GENERAL NOTES

The Red Junglefowl of the Philippines—Native or Introduced?—The Red Junglefowl, *Gallus gallus*, is found as a wild bird throughout the Philippine archipelago in suitably forested areas. Rand and Rabor (1960: 414–419) have presented an interesting discussion of the relationships between the wild population and the domesticated fowl in the Philippines, showing that the two types now behave largely as "ecological races." Although some earlier authors believed that there was significant gene flow between the wild and domesticated populations, Rand and Rabor believe that this is not now the case.

There is much uncertainty expressed in the literature as to the origin of the junglefowl in the Philippines. Delacour (1951: 107) and some other authors have firmly stated that the species was introduced by man, presumably by prewhite settlers. Rand and Rabor (*op. cit.*: 418) said: ". . . it is not impossible that the jungle fowl colonized the Philippines naturally." Hachisuka (1929: viii–ix) reviewed what little evidence there was on both sides, but came to no definite conclusion. Later (1931: 158), discussing the same question, he leaned toward an indigenous status for the junglefowl, and finally (1939) formally described the Philippine population as a subspecies, *G. g. philippensis*. Subsequent authors have paid little or no attention to Hachisuka's name, perhaps partly because he also gave a subspecific name to the Philippine population of the Tree Sparrow, *Passer montanus*, a species whose introduced status has not been questioned (Parkes, 1959).

The argument most frequently used against an indigenous status for the Philippine junglefowl has been zoogeographical. There are no other true pheasants in the Philippines proper, although there are five species, of three genera, in nearby Borneo. A peacock pheasant (*Polyplectron emphanum*) is found on the island of Palawan, but this merely reflects the strong Bornean element in the avifauna of that island. A small quail of very wide distribution (*Coturnix chinensis*) is also found in the Philippines. No junglefowl is found in Borneo, and the race in Java and Sumatra is quite distinctive. The Philippine birds have generally been considered to be the same as the nominate race from Indochina, although Hachisuka seems to be the only taxonomist who has actually taken the trouble to investigate the matter.

Comparison of series of Philippine junglefowl with those from the mainland in the collections of the American Museum of Natural History and the Peabody Museum of Yale University (through the courtesy of Dean Amadon and Philip S. Humphrey, respectively) indicates that the former are, indeed, separable from *Gallus g. gallus*, but not by the characters specified by Hachisuka in his description of *philippensis*. He relied entirely on males, but differentiation appears best developed in females. These are more richly rufescent below and, on the average, on the upper parts than are mainland females. In addition, the deep orange-brown of the anterior crown extends farther back toward the nape. There is one good character for males not mentioned by Hachisuka. In Philippine cocks, there is an increase of iridescence on the tertials, with more individual feathers more highly iridescent than in mainland birds. Also, on the average, Philippine cocks appear more intensely colored below because the black of the underparts averages more strongly iridescent.

The mere fact that the Philippine population can be shown to differ from mainland *Gallus g. gallus* is not in itself sufficient to establish it as an indigenous race. It might be suggested that the introduced birds originated from a subspecifically differentiated population somewhere on the mainland, not described in the literature. If the junglefowl were introduced, it was presumably by peoples of Malaysian stock, who invaded

the archipelago at a time when it was populated by peoples of Negrito type. Harold C. Conklin of Columbia University informs me (letter of 14 November 1961) that the "Southern Mongoloids" apparently began to displace the Negritos about three thousand years ago. It is conceivable that the junglefowl might have spread through the entire archipelago and visibly differentiated in three thousand years, but it seems unlikely. Chickens, whether kept for eggs, meat, or fighting, represent wealth to their owners; it seems improbable that enough "escapes" would take place from a human-kept population to permit the archipelago to be so widely inhabited by junglefowl, even in areas with little or no human population. The evidence assembled by Rand and Rabor on the distinctiveness of the wild and domestic Philippine populations of *Gallus* with respect to physical characteristics, behavior, habitat preference, and wildness (as a character) makes it appear highly unlikely that the junglefowl of the Philippines originated from domestic stock that reverted to a life independent of man. It is possible, as they suggest, that the Malays introduced the wild bird as such, although the reasons for such an introduction appear obscure.

Rand and Rabor (*op. cit.*: 418) state that the absence of the junglefowl from Borneo "is not conclusive evidence against natural colonization, for there are other species of spotty distribution." Mr. Tom Harrisson, Curator of the Sarawak Museum, informs me (letter of 23 December 1961) that he feels that the absence from Borneo of the junglefowl is actually circumstantial evidence for the natural colonization of the Philippines, as he cannot believe that man would have introduced the species to the Philippines and not to Borneo. The domestic fowl was, indeed, brought to Borneo in ancient times, as shown by prehistoric paintings of cockfighting on the walls of Niah Cave (Harrisson, *in litt.*), but there are no wild junglefowl in Borneo—another piece of evidence against a domestic origin for the wild Philippine population.

There is one final taxonomic point that appears to add further evidence for an indigenous status for Philippine *Gallus*. As mentioned above, the Philippine junglefowl is separable on several taxonomic characters from the nominate race of the mainland. This differentiation is not uniform. The characters are best developed in the southern part of the archipelago, notably on Mindanao and Basilan, and less so toward the north. An occasional Luzon specimen, however, closely matches Mindanao birds, and the entire Philippine population can conveniently be called *philippensis* Hachisuka, the type locality of which is in Mindanao. The point here is that it seems most dubious that this pattern of variation, of a clinal nature, would be likely to appear in a population originally artificially introduced by man only about three thousand years ago. The weight of the evidence thus suggests that the junglefowl population of the Philippines is indigenous and was not introduced by man. It is true that this presents a somewhat unusual zoogeographic picture, but, as pointed out by Rand and Rabor, there are other Philippine species of irregular distribution whose natural invasion routes are equally difficult to retrace.

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—KENNETH C. PARKES, *Carnegie Museum, Pittsburgh 13, Pennsylvania.*

Additional Evidence of Rivoli's Hummingbird in Colorado.—A. M. Bailey has reported (*Auk*, 62: 630–631, 1945; 77: 345–346, 1960) the occurrence of Rivoli's Hummingbird (*Eugenes fulgens*) in Colorado during the summers of 1942 and 1959. In the summer of 1961 a single female of this species was observed by the senior author for 11 consecutive days at the Rocky Mountain Biological Laboratory, which is located in the Elk Mountains at an elevation of 3,160 meters (9,500 feet) in Gunnison County, Colorado, 14 km (nine miles) north of Crested Butte.

Figure 1. ***Eugenes fulgens*** **♀. Rocky Mountain Biological Laboratory, Gunnison County, Colorado. (Photographed 27 July 1961 by William K. Baker.)**