equipped with bike racks to encourage "bike and ride" travelers; one Canadian aid group is even redesigning the bicycle rickshaw to better accommodate Asia's shorter drivers. In China, of course, the bicycle is king of the road. In the Netherlands, the most "bicycle friendly" of the industrial nations (and one of the flattest) the government spent $230 million to expand bicycle parking and build special "cycleways." Today, 20 to 50 percent of all Dutch trips are made on two wheels.

At least one American municipality, the college town of Palo Alto, California, has given the bicycle a chance to show its stuff. The city has spent $1 million since 1980 on bike lockers, racks, paths, and a two-mile "bicycle boulevard" downtown. All road patching must meet smoothness standards, and bike-detecting sensors change traffic signals for bikers.

Lowe believes that America should go the way of Palo Alto. Yet, she laments, the bicycle was barely mentioned in the U.S. Department of Transportation's recently announced national transportation policy.

Fad Farming?

"Alternative Agriculture" by Bette Hileman, in *Chemical & Engineering News* (Mar. 5, 1990), 1155 16th St. N.W., Washington, D.C. 20036.

"Alternative agriculture" has been much in the news since the U.S. National Research Council (NRC) published a controversial report last fall hailing its promise. By and large, says Hileman, a *Chemical & Engineering News* editor, it is not what its critics or its supporters claim.

Even the term "alternative" is a little misleading, since it conjures up images of peasant dresses and pony tails. Most of the farmers who are experimenting with new agricultural techniques (and they are a tiny minority) are more concerned about paying their feed and fertilizer bills than about singlehandedly saving Planet Earth. From the Left or the Right, ancients or moderns, they will borrow any technique that works. So many are trying ridge tillage, a system developed in China 3,000 years ago that minimizes cultivation and thus can sometimes reduce soil erosion and weeds. From the contemporary chemistry lab there is now a new soil test that allows farmers to determine the minimum amount of synthetic nitrogen fertilizer needed to obtain maximum yields.

That may not sound revolutionary, but research shows that farmers steeped in modern "high-chem" agriculture habitually overapply synthetic fertilizers. One specialist estimates that a good test could cut fertilizer use by one-third and outlays by $100 million annually in the state of Iowa alone. To paraphrase an old saying about politics, however, all farming is local. So different soil tests must be devised for different areas of the country. Likewise, the results of alternative agriculture vary from place to place. Pest control methods that work in arid California can't often be used in Florida's hot, humid climate. And because alternative agriculture is new and only spottily employed, its advocates lack the large-scale statistical studies needed to prove their claims.

What does seem clear to Hileman is that "high-chem" farming has its limits. For example, David Pimentel, a Cornell entomologist, estimates that while the use of synthetic pesticides has grown 33-fold since 1945, annual crop losses from insects, weeds, and diseases have grown from 31 percent to 37 percent. Twenty years ago, shortly after they were introduced, herbicides virtually eliminated the need to cultivate fields. Today, cultivation is back. With surprising speed, about 80 out of some 500 weed species have developed resistance to herbicides.

Since the NRC's report, there has been a lot of debate about alternative agriculture. The best thing anybody can do, says Hileman, is to get out of the way—by restructuring federal farm subsidy policies that discourage alternative methods—and leave the choice to the farmers.