

The acute effects of inhalation of cigarette smoke on pulmonary function have been demonstrated (Chiang and Wang, 1970). Although no difference was measured in the lung volumes and flows of smokers and nonsmokers, breath wash-out studies indicated significant differences of residual volume, lung clearance index, nitrogen wash-out time, size of lung compartments, and alveolar dilution factors. In fact, these authors recommended that no pulmonary-function test be conducted until at least an hour after the patient's last cigarette.

These three "now" effects of smoking—oxygen-carrying capacity of the blood, depression of the oxygen-hemoglobin disassociation curve, and acute effects on pulmonary function—can be effectively used to show the cause-and-effect relationship of smoking on the physiology of the smoker.

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#### NEW STATE RESPONSIBILITIES

The Woodrow Wilson Center for Scholars, at the Smithsonian Institution, has published *Managing the Environment: Nine States Look for New Answers*. Prepared by Elizabeth Haskell and Smithsonian staffers, the report tells how nine representative states—Illinois, Minnesota, Washington, Wisconsin, New York, Vermont, Maine, Maryland, and Michigan—have begun to modernize their governmental structures to deal with ecologic problems. New responsibilities are being undertaken by land-use and waste-management agencies, the state courts, and consolidated environmental departments. *Conservation News* calls the report "a valuable document for any group . . . interested in environmental problems and the practical details of modifying 'the system' to solve them." A who-does-what feature is a list of persons interviewed in each state. The report is available from the Woodrow Wilson Center for Scholars, Smithsonian Institution, Washington, D.C. 20560.

#### Bio-de-grade-able . . . . . from p. 70

dents in this particular class believed that the experiment was a worthwhile experience and that it should be repeated with future classes is some indication of its success.

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#### LIFE ON THE SEABED

Ecologic theory says a stable environment should lead to the presence of many kinds of life. The ocean floor is a highly stable environment. It is constantly dark, constantly cold, and constantly low in available food. Such an environment, stable or not, has been thought to be relatively inhospitable to life; the ocean floor has even been called a biologic desert.

But Howard L. Sanders, a Woods Hole (Mass.) Oceanographic Institution scientist, working with National Science Foundation support, has been writing even the deep-ocean floor into ecologic theory. He has been finding that even though the density of life may be low, the diversity of species on the deep-ocean floor "is about the same as that in the physically stable, shallow, tropical marine environment," where life abounds.

Earlier efforts to sample life forms from the seabed 450 to 4,500 m beneath the surface met with relatively little success; the limited number of samples brought up in dredges led inevitably to the conclusion that there were few kinds of life to find. But through the use of improved collecting equipment of their own design, Sanders and his colleagues have been able to find tens of thousands of organisms where their predecessors found few or none at all. In 19 samples, for instance, they retrieved 3,257 specimens of a single bivalve species, only one specimen of which had ever been seen before. Of another almost unknown species, they retrieved 255 specimens in 10 samples. Sanders has found that deep-sea-floor species, of which there appear to be thousands, vary far more with depth than they do with geography, and that the sea-floor temperatures are often far more critical to their survival than are pressures.