

A Record of *Perochirus* cf. *scutellatus* (Squamata: Gekkonidae) from Ulithi Atoll, Caroline Islands

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Abstract—This paper documents the occurrence of the gecko *Perochirus* cf. *scutellatus* at Ulithi Atoll in the Caroline Islands, where it is possibly restricted to a single islet. This represents just the third known location for the species and extends its range by 975 km. Information gathered to date suggests the species was once more widespread and is perhaps sensitive to human-induced habitat change.

The genus *Perochirus* is comprised of three extant species of gecko native to Micronesia and Vanuatu and an extinct form from Tonga (Brown 1976, Pregill 1993, Crombie & Pregill 1999). The giant Micronesian gecko (*P. scutellatus*) is the largest member of the genus and was until recently considered endemic to Kapingamarangi Atoll in southern Micronesia, where it is common on many islets (Buden 1998a, 1998b). Crombie & Pregill (1999) reported two specimens resembling this species from Fana in the Southwest Islands of Palau; these are considered to be *P. cf. scutellatus* pending further comparison with material from Kapingamarangi (R. Crombie, pers. comm.). Herein, I document the occurrence of *P. cf. scutellatus* from an additional site in Micronesia.

During a week-long fruit bat survey at Ulithi Atoll in Yap State, Caroline Islands in March 1986 (Wiles et al. 1991), 14 of the atoll's larger islets comprising 77% of the total land area were visited. Fieldwork was conducted primarily from dawn to dusk, with four observers spending much of their time walking transects through the forested interior of each islet. Incidental lizard observations were made throughout the study. At about 1000 hr on 14 March, J. Engbring and I observed four large geckos exposed on the bare lower trunk of a relatively large tree on Sorenleng (= Droling) Islet (10°03'N, 139°35'E). One individual with a snout-vent length of 134 mm and tail length of 81 mm was captured (BPBM 11161) and later identified as *P. cf. scutellatus* (R. Crombie and A. Allison, pers. comm.). An additional seven or eight animals were sighted on another tree trunk elsewhere on the island at about the same time of day (M. Falanruw, pers. obs.). These were the only detections of the species during the entire survey. Both groups of animals displayed behavior similar to that described at Kapingamarangi, where the species is a largely diurnal inhabitant

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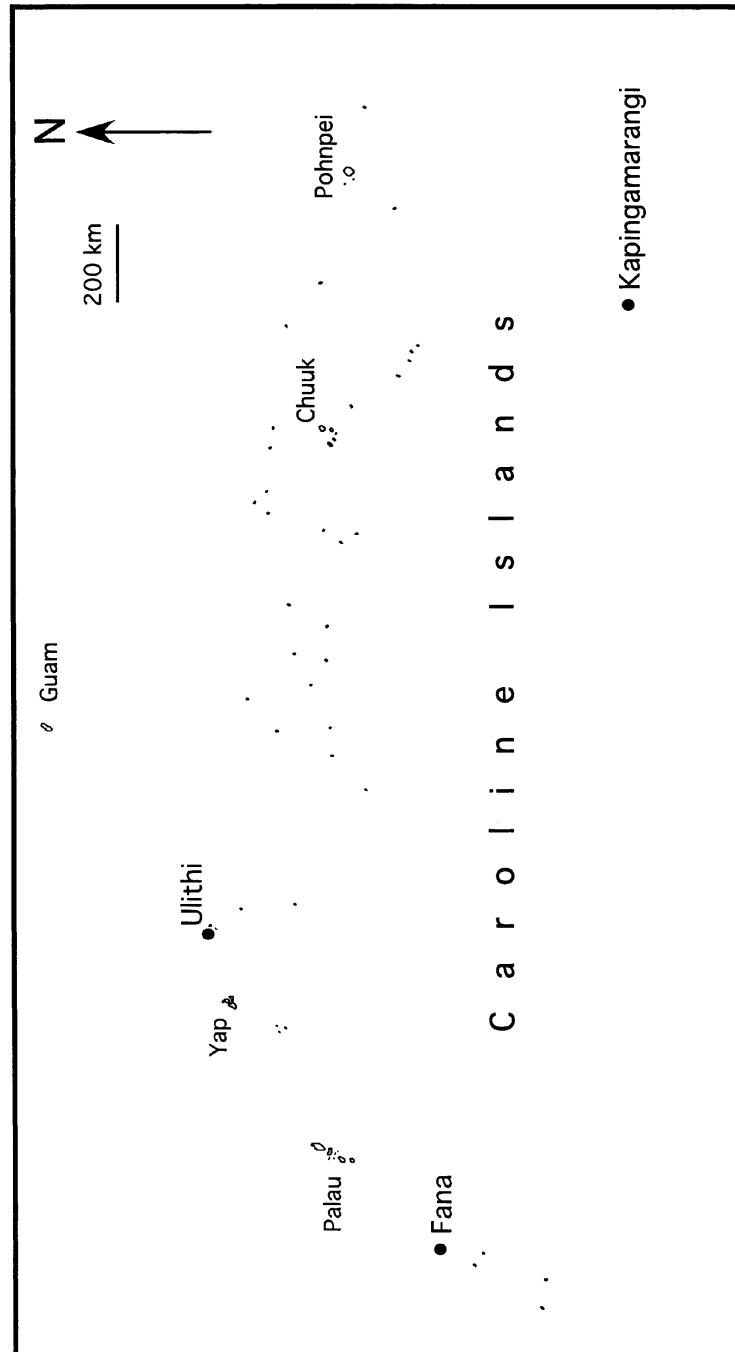


Figure 1. Map of central and western Micronesia, showing locations where *Perochirus scutellatus* (Kapingamarangi) and *P. cf. scutellatus* (Ulithi and Fana) have thus far been recorded.

of large tree trunks, with multiple individuals routinely present in single trees (Buden 1998a).

Ulithi consists of 43 low coralline islets with a total land area of 4.4 km² that surround a 20-by-30-km central lagoon. About 22 islets are sufficiently large to be forested, with agricultural forest and indigenous strand forest predominating over other habitats. Characteristic trees include *Cocos nucifera*, *Pandanus tectorius*, *Artocarpus altilis*, *A. mariannensis*, *Guettarda speciosa*, *Neisosperma oppositifolia*, *Ficus prolixa*, *Pisonia grandis*, *Musa* spp., *Tournefortia argentea*, and *Scaevola sericea*. Forest canopy heights range from 10–18 m. A population of about 800 people resides on four main islets, but as many as 10 other islets may have been occupied at various times in the past (Craib 1981).

Sorenleng measured 11 ha in size and was uniquely pristine among the islets visited. It was vegetated entirely in strand forest comprised primarily of *Pisonia grandis*, *F. prolixa*, and *Pipturus argenteus* and had none of the agricultural forest that covered large portions of other islets. Relatively little coconut, pandanus, and *G. speciosa* were present. This and the absence of archaeological evidence (Craib 1981) suggest that the islet has never been inhabited or cleared for gardens. It was also the only islet visited that supported large numbers of roosting or nesting seabirds, primarily red-footed boobies (*Sula sula*), great frigatebirds (*Fregata minor*), and black noddies (*Anous minutus*). A strong odor of seabirds and excrement permeated much of the island and the soil was unusually soft and spongy.

The discovery of *P. cf. scutellatus* on Sorenleng strengthens the hypothesis that the species once was widespread in central and western Micronesia, but is now characterized by a remnant distribution (Buden 1998a, Crombie & Pregill 1999). Distances of 975–2,475 km separate the three sites from which it is currently known (Fig. 1). Because the terrestrial vertebrate faunas of nearly all atolls in Yap and Chuuk remain poorly examined, it seems likely that *P. cf. scutellatus* will eventually be found at additional locations as adequate study occurs. Nevertheless, it is perplexing that such a large and conspicuous gecko should go undetected thus far if it was relatively numerous elsewhere (Buden 1998a). The absence of earlier records from Ulithi, which is one of the better collected sites for lizards among atolls in the area, combined with my own brief observations from 1986 suggest that the species may be isolated even within an atoll and therefore overlooked if all islets are not surveyed.

Several factors are commonly associated with lizard extinctions, including large body size, occurrence on small islands, and susceptibility to human-induced environmental change, such as the introduction of predators (e.g., rats and cats) and habitat alteration (Case et al. 1992). All have possibly contributed to a putative range decline in *P. scutellatus*. At Ulithi, its presence on an undisturbed islet suggests that the species may be sensitive to human habitation or the conversion of strand forest to agricultural forest. Fana is similarly uninhabited (but shows evidence of former occupation), with extensive strand forest and impressive seabird colonies also present (A. K. Kepler, unpubl. data). Buden (1998a) found *P. scutellatus* common in agricultural forest at Kapingamarangi, but noted its

absence or scarcity from islets currently or formerly supporting dense human populations. It also displayed an avoidance of human-made structures and nearby areas. *Perochirus scutellatus* co-exists with *Rattus exulans* on a number of islets at Kapingamarangi (D. Buden, pers. comm.), but information on *Rattus* presence is lacking for Sorenleng (G. Wiles, pers. obs.) and Fana (A. K. Kepler, unpubl. data).

On atolls in Pohnpei State, an absence of range overlap between *P. scutellatus* and the arboreal skink *Lamprolepis smaragdina*, both of which occupy similar niches, perhaps offers further insight into the distribution of *P. scutellatus* (Buden 1998a). However, both occur sympatrically at Sorenleng (G. Wiles, pers. obs.) and Fana (Crombie & Pregill 1999), arguing against any form of competitive exclusion between the two species.

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