

In one sense, however, the new research is not discovering truths about women so much as it is affirming what feminists have been saying for some time. The evidence does indeed point to social training that makes men and women psychologically different. But, surprisingly, the research suggests that the training does not tend to occur in the first six years of life, as many theorists and parents had assumed.

Some of the studies have come up with other surprising insights. For instance, juggling the multiple roles of wife, mother and worker actually seems to lessen stress, contrary to predictions that the increase in working mothers would multiply stress problems in such women.

Dr. Gilligan notes that what some psychological theories take to be women's deficiencies are in fact mere differences from men.

Her work is at odds with that of Lawrence Kohlberg of Harvard, who elaborated on a theory of moral development formulated by Jean Piaget, the late Swiss psychologist. Dr. Continued on Page C3



1983 Environmental Protection Agency workers adjusting their protective clothing in Times Beach, Mo., before collecting soil samples for dioxin tests.

cluded the pesticides DDT and Kepone; the artificial sweeteners cyclamate and saccharin; the synthetic hormone DES; the industrial chemicals asbestos, vinyl chloride, benzene, formaldehyde and polychlorinated biphenyls (PCB's); such consumer products as hair dyes and children's nightgowns treated with Tris, a flame retardant; and even such common items in the American diet as coffee and charcoal-broiled steaks.

These and dozens of other substances like them were accused of causing cancer and often other health or environmental damage. Each flared briefly into public prominence, generating headlines, scientific debate and political or legal or regulatory proceedings. In the end most were subjected to regulatory restrictions or, in a few cases, banned entirely. Each then disappeared from public debate, to be replaced shortly by the next "carcinogen of the month." This chemical carcinogens, among all the causes of cancer, have for the most part attracted the greatest amount of public and regulatory attention.

What has it all added up to? Are we being bombarded relentlessly by one manmade chemical carcinogen after another in a losing war against cancer? Or are we making steady progress in our efforts to control the hazards of carcinogenic chemicals?

Although virtually any statement made about the role of chemicals in cancer is subject to dispute by one expert or another, recent interviews with more than two dozen cancer and health experts suggest the main lines of development over the last decade can be summarized in these ways:

Commercial and industrial chemicals, the kind that typically raise alarm when detected at unexpected levels in food, air, water, soil, consumer products or the workplace, cause only a small proportion of the nation's 450,000 annual cancer deaths, probably less than 10 percent by the most widely accepted estimates.

Even so, such chemicals remain a significant health problem, causing tens of thousands of cancer deaths each year that could potentially be prevented.

Substantial progress has been made in assessing the extent of the carcinogen problem, establishing regulatory mechanisms and reducing exposures, although the extent of the progress cannot be measured and enormous gaps remain in regulatory surveillance.

The impression that carcinogens are cropping up everywhere results,

gen only to replace it with an alternative that is as bad or worse.

The magnitude of the job ahead appears daunting. An enormous amount of work remains in testing, assessing and controlling exposures to chemical carcinogens.

The fundamental problem is scientific ignorance, which prevents a more coherent approach to carcinogens. Only when scientists learn the precise mechanisms by which cancer is caused and the role chemicals play in the process will they be in a position to abandon their chemical-by-chemical attack and adopt a more comprehensive program of prevention and cure, some experts say. The most optimistic among them predict the disappearance of cancer as a major health problem by the end of the century.

Chemical Threat: How Great Is It?

The last decade has seen a striking shift of opinion among Government officials and many scientists in the importance attached to chemical carcinogens.

In the 1970's, a decade of great environmental sensitivity, Government officials and scientists emphasized the role of manmade chemicals encountered in the workplace or the general environment as a major cause of disease, including cancer.

In 1978, for example, Joseph A. Califano, Secretary of Health, Education and Welfare, warned the nation was headed for an alarming increase in cancer deaths from occupational chemical exposures. He based his warning on an estimate, attributed to 10 distinguished Government scientists, that 20 percent to 38 percent of all cancers in the near future would be caused by workplace exposures to just six industrial chemicals: asbestos, arsenic, benzene, chromium, nickel oxides and petroleum fractions. These themes dominated news coverage of cancer issues. Studies of articles about cancer in the country's 50 largest daily newspapers in 1977 and 1980, conducted by the National Cancer Institute, found the most frequently mentioned causes of cancer were environmental pollutants, job-related exposures to carcinogens, and chemicals or additives, according to a report in the 1984 winter issue of the *Journal of Communication*.

But now the official emphasis has shifted. On March 6, while beginning

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EDUCATION

College Freshmen Better in Basics

By EDWARD B. FISKE

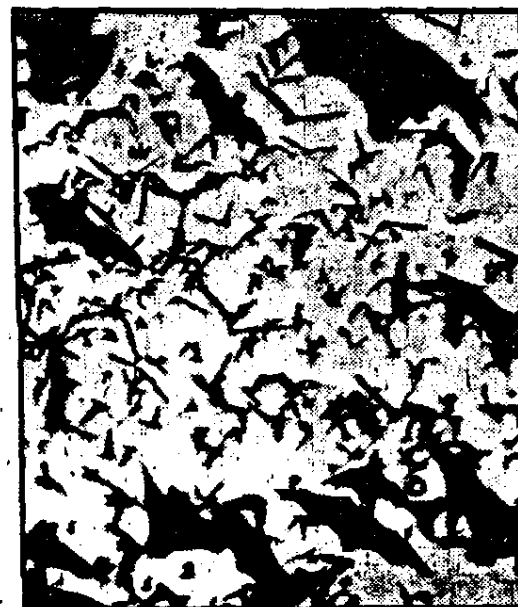
A DETAILED picture is beginning to emerge of the men and women who planned to enroll in this year's college freshman class. One of the more striking findings is that they arrived at college last fall with a stronger background in mathematics, sciences and foreign languages, suggesting that the current national emphasis on such basic courses is already showing results.

In its annual profile of high school seniors who are planning to attend college, the College Board also found that while college-bound black students share in the general trend toward better high school preparation, blacks as a group are now losing ground. The percentage of blacks among all college students has fallen from a high of 9.1 percent in 1980 to 8.5 percent last fall.

"We're in a state of alarm," said Robert L. Albright, the president of Johnson C. Smith University in Charlotte, N.C., who is an adviser on minority affairs to the board. "With the cutbacks in Federal student aid, a lot of students

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Bats Find Offspring Even in Cave's Chaos



Andrew Folsinger

Female bats when they return to their caves are able, in most cases, to locate their pup among the millions of other baby bats.

By WALTER SULLIVAN

FOR those who love bats, or are fascinated by them, there are no more dramatic displays than their nightly emergence from their caves in the Southwest. It is estimated that as many as 70 million bats live in some caves in Texas, and at dusk they emerge in a fluttering black cloud to hunt insects.

Particularly intriguing to animal behaviorists is the chaos assumed to develop inside a cave when females return at dawn to nurse their pups. The roof and walls of the cave often are a seething mass of tiny, hungry, squealing bat babies packed so closely together that as many as 40 have been counted per 100 square centimeters (15 square inches).

Because there can be millions of pups in a single cave, and because they move about in their mothers' absence, it has long been assumed that each mother finds the pups on a first-come, first-serve basis, without regard to her own offspring. The mothers have been regarded as a "dairy herd" that feeds the pup population communally.

To test this hypothesis, Dr. Gary F. McCracken of the University of Tennessee in Knoxville plucked lactating females — with pups firmly attached to

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STAGE: Schulberg revising 'On the Waterfront' for Broadway, page C17./ A display of city's theater heritage, page C17.

BOOKS: Graham Swift's new novel, 'Waterland,' page C19./ **TV:** Film and comedy series with body builders, page C21.