THE gradual changes of agricultural practices which have been made by American farmers during the past three-quarters of a century have greatly altered insect control programs necessary to the economical production of corn in the Corn Belt area. The entire ecological picture has been changed. The environment to which the insect is exposed today is quite different from that existent during the middle of the last century. Much of the change has taken place during our lifetime, yet this is a fundamental concept which has not received the attention to which it is entitled.

Most of the insects with which we are now concerned were present prior to the start of agricultural development in the midwest. They were, however, generally restrained by their environment and natural enemies. When the original prairie sod was broken for the planting of corn, the soil was in a highly fertile condition, and the resulting crops grew rapidly and strongly. The resultant of these two conditions was a minimum of loss resulting from insect damage.

Repeated growth of corn or the use of corn-oats or corn-oats-timothy rotations produced an entirely new set of conditions at the close of the last century and the early years of the present century. Insects which are natural feeders on the Graminae had taken full advantage of the increase in the presence of the full-season and continuous feeding areas that were an integral part of the new agricultural program. Natural enemies, such as birds, skunks, and snakes, had been reduced in numbers. Soil fertility had suffered. The net result was a rather rapid build-up of such insects as white grubs, Phyllophaga spp., wireworms, Elateridae, the corn rootworm, Diabrotica longicornis Say., corn root aphids, Anuraphis maidi-radicis Forbes, and chinch bugs, Blissus leucopterus Say., and severe crop losses due to attacks by these insects. The grape colaspis, Colaspis brunnea Fab., also appeared sporadically during this period.

About the time that this situation became really serious, legumes were rather generally introduced into rotations. Farmers began to use red clover and later sweet clover more intensively and with a purpose. In fact, two purposes were served, viz., the change served at least partially to recoup the losses in soil organic matter and fertility and it served to break up the continuous grass sequence. The entomological picture was entirely altered. Here was a new ecological situation. This change served to reduce, at least partially, losses from the grass-feeding insects. By the third decade of the present century these insects were considered to be at least partially controllable by rotation with clovers. However, the general trend of fertility downward was not entirely checked, even by the introduction