

change from pioneer conditions to the present, from modest economic means to greater affluence, of a shifting road pattern and greater mobility, of a change of population balance from open country to town.

Concomitant with period and size of cemetery types, Price found a sequence of tombstone styles. Before 1840, the only tombstones used were of a durable local sandstone. Most were simply crude rocks, larger for headstones, smaller for footstones. A few were carved, all apparently the work of a single folk craftsman. A plain marble marker appeared during the period 1840-1900, and an obelisk-shaped marker of marble or granite was prevalent between 1880 and 1900. A lower and wider stone, usually granite, was dominant by 1930. A recent innovation is a brass or bronze plate set flush with the surface, a boon to maintenance of cemetery grounds.

In Louisiana, with its sharp cultural divergence, the expected contrasts in burial practices appear, the subject of several unpublished student research papers. French and Catholic south Louisiana has large central cemeteries composed of above-surface, white vaults on sanctified ground adjoining rural and small-town churches. These practices have largely extended to smaller congregations of Anglo-Saxon Protestants, particularly Episcopalians, within the general area. The distinctive use of above-surface vaults has been ascribed to sanitary precautions during fever epidemics in New Orleans and to a humanistic reaction to a high water table. Neither explanation satisfies completely, but it is a fact that historic graveyards in Louisiana are frequently situated on Indian mounds, just as in rural glaciated areas of the Great Lakes region they are invariably placed on ridges.

Rural north Louisiana follows the practices common to the upland South. Interment is beneath the ground, with a general east-west orientation of the graves. Markers are usually plain, and contrast strikingly with those of south Louisiana in the absence of crosses. Isolated family cemeteries are probably prevalent numerically, the locations of abandoned and overgrown burial grounds identified by groves of planted cedar trees. Here and there clusters of small gabled roofs shelter individual graves. There are still annual "scrapings," when the grass is eradicated to leave the ground bare. Sea shells and bits of glass commonly border the grave plot. Urban cemeteries in both north and south Louisiana to a large extent reflect rural regional practices.

Formal disposal of the deceased is a universal practice, and in common with other elements of the occupance pattern should be an essential consideration in individual or comparative study. It reflects traditional values, religious tenets, legal regulation, economic and social status, and even natural environment. Evolution, invention, and diffusion are as nicely exemplified here as with any other cultural phenomenon. Since there is a special reluctance to disturb graveyards, they often lie surrounded by bustling urban activities, preserved for study far longer than might normally be expected of an outmoded folkway. There can be few other subjects as untouched or as promising as the geographical study of burial practices.

—FRED KNIFFEN

USE AND MISUSE IN NARRAGANSETT BAY. Over the past three years the student of science policy might have observed the process of national-goal formation in the evolving commitment of this country to the exploration and utilization of the sea. A focus for scientific investigation, an area for resource exploitation, a playing field for peaceful international competition, a science-fiction site for future settlement, a frontier designed to stir the heart

and stretch the mind as deep as the lofty reaches of space—all these aspects of the sea are duly noted in the documentation that marks the trail of any national commitment (see the reports of the National Academy of Sciences-National Research Council Committee on Oceanography, the Subcommittee on Oceanography of the House Merchant Marine and Fisheries Committee, and the Interagency Committee on Oceanography; a Commission on Marine Science, Engineering and Resources has recently been appointed by the President). In the midst of this normative outpouring of direction and advice, a modest study by Lewis M. Alexander provides a refreshing reminder of the normative-behavioral gap, the hiatus between what men ought to do and how they actually behave (Lewis M. Alexander: *Narragansett Bay: A Marine Use Profile* [Final Report under Contract Nonr-396(09), NR-389-134, Geography Branch, Office of Naval Research, 1966]). In it Professor Alexander brings to bear his long acquaintance with the geography of the shore and his sensitivity toward the complexity of decision making in drawing a marine-use profile of Narragansett Bay. The marine-use profile, a conceptual framework of his own design, describes the resource base of Narragansett Bay, relates the forms of resource use, and evaluates the marine orientation of the people who live on and around the shores.

Narragansett Bay, an estuary of 174 square miles, lies almost entirely within Rhode Island. It provides a shellfishery with a gross value of 1.5 million dollars and sport fishing and pleasure boating for the owners of an estimated twenty thousand boats. It also provides ingress to the ports of Providence and Fall River and egress for the accumulated industrial and municipal wastes of the towns that surround it and border three rivers in Massachusetts and Rhode Island. Along the 250 miles of shore are heavy industries, naval installations, residential areas, marinas, beaches, and tidal marshes. In short, it can be seen that Narragansett Bay is not atypical of the estuarine areas of Megalopolis and the marine-resource problems that characterize the estuaries of the Hudson, the Delaware, and the Potomac.

Marine orientation, in Alexander's scheme, means either economic dependence on the sea or commitment to the sea, reflected in public attitudes toward the Bay and the measure of investment in, and development of, its marine-resource potential. At most, only 3 percent of Rhode Island's labor force is employed in utilization of the Bay's resources. There is widespread unwillingness to invest heavily in resource development in the Bay and much confusion as to the direction that such investment should take, even though a large number approve of it in theory. Utilization of the Bay is static or stagnating. Shipping has not grown since World War II, despite substantial investment in the improvement of navigation. A once-flourishing shellfish industry is waning; pollution is stable or increasing; and recreation (with the exception of boating) has not grown comparably with other areas. The United States Navy, a major user of the Bay, is subject to all the vicissitudes of proprietors of military bases.

How, then, does one explain the gap between the reality of Narragansett Bay and the rhetoric of the new marine frontier? Three sets of factors inhibit full utilization of the resource potential: uncertainty; interdependence of uses; and conflicts of value. Future developments related to the use of the Bay are highly uncertain, the rise and fall of shellfish populations are poorly understood, the recurrence of hurricanes is dimly perceived, the path of government investment in naval facilities is unknown. Similarly, the interdependence of uses of the Bay is realized, but existing institutions prove inadequate to deal with them. Government acquisition of new beach and park areas continues, while some existing areas

are underused because of the lack of ancillary private investment or high levels of pollution. Baysiders reject large investments in hurricane control works but fail to zone high-risk undeveloped land against subdivision and settlement. Value conflicts abound. The use of the Bay for temporary waste storage is antithetic to its use for shellfishing and bathing. The use of the shore for residence or recreation is contrary to commercial or industrial development. Conflict extends even to methods of clam fishing—handrakers versus dredgers.

As a political geographer, Alexander illuminates the questions underlying the use of the resource and is able to identify a set of problems and obstacles. But he does not find it easy to propose solutions or even alternatives. The single scholar has much to offer to the dialogue but is often unable to explore the full complexity of multidimensional resource problems, even when these are confined to a single bay. Narragansett Bay is amenable to a system analytic approach in which the tradeoffs between conflicting use and the dimensions of potential use can be quantified. Although far from being precise, such techniques nevertheless have great heuristic value for public policy decisions. Work is nearing completion in studies of this type in the estuaries of the Delaware and the Potomac and in Pamlico Sound, utilizing the skills of the biologist, the engineer, and the economist. The issues explored in the marine-use profile of Narragansett Bay provide a base by which to judge these more costly and complex studies.—ROBERT W. KATES

### AFRICA

**ECONOMIC AND SOCIAL CHANGE IN THE SEYCHELLES.** When on November 10, 1965, it was announced in London that the British Indian Ocean Territory had been formed, the stage was set for a new period in the history of the Seychelles. The Territory includes the islands of Aldabra, Farquhar, and Des Roches, all formerly part of the British Crown Colony of Seychelles. The announcement also brought the word that in exchange for these widely separated atolls a civil airfield capable of handling jets would be constructed on Mahé, the largest and most populous of the nearly one hundred islands that make up the Seychelles Archipelago. Improved communications with the outside world had long been requested, but few Seychellois had any hope that an airfield would ever materialize. Flat land was scarce, and costs would be prohibitive. Now that there was a source of money, it was decided that an airfield would be built on the reef flat. This airport, following on the heels of several other recent developments, may well be the nexus that will give the Colony a new lease on life.

The small, mountainous, granitic island of Mahé, fifty-five square miles in area and with peaks to three thousand feet, has no known important resources except its agricultural productivity, its fish, and its rugged equatorial beauty. Mahé lies some one thousand miles east of Mombasa. It was not settled until about the middle of the eighteenth century. French planters with their African slaves were sent to produce food and other supplies for revictualizing French ships on their trips between Mauritius and India. Crops such as rice, maize, sweet potatoes, cotton, and spices dominated agriculture until slavery was abolished in 1835. Then the landowners, forced to turn to crops requiring less labor, began to concentrate on tropical export crops such as coconut and copra, cinnamon, vanilla beans, and patchouli. These crops—especially copra, which provides more than 70 percent of the export income—have remained the mainstay of the economy. The period of agricultural transition was also one of economic transition from a self-supporting to an export-import economy. Today the Colony