See-through women replace yellow-bellied sapsuckers

Boston's Museum of Science. Open daily. Adults \$2, children \$1. Closed Thanksgiving, Christmas, New Year, July 4, Labour Day.

THE Museum of Science in Boston lives in one of those bleak, deserted areas peculiar to American cities. Although a mere five minutes' walk from the city centre the pedestrian finds himself hideously outnumbered by speeding cars. On a causeway across the Charles River, the buildings tempt you in by their very humanity amidst the heartlessness, and (again an American feature) an affluent and joyful interior in stark contrast to the external world. For the museum, whatever else it is, is full of joy, and the most un-museum like museum I have yet seen.

One colossal advantage it has over many other museums is its youth. When Bradford Washburn became director in 1939 it was sited in a four-square civil-war vintage building in downtown Boston, and as with so many museums of science, it was hard pressed for space and dominated by natural history exhibits. Washburn, a distinguished explorer and mountaineer, returned after war service to create a completely new multidisciplinary museum that would be particularly attractive to the young. In many ways he was lucky. The forties and early fifties were times when it was probably easier than today to persuade donors that science needed good publicity. Harvard Museum of Comparative Zoology, furthermore, served as a reference museum, releasing him from the burden of endless display cases of stuffed animals. The closeness of many educational, medical and technological institutions ensured ready assistance and advice (though is this true in London, say?). And there is Boston—just the right sort of city to plant this sort of thing in.

But if he was lucky, he has also had an incredible flair for what appeals to the young, and above all what makes them feel at home. As part of my preliminary research I took a couple of young boys—5 and 3—and let them loose. They found a lot that they enjoyed—a surprisingly large fraction of the exhibits—but eventually they gravitated to a huge tyre hanging, playground-style, from a ceiling. This gave them twenty minutes of simple fun; with them happily parked therein (indeed eventually almost impossible to prise out) I could look around at leisure. The next day, when I met Ned Pearce, the Museum's librarian, he had marked on a map for me what the most popular exhibits were—an

uncannily accurate description of Wilson's and Philip's somewhat erratic route through the museum. And the giant tyre? Yes that was on the list and Mr Pearce was mildly defensive about it, thinking I as a high priest of scientific orthodoxy would be cynical about a mere plaything. "You see we regard it as an important exhibit—children learn that there are things they can climb on here and not get screamed at. One of our key roles is to persuade kids that this is a friendly place and that people here are nice." This is put somewhat more sentimentally in one of their glossy brochures as "When [children] arrive . . . they are not only met by wonder and excitement and discovery. They are also met by love . . ." Mawkish stuff maybe but there is more than a grain of truth in it. A substantial fraction of the three quarters of a million visitors each year come in school buses, many of these from the inner city. They are naturally hostile to anything that smacks of authority and schoolroom formality, and for them a large number of volunteer guides—adults or teenagers—are laid on. It is essential, says Pearce, that guides, whether volunteer or full-time, should not be seen as policemen.

There has been much discussion in the museum on the social aspects of the educational programmes that they run, which include Saturday morning classes. Is the museum seen as a middle class institution perpetuating science as a middle class occupation? Questions like this (barely asked at all in England) are put in sharp focus when a busload of inner-city poor debouches into the arms of a potentially loving phalanx of suburban moms with their biology degrees and their worthy aims. As far as possible the museum tries to recruit volunteers and guides who can relate at first hand with the underprivileged but it is a difficult task. Already they are phasing out some of the Saturday activities which have tended to become high quality baby-sitting for the middle classes.

Once inside, how does the youngster experience the "enjoyment of learning" that Washburn dedicates the museum to? I think he does it in two ways—through the imaginative use of space, and through unashamed compromise. As museums go it has a very average amount of square footage per visitor. But there seemed to be less clutter and less pressure to circulate. Come on a rainy Sunday, said Pearce, then you'll see things differently, but I think the point is that if you go on a sunny

Wednesday you can really breathe.

And the compromise—it's not a poor man's university. You can mingle with a full sized *Tyrannosaurus rex* but the next exhibit along is a giant magnet one way, and a telephone exchange the other. The hot air balloon (for my money the best exhibit) rubs shoulders with the deep diving submarine. There is no logical order or historical succession to it all, it is a huge sampler. Washburn says "To touch a snake, to see liquid air or to pat a porcupine are never-to-be-forgotten experiences which will launch a youngster into a science career a thousand times more rapidly and powerfully than any number of carefully labelled exhibits".

In twenty years how has fashion changed in Boston? Natural history was and is unassailably Number One at all ages, declares Washburn. But whereas the prime interest used to be birds it is now 'me': the human being and how it works. Certainly the transparent woman, the stages in childbearing, the heart and the appendectomy draw more than such commonplaces of the seventies as lunar modules and computers, though the number who stay the course of ten realistic stages of removing an appendix without retiring slightly queasy is small.

The museum runs on an annual budget of around \$2 million of which about half is collected through admissions (including state-paid visits of school-children) and memberships. Private and corporate donors find the rest. Of course there is debate about the admission charge, although the staff fear for the crush on Sundays were entrance to be free. But at present that cannot even be considered.

Washburn has been successful at persuading the corporate donors to pay without visible returns. The museum is mercifully free of brand name exhibits which elsewhere range from the excellent, such as the IBM mathematics pavilion at Chicago, through the blatantly commercial "would you mind stepping into our exhibit and answering a five minute questionnaire on your cooked-ham eating habits?" also at Chicago to the dreary cutaway models of factories made by the apprentices and presented by the managing directors at—well, never mind where.

As long as Brad Washburn and his staff can continue to say 'no' if it isn't fun, I suspect that Boston will continue to be a hotbed of bright young scientists, many of whom will have experienced their first awakenings in or near the giant tyre.

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