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from the breeding grounds of certain species, particularly the terns. This was done by the Polynesians over many, many successive generations without any reduction in the maximum numbers of the breeding birds, that is the largest numbers that the nesting areas are capable of supporting. White men, on the other hand, have seriously upset the balance and have even exterminated certain species at certain breeding stations. On the whole, perhaps, the worst of all dangers is offered by man's domestic animals, such as pigs, cats, dogs and, indirectly, of course goats and rats.

Robert Cushman Murphy

#### Land Birds:

Only very few species of land birds are found on coral atolls and even among these some are not strictly land birds, such as the Reef Heron, the Australian Gray Duck, and certain species of rails. The only real land birds found on some of the islands are fruit pigeons and warblers (Acrocephalus). As far as the fruit pigeons are concerned, we would like to know more about their seasonal movements, particularly from one island to the next and from one group of islands to the next. Are these movements large-scale and are they correlated with the seasonal appearance of certain fruits? What is the status of some of these species in view of the increased shooting on some of the islands? Is there any relation between time occurrence of rails and sea bird colonies?

Ernst Mayr

#### VI. (c) RATS

While I have not worked on atolls information available indicates that the Polynesian rat (Rattus exulans) is found on some. This rat is introduced by native methods of travel and able to maintain itself in habitats where little fresh water is available. It is not a destructive animal. On atolls where military supplies have been unloaded the destructive Mindanao rat (Rattus mindanensis) and even more destructive Norway rat (Rattus norvegicus) may have been introduced. The Norway rat cannot persist under usual conditions found on atolls but the Mindanao rat may. Since each of these three rats has different habitat requirements and different habits before control is attempted the species should be determined. Control measures for each species on atolls could be worked out without difficulty. Measures to prevent the introduction of the two non-native rats should be investigated.

Robert K. Enders