

THE SOUTH PACIFIC GALLINULES
OF THE GENUS *PAREUDIASTES*

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The gallinule *Pareudiastes* ("Edithornis") *silvestris* (Mayr).
From a painting by F. L. Jaques in the American Museum of Natural History.

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On 4 December 1929, a native boy on the island of San Cristobal in the Solomons carried a strange and totally unknown gallinule into the camp of a party from the Whitney South Sea Expedition consisting of Ernst Mayr, W. F. Coultas, and W. J. Eyerdam. The sight of this specimen "gave Mayr such a thrill he nearly fainted with excitement . . . had to lay off work for the rest of the day; the thrill was too much for his constitution, which otherwise is quite sound" (Coultas and Eyerdam, in Greenway 1973:150).

Some appreciation of Mayr's understandable rapture may be gained from the frontispiece which is taken from a painting done some years ago by the late F. L. Jaques and which reposed thereafter in the American Museum of Natural History. To my knowledge this is the first illustration ever published of the bird Mayr was later to name *Edithornis silvestris* (Mayr 1933).

TAXONOMY

In his original description, Mayr (1933) noticed a similarity between *Edithornis silvestris* and the now extinct *Pareudiastes pacificus* of Samoa. Later (Mayr 1949:22), he remarked that "a revision of the family Rallidae may reveal the necessity for combining [*Edithornis*] with *Pareudiastes*." Greenway (1973) also believed that this would quite probably be done. In my classification of the Rallidae (Olson 1973b), I took this step, but limitations of space prevented me from presenting many details at that time. I will take the present opportunity to offer a more complete characterization of the expanded genus *Pareudiastes*.

While *Pareudiastes silvestris* can scarcely be confused with any other rail, *P. pacificus* bears a superficial resemblance to *Gallinula*. In the following diagnosis, therefore, I have listed those characters that link the two species of *Pareudiastes* but which at the same time distinguish them from *Gallinula*.

GENUS *PAREUDIASTES* HARTLAUB AND FINSCH 1871

Included species: *P. pacificus* Hartlaub and Finsch (the type); *P. silvestris* (Mayr).

Diagnosis: Frontal shield flatter and thinner than in *Gallinula*, starting as a thin ridge above each nostril and produced into a small but distinct flange over the loreal area. Posterior border of shield truncate rather than rounded as in *Gallinula*. Bony nostril smaller and more rounded. Supraloreal, supraorbital, and postorbital areas with sparse, short feathers (appearing bare), differing from the uniformly feathered face of *Gallinula*. Tarsi and toes shorter and stouter than in *Gallinula*. Tail much shorter, the rectrices decomposed, the undertail coverts dark rather than white as in *Gallinula* (however, the undertail coverts are dark in the subgenus *Tribonyx* of *Gallinula*). White flank spots (characteristic of *Gallinula*, except most *G. tenebrosa* but see Cox [1973]) lacking. Breast with a decidedly bluish tinge.

I believe these characters are sufficient to separate *Pareudiastes* from *Gallinula* and to unite *pacificus* and *silvestris* in one genus. *P. silvestris* differs from *P. pacificus* in the following characters: larger size (e.g. tarsus 63.5 mm vs. 46.9 and 40.4 in two specimens of *pacificus*); bill larger and heavier; gonys with two longitudinal grooves (lacking in *pacificus*); frontal shield much larger, extending well past the eye (in *pacificus* the shield reaches only to the middle of the eye); bare area beneath the eye more extensive; bristly loreal feathers shorter, exposing more of the skin beneath; bluish tinge of breast more pronounced, extending also to the nape and mantle (in *pacificus* the dorsum is uniform dark brown). (In the rather poorly executed color plate of *P. pacificus* in Rothschild (1907), the bird is made to look much more bluish and *Porphyrio*-like than is true of the two specimens that I examined, while the plate in Hartlaub and Finsch (1871), although drawn much better, seems not bluish enough.) The differences between *P. pacificus* and *P. silvestris* are probably no more than would be expected between two well-isolated species of the same genus.

I have been able to extract the distal end of the tarsometatarsus from a damaged specimen of *P. pacificus*. This proves to be quite distinct from that of *Gallinula* (Fig. 1). In *Pareudiastes* the shaft is relatively narrower, the distal end more expanded, the inner and outer trochleae placed farther distally, the inner trochlea is not rotated as far posteriorly, the scar for the hallux is deeper, and all three trochleae are broader and less elongate. From that of *Porphyrio* (incl. *Porphyryla*), the tarsometatarsus of *Pareudiastes* differs in the slightly heavier shaft, smaller distal foramen, less developed wing of the outer trochlea, more massive inner trochlea, and less sculpted and complex scar for the hallux.

The tarsometatarsus of *Pareudiastes* can be considered as being almost perfectly intermediate between that of *Gallinula*, which is typical of most rails, and that of *Porphyrio*, which is highly specialized for walking on floating vegetation (Olson 1973a). The more bluish coloration and the smaller, more rounded bony nostril are also characters in which *Pareudiastes* resembles *Porphyrio*. The genus *Pareudiastes* might therefore be regarded as a relict group occupying a position that is morphologically and perhaps phylogenetically intermediate between *Gallinula* and *Porphyrio*.

NATURAL HISTORY

Very little is recorded about either species of *Pareudiastes* in life. Apparently all that is known of *P. pacificus* is contained in the accounts of Whitmee (1874) and Pritchard (1866). The available specimens come from the Samoan island of Savaii, but Whitmee indicates that the species also occurred

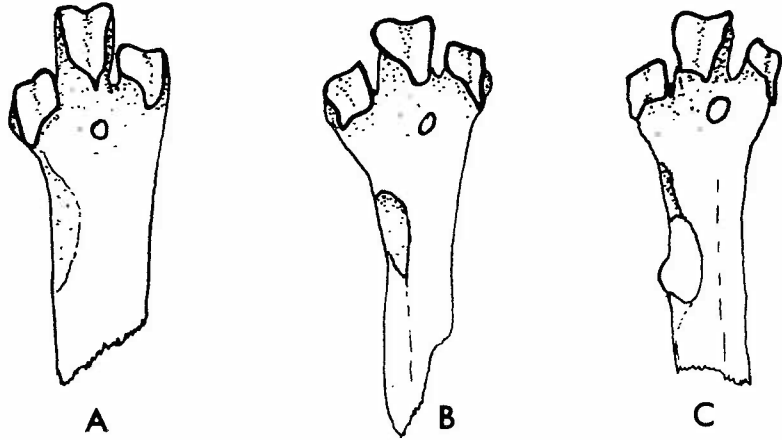


FIG. 1. Gallinule tarsometatarsi, posterior view of distal end: (a) *Gallinula chloropus*, (b) *Pareudiastes pacificus*, (c) *Porphyrio martinica*.

on Upolu. Armstrong (1932) states that *P. pacificus* was once found on Tutuila and on Tau in the Manua group, but since much in Armstrong's book appears to be unreliable, these records may be doubted.

The bird inhabited montane forest. Both Pritchard (1866) and Whitmee (1874) give *puna'e* (meaning "springer-up" according to Pritchard) as the native name of *P. pacificus*, and both state that the natives consistently maintained that the birds lived in burrows in the ground. Mayr (1945) and Greenway (1958) suggested that these statements were the result of confusion between the rail and some procellariiform. That this may not have been the case, however, is evidenced by Pritchard (1866:164). Although he never saw the bird himself, he relates that, according to the natives, the *puna'e*, when started from its burrow, "makes a long spring upwards from the ground, but having very small wings it cannot fly." This suggests that the bird was something other than a petrel. On the other hand, Whitmee (1874: 185) reports that a *puna'e* with two eggs was taken by a native from a nest on the ground "composed of a few twigs and a little grass," a description that does not correspond with the bird's reputed burrowing habits. These eggs were described as being "of much less breadth, longer, and lighter in colour" than those of the indigenous *Porphyrio*.

Hartlaub and Finsch (1871) remarked on the large eyes of *P. pacificus*, from which Greenway (1958) inferred that the species might have been crepuscular or nocturnal. Whitmee and Pritchard both indicate that the diet of *P. pacificus* consisted almost entirely of animal matter and Whitmee told of captive birds that fared poorly when fed on a vegetable diet.

While the natives esteemed the *puna'e* as food, its apparent demise is probably attributable to rats, cats, and other introduced predators. There are no authenticated records of *P. pacificus* after 1873; the Whitney Expedition failed to find it in 1926 (Greenway 1958). It has since then been presumed extinct.

Of *P. silvestris* even less is known. The type and only specimen was taken in montane forest at about 600 m in the center of San Cristobal in the Solomons. Mayr (1933) reckoned it was truly a bird of the forest and that it was quite rare. The bird is called *kia* by the natives and it is hunted with dogs; presumably it has little or no flying ability. Unfortunately, the body skeleton of the type was not saved, as this would certainly have indicated to what extent the pectoral apparatus may be reduced.

Galbraith and Galbraith (1962:22) commented that in 1953 the species was still "well-known to the natives, and apparently not rare below Nagasi," yet they failed to obtain any specimens. This rail is probably in little danger of extinction since the very steep, dense mountain forest it inhabits is virtually inaccessible and the human population of the island appears to be abandoning the mountain settlements in favor of the lowlands.

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