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Ducks, Geese, and Swans of the World: Tribe Merganettini (Torrent Duck)

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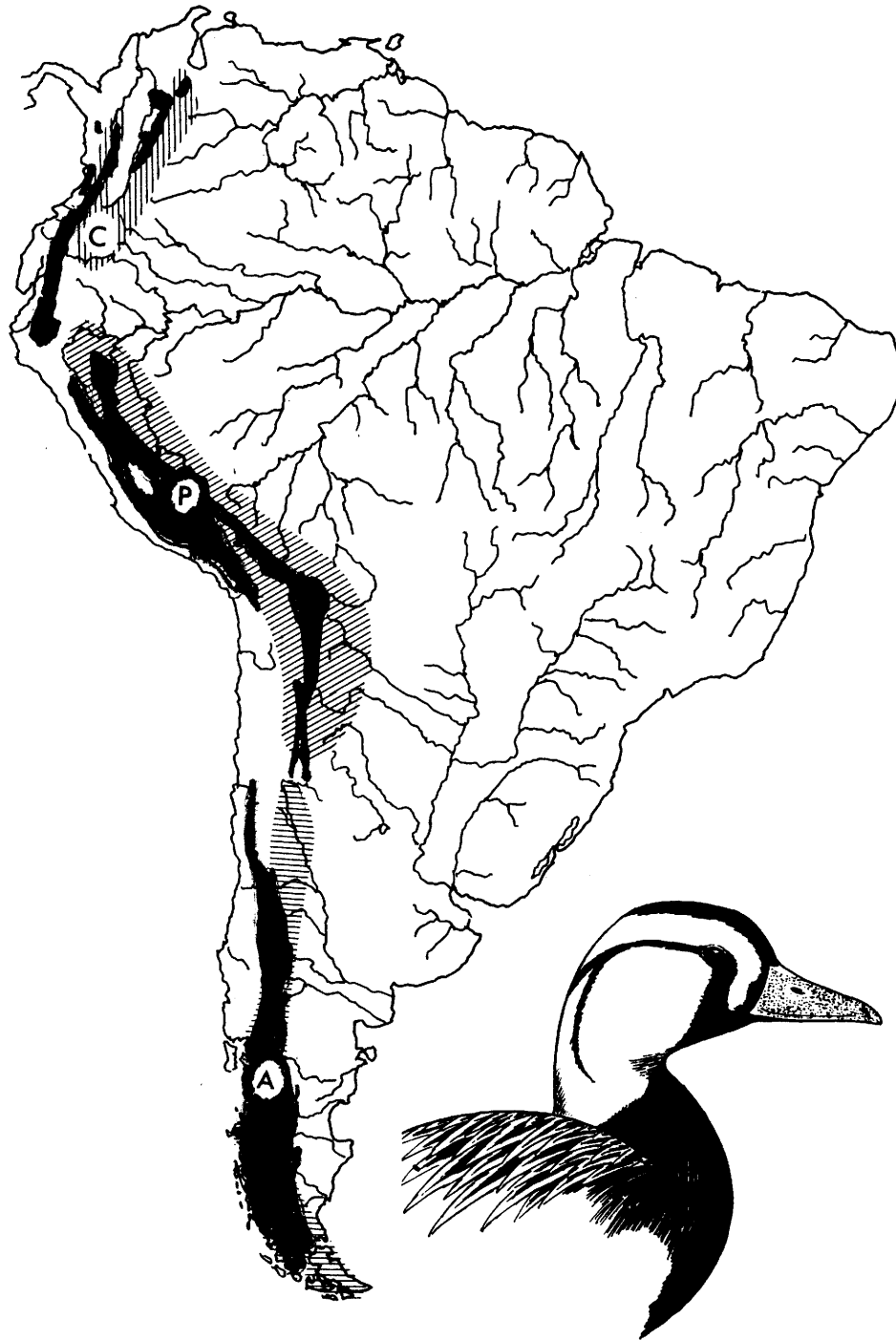
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Tribe Merganettini (Torrent Duck)





MAP 61. Breeding or residential distributions of the Colombian ("C") Peruvian ("P"), and Argentine ("A") torrent ducks.

Drawing on preceding page: Peruvian Torrent Duck

Torrent Duck

Merganetta armata Gould 1841

Other vernacular names. None in general English use. Sturzbachente (German); canard de torrents (French), pato corta-corrientes (Spanish).

Subspecies and ranges. (See map 61.)

M. a. colombiana: Colombian torrent duck. Resident in the Andes of Venezuela, Colombia, and northern Ecuador.

M. a. leucogenis: Peruvian torrent duck. Resident in the Andes of southern and central Ecuador, Peru, Bolivia, northwestern Argentina, and extreme northern Chile. (This encompasses the ranges of *turneri*, *garleppi*, and *berlepschi*, which do not appear to be sufficiently distinct from *leucogenis* to be recognizable.)

M. a. armata: Argentine torrent duck. Resident in the Andes of Chile and adjoining parts of Argentina from Mendoza to Tierra del Fuego.

Measurements and weights. Folded wing: males, 142–84 mm; females, 132–65 mm. Culmen: males, 29–31 mm; females, 25–27 mm. Weights: males, ca. 440 g; females, 315–40 g (Niethammer, 1952). Eggs: av. 61 x 41 mm, buff, ca. 65 g.

Identification and field marks. Length 17–18" (43–46 cm). Plate 36. *Adult males* are slim-bodied ducks with long (over 120 mm) tails that are somewhat stiffened, and with bony spurs at the bend of the wings. In all races the head is mostly white, with a black crown stripe that extends down the back of the neck, where it merges with a black stripe that extends back from the eye and branches to form a second neck stripe just ahead of the nape stripe. The upperparts are mostly made up of gray to blackish feathers with pale gray to white margins, while the flanks and underparts vary from predominantly white with small black spotting (northern forms) to mostly blackish with brownish feather margins (southern forms). The tail is grayish brown and the upper coverts are finely vermiculated with gray and black, while the under coverts vary from white to blackish. The upper wing coverts are grayish blue, the primaries are brown, and the secondaries are iridescent green, with prominent white borders in front and behind. The bill is bright red, the legs and feet are reddish with darker markings, and the iris is brown. *Females* are mostly a finely vermiculated gray pattern on the upper half of the head and

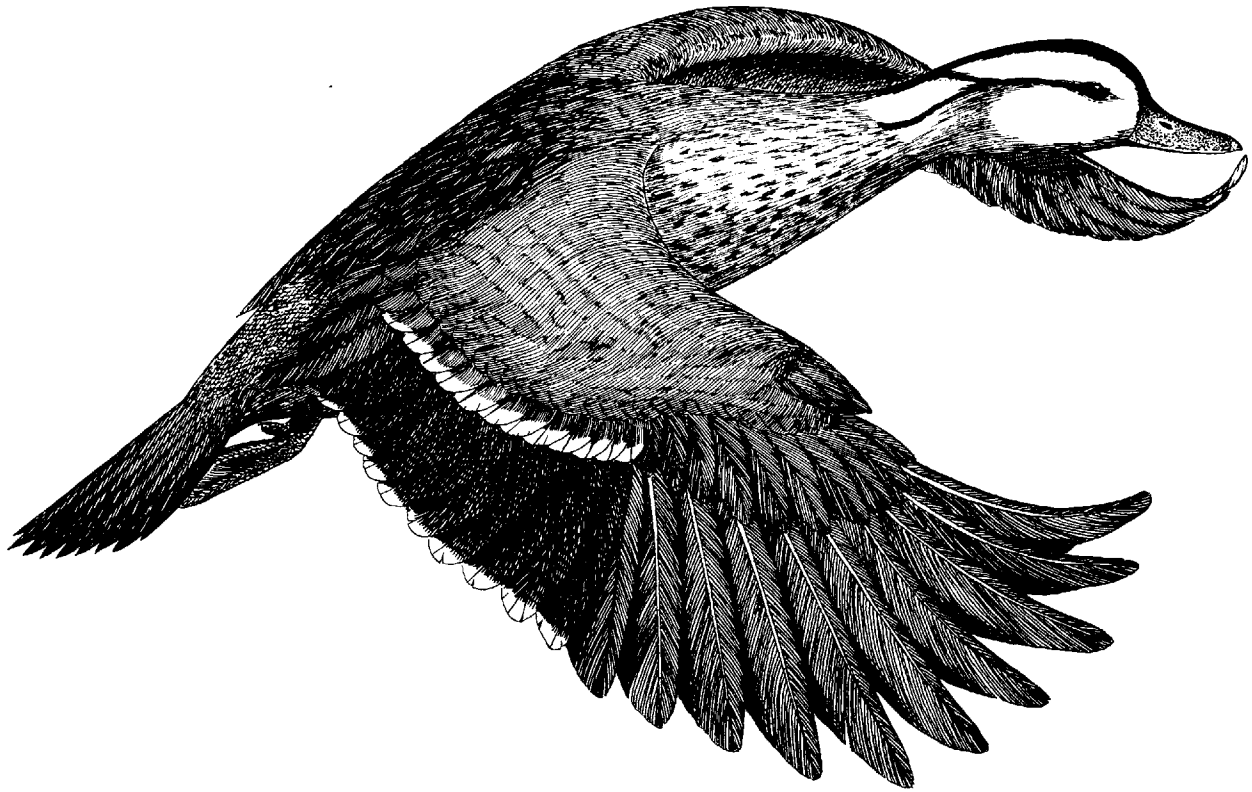
body, and a contrasting rusty brown on the flanks and underside of the head, neck, and body. The tail and wing patterns are like those of the male, as are the soft-part colors. *Juveniles* are generally grayish above and white below, with distinctive gray barring on the flanks.

In the field, torrent ducks are the only waterfowl that inhabit the turbulent Andean streams, and are impossible to confuse with other species. The sharp, clear whistle of the males may be readily heard above the noise of the rushing water, and is directed toward other males (as a territorial call?) as well as toward their own mates or families. Torrent ducks fly quickly but fairly low over the water, rarely higher than 20 feet, methodically following the twists of the river. Their wingbeats are unusually shallow and rapid.

NATURAL HISTORY

Habitat and foods. All of the areas where I (1966a) have observed torrent ducks consisted of rivers with rapids and waterfalls interspersed with stretches of more placid water. The width of the river is seemingly unimportant, but the waters are always cold (12° C in one case), clear, and well oxygenated. In various parts of their range they occur from near sea level (in Chile) to at least 4,500 meters (in Bolivia). River gradients on which they have been found vary from as little as about 5 to 100 meters of descent per kilometer of flow. The birds typically forage by diving into the water from large rocks, disappearing from sight, and remaining submerged for periods of up to nearly 20 seconds as they probe rock crevices for aquatic insects, especially caddis fly larvae. At times the birds also swim on the surface, with only the head submerged, or upend in the manner of dabbling ducks. They also at times crawl behind waterfalls to probe among the rocky ledges. Besides caddis flies, the larvae of stone flies and May flies are consumed, and perhaps also some mollusks. It is likely too that in some areas small fish may be caught and consumed in limited quantities (Johnsgard, 1966a).

Social behavior. Throughout the year torrent ducks are evidently not gregarious, and rarely are seen in groups other than pairs or families, except perhaps during courtship display. In general the birds occupy exclusive foraging and breeding territories along river stretches that space the population out



into a density of about one pair per kilometer. There is little doubt that the birds move only limited distances from these areas, and that pair bonds are strong and presumably permanent. This is indicated by the absence of marked nonbreeding plumages, the extended breeding season, and the participation of males in brood care. Pair-forming displays are still but poorly understood, and the few published descriptions (Johnsgard, 1966a; Moffett, 1970) suggest that sexual displays are quite different from those of other dabbling or perching ducks. A repeated bowing display, or body bend, is evidently used both as a pair-maintaining display and as a territorial boundary display. Aggressive displays between birds holding adjacent territories are complex and well developed. They include calling with simultaneous body bends, and mule kicking, in which water is kicked backwards with both feet, accompanied by a high-intensity bowing movement. Actual fighting between rivals has not yet been reported, in spite of the fact that males possess well-developed wing spurs that almost certainly are used in aggressive encounters. Copulatory behavior is relatively inconspicuous, and according to unpublished observations by Jan Eldridge, is typically pre-

ceded by the female's assuming a prone posture, with only bill dipping or head shaking as associated behavior. The male then performs bill dipping, head dipping, barging, and a double-shake display before mounting. Postcopulatory behavior includes bathing by the female and a body bend by the male (Eldridge, 1977).

Reproductive biology. The breeding season of torrent ducks in South America is evidently very long, at least in the northern part of the species' range. In the central Andes, the sightings of young during July and August suggest that breeding occurs during the dry season. In Chile and Argentina, where seasonal temperature changes are considerable, the observations of broods indicate that nesting occurs at the end of the wet winter period (Johnsgard, 1966a). Only a few actual nests have been found. The locations have included a ledge site with overhanging rocks about 4 feet above a stream, a bank tunnel location along a power plant canal about 3 feet above water, and a cliff nest about 75 feet above water at the base of a bush. Johnson (1965) found a nest in a kingfisher cavity about 20 feet above a boulder-strewn river bank and a second

probable nesting site in a vertical crevice in the face of a cliff. Most published information indicates that 3 or 4 eggs constitute the clutch. Moffett's (1970) field study in Argentina is the most complete to date, and he reported a nest in a coihue (*Nothofagus*) tree-root cavity about 15 feet above water, one in a streamside cavity about 9 feet above water, and a third in a cliff crevice about 60 feet above water. In one nest Moffett found that the 4 eggs were apparently laid at weekly intervals, and that the incubation period from the laying of the last egg was 43 to 44 days. This included an entire week between the pipping of the first egg and the emergence of the last chick. This amazingly long egg-laying and incubation period, if typical, would make the torrent duck's the longest of any known anatid. Only the female incubated, but the male always met her on her daily foraging trips of several hours each morning and afternoon. These long breaks in incubation and the cold temperatures at the time of incubation no doubt help to account for the extended incubation period Moffett observed. In one case, he found that the chicks left the nest two days after the last egg had hatched, and in a second nest he watched the ducklings drop from their cliffside nest to the rocks 60 feet below at the call of their mother. After the young had reached the water, they were joined by the male, who thereafter remained with the family and guarded them as the young foraged in the shallows at the river's edge. The period of time to fledging has not yet been established.

Status. The torrent duck appears to be relatively rare and probably is declining in abundance over most of the northern parts of its range, but it is still quite common in Chile and Argentina. Its specialized habitat requirements of clear, cold, swiftly flowing waters are easily destroyed by impoundments or river pollution, and the introduction of insectivorous fishes could also prove harmful to the species.

Relationships. In an earlier review (Johnsgard, 1966a), I concluded that the torrent duck's closest affinities are probably with the perching ducks, and that it should either be included in that tribe or be placed in a separate tribe (Merganettini) of its own. Woolfenden (1961) likewise suggested a separate tribe for this species on the basis of its postcranial osteology. Quite possibly the bird is most closely related to the Salvadori duck, as Kear (1975) has suggested, but unless this or other strong dabbling duck affinities can be established, it seems most practical to keep it tribally separate from that group. Recently Brush (1976) concluded on the basis of its feather proteins that the torrent duck is probably not a member of the dabbling duck group and its affinities are more probably with the perching ducks or shelducks. He thus retained it in a separate tribe near the shelducks.

Suggested readings. Johnsgard, 1966a; Johnson, 1963; Moffett, 1970.

