

Trimnings

Ancient remedies and several new discoveries of natural insecticide compounds derived from plants are reviewed in a new book issued by the U. S. Department of Agriculture (USDA). For example, a substance extracted from the leaves of the chinaberry tree kills corn earworms and fall armyworms. Some plants also contain compounds effective against insects that do not attack plants. In one study, scientists killed several species of ticks in less than four minutes by exposing the pests to powdered garlic. Other researchers found that cardol and anacardic acid from the nutshells of cashews killed mosquito larvae as well as grain weevils and caterpillars. English ivy leaves have been used since antiquity to destroy vermin of the body. An extract of the ivy bark, used as a spray, failed to kill house flies or yellow fever mosquitoes. Altogether, more than 500 studies conducted between 1954 and 1971 are reviewed. Copies of the Agriculture Handbook No. 461, "Insecticides From Plants," are available for \$2 each from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402.

The January monthly fertilizer tonnage report issued by the University of Missouri-Columbia shows a total of 1,739 tons of non-farm fertilizer shipped. Total shipment for fiscal year 1974-75 was 608,259 tons.

Is the real thing better than a photo? Who actually gets more out of a situation — the person who sees it first-hand or one who views it in a photograph or slide? There's really not much difference, according to a recent U. S. Forest Service Study, if the photograph shows the entire scene. Three groups of respondents were tested. One saw the actual scenes, another viewed color slides and a third saw color photos. Reactions were recorded on a set of adjective scales and compared both graphically and statistically. The

researchers found that a scene with "natural" content elicited similar on-and-off site responses. So the next time you're sitting in on an educational session and the speaker turns off the lights and flips on the slide projector just remember that it's almost as nice as being there in person.

An outdoor pest control program aimed at controlling the dreaded malaria mosquito has been launched by USDA scientists in El Salvador. Using the sterile male technique, scientists hope to release sterile males into the natural population in such large numbers that they, and not the virile males, mate with a large portion of the females. If the area is large enough or isolated to keep immigration of fertile insects at a minimum, no progeny develop. Thus insect populations are drastically reduced and the disease transmission cycle interrupted. According to present plans, the study will run for 2-and-one-half years. The first year will be devoted to preliminary studies of mosquito biology, working out techniques, establishing a mosquito colony, training nationals to operate the program and in general getting the essentials of the program underway. The full scale program will go into effect the second year.

Taking the stink out of composting sewage sludge are a couple of ARS researchers, Dr. Eliot Epstein and George B. Wilson. Their technique involves controlled aeration from beneath the sludge, pulling interior temperatures up from a minimum of 130 degrees F to as high as 185 degrees F. Woodchips are mixed with the sludge at a ratio of three parts chips to one part sludge before composting to improve drafting through the pile. Each pile is covered with a blanket of pre-dried screened sludge compost which prevents odors from escaping to the atmosphere. The cover of screened compost is also an insulating layer providing more uni-

form temperature distribution throughout the pile. Previous studies showed that temperatures obtained by this composting technique kill most human pathogens. Additional studies are being conducted on virus and bacterial survival during composting. Past experiments in composting sludge brought protest from nearby citizens and passing motorists.

Converted air pollution monitoring equipment is being used by a crop physiologist in the Institute of Agriculture and Natural Resources of the University of Nebraska to identify an effective herbicide and show how it works. Dr. Lowell Klepper has modified an early model monitoring devise and is using it to monitor nitrogen dioxide gas given off by a leaf of a plant treated with an herbicide. With his equipment, one person can test 50 chemicals per day for herbicidal action. Commercial tests now take several days for each chemical, he said. The souped-up monitor can also measure herbicide penetration.

Okay, we all know about insect sex attractants. And we know some insects give off chemical signals that turn off certain unwanted suitors. But now scientists are using these facts to develop additional alternatives to pesticides for insect pest control. Control strategies are possible in two directions — attractions and inhibition or disruption. First of all, the synthetic pheromone may be used to attract insects to a bait laced with small amounts of pesticides in a trap. Another is using the attractant to confuse — an area permeated with the pheromone so males cannot tell exactly where females are. These studies and others will determine the effectiveness of male trapping in population suppression and will be used to evaluate the effect of migration and other factors in any future control program.