PHOBIAS IN ARCHAEOLOGY

by

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Summary

Refusal to seriously discuss pre-Columbian transoceanic contacts, including contacts across bodies of water such as the Mediterranean and the Gulf of Mexico, is rooted in prehistoric archaeology's foundation in nineteenth-century cultural evolution, a paradigm still dominant in the discipline. Belief in gradual agent-less development driven by environmental and innate forces, and the effort to discover universal laws of cultural development, mistakenly claim to use evolutionary biology principles. The doyen of paleontologists, George Gaylord Simpson, denounced the hypothetico-deductive method favored by "evolutionary" archaeologists and outline instead the method for historical sciences based on the principle of actualism. Joseph Needham outlined criteria for evaluating questions of "diffusion" (innovations stemming from intersocietal contacts). Both of these preeminent scientists are ignored by most archaeologists. The paper concludes with description of Needham's visit to Mexico in 1977 to examine firsthand, evidence for pre-Columbian trans-Pacific contacts. ARCHAEOLOGY is a historical science, therefore it should follow the basic method of historical sciences, outlined by the great paleontoligist George Gaylord Simpson:

We... observe present configurations and from them infer configurations that preceded them. The principle of actualism is essential for such inferences. Historical inferences depends less on projection into the past of the immanent, construed in a static sense, than on projection of processes, which of course do depend upon immanent characteristics. For the most part, these processes are recognized and characterized as they occur in the present. ...

IN THE TOTAL STUDY of ... any history, there are three phases:

- 1) obtaining and studying the historical data, ...
- 2) determination of present processes, ... and
- 3) confrontation of 1 and 2 with the view to ordering, filling in, and explaining the history (Simpson 1970: 81, 84-85).

Simpson disentangled the principle of actualism from the assumption of uniform rate - gradualism - previously conflated with it in Lyell's term "uniformity". Rejecting the idea that gradualism is fundamental to evolution, Simpson would seem to have carried evolutionary biology closer to history, opening up archaeology to considering human agency and social actions within his scientific framework. Publishing during the putsch maneuvered by Lewis Binford and his disciples (Kehoe 1998: 115-116), Simpson's work was ignored in favor of the philosopher pseudo-scientific Carl Hempel's "hypothetico-deductive method", in spite of the practicing scientist's unequivocal "hypotheticodeductive statement that explanation Hempel-explanation" ... is "quite inacceptable in the practice of historical science" (Simpson 1970: 86).

Contemporary with Simpson's exposition of method, another of the twentieth century's greatest scientific minds was creating that monumental edifice of scholarship, Science and Civilisation in China. Two decades of concentrated work on questions of discovery, led innovation, and diffusion Joseph Needham and his principal collaborator, Lu Gwei-djen, to state, "We often know very little of how transmissions took place, but as in all other fields of science and technology, the onus of proof lies upon those who wish to independent maintain fully invention" (Needham and Lu 1985: 13). Needham and Lu set out the criteria of "collocation" and "time" for assessing the probability that interpersonal or intersocietal contact was the source of innovation. The collocative criterion is similar to early-twentieth-century Austrian anthropologist Fritz Graebner's criterion of quantity: it evaluates the number, specificity, complexity, and patterning of apparently similar traits or elements in two or more cultures. The time criterion notes the time differential between the two or more occurrences of the traits (Needham and Lu 1985: 12).

NEEDHAM delighted in referring to himself by the title he had chosen, Sheng Jung Tzu, "the Victorious-over-Confusion Master". He said he had "a love of little concrete things, and facts, the building-stones, the 'bras tacks'. without which the grandiose generalisation will not reveal itself with relative certainty" (Needham quoted in Lu 1982: 37). That love of empirical data led him to examine the possibility of pre-Columbian trans-Pacific contacts (Needham 1971: 540ff.), in addition to more strictly historical questions such as the diffusion of gunpowder and related technology from China to the west - the "gunpowder epic" (Needham 1986) he called it, noting that its story was hidden under threat of the most stringent penalties for its diffusion. Why Western scholars should accept that spread by human contacts, gunpowder regardless of official documentation, and

refuse to accept pre-Columbian trans-Pacific links?

DO ARCHAEOLOGISTS have a phobia about water? Not only are the oceans held to be impassable barriers, the Mediterranean seems to sever Europe from North-Africa and Egypt (Bernal 1987), and the Gulf of Mexico severs Mesoamerica from the United States (Kehoe 1998: 117). The usual put-down is that prehistoric people didn't have the boats or navigational knowledge and skill to cross open bodies of water. Such a proposition is easily refuted, by the actuality of island colonizations millennia before the European "Age of Discovery", and by recent small-boat crossings and the literature discussing them (e.g., Heyerdahl 1980, Severin 1978). Table I is my compilation of recent crossings.

See Table I

For archaeologists accustomed to thinking of their subjects making long ocean voyages. the probability of Polynesian landings on the American coast is a given (Green 1998), and similarly the likelihood of Mayan contacts across the Gulf of Mexico to Florida (Bullen 1966). I well remember the late Stuart Piggott telling me, when he was a visiting professor one semester at Harvard and I was a graduate student there, that riding in an Irish curragh to the Aran Islands quickly convinced him that the light, keel-less curragh, in this time with a wooden frame covered with canvas, is superior for ocean swells to the keeled plank-built ships used by Columbus and his cohort (Lewis 1958: 4-6), Lewis and Runyan 1985). My research into small boat Atlantic crossings was initiated by Piggott for a paper for his seminar; the larger question he set me to address was the sudden appearance of ceramics in northeast America three millennia ago, the ceramics much resembling those long before established in northwestern Europe. The origin of this innovation is still not established (Sassaman 1999), with the recent discoveries of Terminal Pleistocene ceramics of this general

fabric-impressed technology and style -Needham's collocation criterion in northeastern Asia (Hyland et al., 2000; Ikawa-Smith 2000) creating а verv considerable gap between these and the European as well as an even greater gap with northeastern American ceramics Needham's time criterion.

CLAIMING MOST archaeologists are landrubbers afraid of open water is too facile an explanation for the arrant disregard of other peoples' evidence for intrepid vovaging. Desire to find independent confirmation of postulates of evolutionary cultural development is one factor in the blind assertion that the Americas were totally isolated from the rest of the world once Late Pleistocene migrants had crossed through Beringia. scientific The notion that hypotheses are proven by replicating experiments, rational but simplistic а assumption (Laudan 1981), drives some archaeologists to assert that what appear to be parallel cases separated spatially are naturally replicated experiments validating premises of trajectories evolutionary (e.g., Kehoe 1998:79). Hempel's hypothetico-deductive method, beginning with a hypothesis and seeking data predetermined to be suitable for validating or falsifying the hypothesis. placing empirical data secondary to ratiocination. the replicated valorizes "experiment" over struggling to find an interpretation accommodating one's data.

THE 1996 READER Contemporary Archaeology in Theory, edited by Robert Preucel and Ian Hodder, allows us to discover the paradigms that apparently have no room at all for the actualistic premise that interpersonal and intersocietal contacts most innovations in local account for cultures. Preucel and Hodder embed the paper "Cultural Transmission and Cultural Change" in their section "Social and Cultural Evolution", introduced by their essav "Process, Structure and History". They state,

Archaeology obtains much of its disciplinary identity from the study of how and why cultures change. The theories of change used today are highly diverse and have been forged through a complex history of intellectual cross-fertilization between the social and natural sciences and represent different accommodations to issues such as scale. process. structure and agency. We can distinguish two distinct. but interconnected. traditions. The first is cultural evolution the product of ... adaptations to the natural environment ... The second might be called social evolution ... that change is best evaluated with regard to changes in social and political organization. changes which are in turn driven by modifications in the economic sphere. ... Crudely put, ... whether primacy is given to environmental interactions or social relations, whether to system or to structure (Preucel and Hodder 1996: 205).

Preucel and Hodder seem not to have read one of their preceding selections, by Philip Kohl, who said,

> • The currently fashionable regional ecosystemic perspectives ... represent an advance over earlier diffusionary theories for they compel us to consider long-term structural phenomena, but they are still inadequate because they refuse to acknowledge the importance of historical events and the coming together of different cultural systems (Kohl 1996: 161).

APPARENTLY Kohl's reiteration of the word "system" obscured for Preucel and

Hodder that "societies" could be substituted for the jargon "system" here in his last line.

Absent from the Preucel and Hodder reader is any discussion, or even references, to such basic work on cultural innovation diffusion as Hägerstrand (1967), Rogers (1962), or Lawrence Brown's Innovation Diffusion (1981). These studies by geographers and sociologists are actualistic. The literature they exemplify clearly makes the critical distinction between innovation and diffusion of an innovation within a society, a distinction any business person deals with. Renfrew and Bahn, in their textbook Archaeology, do recognize the distinction, (Renfrew and Bahn 1996: 448), leading students gently through competing theoretical positions including Childe's premise of diffusion.

ONE LANDMARK publication demarcating the prewar diffusion premise and the postwar processual approach was Grahame Clark's "The Invasion Hypothesis in British Archaeology" (1966). Clark remarks, "The British took the expansion of their power in the world (in the nineteenth and early twentieth centuries) almost as if providence rather than any qualities of their own was responsible" (Clark 1966: 172). This attitude was entirely congruent with nineteenthcentury unilinear cultural evolution. assuming without debate that educated Englishmen were the apex of evolution, lesser breeds to inevitably succumb to the expansion of this most evolved culture. Notwithstanding. Clark describes. as invasions of earlier Britain by more advanced cultures - Beaker Folk, Iron Age Celts, as later Romans and Normans - was the accepted model of innovation in British prehistory. The two models are not incompatible, for it was the continuing evolution of the English as they absorbed one after another declining culture that produced their eventual triumph. "Providence", not happenstances of historical events, brought about the happiness of the haute bourgeoisie.

The Preucel and Hodder volume paper "Cultural Transmission and Cultural Change", by Stephen Shennan, was originally published 1989 in What's New? A Closer Look at the Process of Innovation, edited by S. E. van der Leeuw and Robin Torrance (Routledge). Shennan cites studies that he considers representative of "the 'neodiffusionist' perspective". apparently Renfrew's "peer polity interaction" which he correctly notes has little to do with cultural geographers' concern with diffusion and much to do with Thorstein Veblen's 1899 Theory of the Leisure Class (Shennan 1996: 283). Shennan then sets up Boyd and Richerson's 1985 effort to show that cultural change can be accommodated within an evolutionary biology descent model, against Giddens and Bourdieu, whose work Shennan sees as demonstrating the social construction social structure without, of however. explaining how the cultural structure is transmitted. (Shennan cites neither Bourdieu's Reproduction in Education. Society and Culture nor his Le Distinction, Critique Sociale du Jugement, the book that says it all in photographs).

WHAT CAN WE make of these much praised and cited assertions that Darwinian evolutionary biology should be our model for understanding cultural innovation and change? Charles Darwin practised historical science, amassing many notebooks of observations of the actual behavior of organisms including earthworms and barnacles, two animals for which his studies remain authoritative. When he turned at last to discoursing on humans, in The Descent of Man, he carefully focused on sexual selection observed in myriads of animals and a range of humans (Desmond and Moore 1991: 556,565,572). In contrast, the "evolutionary archaeologists" use hypothetico-deduction, hypothesizing what might seem to confirm a hypothesis - in these cases, the operation of natural selection on human behavior - and proffering examples that fit their projections. Empirical data are distinctly secondary in these ambitious formulations designed to

yield universal laws of evolutionary development (Shennan 1996: 294-295, Preucel and Hodder 1996: 216-217). Ernst Mayr, the doyen of the field, comments, "Sweeping claims are rarely correct in evolutionary biology" (Mayr 1991: 149).

WHEN IT APPEARED, a few years after the 1971 publication of Joseph Needham's consideration of the issues of pre-Columbian trans-Pacific contact, that archaeologists were ignoring it, David H. Kelly and I decided to venture a conference on the topic. Needham and his collaborator Lu were delighted to participate in our plan to visit firsthand museum collections and sites in Mexico, in company with archaeologists who had primary experience with the sites. This was actualistic research, following Simpson's canon. Lita Osmundsen of the Wenner-Gren Foundation agreed to support the conference, with additional funds provided by the Ford Foundation. We met in Mexico for two weeks in 1977, with Gordon and Marguerite Ekholm, Paul Tolstoy, Yolanda Gonzalez Torres, Kelley, and myself convinced that data congruent with both the collocation and time criteria evidenced some, intermittent, pre-Columbian trans-Pacific contact, and Norman Hammond, Peter Furst, David Harris, Paul Wheatley, and Donn Bayard (the last three with southeast Asian experience) the skeptics. We planned a volume presenting both pro and con papers on trans-Pacific contact, with the working title suggested by Needham, The Smoking Mirror: A New Look at the Ancient Asian and Amerindian Civilisations. The Ekholms. Tolstov. Gonzales Torres and Kelley wrote the chapters they had volunteered, none of the skeptics would commit a word to paper explaining their position. Needham and Lu finally published their chapter in 1985 as a small book.

ON-SITE examination of the archaeological materials and extended discussions with the archaeologists directly over the adduced artifacts confirmed Needham and Lu's earlier conclusion that occasional trans-Pacific

voyages before the sixteenth century A.D. had reached American shores and transmitted some innovations. To the mind, the most powerful evidence is the calendar astrology shared by Eurasians and Mesoamericans, fantastic images of animals including dragons assigned to lunar mansions, colors, deities, highly and human fates. Based on sophisticated mathematics and astronomy, maintained through written texts. this calendar astrology (still active through popular newspaper, book. and Internet astrology) cannot be simply derived from observations of nature, nor attributed to Paleolithic beliefs supposedly surviving among non-literate nations. Needham and Lu did not suggest Asian contacts instituted or controlled Mesoamerican civilizations, but rather that the Americas were part of worldwide enterprises of exploration for possible trade and colonization long before Columbus.

THE MOST PROVOCATIVE result of our conference with Needham nad Lu was their highlighting a gray zone between pre- and post-Columbian transoceanic contacts. Needham observed, in collections made in west Mexico by Isabel Kelly and housed in the Museo Nacional de Antropologia in Mexico City, which he examined in company with Dr. Kelly, that certain pots and plates could be set together to make an Asian-type distilling apparatus used there for liquor. Kelly's filed records did not indicate the three components had been found set up, but they were in the same tomb and could have been placed separately or have fallen over. Ethnographically, the Asian still is known in West Mexico. Is it pre-Columbian? if so, did it come from Asian contact? or - here is the difficulty: are Kelly's vessels merely pots and a perforated plate, and the ethnographic still brought by Asian seaman on the Manilla galleons of the historic period? The possibility of post-Columbian innovations carried by unknown seaman on the Manilla route, both Asians and Mexicans, and by extension into other regions of the America by other poorly-documented laborers such as

Russian-American Fur the Company's Siberian employees or the Hawaiian Kanakas employed in West Coast North American posts and ports, greatly complicates the question of pre-Columbian contacts. Life on the Manilla galleons during the sixteenth and seventeenth centuries was nearly intolerable for seaman; to keep them, desertion was punished by severe flogging or death. Men did desert and flee into the interior where they could join indigenous communities. Did they bring fighting cocks and knowledge of stills?

Conclusion

The question of intersocietal contacts across water before the European "Age of Discovery" is generally ignored or rejected by archaeologists, not only because the evidence may be equivocal but also because prehistoric archaeology remains dominated evolutionary models. bv its original nineteenth-century paradigm. Archaeologists seem uncomfortable with accepting contacts as part of a scientific approach, in spite of the principle of actualism articulated as the foundation of historical science by George Gaylord Simpson, and of the impressive studies of diffusion in Joseph Needham's Science and Civilisation in China series. The reputations of Simpson and Needham as two of the greatest scientists of the twentieth century do not impress most archaeologists. Needham's own direct, largely positive, evaluation of pre-Columbian trans-Pacific contacts is ignored by mainstream archaeology. Following а two-week conference in Mexico in 1977, with Needham and his collaborator Lu Gwei-djen directly examining data in the company of responsible archaeologists. Needham's earlier conclusions were confirmed and he identified a neglected question, whether some of the ethnographic similarities might be due to seamen deserting from post-Columbian trans-Pacific merchant ships, particularly (in Mexico) the Manilla galleons. A wide field for research is this question of transmissals among undocumented commoners.

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Abstract

Prehistoric archaeology's foundation in nineteenth-century cultural evolution includes belief in gradual agent-less development driven by environmental and innate forces, and efforts to discover universal laws of cultural development. George Gaylord Simpson, the paleontologist, denounced the hypothetico-deductive method favored by "evolutionary" archaeologists and stated that the historical sciences must give priority to empirical data and use the principle of actualism. Joseph Needham evaluated questions of "diffusion" (innovations stemming from intersocietal contacts) using the criteria of collocation and time. After discussing the abstract theorizing of contemporary archaeologists such as Ian Hodder and Robert Preucel, this paper concludes with a description of Needham's visit to Mexico in 1977, where he examined, firsthand, evidence for pre-Columbian trans-Pacific contacts and discussed these data with responsible archaeologists. Needham brought out an overlooked "gray zone" of commoner contacts undocumented in archives, particularly the probability that some of the Asian-Mexican parallels seen ethnographically may come from seamen deserting the Manilla galleons of the sixteenth and seventeenth centuries. These men, who would be killed if recaptured by the galleon captains, took refuge with indigenous communities. Similar transmissions of innovations between commoners are known from Russian-American Fur Trade Company Siberian employees in northwestern America, and Hawaiian Kanakas in the same region.

TABLE I

TRANS-OCEANIC CROSSINGS

From Jean Merrien [real name, Rene Marie de la Poix de Freminville], Lonely Voyagers [Les Navigateurs Solitaires], English translation 1954, J. H. Watkins. New York: G. P. Putnam's Sons:

1866 - First recorded Atlantic crossing by a ship smaller than 60 ft., the sloop Alice (48'), Boston to Isle of Wight, 19 days.

1868 - Nonpareil, 3 rubber cigar-shaped floats each 26' long, with light planking deck, 2 masts, New York to Southampton, 43 days.

1870 - John C. Buckley and Nicolas Primoraz on City of Ragusa, 20 ft. ship's lifeboat (whaleboat type), yawl-rigged, Queenstown Ireland to Boston, 85 days.

1876 - Alfred Johnson, a New England halibut fisherman, in the Centennial, a 20-ft. fishing dory with 4 sails on one mast, Gloucester NJ to Nova Scotia, to Abercastel, Wales, 46 days.

1889 - J. W. Lawlor with 2 seamen, Boston to Le Havre on 40-ft. Neversink, 49 days.

1891 - Lawlor, alone, in Sea Serpent, 15 ft., with spritsail, Boston to Cornwall in 45 days.

1894 - George Harbo and Frank Samuelson, Norwegian-born naturalized American dory fishermen out of Sandy Hook NJ, on 17' 8" Police Gazette, a clinker-built whaleboat no sail but with air tanks at each end, rowed New York to Scilly Isles, 55 days.

1899 - Howard Blackburn, Gloucester MA to Gloucester England, 61 days, on Great Western, 30 ft. sloop; 1901, Blackburn, Gloucester MA to Cape Espiehel at mouth of Tagus, Portugal, on 24' 8" Great Republic, 38 days, on 39th day sailed into Lisbon.

1923 - Alain Gerbault, on 36 ft. cutter Fire Crest, Gibralter to New York, 101 days.

1928 - Captain Romer, Cape St. Vincent, Portugal to St. Thomas, Virgin Islands, on kayak made of waterproof fabric over wood frame, 90 days.

1950 - Frederick Benjamin Carlin, an Australian mining engineer, and his wife in an amphibian jeep he refitted, with one fuel tank under the jeep and another towed, Halifax to Flores, Azores, on to Madeira, Canaries, Africa and ending driving into Paris June 1, 1951.

1952-53 - Ann Davison, English, on 21'6" sloop Felicity Ann, Canaries to Dominica, West Indies. Mrs. Davison and her husband had intended to cross the Atlantic on the Reliance but both boat and husband were lost at sea a few miles out.

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1952 - Dr. Alain Bombard, in 15 ft. rubber dinghy l'Heretique, living entirely off caught fish, 65 days from Casablanca via Las Palmas to Barbados.

Here are updates on contenders for the title of Smallest Boat Crossing (listed in David A. Boehm, Stephen Topping, Cyd Smith, eds., 1983 Guinness Book of World Records, New York: Sterling):

1980 - Gerard d'Aboville, a Breton, rowed from Cape Cod to Ouessant, France, 3320 miles, in an 18-foot boat in 72 days, the first documented solo crossing from mainland to mainland.

1981 - Gerry Spiess made a 7800-mile Pacific crossing to Sydney in five months in a ten-foot sailboat; he had previously crossed the Atlantic in the boat.

1982 - Bill Dunlop took 78 days to sail a 9-foot boat from Maine to Falmouth, England.

1983 - Wayne Dickinson took 142 days to sail from Florida to northwestern Ireland in an 8'11" sailboat.

1984 - Arnaud de Rosnay disappeared at sea from a sailboard going from China to Taiwan. Earlier, his longest of seven open-water crossings was a thousand kilometers from the Marquesas to Ahe in the Tuamotus.

1985 - two Frenchmen took 39 days to cross the Atlantic on a surfboard with a 20-inch-high hold for sleeping (one at a time).

1986 - Alain Pichavant and Stephane Peyron took 24 1/2 days on a 31-foot sailboard from Senegal to Guadeloupe, whence they were continuing to New York. Peyron then sailed, in 1987, on a 25-foot sailboard from New York to La Rochelle, France, in 46 days.

1988 - Rüdiger Nehberg pedaled from Senegal to Sao Luis, northern Brazil, in a small Fiberglas pedal-rowing boat, taking 74 days.

1991 - British sailor Tom McNally sailed from Portugal to San Juan, Puerto Rico in 5' 4 1/2 " boat.

1993, Hugo Vihlen beat that on Father's Day - 5' 4", 106 days, St. John's NFLD to Southern England.

1999, Tori Murden (36 yr.old woman) rowed a 23 ft. boat, American Pearl, 3000 miles from the Canary Islands westward to Fort-du-Bas, Guadeloupe, in 81 days; first American and first woman to row alone across Atlantic.

TRANS-PACIFIC CROSSINGS

1882 - Bernard Gilboy, an American, on the 19 ft. schooner Pacific, San Francisco to 40 miles NE of Sandy Cape, Australia (6500 miles) in 162 days.

1972, John Fairfax and Sylvia Cook rowed 8000 miles in a 35-foot boat from San Francisco, drifting down the coast to Mexico before crossing to Hayman Island on the central Australian coast. Fairfax had rowed from the Canary Islands to Florida in 180 days in 1969.

1978, Webb Chiles left San Diego to circumnavigate the world in an 18-foot open boat; two years later, he sailed into Cairns Harbor, 1250 miles north of Sydney, Australia, having stopped over on islands.

1980, on November 30, six Japanese researchers arrived in Chile, six and a half months after leaving Shimoda, Japan in a 43-foot catamaran, the Yasei-Go. They took the Kuroshio Current east to the Northern Pacific Current, taking that to San Francisco, then sailing down the coast to Chile (Milwaukee Journal 12/1/80).

1982-3, Peter Bird rowed from San Francisco almost to Australia.

1987, Ed Gillet paddled a kayak from Monterey Bay to Maui, Hawaii, in 63 days.

1991, Gerard d'Aboville rowed a 26-foot boat from Japan to Ilwaco, Wash., in 134 days.

1999, Kenichi Horie (60 years old), 103 days San Francisco to western Japan on sailboat made of 528 empty stainless steel beer kegs with sails made of recycled plastic bottles; 1996, Horie crossed on solar-powered "yacht" made of melted-down aluminum beer cans; 1962, 23-years-old Horie crossed on 19-ft yacht. (All solo crossings; 1999 crossing was 6800 miles.)(Milwaukee Journal Sentinel 7/9/99).

AROUND THE WORLD SINGLE-HANDED

1895-1898, John Slocum, sea captain, out of Gloucester MA, on the 36'9" Spray.

1901-1904, J. C. (Johann Klaus) Voss, naturalized Canadian, in the 50 ft. red cedar Indian canoe g Tilikum, 3 masts; for sections of the sailing, Voss had a second man on board (one swept overboard).

1942-43, Vito Dumas, of Argentina, 32 ft. ketch Legh II, 13 months 2 weeks (fastest

circumnavigation at least up to Merrien's publication date of 1954).

The record for smallest boat crossing the Atlantic is Hugo Vihlen in Father's Day - 5' 4", 106 days, St. John's NFLD to Southern England, 1993 (earlier, he sailed The April Fool, 5' 11-7/8" (Boehm, ed. 1983:352), Casablanca to Fort Lauderdale, Florida, 85 days in 1968).

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