *Early Maryland Poetry*. Baltimore, 1900; the quote is from p. 13.

¹² Harold E. Driver, *Indians of North America*. Chicago 1961, 599.

¹³ Henry Glassie, *Pattern in the Material Folk Culture of the Eastern United States*. Philadelphia 1969, 119, 181.

¹⁴ James Hornell, *Water Transport*. Cambridge 1946, 187–192.

¹⁵ I. F. Grant, *Highland Folk Ways*. London 1961, 251.

in use commonly from prehistoric times into the late seventeenth century¹⁶. And a substantial number of the early settlers of the Chesapeake country came from Ireland¹⁷. Turning only to West Africa, the area from whence were wrenched the greatest number of slaves for America¹⁸, we find that dugout canoes were the common means of water transport (Fig. 3). Unlike the simple Indian canoes, the African dugouts were of many forms, some were burned out of hardwood, others hewn out of softwood¹⁹; from the fifteenth century on, European slavers off Nigeria were particularly impressed by the enormous Ijo canoes, capable of carrying eighty warriors or great quantities of produce or slaves from the interior²⁰. The linear reasoning that finds the source of the American dugout in the Indian's canoe alone is an expression of the (dimly guilty) positive attitude held toward the red man; modern Americans, safe in a synthetic cave, enjoy establishing genetic and cultural links with Indians. But until recently even black Americans denied the possibility of cultural connections with Africa²¹; the more rigorous analysis becomes, however, the more are the continuities that appear between Africa and American folk cultures. African linguistic survivals in the South have long been recognized, and stimulated notably by the cantometrics project²², American folklorists have come to appreciate more and more the power of the African aesthetic operative in black American folk musical style. The persistence of African modes in America would seem to be weakest in material culture²³; still, the African inheritance appears in cuisine, in the basketmaking and quilt design of black folk on the Carolina

¹⁶ Mary Rogers, *The Navigation of Lough Erne*. *Ulster Folklife* 12 (1966) 97-103.

¹⁷ Carl Bridenbaugh, *Myths and Realities: Societies of the Colonial South*. Baton Rouge 1952, 7.

¹⁸ Melville J. Herskovits, *The Significance of West Africa for Negro Research*, in Frances S. Herskovits, ed. *The New World Negro*. Bloomington 1966, 89-101.

¹⁹ G. J. Afolabi Ojo, *Yoruba Culture: A Geographical Analysis*. London 1966, 45, 49-50; Barry Floyd, *Eastern Nigeria: A Geographical Review*. London 1969, 241, 244, 245, plate 47; Frederick William Hugh Migeod, *A View of Sierra Leone*. New York 1970, reprint of 1926, 17, 35, 152.

²⁰ G. I. Jones, *The Trading States of the Oil Rivers: A Study of Political Development in Eastern Nigeria*. London 1963, 33, 38, 44, 55.

²¹ For example, Charles S. Johnson, *Shadow of the Plantation*. Chicago 1966, reprint of 1934, 4-5.

²² Alan Lomax, *Folk Song Style and Culture*. Publication, 88. Washington 1968.

²³ Melville J. Herskovits, *The Myth of the Negro Past*. Boston 1958, 136-137.

Sea Islands, and in the style of folk sculpture in various media²⁴. Black men were working as ship carpenters around the Chesapeake Bay by the middle of the eighteenth century²⁵, and Afro-Americans continue to participate in the water-oriented life of the area, not only as deck hands in the menhaden fleet, chanteying while they haul in the seines, and on the oyster dredging and clamming boats, but also as independent watermen, as masters of sailing boats, sail sewers and boat builders. The New World dugout may have a debt to pay in history to Africa and to Ireland as well as to the Indian's America. It is suggestive that the idea of the canoe was not fully taken into Anglo-American culture until the population included its African and Irish elements.

The dugout canoe was built widely and extensively modified by American folk fishermen. In most areas, such as along New Jersey's Raritan River²⁶, the dugout canoe passed out of use with the arrival of the nineteenth century. The dugout was last used in the Northeast around New Haven in Connecticut; in his 1880 *Report on the Ship-Building Industry of the United States*, Henry Hall wrote:

With the clearing of the timber the use of canoes disappeared on every part of the New England coast, except in Connecticut, where they were favorites with the oystermen for 150 years after the time of the first settlement... These canoes were of the shovel-nose type, so called from the shape of the wooden shovel used in handling grain and flour. They were flat on the floor, having great stability, and were accordingly furnished with one or two light pole masts and sails. The average size was 28 feet in length, 36 or 39 inches beam, and 18 inches in total depth, the wood of the bottom being 3 inches thick, the sides 2½ inches. They were always made from single sticks of white pine, floated at 3 inches draught of water, and were able to carry two men and a ton of oysters in the shell... A few dozen of these boats are still seen at Fair Haven, on the Quinnipiac river, some of them being 35 feet long. When under sail they carry a lee board, which is dropped over the side just aft of the mast thwart, and is held by a rope and shifted every time the boat is put about...²⁷.

The shape of the Connecticut canoe (Fig. 1) was not greatly changed from that of the aboriginal prototype, but the sails were a European

²⁴ Although seriously weakened by a failure to consider European-American folk artistic style, the argument of this paper is important: Robert Farris Thompson, African Influence on the Art of the United States, in: Armistead L. Robinson, Craig C. Foster and Donald H. Ogilvie, eds. *Black Studies in the University: A Symposium*. New Haven 1969, 122-170.

²⁵ Arthur Pierce Middleton, *Tobacco Coast: A Maritime History of the Chesapeake Bay in the Colonial Era*. Newport News 1953, 234.

²⁶ Peter O. Wacker, *The Musconetcong Valley of New Jersey: A Historical Geography*. New Brunswick 1968, 25.

²⁷ Henry Hall, *Report on the Ship-Building Industry of the United States*: U. S. Census Office: Tenth Census, 1880. Washington 1884, 29.

addition and the stabilizing leeboard followed seventeenth century English practice²⁸.

Dugout canoes were used widely in the network of western waters comprising the Ohio and Mississippi River systems²⁹; archaeologists have found examples in Indiana³⁰. They were extensively used on the inland waterways of the Deep South into this century. A pair of descriptions are available in what are probably the best two early twentieth century sources for American folklife scholars—the papers of the Bucks County Historical Society, assembled under the direction of Henry C. Mercer³¹, and the *American Highways and Byways* series written by rambling artist Clifton Johnson³². Examples of Anglo-American dugouts from various parts of the South have been preserved in museums³³.

The two areas of the eastern United States in which the dugout canoe was most commonly used and is still occasionally found are areas where the webs of waterways proved more important than overland roads for local communication, where the wild fauna was basic to the accumulation of both caloric and pecuniary capital: the Chesapeake Bay of Maryland and Virginia³⁴, predominantly British, and southern Louisiana³⁵, predominantly French. In both of these areas the log canoe's shape is markedly different from that of the

²⁸ William A. Baker, *Colonial Vessels: Some Seventeenth-Century Sailing Craft*. Barre 1962, 48.

²⁹ Leland D. Baldwin, *The Keelboat Age on Western Waters*. Pittsburgh 1941, 41.

³⁰ There is an Indian dugout canoe preserved at the Indian University Museum, Bloomington, Indiana, and there is a European-American dugout canoe at the Conner Prairie Pioneer Settlement Museum, Noblesville, Indiana.

³¹ Frank K. Swain, *Making a Dugout Boat in Mississippi*. *A Collection of Papers Read Before the Bucks County Historical Society* 5 (1926) 87–89.

³² Clifton Johnson, *Hyways and Byways of the Mississippi Valley*. New York 1906, 73, facing p. 64. To the new edition of Johnson's *What They Say in New England*. New York 1963, Carl Withers has added a good biographical introduction, a bibliography and folkloristic selections from other of Johnson's books.

³³ Carl W. Mitman, *Catalogue of the Watercraft Collection in the United States National Museum*. U. S. National Museum Bulletin 127 (Washington 1923), 35, 203–205; Edouard A. Stackpole and James Kleinschmidt, *Small Craft at Mystic Seaport*, No. 36. Mystic 1959, 62.

³⁴ For the Chesapeake log canoe: Howard I. Chapelle, *American Small Sailing Craft: Their Design, Development, and Construction*. New York 1951, 291–304; M. V. Brewington, *Chesapeake Bay Log Canoes and Bugeyes*. Cambridge 1963, part one. These are both excellent studies.

³⁵ For the Louisiana pirogue: William B. Knipmeyer, *Settlement Succession in Eastern French Louisiana*, unpublished doctoral dissertation, Louisiana State University (August 1965) 14–162; H. F. Gregory, *The Pirogue-Builder: A Vanishing Craftsman*. *Louisiana Studies* 3, 3 (Fall 1964) 316–318.

Indian's craft: it is a double-ender, sharp of stern and stem (Fig. 2). The usual model of the seventeenth century Western small boat was a double-ender³⁶ and it was natural that the dugout would be formally altered to accord with European tradition. The double end form, the general preference of fishermen³⁷, was employed on many traditional framed boats in the United States, such as the whale-boats of the last century, and it was known in several parts of the British Isles. The double-ender is at its most elegant in the longship-like, clinker-built fishing boats of Norway, Faroe, and Iceland. Exactly the Viking form can also be found on the sixern, fourareen, Fair Isle skiff, and Ness yole of Shetland and in a blockier expression on the boats of the Orkneys³⁸. The clinker-built, double-end type of Scandinavian extraction is found, too, in England's eastern counties (the crab boats of Sheringham, the doble and peter boat of the Thames estuary³⁹), on the scowte and baulk yawl of the Isle of Man⁴⁰, and the baulk yawl of northern Ireland⁴¹. It is probably important to note as well that at least as early as the seventeenth century some of the large dugout canoes of West Africa were sharp at each end⁴², and the double-ender is still common there (Fig. 3).

The Louisiana pirogue, propelled like the Indian canoe with a paddle, is axed and adzed out of a single cypress log (Fig. 4). Similar canoes were used in the Chesapeake Bay, but there since the eighteenth century the characteristic canoe, of which there were three distinct subtypes, was hewn out of two or more pine logs, three or five being the usual number; by the 1870's as many as seven or even nine logs were used in constructing the boat's hull. Intriguingly the innovation

³⁶ Baker, *Colonial Vessels* (see note 28 above) 17, 45.

³⁷ Mitman, *Catalogue of the Watercraft Collection* (see note 30 above) 30. The practical qualities which make the sharp stern popular are outlined in E. F. Knight, *Small-Boat Sailing*. New York 1920, 63-64.

³⁸ John Spence, *Shetland Folk-lore*. Lerwick 1899, 124-139; Peter F. Anson, *Fishing Boats and Fisher Folk of the East Coast of Scotland*. London and Toronto 1930, chapter 3; Peter F. Anson, *Scots Fisherfolk*. Banff 1950, chapter 8; J. Y. Mather, *Boats and Boatmen of Orkney and Shetland*. *Scottish Studies* 8, 1 (1964) 19-32.

³⁹ Henry Coleman Folkard, *The Sailing Boat*. London 1853, 33-39; G. S. Laird Clowes, *British Fishing and Coastal Craft*. London 1937, 12, 31, 34; Peter F. Anson, *British Sea Fishermen*. London 1944, 29.

⁴⁰ Basil and Eleanor Megaw, *Early Manx Fishing Craft*. *The Mariner's Mirror* 27,2 (April 1941) 92-97.

⁴¹ Edmund W. H. Holdsworth, *Deep-Sea Fishing and Fishing Boats*. London 1874, 392-394; E. Estyn Evans, *Mourne Country*. Dundalk 1967, 107, 157, 169-182.

⁴² Jones, *Trading States of the Oil Rivers* (see note 20 above) 38.

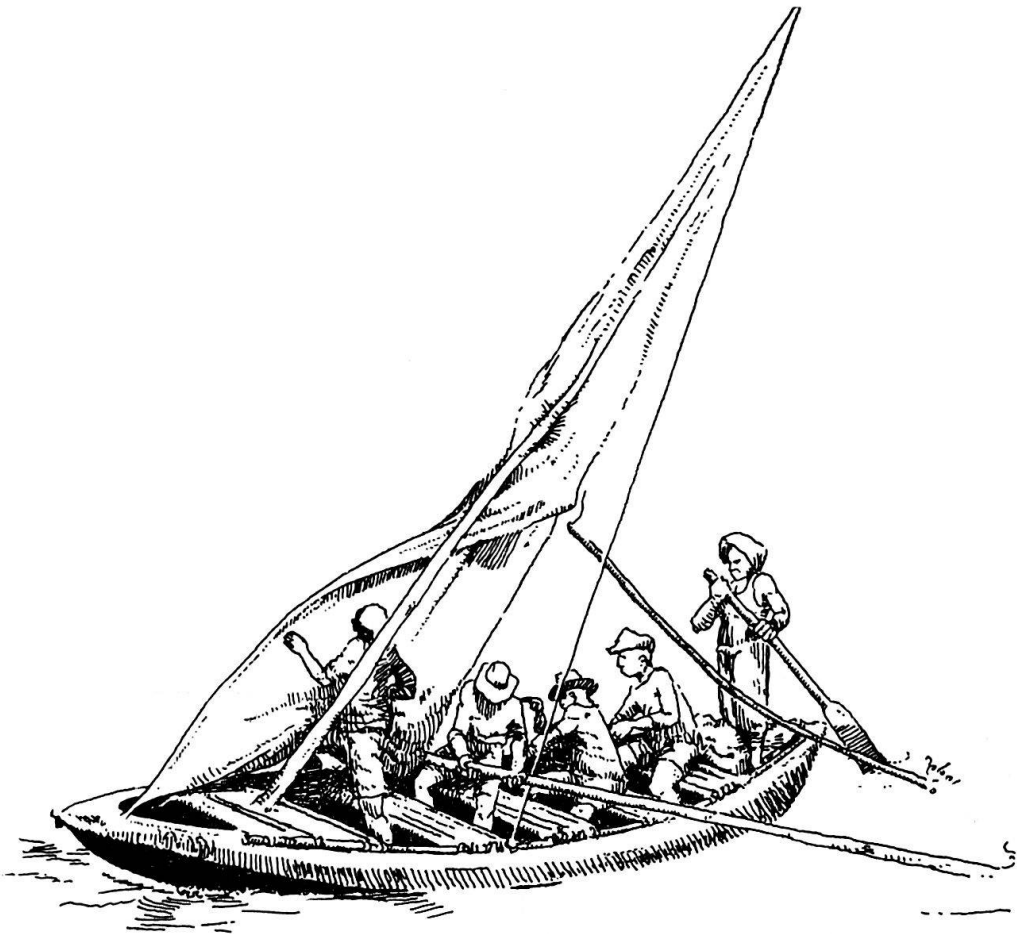


Fig. 3. The Dugout Canoe of Ghana. — This was drawn from a photograph found in Paul Redmayne, *Gold Coast: Yesterday and To-Day*. Cape Coast 1941.

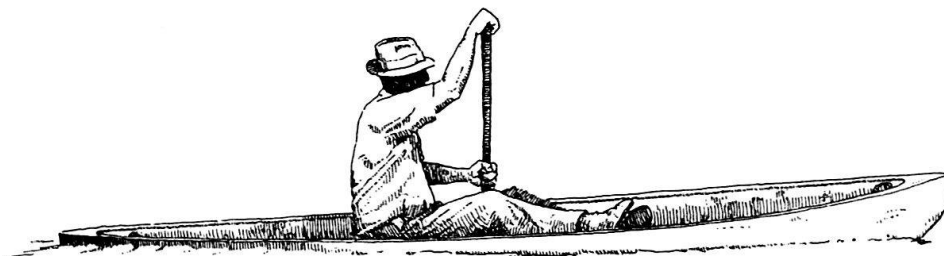


Fig. 4. Louisiana Pirogue. — The latter day dugout of southeastern Louisiana measures in the neighborhood of twelve to fourteen feet: it is a boat for one man. This one was made recently at Bayou Pierre Part. The drawing was made from a photograph supplied by the Standard Oil Company of New Jersey.

of the concept of multiple log construction (which has parallels in India, Persia, and Arabia⁴³) has been credited by tradition to a slave named Aaron⁴⁴. The Chesapeake Bay canoe which may measure up to fifty feet in length was rigged (Fig. 5). Although the usual small boat of Britain carried a square sail, in one of those hard to explain statistical shifts that occurred in the move across the Atlantic, the less usual European fore-and-aft rig came to predominate in America, and while lug-rigged small boats were known early in the Chesapeake, the log canoe generally sailed under some variety of leg of mutton power⁴⁵. As legislation and technological advances made it possible to achieve greater and greater returns from the oyster fishery, the canoe was enlarged into the half-decked brogan and then after the Civil War into the fully decked bugeye, a two masted oyster dredging type that generally measured fifty to sixty feet on deck⁴⁶. The bugeye was translated from sharp to round sterned and from log to frame and then it yielded to the boat that still sails the Chesapeake through the winter months dredging oysters—the boat the journalists and Sunday sailors call the “skipjack”⁴⁷, but which the men who work them call “drudge boats”. Although the skipjack’s hull is framed into the V-bottom “deadrise” form, its profile with its graceful sheer and clipper bow, its jib-headed sloop rig, and its deck plan amount precisely to the forward two-thirds of the old bugeye; the canoe still has a sailing descendant working the oyster rocks of the Bay.

The forms of the dugouts of Louisiana and the Chesapeake country were enabled by metal tools, but those forms, complexly curved and sharply double-ended, were not the inevitable result of the application of complicated technological procedures to the dugout concept, for the Indian equipped with European tools did not necessarily produce a form like the pirogue. In Michigan just south of the birch bark canoe

⁴³ Hornell, *Water Transport* (see note 14 above) 192.

⁴⁴ Brewington, *Chesapeake Bay Log Canoes and Bugeyes* (see note 34 above) 31, f.n. 21.

⁴⁵ E. P. Morris, *The Fore-and-Aft Rig in America: A Sketch*. New Haven 1927, chapter 6; Richard LeBaron Bowen, Jr., *The Origins of Fore-and-Aft Rigs, Part I. The American Neptune*, 19, 3 (July 1959) 165–177; Baker, *Colonial Vessels* (see note 28 above) 4–5, 7, 132, 134–140; Middleton, *Tobacco Coast* (see note 25 above) 215–217, 222–223.

⁴⁶ Brewington, *Chesapeake Bay Log Canoes and Bugeyes* (see note 34 above) part two.

⁴⁷ For the skipjack: Chapelle, *American Small Sailing Craft* (see note 34 above) 323–329; M. V. Brewington, *Chesapeake Bay: A Pictorial Maritime History*. New York 1956, 65–66, 102–106, 177; Robert H. Burgess, *Chesapeake Circle*. Cambridge 1965, 64–69, 196; Charles H. Coe, *Adventuring Along the “Eastern Shore”*. *Motor Boat* 19, 2 (November 25, 1922) 8.

domain, Indians using metal tools made a log copy of the bark canoe model⁴⁸. And nonliterate men lacking metal tools were capable of producing grand and elaborate dugouts. The enticing and facile explanation of the canoe in America as the predictable offspring of the marriage of western technology and New World environment is at best incomplete. Similarly impoverished is the art historical sort of thinking that is predicated on the influence of form upon form as if the human agent were an accidental intruder in a progressive sequence instead of its motivating force. The canoe like any artifact needs to be read as an expression of a set of ideas tied through a responsively functional system to the intellectual totalization of a culture⁴⁹.

Further thought on the canoe as a cultural expression will be aided by a look at the second center of American Indian dugout canoes: the Pacific Coast from Cape Mendocino in California to the Tlingit territory of southern Alaska⁵⁰. Here there were two classes of canoes. One was the shovelnose, similar to that of the East (Fig. 2 A); it is distributionally concentrated in northern California and inland east of Puget Sound, although apparently it was once found throughout the Northwest Coast as well as along the northern Asian rim of the Pacific. The other class comprises two types, the northern and the southern or "Chinook" (Fig. 6). Franz Boas has left us a full description of the manner of manufacture of a canoe of this second class among the Kwakiutl⁵¹. Although no metal was used, the canoe's form was entirely split, chiseled and adzed out of red cedar with compound tools. Additional sections were pegged and sewed to the bow and stern. Laterally and horizontally the shovelnose canoe is a simple parallelogram, but the complex canoe of the Northwest Coast is carved and bent after stone boiling so that, like the canoes of the Chesapeake Bay

⁴⁸ Robert Galbreath, Dugout Canoes in Michigan. *Cranbrook Institute of Science News Letter* 29, 2 (October 1959) 11.

⁴⁹ cf. J. L. Fischer, Art Styles as Cultural Cognitive Maps. *American Anthropologist*, 63, 1 (February 1961) 89-90.

⁵⁰ For Pacific Coast dugouts: Franz Boas, *The Kwakiutl of Vancouver Island, The Jesup North Pacific Expedition*, 5, 2. *Memoirs of the American Museum of Natural History* 8, 2 (1908) 334-338, 344-449; T. T. Waterman and Geraldine Coffin, *Types of Canoes on Puget Sound*. *Indian Notes and Monographs*, 5. New York 1920; T. T. Waterman, *The Whaling Equipment of the Makah Indians*. University of Washington Publications in Political and Social Science, 1, 1. Seattle 1920, 9-27, 52-55; Ronald L. Olson, *Adze, Canoe, and House Types of the Northwest Coast*. University of Washington Publications in Anthropology, 2, 1. Seattle 1927, 8, 18-23, 30-31; Robert Bruce Inverarity, *Art of the Northwest Coast Indians*. Berkeley and Los Angeles 1950, 13-14.

⁵¹ *The Kwakiutl of Vancouver Island* (see note 50 above) 334-338, 344-369.

or French Louisiana, it presents curved lines when viewed from the top, side, or end. The walls of the hull were hewn to a uniform thickness which was gauged by boring holes into which were inserted measuring sticks; the holes were later plugged with maple⁵². The same technique of mensuration was used in making dugout canoes in Ireland⁵³, the upper Chesapeake Bay⁵⁴, and French Louisiana⁵⁵. There is some controversy on the matter⁵⁶, but at an early date, if not aboriginally, the large Northwest canoe, which occasionally reached the length of eighty feet, was fitted with a sail, like the dugouts of West Africa, Connecticut and the Chesapeake Bay. The Northwest Coast canoe was often joined with another, catamaran fashion, to form a still more complex boat⁵⁷; the same was done by Anglo-Americans in Virginia⁵⁸ and on the Missouri River⁵⁹. The similarities of the European-American and Northwest Coast dugout, similarities more of style than of form, are not reducible to a diffusionistic explanation. The technological comparability of the Louisiana Cajun, the Chesapeake waterman, and the Nootka or Kwakiutl craftsman, all of whom were fishermen mainly, is owed certainly not to the material of which the edges of their tools were made; the similarities run deeper to the level of the philosophical essences from which are generated the patterned ways that man uses for movement in nature and among other men.

To come closer to those essences, we may begin by concentrating on a structural principle which is among the prods for contemplation provided for us by Claude Lévi-Strauss—the opposition of nature and culture and the need for mediation between them. Although the idea struck Bidney as an anthropological projection⁶⁰, its age in Western

⁵² Ibid. 347, 361–362; Waterman and Coffin, *Types of Canoes on Puget Sound* (see note 50 above) 27.

⁵³ E. Estyn Evans, *Irish Folk Ways*. New York 1957, 241.

⁵⁴ Chapelle, *American Small Sailing Craft* (see note 34 above) 295–296; Brewington, *Chesapeake Bay Log Canoes and Bugeyes* (see note 34 above) 16.

⁵⁵ Knipmeyer, *Settlement Succession in Eastern French Louisiana* (see note 35 above) 151.

⁵⁶ Boas, *The Kwakiutl of Vancouver Island* (see note 50 above) 445–446; Waterman, *The Whaling Equipment of the Makah*. Ibid., 21–26.

⁵⁷ Boas, *The Kwakiutl of Vancouver Island*. Ibid., 448; Waterman and Coffin, *Types of Canoes on Puget Sound*. Ibid., plate III; Olson, *Adze, Canoe and House Types*. Ibid. 23.

⁵⁸ Cerinda W. Evans, *Some Notes on Shipbuilding and Shipping in Colonial Virginia*. Williamsburg 1957, 58.

⁵⁹ Seymour Dunbar, *A History of Travel in America*. New York 1937, 1140–1141.

⁶⁰ Review of *Le Cru et Le Cruit*. *Journal of American Folklore* 79, 314 (October–December 1966) 612.

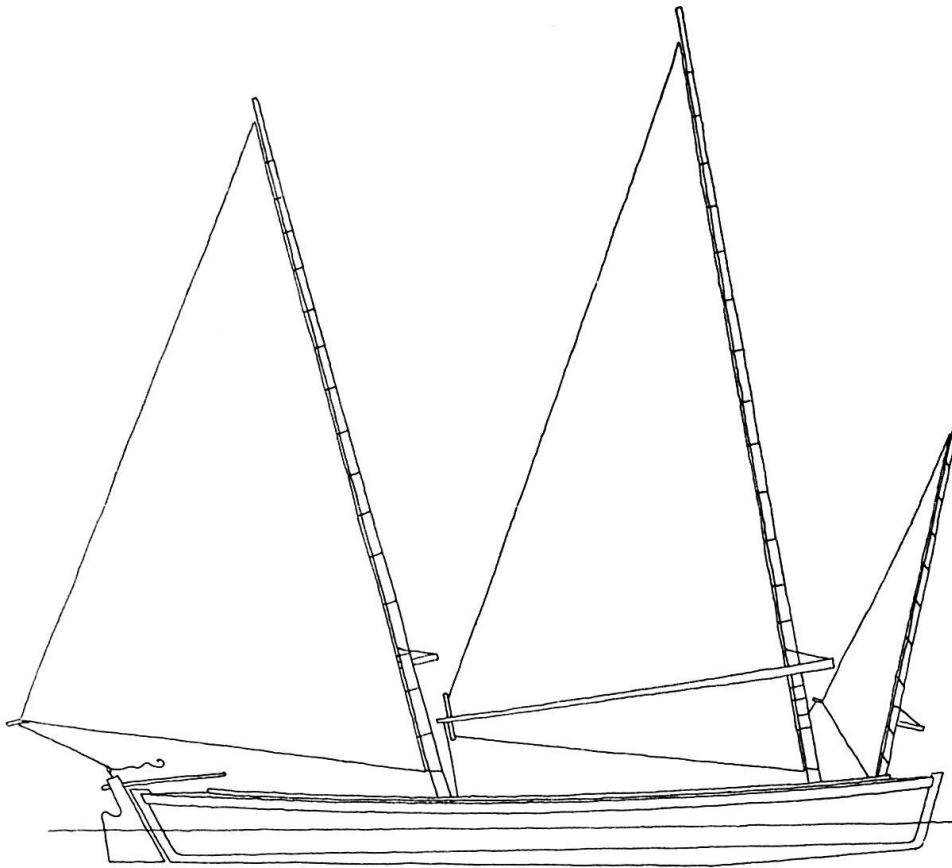


Fig. 5. Chesapeake Bay Log Canoe. – This is a five log Pocomoke Canoe built in Somerset County, Maryland, in 1885. It is about thirty-nine feet in length. It is rigged with leg of mutton sails. After Chapelle in Brewington, Chesapeake Bay Log Canoes and Bugeyes, 132.

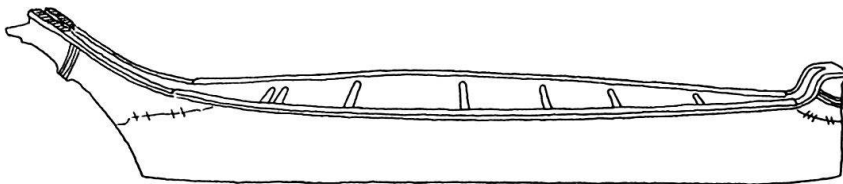


Fig. 6. The "Chinook" Type of the Northwest Coast Indian Canoe. After Waterman, *The Whaling Equipment of the Makah Indians*, 16.

thinking is great, Vogt has found it applicable in a nonwestern context⁶¹, and Lévi-Strauss defends it as universal⁶². It may help us through our problem. The canoe lies conceptually as well as materially—as a sign as well as an object—between nature and man: it is the natural (a tree) transformed into the cultural (a boat); by means of this conversion of natural substances, nature is further transformed by the facilitation of motion through space. The eastern Indian and the California Indian used stones or shells to scrape out the parts of the log that had been altered by fire; to borrow more obviously from the nimble logic of *The Raw and the Cooked*⁶³: fire marks the point of transition from nature to culture, the tree is cooked to enable its cannibalization—its assimilation for man's use. The fire was controlled by substances from nature (stones or mud or gum); the resultant shape diverged but minimally from that of the tree: its width was the tree's width, its bottom, the tree's rounded side. The tree was often felled by fire, but the commentators regularly mention the use of a fallen tree or driftwood. The tree was difficult to bring down, of course, but felling it was not desirable: the living tree had a soul and cutting it down was a killing act not to be taken lightly. The log canoes of the European-Americans and the Kwakiutl were chopped down and chopped out. Their shapes were sliced and bent away from that of the tree and additively elaborated. Finally, they were decorated, at least with a coat of paint, thus eliminating the last reminder of the boat's beginning in a tree. In the Kwakiutl mythic system, the trees chosen for canoe making are those that have already fallen; they are hollowed out by fire⁶⁴. Whether this is an oral reminder of past practice, or the expression of an unobserved ideal, or (as is likely) both, the implications are that the Kwakiutl in practice stand in an aggressive relation to nature different from that characteristic of the Indian, who lives as part of nature, and similar to that of the European interloper in the Indian's land for whom nature exists as a source. This relation is an element in the philosophical system that makes the culture, and these are the culture's "outstanding patterns: emphasis on woodworking;

⁶¹ Evon Z. Vogt, *Human Souls and Animal Spirits in Zinacantan*, in: Jean Pouillon and Pierre Maranda, eds. *Échanges et Communications: Mélanges Offerts à Claude Lévi-Strauss*, 2. The Hague 1970, 1148–1167.

⁶² The idea carries through much of his writing; see, for example, the middle sections of *The Savage Mind*. Chicago 1966.

⁶³ See Claude Lévi-Strauss, *The Raw and the Cooked*. Transl. John and Doreen Weightman. New York 1970, 151–152, 164.

⁶⁴ Franz Boas, *Kwakiutl Culture as Reflected in Mythology*. *Memoirs of the American Folk-Lore Society*, 28. New York 1935, 12.

rectangular plank houses; specialized varieties of dugout canoes and emphasis on water transportation;... an economy built around fishing...; rank-wealth correlation defining status, and emphasis on individual status in social affairs; slavery..."⁶⁵. That is Philip Drucker's conclusion on the Indians of the Northwest Coast. It also fits the folk society of the Chesapeake Bay of a century and a half ago.

Comparable artifacts from unrelated cultures provide independent suggestions about the relationship between the artifact and the style of the total culture of which it is a partial but logical manifestation. Setting those cultures loose to revolve in time yields in addition a temporal pattern—evolutionary, if you will—tied to types of cultures rather than particularistically to individual cultures. As aggressive cultures like those of colonial America and the Northwest Coast develop, the artifacts that are utilized to further the society's goals provide the analyst with the impression that the society's members are adhering less and less to the dictates of the natural environment and more to artificial ideals in the mind. In such cultures, precision in the handling of materials (while referring here to materials won from nature, the implicit notion that the materials could be other human beings or one's own drives as well as the natural environment should be brought out into the open) becomes an ideal, resulting in the desire and ability to elaborate individual forms, the desire and ability to replicate those forms with a minimum of variation, and the desire and ability to further transform materials for use. For the individual there is an increase in the opportunities for displaying his control over his motor abilities and his context (and a corresponding increase in the opportunities for making errors). For those from the Old World who adopted the Indian's canoe, and especially for the Kwakiutl whose tools had stone blades, it was not always easier to chop than to burn the tree⁶⁶, but the fire could escape from control, and within these cultures it was more logical to interpose complex, man-made tools between man and nature than the substance of fire which can issue from nature as well as from man's efforts, and it was logical to deny nature in the symmetry and the curved thin walls of the end product. The simultaneous proclivities to elaboration and control as tests of the individual's ideas and action are extended synchronically throughout cultures like those of colonial America. When arrayed chrono-

⁶⁵ Philip Drucker, *Indians of the Northwest Coast*. Garden City 1963, reprint of 1955, 195.

⁶⁶ cf. Robert F. G. Spier, *From the Hand of Man: Primitive and Preindustrial Technologies*. Boston 1970, 61.

logically, the old forms of such cultures can be seen to transform logically into new forms. In the nature of those transformations is written the record of man striving in his environment.

Artifacts, being human products, are always comprehensible if thought about them proceeds in an orderly way; if, that is, observation is systematic and the synchronic description is complete before diachronic problems are approached. The ideal of completeness requires a full description of form: if one sees only the American log canoe's dugoutness it may be explained simply as a survival of an Indian craft; if one sees only its double-endedness it may be explained as a survival of European design. In reality form is a complex structure of components and no part of it may be taken to stand for the whole; one step in artifactual analysis must involve no less than a full formal description⁶⁷. In moving from formal to functional considerations, the same caution obtains: artifacts are simultaneously multifunctional so that no one function can be offered as a full explanation of the artifact's value in filling human needs and maintaining culture⁶⁸. Being formally compound and functionally multidimensional, the old artifact need not be eliminated nor changed completely during man's attempts to adapt to new contexts: part of a thing rather than all of it may be changed, its functions may be reordered rather than invented. The novelty is an old thing altered rather than a new thing.

The dugout canoe functioned as an element in a system that provided the economic base for a water-oriented community and linked the community to the outside. The system provided equilibrium for the community of trappers and moss gatherers in Louisiana, crabbers, clambers, oyster tongers and duck gunners in the Chesapeake, by enabling the harvest of nature and giving the community's members a common goal and a means for communication, and it carried the potential for engendering disequilibrium in that it related the community to an external market. Through this channel to the outside flows change—pressures that create functional disorder. The system is brought back to balance by internal changes, either in the elements of the system, or in the nature of the element's functions. Both of these kinds of change affected the dugout. With the depletion of the forests, due mostly to lumbering on a scale larger than was necessary to the local community, and the concurrent availability of prepared lumber,

⁶⁷ See Henry Glassie, *Structure and Function, Folklore and the Artifact*. In press in the journal *Semiotica*.

⁶⁸ See Petr Bogatyrev's study *The Functions of Folk Costume in Moravian Slovakia*. The Hague 1971.

the dugout canoe's form came to be achieved not by hewing but by framing boards. This happened in the Chesapeake Bay⁶⁹, in French Louisiana⁷⁰, and in Ireland⁷¹; in his arrangement of literary references to the Irish dugout from the seventh century to the present, A. T. Lucas comments:

Some tradition of it [the dugout], however, lingers on even yet, for the small flat-bottomed plank-built boats, called cots, which are still used on the Shannon, the Slaney and some of the Cavan Lakes, are the obvious descendants, in form and name, of the dugout canoes which preceded them on these waters for thousands of years⁷².

The little community's waterman competing in the great society's market needed to keep his tradition flexible: means for increasing his catch had to be tested and adopted if successful. Around the Chesapeake Bay, the log canoe's centerboard was ripped out, its masts were discarded, a cuddy and an engine were added, and many log canoes, thus modified, still perform as crab boats on the Bay (Fig. 7). In Ghana nearly one-third of the 10,200 dugouts still used by fishermen have had outboard motors added⁷³. The end of the dugout's practicality did not bring about the elderly canoe's death; it signaled, rather, a functional reorganization: one of its old subordinate functions became its predominant new function. Though used mostly for gaining a livelihood on the waters, the canoe's owners had always taken pleasure from it too. They raced it and relaxed in its motion. Old captains on the Potomac River kept old log canoes, the companions of their workaday youths, as pleasure boats⁷⁴, and long after its life as a workboat was over, the rigged Chesapeake log canoe was "alive"—as they say on the Bay—as a racing boat⁷⁵. The Louisiana dugout pirogue is made now mostly for Chamber of Commerce supported

⁶⁹ Howard I. Chapelle, *The Migrations of an American Boat Type*. Contributions from the Museum of History and Technology, U.S. National Museum Bulletin 228 (Washington 1961) 152–153.

⁷⁰ Knipmeyer, *Settlement Succession in Eastern French Louisiana* (see note 35 above) 160–162.

⁷¹ N. C. Mitchell, *The Lower Bann Fisheries*. *Ulster Folklife* 11 (1965) 14; Alan Gailey, *The Cots of North Derry*. *Ulster Folklife* 9 (1963) 52.

⁷² A. T. Lucas, *The Dugout Canoe in Ireland: The Literary Evidence*. *Varbergs Museum årsbok* (1963) 66.

⁷³ E. A. Boateng, *A Geography of Ghana*. Cambridge 1966, 80.

⁷⁴ Edwin W. Beitzell, *Life on the Potomac River*. Abell, Md. 1968, 69–70.

⁷⁵ Brewington, *Chesapeake Bay Log Canoes and Bugeyes* (see note 34 above) chapter 4.

ances⁷⁶. With change, functional stasis requires formal change, where formal stasis requires functional change.

The complexities of New World culture and nature environed an artifact that was made to fit those complexities subtly and variously. These artifacts provide a valuable record, but only if they are approached with theories powerful enough to place them accurately as complete elements in totalizing systems, and only if the analyst maintains his awareness of the distinct and interrelated historic traditions having their sources in Europe, Africa, and the Indian's land.

⁷⁶ Edward J. Kammer, *A Socio-Economic Survey of the Marshdwellers of Four Southeastern Louisiana Parishes*, Catholic University Studies in Sociology, 3. Washington 1941, 76-79.

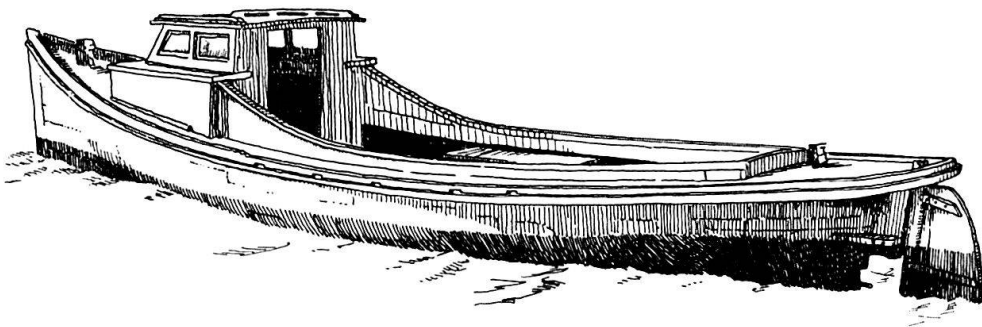


Fig. 7. The Chesapeake Bay Log Canoe Altered for Modern Work. This was drawn from photographs taken of a boat docked near Crisfield, Somerset County, Maryland in March, 1969.