

## LETTER TO THE EDITOR

## Of Time and Tide: Comments on Newby and Webb, 1994

As Senior Scientist and Field Supervisor for the reinvestigation of the Boylston Street fish weirs in Boston, Massachusetts from 1985 to 1988, we wish to comment on some of the conclusions presented in the recent article by Newby and Webb (1994). Their contributions to the multidisciplinary research on the weirs were considerable and essential; we are pleased to see in print their interpretation of the vegetative environments of the weirs. Wherever the inferences involve the palynological data we are confident that they are well-founded and significant. Building on their data set, they go on to derive an "age model"—an interesting and innovative attempt to correlate pollen diagrams over short distances.

Because the results of the full multidisciplinary investigations will not be ready for publication for some time, we are concerned lest readers adopt too readily the plausible but incomplete interpretations in this article. On the basis of our very much larger data set, which combines archaeological, zooarchaeological, biological, paleotopographic, spatial, and sedimentological data, we cannot confirm or accept some of the conclusions about the relative ages and relationships of the several weir locations.

Analysis of our data set is leading to conclusions significantly different from earlier studies on the "Boylston Street Fishweir." Those latter are justly famous in paleoenvironmental archaeology; they set high standards in the 1930s and 1940s (Johnson, 1939, 1942). Problems in the earlier data sets, related to limited sampling, incomplete calibration of elevations from site to site, and the lack of an independent dating technique such as radiocarbon, render the early results subtly misleading in detail and in conclusions. Newby and Webb's Fig. 5 depends heavily on uncorrected data in the early reports, data that we now know are unreliable in detail and unsuitable as components in a new "age model."

The extrapolation of radiocarbon ages of peat from one research area to others is not supported by what we know about the paleotopography and inundation history. Despite the apparently reasonable fit with interpretations of pollen diagrams representing selected portions of the sediment column at the New England Life and John Hancock sites, the peat dates cannot be applied to areas beyond their original sample sources. The transgression of the sea into the ancient Back Bay in the immediate area of the weirs occurred from southwest to north on a strong slope, over more than a millennium (cf. p. 230 of Newby and Webb). The top of the glacial Blue Clay, and therefore the contact with anything above it, slopes from northeast southerly across the area of the weirs. It follows that

the "lower peat" was increasingly older toward the south within the weir area. The weir sites were constructed from south to north progressively up the slope of a hill whose summit was called Fox Hill in eighteenth- and nineteenth-century Boston. Both the marine inundation and the weir elements at the northerly New England Life (NEL) site were a millennium or more later, and as much as 10 feet (3.32 m) higher, than at the John Hancock site to the south. The uppermost weirs at NEL were built in a higher energy tidal environment than those at the 500 Boylston Street site and at the Hancock site.

At this time, with more analysis still to be done, we interpret the weirs as constructed essentially parallel to the sloping shore (i.e., on contours), functioning as tidal traps for small fish that would be stranded between the shore and weir walls as the tide ebbed (D. F. Dincauze and E. Decima, unpublished data). Whether the weirs were intertidal or subtidal still remains to be determined and may in fact have varied with the location and age of the weir sets on the sloping foreshore.

Readers interested in the Back Bay fish weirs of Boston are urged to await fuller details of a fascinating multidisciplinary study that will revise archaeological interpretations of the structures while corroborating the paleoenvironmental and dating interpretations of the earlier studies. Here, and in publications to come, we congratulate the entire research team, significantly including Newby and Webb, for work well done and contributions to take pride in.

## ACKNOWLEDGMENTS

This research was undertaken by Timelines, Inc., of Groton, MA, under contract to Gerald D. Hines Interests, of Dallas Texas, between 1985 and 1989.

## REFERENCES

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