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VERTEBRATE PESTS IN SOUTHEAST ASIA

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Rodents, birds, and, occasionally, bats are major agricultural pests in Southeast Asia. Because agriculture is of major economic importance throughout the region and because vertebrate damage to crops, though variable, is extremely widespread, the need for more effective control of these pests has received increasing emphasis among local plant protection agencies and has drawn the attention of increasing numbers of agricultural scientists and administrators. During the past several years, biologists from the Rodent Research Center have made brief visits to several countries in Southeast Asia where vertebrate pest damage has been reported to obtain preliminary information on losses.

Surveys of rodent damage to rice have been conducted in major rice-growing regions of the Philippines for several years. During the 1970-71 season, about 90% of the fields surveyed showed some damage. Damage in these preliminary surveys has averaged less than 5%, but virtually total losses are sometimes observed. The rodent species involved are Rattus rattus mindanensis, Rattus argentiventer, and, to a lesser extent, Rattus exulans and Rattus norvegicus.

Preliminary work in several provinces of South Vietnam during the latter part of 1972 the last rice crop has suggested that rat damage to rice is also widespread there. Both floating rice and the older local varieties which are transplanted receive damage, although losses tend to be greater where the new high-yielding (TH) varieties are planted. R. argentiventer is primarily involved in damage to all types of rice plantings.

During a recent visit to Thailand we trapped Bandicota savilei, R. argentiventer, and Mus caroli in rice fields. These and possibly other species may be responsible for agricultural losses in this country. R. argentiventer is also responsible for widespread rice damage in Indonesia. According to some reports, outbreaks of damage by this species, similar to those in Cotabato, Philippines, during the early 1950's, are currently being encountered in some parts of Central Java.

1 Paper prepared for presentation at the Fourth National Conference of the Pest Control Council of the Philippines, Legaspi City, May 16-18, 1973.

2 Permanent address: Wildlife Research Center, U.S. Bureau of Sport Fisheries and Wildlife, Federal Center, Denver, Colorado 80225.

Rodents may also cause severe damage to other crops. In Malaysia, there have been reports of severe damage to oil palm by Rattus tiomanicus, which attacks the fruit, and by P. argentiventer, which damages young trees. Rat damage to coconuts has been reported from several countries although the problem species have often not been identified. Several species of rodents are also reported to do significant damage to cacao. Rat damage to fruits and vegetables can be locally severe and may be expected to increase as such plantings become used more often as post-harvest crops in rice-growing areas. Our experience with one widespread species in the Philippines (R. r. mindanensis) indicates that virtually every apricultural crop grown within its range may receive heavy damage under some conditions.

Bird damage is also important in several crops in Southeast Asia. Birds are more visible pests than rodents, and considerable effort is often exerted to chase them from fields. In rice, several species of the genus Lonchura are principally responsible for damage. In the Philippines the species present are L. punctulata, L. malacca, and L. leucogastra. Other species involved in rice damage in Southeast Asia are Passer montanus, Passer flaveolus, Ploceus philippinus, Ploceus manvar, and Padda oryzivora. Bird damage tends to be even severe in dry-season crops because of seasonal flocking patterns and because such plantings are often made on a small fraction of the area used in the wet season. Bird damage to other cereal grains such as sorghum and millet has been widely reported; severe local damage to various fruits also occurs.

Because vertebrate pest problems tend to be biologically similar in Southeast Asian countries, considerable benefit can be gained from cooperative research efforts. However, agricultural practices, local economics, and cultural factors vary widely in the region, and each problem requires separate evaluation. With the trend toward more intensive agriculture through the development of large irrigation projects, introduction of new crop varieties, and cultivation of new lands, rodent and bird problems can be expected to become more serious. However, agriculturists at all levels -- from farmer to administrator -- are becoming increasingly aware of the importance of the losses to vertebrate pests, suggesting that increasing support for control methods development and increasing use of improved crop protection techniques might be expected.

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