

# Terrors and Pleasures of the (New) Automaton

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## I - Future Attractions

This is what happens in a Butterfly Museum. Butterfly chrysalides and larvae from various parts of the world – though primarily from butterfly ranches in Central and South America, home to more visually startling species – are brought into a large, greenhouse-like glass structure. Here the mechanically controlled environment mocks that of a rainforest: at night it rains, and during the day there are periodic bouts of mist. The chrysalides, pinned to bark or sticks, are set out to hatch on frames behind open-ended protective glass shields. You can watch the slow unfolding of the butterflies, their wings drying and hardening. It's like a very small, very crowded maternity ward.

Once emerged, the butterflies are free to fly about the space, feeding from ubiquitous fruit plates and nectar trays, alighting on real and artificial plants and trees, and on visitors, and coupling and fluttering in general. There are no predators. The architecture requires a minimum of flight obstructions and sharp edges. After a few weeks – depending on the species – these butterflies die, having lived out their splendid lives. In the meantime, replacements will have been brought in to be born. Carcasses are removed every morning, and attendants quietly dispose of those butterflies that die during hours.

A visitor buys a ticket for an appointed time, and enters with a group. Prior to entering the live room, groups are shown a video or given a lecture on the biology of these remarkable creatures, their fragility, and, by extension, the fragility of their environment. The sources for the chrysalides are roughly identified and exonerated. The entire enterprise is cast in the light of doing the right thing environmentally. The word nature is frequently used, though complex distinctions between wild and otherwise are not made. The visitors are admonished to stay on the trails, and to watch their footing on the continually moist surfaces. Checklists – laminated, with color photographs of the species one might see – are passed out. For all intents and purposes you are entering the wilderness.

An airlock, a dark tunnel, water, a ramp up into light: still, entry to the large live room is frequently accompanied by

initial disappointment. Only gradually does the eye become facile at spotting the butterflies. Then suddenly they are everywhere, overwhelmingly (in Houston's there are several thousand butterflies on display): in the air, on the ground, under leaves, on feeding stations, and often landing on the brightly colored shirts that repeat visitors know to wear (which the Museum promotes). The trails loop around, and back on themselves, passing various micro-environments. Everywhere there are people being cautious, pointing and whispering – no guard rails interfere. There is a surfeit of complicated camera lenses. Afterwards there will be a gift shop. Surprisingly, or perhaps not, it is possible to purchase real butterflies, mounted, in glass frames.

If the largish to large city that you probably live in or near does not yet have its own Butterfly Museum, well, you can be certain that somewhere someone is planning one. And if you have never been in a Butterfly Museum then you are distinctly slacking, my friend, in experiencing the peculiar terrors and pleasures that only the consumption of Nature in the late twentieth century is capable of offering. A new Automaton is here, a mechanized, moralized pleasure dome, ready to educate the children and entertain the adults (which may be the same thing), and able to confound the skeptics, who lament: it could not, should not be done.

## II - Jewelry

In 1994, the Houston Museum of Natural History re-opened its extensively renovated building.<sup>1</sup> Originally built in 1964, the museum for many years maintained a sort of low hum in the landscape. A travertine-clad warehouse, it could have been a state office building. Beyond the grade school groups on obligatory field trips, the large building always felt dim and undervisited. The exhibits never seemed to change. They were an odd mix to begin with, a sort of mish-mash of sporadic donations, heavy on petroleum exploration, without an evident overall curation. The whole languished in that kind of pleasant and/or frustrating torpor endemic to hot and humid cities. Outside, one entered Hermann Park, of the city-beautiful variety, it too going inexorably to seed. Houston at that time was a city with – in the language of the museum –

a very large inertial mass, with an overwhelming tendency toward entropy.

All of that changed dramatically for the museum beginning in the early 1980's. Houston underwent a stretch of extremely rapid growth, fueled by high oil prices, that brought nearly a million new inhabitants to the city. During roughly the same period museums, too, were evolving: the self-promoting museum was gradually supplanting the Museum as quiet repository, as Museums had to scramble to find funding. Coincidentally, Baby-boomers, then coming into their own as parents, were seeking out—in the evolving urban landscape—safe places for children to be entertained, and for themselves to meet, and the newly aggressive museum precisely filled this niche.

If the above changes in part explain a greater attendance at museums generally, the Museum of Natural History was further benefited because the role of nature in society was also changing, as what was once understood to be nature itself evolved. If the archetypal television image of nature in the 1960's is a National Geographic special documenting some essentially amoral system of cause and effect - a mantis eats her mate, postcoitally - free from, but threatened by, the invasion of humankind - certainly for the nineteen eighties and nineties it has to be nature as pitchman for, among others, beer (Tap the Rockies!) and, especially, sports utility vehicles (sting rays swim past: the camera swoops up continuously, through pounding surf - a beach, gulls - up and over a vertiginous coastal range to find a Jeep Grand Cherokee parked on a dormant volcano: spectral sunshine, orchestral overture).

Much has, of course, been made of the irony in this, but there is, arguably, no irony here at all. Certainly the last thirty years has seen a profound shift away from nature as understood in the National Geographic example above. We, by and large, no longer believe that there are natural environments free of the consequences of human presence, even if at a distance (acid rain, the ozone layer, global warming, etc.). And, perhaps in a sort of martyrdom, the notion of Nature as amoral has certainly been supplanted by the notion of the natural as very moral. For proof of this you need merely visit any elementary school. See if George Washington is held up for more substantial veneration and respect than the little blue penguin. Nature, when we had it, just was; now that we don't have it, nature is very good.

The elevation of the natural has, of course, been exacerbated by the extraordinary growth of urban areas. The relationship of the concept of nature and the fact of cities, while clearly an issue of startling complexity, has nonetheless two characteristics particularly relevant to the issues at hand. First, what we understand the natural to be changes as a consequence of increasing urbanization. As Robert Nash has pointed out,<sup>2</sup> a rest stop in Minnesotamay be wild to a resident of New York City, but it is civilization for a trucker coming down from the Yukon. Our definition of nature exists on a sort of sliding scale of authenticity according to our normative environment. As that environment increasingly becomes an

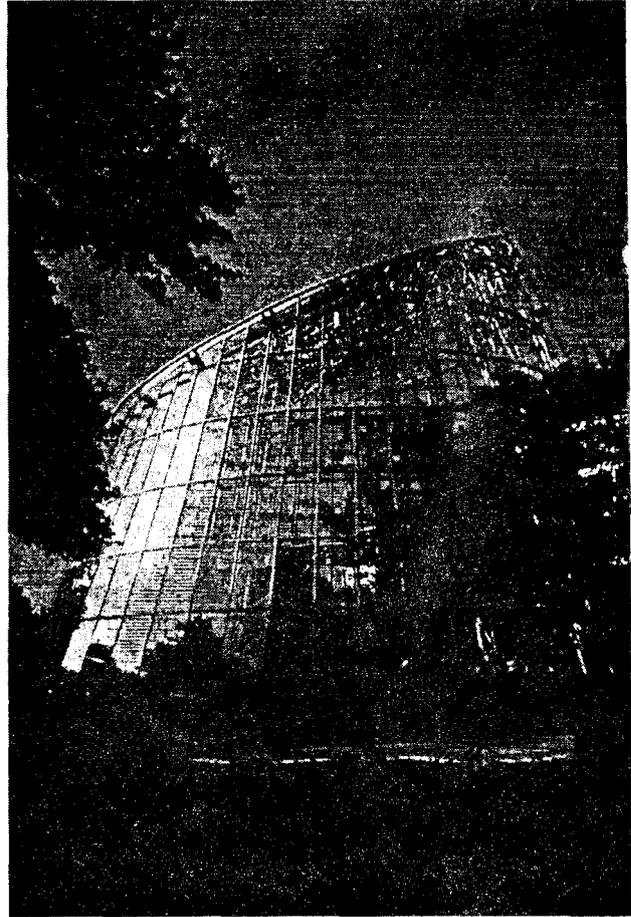


Fig. 1. Exterior View, Cockrell Butterfly Center, Museum of Natural History, Houston, TX. Hoover and Associates, architects, 1994. (photograph by Ronald J. Zaguli, RJZ images).

urbanity understood to be artificial, the scale of what is acceptably natural slides increasingly from actually wild to apparently wild.

And second, nature and city are linked by a perverse inversion: the more we sense the urban realm to be man-made, the greater is our demand for the natural. So, to summarize the issues at hand, there has been an increased demand for the natural as a consequence of the increase in urbanization. At the same time, there is a reduced supply of the natural as we once defined it: free of human intervention. Our awareness of this has merely increased the demand. But - luckily? - our definition of nature has been changing too, and we should - because our frame of reference is ever sliding toward the urban - be able to accept as natural things which were once patently understood to be human fabrications.'

The museum responded to these assembled forces and factors rather well. Around its original travertine box - mute, opaque, a storage house mausoleum - it added a series of spectacle/ objects - a planetarium, an Imax theater, the Butterfly Center - interconnected by a shopping mall-like public arcade, with gift shops and cafe (the total expansion was 65,000 sf). The original building too was brought up to date, and exhibitions were revamped and substantially curated,



Fig. 2. Interior View, Cockrell Butterfly Center, Houston, TX. (photograph by the author).

filling gaps in the original line up. The educational endeavors were expanded, as were the social ones: openings became events, galleries were named after patrons, extraordinary collections were donated, etc.

Still, the real jewel of the renovation was and remains the butterflies, housed in their jewel-like setting – a truncated glass and steel cone (fig. 1), set prominently at the end of the pedestrian arcade (where it is also most visible to drivers on the nearby main arterials). The Butterfly Center is entirely isolated: it is an aquarium of sky. To enter it, after the obligatory video sermon hall, one drops below grade. Coming through an airlock, one is at the base of a pit into which is pouring, from sources unknown, a waterfall (fig. 2). A ramp spirals up from this pit through a descending mist. The walls – Gunnite – are modeled as a Yucatan sink hole. The sense that all is a sham vanishes as a very large – it is easily the size of a well-fed bat – iridescent blue butterfly appears, flapping lazily.

Gradually the foliage begins: the ramp comes to grade at the base of an immense tree (it is actually stained concrete). The butterflies appear in earnest (fig. 3), and the path branches, doubling back in the opposite direction about the pit, through and throughout a dense, wet, semi-circular forest of flowering



Fig. 3. In the butterfly forest (photograph by the author).

plants and shrubs, butterflies everywhere. Eventually these various paths come together at the base of a ramp-stair, which ascends further into the glass cone to a point just underneath the waterfall's lip (still above that the cone continues for another half of its height). Here are the vitrines – Inca motifs abound – where the butterflies are born (fig. 4). Another airlock admits you into the cliff – check your clothing for strays! – and you enter the Museum's vast preserved butterfly and moth collection. It is a staggering, maze-like display, like a fantastic over-ripe jewelry store.

It is all jewelry. Where once the museum had formed a blank edge to the Park, now it has set out this faceted glass emerald like a new geometric emissary. While the park has declined (nature-as-we-once-knew-it) attendance at the museum has skyrocketed. To see the butterflies it is recommended that you have advance reservations on busier days. It is, after all, not like going to a museum: the insects are alive! It isn't until you are inside that you begin to wonder if maybe that somehow might not problematically be the point, but the thought flutters away before you can put a pin through its abdomen.

### III - Bodysnatchers

The evolution in our understanding of what constitutes the

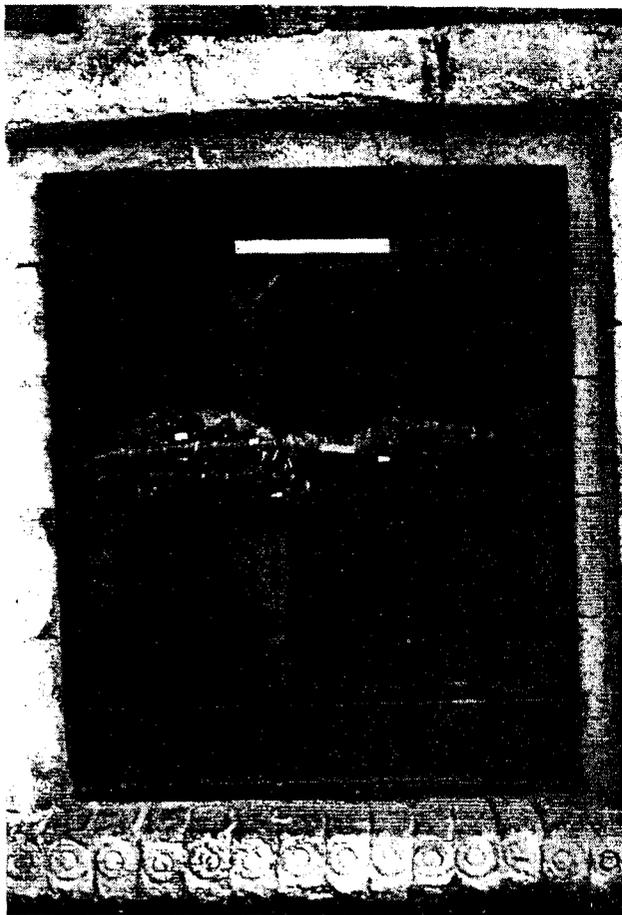


Fig. 4. The very small maternity ward (photograph by the author).

natural is curiously coincident with the shift from the Modern reliance on essence (noumena) to the after-Modern fascination with and dependence on image (phenomena). These evolutions may or may not be linked in some chicken and egg fashion to changes in the theoretical concerns of various cultural endeavors – especially film, photography, art, and architecture – but it would be hard to argue, since, in the case of making more Nature, as the increased demand would have us do, it is by definition impossible to make in any other way except by image, and especially by the control thereof.

In this regard, the design of the Cockrell Butterfly Center utilizes a series of strategies<sup>4</sup> to generate aphantasm of nature. These strategies are somewhat familiar ones – they are variations of methods already widely at work in the designed landscape – and may be of interest to you, since it is in all likelihood to be the case that you, architect, will soon be called upon to make more nature. It is worth noting that the various methods are not primarily formal, but rather involve a variety of mechanisms by which spatial meaning is controlled by the framing of perception.

The first of the strategies is the apparent creation of a sustenance. By claiming a space in the landscape in order to sustain something threatened – and thereby freezing it out of cycle of development – we evidence some agreement that so

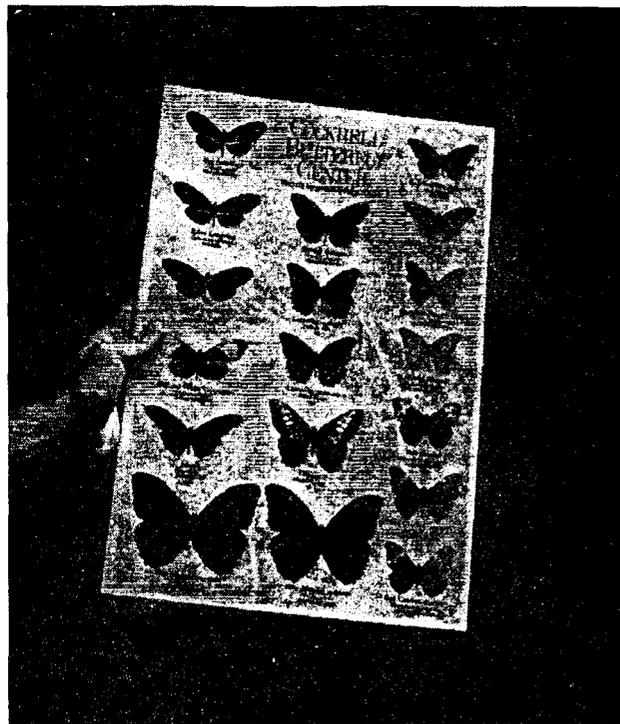


Fig. 5. The field guide (photograph by the author).

doing has merit, and that the space reserved is still somehow the extreme, hence natural. There are many examples. The National Park System is the big one, but, on a much smaller scale, many municipalities have instituted no development zones, usually in trade for more intense development elsewhere. While the Cockrell Butterfly Center does not preserve a noumenal environment, it nonetheless presents a phenomenal environment as a sort of necessary stand in. The rainforest may be disappearing in Central America, but an improved version is appearing here, a sort of refugee camp for innocent orphans.

The sense of sustenance is furthered by the presence of the technology needed to stabilize and artificially regenerate the ideal environment. We understand that such technology is no longer an option: you don't get nature by just leaving something alone anymore! At the Butterfly Center the complex but essentially technical task of sustenance is undertaken in such a clinical and expensive manner – suspended within the fine steel and glass shell (hurricane-proof, the visitor is told) is a marvelous stainless steel rainmaking device, replete with complex tracking system and catwalks – that the seriousness of the venture cannot be called into doubt. The nagging question – aren't these butterflies, for our entertainment, probably just being taken from somewhere that now has less butterflies? – withers in the face of it all.

Curiously, the presence of the evidently technical has the net effect of making the patently artificial trees and rocks seem less so. They in turn constitute another strategy – simile – that is very much at work in the broader landscape – the Scotsdale ordinance requiring the chemical aging of freshly

cut rock face is a good example. At the Cockrell, simile comes in the form of the fake rainforest and sink hole. While these are actually exceptionally well done, people are not fooled, as they seem in instances of simile at large. Surprisingly, they do not seem to have to be, for two quite interesting reasons. On the one hand, the extraordinary presence of the butterflies relegates the trumped up landscape to background. On the other, most visitors seek to be entertained, and they fully accept and understand the role of image therein.<sup>5</sup> It is not exactly reality that they seek from the natural.

Aiding the strategies of sustenance and simile is the policy of exclusivity, at work in the larger landscape in many ways, from ridgeline ordinances to private conservancies to no-access zones in public lands. If once planners hoped to get people out into nature, now they seek to keep the two apart. Generally this policy is accepted by the public, which understands its necessity for the public good. While polarizing the landscape, it has the benefit of making the protected seem simultaneously more natural, and more desirable. It is founded on a marvelously weird premise: public space which the public cannot access.

Exclusivity at the Butterfly Center is based on the notion of denial and privilege. Not only are we privileged to see these creatures, and in their most intimate moments, but we are privileged to do so in a small group, at an appointed hour. The entry fee seems a paltry expense! The architectural support for this programmatic agenda is fairly straightforward. From the outside the cone is the perfect vitamin capsule, an object of desire. Through the glass we can see but not hear children laughing.

While it would seem that the policy of exclusivity is threatened by the fact that groups move through by herd control, a fine balance is achieved. The sense of something portentous taking place is in fact heightened by the presence of many eager strangers. Being let in as groups, rather than by steady stream, heightens the expeditionary sense, which is shamelessly exploited by the architectural entry sequence described above: the group must stick together until the trails branch out above the sink hole.

One of the most startling manners by which the space of the Center is made to feel natural is by the judicious use of texts. Prior to entering the live room, the visitor passes a series of back lit panels which provide all kinds of information regarding butterflies in general. Most visitors do not stop to read at the panels, but one suspects that the desired effect is gained nonetheless: the live room is clearly not just entertainment! But the most effective texts are the laminated checklists that visitors carry to identify the species (fig. 5). Modeled on field guides – i.e. camping equipment – they keep the visitors' focus away from the conundrums of the entity at large, and generate a sense of luck in what would otherwise seem an entirely controlled experience.

Along similar (postmodern) lines, photography in the live room too adds to the sense of the natural. It is not just the noted sense of the camera's presence validating an event or fact. The layout of the room is such that a maximum amount of the

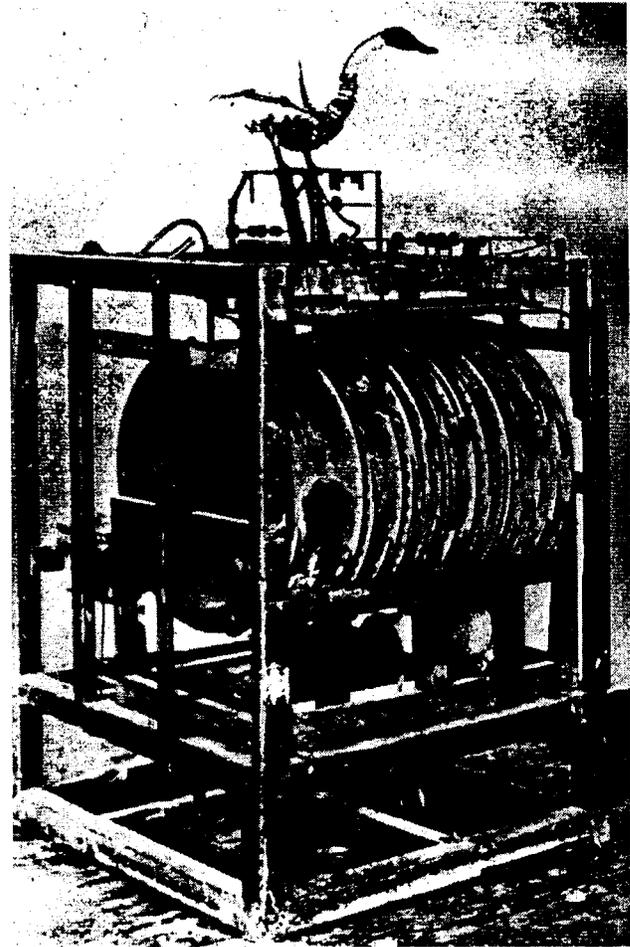


Fig. 6. Vaucanson's Duck, 1733 - 34, or copy thereof. Musee du Conservatoire National des Arts et Metiers, Paris (image copyright by same).

infrastructure is hidden by living, flowering plants. The cage is thus not in evidence, and it is rather easy to photograph the butterflies as if no cage existed. This may be like shooting ducks in a barrel, but later the photographs lead their own lives, presenting a distinct reality as concrete (more concrete, if we are to believe Susan Sontag) as the event itself, but determined entirely by the edited evidence of the images.

Actually, the possibility offered by the planting – a cage without bars – defines the very important agenda of the various strategies: seamlessness. Tremendous care has obviously gone into avoiding the possibility of the visitor having a programmatic, spatial, moral, or emotional crisis of confidence in the entire undertaking. That is, one suspects, the primary reason that the death of the butterflies – a non-renewable resource (though the museum raises 20% of its own stock in greenhouses atop its parking garage) is not dwelt upon. Still, what could be more natural? But that is the point. Here is more nature, and nature as it is actually wanted: safe, and pretty, without predators and prey, without crisis, guilt free; i.e.: *The Garden of Eden*.

Of course there is a catch. Houston's climate – its brutal



Fig. 7. Young writer, c. 1770, Pierre Jaquet-Droz, Musee d' Art et d' Histoire, Neuchatel (image copyright by same).

heat and humidity – treats all human inventions with relentless entropic disdain. Ants have managed to breach the perfection of the center's sealed edges. While they are kept away from the food plates, they are nonetheless attracted to the corpses of the dying butterflies. If you are really lucky you will see ants dragging one along, as they perform an environmental task to which they have precisely evolved: they are the great garbage gleaners, the recyclers, the makers of mulch. But before you rejoice in the reassertive return of Nature the Amoral, the corpse is picked up by an attendant (khaki pants, neutral polo shirt), ants clinging desperately, and whisked away to a plastic receptacle.

#### IV - Terminators

From Daedulus to Frankenstein to *Bladerunner*, we have long been fascinated by humankind bettering nature. The invariably horrifying consequences of so doing links the various myths and stories by a common morality. Or, more precisely, it is the simultaneous presence of fascination and terror which defines a common humanity – a punishable hubris – in these stories. The terrible deed should not be done, though we know it will.

Arguably the most extraordinary examples of actual – rather than literary – attempts at mimicking nature are the automata of Jacques Vaucanson, in France, and Pierre Jaquet-

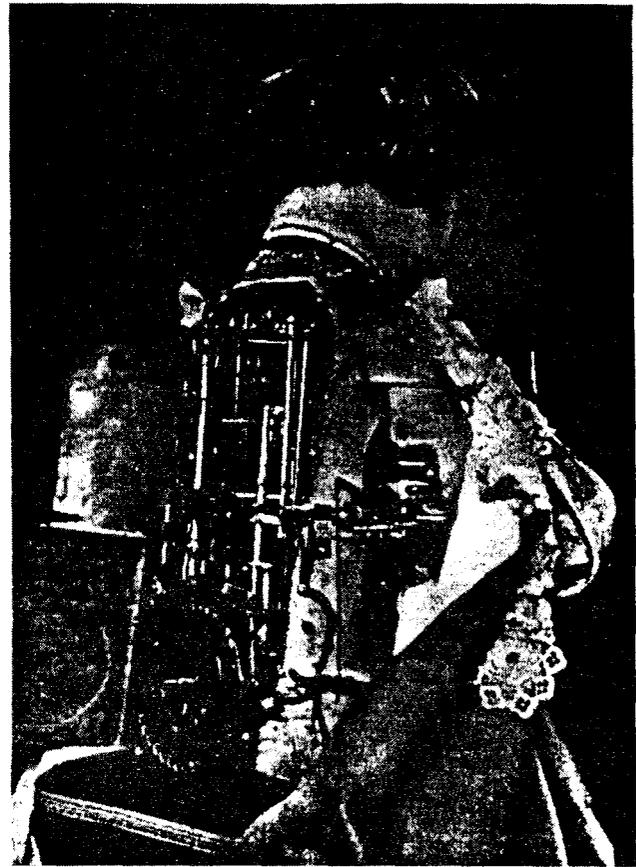


Fig. 8. Young writer, c. 1770, Pierre Jaquet-Droz, Musee d' Art et d' Histoire, Neuchatel (image copyright by same).

Droz, in Switzerland, both working in the eighteenth century.<sup>6</sup> In 1738 Vaucanson exhibited, to great acclaim, three automata: a drummer, a flute-player, and – most notoriously – a duck (fig. 6). This last, made of gilded copper, sat on an imposing sculptural pedestal in which were hidden a system of gears and levers, the use of which made it possible for the duck to, among other things, flap its wings, splash about on water, quack, drink, eat, and digest food. Voltaire ranked Vaucanson a rival to Prometheus.

Droz, in turn, developed a series of automatons that, in the form of perfectly carved wooden dolls, performed normal human functions, like making a drawing or playing the organ. The most extraordinary of these is a writing boy (fig. 7). "When the mechanism [fully hidden in the boy's back] is started, the boy dips his pen in the inkwell, shakes it twice, places his hand at the top of the page, and pauses. As the lever is pressed again, he begins to write, slowly and carefully, distinguishing in his characters between light and heavy strokes." (Pontus Hulten, p.21)

These automata were met with an overwhelming interest, characterized by a mixture of terror and pleasure. "To contemporary spectators, the great attraction was the perfect imitation of living beings and the speculations about the nature of life to which such verisimilitude gave rise....the little mechanical writer must have seemed almost intolerably per-

fect. He must have inspired feelings of curiosity, admiration, and also paralyzing inferiority. The young scholar embodies the idea of perfection – an ideal man, who never makes an error, never gets in a bad humor, and never revolts." (Pontus Hulten, pp. 20 - 21)

This last could almost describe the Butterfly Center. Stable, constant, perfect, absent of menace – just the most beautiful things, behaving perfectly. As automaton, the addition of living creatures – like the living skin on the cyborg in *Terminator* – in fact makes it far more difficult to decide where the illusion begins. What is missing – I think it has been quite consciously designed away – is the component of terror, the "speculation about the nature of life," that such an environment would seem automatically to foster.

But that is where we stand. The purpose of the center is not metaphysical doubt, but moral certainty, packaged in pleasure. Oddly enough, the past year or two has also seen the popular acceptance of real terror in the natural landscape: a series of attacks by mountain lions on visitors to certain National Parks and Forests, some quite close to urban areas. Public support has by and large fallen on the side of the cougars, the resurging population of which has brought these once nearly extirpated creatures back into ranges now settled by ex-urbanites. So keep your eyes open as you walk down the driveway to your car, just now idling in the driveway, kids in the back, so excited to be off to see the Butterflies!

## NOTES

- <sup>1</sup> The addition is by Hoover Architects, to the original building by GeorgePierce-AbelPierce, architects; Staub, Rather, and Howze, associated architects. The bulk of the information regarding the Museum and the Butterfly Center comes from two sources: on-site information gathering, and the article by Gerald Moorehead, FAIA: "Butterfly House", in *Texas Architect* (Austin: Texas Society of Architects, March/April, 1995), pp. 44-45.
- <sup>2</sup> The issue at hand – the definition of nature – is well considered in a text by the author cited: Roderick Nash, *Wilderness and the American Mind*, revised edition (New Haven and London: Yale University Press, 1973), see especially chapters 3 and 4. Another excellent exploration of this topic is by Neil Evernden, *The Social Creation of Nature* (Baltimore and London: The Johns Hopkins University Press, 1992).
- <sup>3</sup> Clearly there are cultures that have been so doing for a long time. A most startling example of this occurred to me while backpacking with a group of German friends in Yosemite. They found the experience of wilderness (Yosemite) a bit disheartening – scruffy – not at all the same as the experience of *nature* (the Black Forest). The distinction between the former – left alone and the latter – exquisitely tended – sets out nicely the problematic distinction between nature as system and nature as invention.
- <sup>4</sup> I have written more extensively on these general strategies elsewhere: "On Making More Nature in Landscape Today", in *A Community of Diverse Interests* (Washington DC: ACSA Press, 1994), pp. 480-485.
- <sup>5</sup> This point is based on informal interviews with visitors during several visits.
- <sup>6</sup> Information in this and the following two paragraphs is drawn from K.G. Pontus Hulten, *The Machine* (New York: The Museum of Modern Art, 1968), pp. 20-21.