

tack seeds of other plants. The cowpea weevils will work even on soy beans when cowpeas are not at hand, and I have found it possible to rear them in numbers in soy beans by soaking and thus softening these rather hard seeds.

The weevils attacking the seeds of cultivated leguminous plants belong to one family of beetles (Bruchidae). They are quite different in appearance from the grain weevils, *Calandra granaria* and *C. oryzae*. These latter are snout weevils or curculios, somewhat like the plum curculio in the shape of their heads. The bean and pea weevils are more compact and stout bodied, and the head is not prolonged into a snout. They run about actively when adult, and take wing quickly if disturbed, so that they are not entirely dependent upon man for dissemination. Very generally, however, they are introduced into new localities with seeds bought for planting, a fact of which the farmer should take note, for he very often plants the weevils with the seeds he sows and then harvests an increased number of pests with his crop.

THE COMMON BEAN WEEVIL (*Bruchus obtectus*).

When snap beans, navy beans and others of their type are harvested, some of the seeds may show small round spots, or pits, where the seed coat has been punctured. They are so small as readily to escape notice, especially when they are few in number. These are the places where the young grubs of weevils have entered while the seed was still in the pod and immature. Such seeds contain the grub, or several of them, in a partly developed condition, as may be determined by cutting open some of the beans. When stored, the young weevil continues to grow and in November or early December, in Kentucky, the adult weevil comes out of the beans thru a round disc cut from the seed coat. The little punctures by which the recently hatched grub enters the bean are only 0.0056 inch (0.1430 mm.) in diameter but the burrow leading down into the seed gradually increases in diameter until it reaches well toward the center of one of the seed leaves (cotyledons) where a central cavity is gradually eaten away, in which the grub assumes the pupa stage. The