

Beware! You Might Just Like It Where You Are

By MILLARD C. DAVIS

Considerable evidence indicates that a large part of man's development took place on the savanna, or parklands, of Africa. And yet this style of living, this possible origin of some of the foundations of our desires, appears to be in conflict with the present trends toward urban development.

As a result, many ecologists suggest that the megapolis may dangerously rupture those streaming clouds of "memory" which we still bear with us. Indeed, the recent piling up of masonry may have so broken into our specific nature that in some places we may be in danger of collapsing into behavioral sinks. We may face fates similar to those Calhoun and others have found in rats crowded together within experimental "cities."

Does this make sense? Are we, the most cognizant beings known on earth, running pell-mell toward mass and individual suicide? Possibly. Freud felt that mankind carries the death-wish. As a matter of fact, he suspected that it was more widespread than just in man and wondered how so many species survived so well in spite of it.

Recreating the Ancestral Home

But in man another cause for this population crush that the megapolis creates may be extraordinarily subtle. Perhaps our cities themselves resemble the ancestral environment, the savanna. Examine your city as simply a series of vertical structures of varying heights. Examine it as a place where we walk among certain silhouettes. Add to this, diversity in distance and uses. Talk to the peo-

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ple who love New York, Boston, Chicago, San Francisco, and points between for their cultural advantages: they mean diversity as to style and depth. The city may add up to diversity in shapes similar to the old forests and openings and diversity of a more recently evolved intellectual sort. So we may just like it where most of us are.

As you know, the minute we get the chance we build a parklike place made of open lawns and trees. A zoo springs up. Baseball diamonds and tennis courts, all suitably backed with high wire screens, are thrown in. A slab of concrete is laid down for basketball, with its pole and metal and wood canopy. Now, is this mimicking our ancestral homeland or is it an offshoot of our present one? Does it matter, so long as we like it? Yes, it does. The danger is that this is a pseudoresemblance to our savanna of grasslands with groves of trees. I can also make some guesses as to the intellectual content, but this is not the place.

Evidence from Long Ago

Let's look back, for the fun of it, and grant this thesis a few minutes' more hearing. The beginnings were subtle. When the protocity that Lewis Mumford (1961) speaks of began to rise from the agricultural lands as men could support more men, diversity was enhanced. Even when shrine and fortified camp were joined, a rambling aspect was preserved. Palace and temple, united symbols of political and religious centers, may have been seen in the early cities as towering trees, a pair of old protective patriarchs over all.

For instance, while David's magnificent move bringing the Ark of the Covenant to a city that had never gotten involved in tribal jealousies is justifi-

ably regarded as a magnificent coup that made Jerusalem truly the Hebrew national capital, he also thus managed to increase the physical and cultural diversity of the city. For the ark, under Solomon, went into a temple that took seven years to build. Doubtless in other places, such as ancient Babylonia, ziggurats had similar roles. (The Tower of Babel was likely one such stone core of a citadel, fallen to ruin and captured as an example of crushed pride by the nomadic Hebrews.)

Negative evidence shows that even fairly well-developed cities were not clearly separated as units from the natural world around them. A look at at least one early vocabulary shows that contemporary cities may have seemed so organically a part of their environment that only their parts were named. According to Mumford, written characters for such objects as woods, water, garden, highway, market, temple, and tower were plainly in use in Ur and Kish. There is no illustration for "city."

So the city as a unit apparently was not clearly recognized at a time and place in its evolution where we might have expected it to be well defined. Furthermore, an irregular physical aspect for the city is suggested in temple, tower, garden, and so on. Let us also notice that the countryside of the Fertile Crescent was far more lush with field and forest than today. Perhaps these parts still fitted in with nature—or at least were not wholly discriminated from it. So by the time of ancient written records the city in cultural, homocentric history was somewhat indistinguishable from the city in natural history—at least at the written vocabulary level of consciousness.

This parklike arrangement may be seen, next, to have eventually extended in many places to the overall pattern of towns and lesser developments. The landscape became dotted widely with centers of population, suggesting on a gigantic scale the groves and openness of true antiquity. Civilization in early Europe shows this exceedingly well. So in medieval times the pattern became one of dominant small cities, which had close ties to lesser towns or villages, each complex scattered out over the countryside. Thus the park spread out in scale and was maintained, though somewhat a shadow of its original form of nature's tree groves and plains.

Later, when the first builders came from Europe to New England, they followed this pattern. This continued in America even into the 17th century. Charleston spawned Woburn, Dedham, Medfield, and Cambridge Belmont, while in the 19th century Ipswich sired Marietta, Ohio. The older ancestral remembrances were also brought along. Raymond Dasmann (1968) observes in somewhat nostalgic tones that the eastern United States has lost its old span of forests in favor of the broken view or views. In the Midwest the prairieland went the other way: now the open view is dotted with "groves" of farmhouse-and-trees.

So, perhaps not only did early cities and even recent ones preserve some of the spirit of the savanna in their physical structure and arrangement, but also nature was, where necessary, reshaped.

The Debate About Man's Place

Does this show up in more intellectual or abstract spheres? Evidently. Stone and mortar were somewhat different from leaf and bough, of course, and conflict can be seen to have broken out in institutions that were more formally claiming allegiance from men's souls. The Franciscan order of monks in the 13th century became so worshipful toward the natural world that at least one well-known scholar has recently suggested that St. Francis of Assisi might make a good patron saint for the ecologists. But, according to René Dubos (1969), St. Benedict would deserve the honor even more, for ruling that the monks of the Benedictine order work *in* nature, creatively. These monks, especially those of the Cistercian order, drained swamps, managed the land under intensive agriculture, and evolved an architecture highly suited to the local landscape and also monastery uses, thus achieving a totally different man-and-nature relationship.

So, as man became more successful in engineering the structures about him, the question of natural *vs.* manmade environment was being debated in realms reserved for the deepest of man's dreams and conjectures. The masses seemingly did not and do not recognize this tug-of-war, but it is surely taking place in an appropriate place. Well, we had seen it earlier. As Dasmann points out, paradise to the early writers was not a city in Eden but a garden.

But we see that a struggle was indeed going on, perhaps between daily living and the long memories. Today's life exists in tension with what Jung called the collective unconscious, the archetypes of our primeval past. The Garden of Eden story has more reality as a remembrance of times held and lost than we have hitherto given it credit for.

Dubos feels that we, in substituting Coney Island and the like, have gone too far, and that "the only solution left to us is to improve Coney Island." This sounds jarring, and yet it again states underneath that we may just like it where we are, at Coney Island. And in a productive future, Dubos suggests, botanists and foresters should work up some plants that really flourish in the metropolis. Plant ecologists, he says, would do well to give this considerable attention, this aspect of the field being a truly pioneering one.

Is it going too far? Are we being subtly led off the main route, too far from the real savanna of our collective unconscious? This we must be alert for.

"Lesson of the Trees"

One last thought. It seems possible that, with a voice of a practicing Emersonian, Moshe Safdie turns to the green plants for inspiration in city-
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building. Athelstan Spilhaus (1969) refers to his ideas as "the lesson of the trees." Well, whether or not most of our cities now present the aspect of a savanna, it is pleasing to read this hint of trying to make them so. I think of that passage in Thoreau's essay "A Winter Walk," where he muses on a winter morning:

The trees and shrubs rear white arms to the sky on every side; and where were walls and fences, we see fantastic forms stretching in frolic gambols across the dusky landscape, as if Nature had strewn her fresh designs over the fields by night as models for man's art.

REFERENCES

- BODE, C., ed. 1947. *The portable Thoreau*. Viking Press, New York.
- DASMANN, R. F. 1968 *A different kind of country*. Macmillan Co., New York.
- DUBOS, R. 1969. *A theology of the earth*. Office of Public Affairs, Smithsonian Institution, Washington, D.C.
- MUMFORD, L. 1961. *The city in history*. Harcourt, Brace, & World, Inc., New York.
- SPILHAUS, A. 1969. Technology, living cities, and human environment. *American Scientist* 57 (1): 24-36.

Catalog of Standard Reference Materials

National Bureau of Standards Special Publication 260 is available for 75¢ from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; or from local U.S. Department of Commerce field offices, as *SD Catalog No. C13.10:260*; or from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151, as *Spec. Publ. 260/1970 ed.* Orders for this 84-page booklet should be prepaid.

This is a revised edition (July 1970) of the publication that lists the various standard reference materials (SRMs) now being distributed by the National Bureau of Standards. These materials are used to calibrate measurement systems and to provide a central basis for uniformity and accuracy of measurement. The unit and quantity, the type, and the certified characterization are listed for each material, as well as directions for ordering. New and renewal materials are announced in the *NBS Technical News Bulletin* and in scientific and trade journals; and the current status and prices will be summarized by insert sheets available at timely intervals from NBS.

Conservation Bibliography Supplemented

Conservation Education: a Selected Bibliography Supplement, compiled by Joan Carvajal and Martha E. Munzer, lists materials published between 1967 and the summer of 1970. It supplements the first bibliography (1968), published by the Conservation Education Association. The new, 44-page booklet is available at 75¢, less educational discounts, from Interstate Printers & Publishers, Danville, Ill. 61832.

FEDERAL SPENDING ON ACADEMIC SCIENCE

Federal agencies provided more than \$2.3 billion for science programs at U.S. universities and colleges during fiscal year 1969, representing virtually the same level of federal funding of academic science as reported for fiscal year 1968. Of this total, the Department of Health, Education, and Welfare (HEW) supplied \$1,245 million, more than one-half of the total provided by all agencies. The National Science Foundation (NSF) ranked second with \$362 million, followed by the Department of Defense (DOD) with \$272 million. Together these two agencies accounted for 28% of Federal obligations for academic science. The remaining 19% was comprised mainly of obligations from the Department of Agriculture (USDA), \$156 million; the National Aeronautics and Space Administration (NASA), \$125 million; and the Atomic Energy Commission (AEC), \$121 million.

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- BOVBJERG, R., and P. GLYNN. 1960. A class exercise on a marine microcosm. *Ecology* 41: 229-232.
- DAVY DE VIRVILLE, A. 1934. Recherches écologiques sur la flore des flaques du littoral de l'Océan Atlantique et de la Manche. *Review of General Botany* 46: 705-721.
- . 1935. *Review of General Botany* 47: 26-43.
- DROOP, M. R. 1953. On the ecology of flagellates from some brackish and fresh water rock pools of Finland. [In English.] *Acta Botanica Fennica* 51: 1-52.
- FAURE-FREMIET, E. 1948. The ecology of some infusorian communities of intertidal pools. *Journal of Animal Ecology* 17: 127-130.
- GANNING, B. 1966. Short time fluctuations of the microfauna in a rock pool in the northern Baltic proper. [In English.] *Veröffentlichungen des Institut für Meeresforschung in Bremerhaven* 2: 149-154.
- GHILAROV, A. M. 1967. The zooplankton of Arctic rock pools. *Oikos* 18: 82-95.
- JOHNSON, D. S., and A. F. SKUTCH. 1928. Littoral vegetation on a headland of Mt. Desert Island, Maine, II: tide pools and the environment and classification of submersible plant communities. *Ecology* 9: 307-337.
- LEWIS, J. R. 1964. *The ecology of rocky shores*. English Universities Press, London.
- MCGREGOR, D. D. 1965. Physical ecology of some New Zealand supralittoral pools. *Hydrobiologia* 25: 277-284.
- NAYLOR, E., and D. J. SLINN. 1958. Observations on the ecology of some brackish water organisms in pools at Scarlett Point, Isle of Man. *Journal of Animal Ecology* 27: 15-25.
- NUTTING, W. B. 1966. Biology of a pond. *American Biology Teacher* 28: 351-360.
- PYEFINCH, K. A. 1943. The intertidal ecology of Bardsey Island, North Wales, with special reference to the re-colonization of rock surfaces and the rock pool environment. *Journal of Animal Ecology* 13: 82-108.
- STEPHENSON, T. A., A. ZOOND, and J. EYRE. 1933. The liberation and utilization of oxygen by the population of rock pools. *Journal of Experimental Biology* 11: 162.
- SWAMI, K. S. 1959. Observations on the ecology of some tropical intertidal rock pools. *Journal of Biological Science* 2: 26-33.
- WILCE, R. T. 1959. The marine algae of the Labrador Peninsula and northwest Newfoundland (ecology and distribution). *National Museum of Canada Bulletin* 158: 1-103.