

VIERAEA	Vol. 33	547-548	Santa Cruz de Tenerife, diciembre 2005	ISSN 0210-945X
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**Bulwer's Petrel *Bulweria bulwerii*
(Jardine & Selby, 1828) incubating two eggs:
first data from the Canary Islands**

Rodríguez, B., A. Rodríguez & A. J. Acevedo (2005). Petrel de Bulwer *Bulweria bulwerii* (Jardine & Selby, 1828) incubando dos huevos: primer dato para las islas Canarias. *VIERAEA* 33: 547-548.

Breeding habits of Bulwer's Petrel *Bulweria bulwerii* (Jardine & Selby, 1828) such as the rest of the order Procellariiformes are very singular, and most of them tend to form large breeding colonies under ground in burrows or holes, visiting colonies only at night (Warham, 1990; *The Petrels – Their Ecology and Breeding Systems*, London: 440 pp). Like other seabirds, petrels and shearwaters forage at sea far away from their breeding grounds and present common reproductive features as single-egg clutch, prolonged incubation period or slow chick growth, suggesting energy limitation during this period (Ricklefs, 1983: *Studies in Avian Biology No. 8*: 84-94). In this sense, breeding females must be in peak physical condition before laying because egg represents a high proportion of its weight, on average 12-16%, and they need a prelaying period of abundant feeding (Del Hoyo *et al.*, 1992: *Handbook of the Birds of the World. Vol. 1.*, Barcelona: 696 pp). Although to this, some examples are available on the presence of two eggs in nests of order Procellariiformes worldwide (e.g. Warham, 1962: *Auk* 79: 139-160; Fisher, 1968: *Auk* 85: 134-135; Imber, 1976: *Ibis* 118: 51-64; Del Hoyo *et al.*, 1992, *op. cit.*), including Bulwer's Petrel (Mougin, 2002: *Bol. Mus. Mun. Funchal* 53: 35-42).

None double clutches were observed in Desertas Islands during a four years study on the breeding biology of Bulwer's Petrel (Nunes, 2000: *Archipelago* sup. 2 (Part. A): 167-173). However, in Selvagem Grande double or triple clutches represent 2,2 % of the total clutches and are mainly relational with inexperienced birds (Mougin, 2002, *op. cit.*). In this colony, two eggs had never been incubated together; being the first always refused before the laid of the second and according to this, double hatching never occurs (Mougin, 2002, *op. cit.*). In the Canaries, around 1.000 pairs of Bulwer's Petrel breed distributed in all islands (Hernández *et al.*, 1990: *Bol. Mus. Mun. Funchal* 47: 5-16). Overall in this archipelago, data on this species are scarce and are mainly based on numbers and distribution, but it is known that the majority of hatching occurs at the middle of July (Martín & Lorenzo, 2001: *Aves del Archipiélago Canario*, La Laguna: 787 pp).

During the inspection of one of the big known colonies of this petrel situated in the south-west coast of La Gomera Island on 3 August 2004, a minimum of fifteen burrows with signs of occupation (faeces, feathers, odour, incubating adults, etc.) were counted. The colony is placed in a zone of fallen rocks in the base (5-15 m a.s.l.) of a sea cliff 150 meters high. These locations, together with uninhabited rocks and islets, constituted the breeding habitat of this petrel in the Canaries. One burrow contained an adult incubating two eggs, which were observed when a flashlight was used to inspect inside and the bird

was flushed. After thirty minutes, the burrow was carefully inspected again and the adult was completely covering the eggs as the first time.

Contrary to Selvagem Grande, where any double clutch is successfully incubated (Mougin, 2002), the bird observed in La Gomera was truly covering the two eggs. It is important to note that the observation date suggests that both eggs were infertile, according to the high synchrony among years and the similar breeding chronology between different sub-tropical colonies (Nunes, 2000).

Finally, the majority of authors considered the two eggs clutch in Procellariiformes as the product of two different females and it is obvious if we considered the high energetic cost of this fact. For example, the egg of the Bulwer's Petrel represents about 22 % of the female weight (Mougin & Mougin, 2002: *Bol. Mus. Mun. Funchal* 53: 43-52). Warham (1962) thought he had evidence of two eggs from the same female of Giant Petrel *Macronectes giganteus*. Also it is known that some species of the order lay a second egg when the first is removed (Boersma *et al.*, 1980: *Auk* 97: 268-282), but it never has been demonstrated in others (Fisher, 1968). After refusing the same female hypothesis some possible explanations could clarify double clutches in Procellariiformes, for example, reoccupation of an abandoned nest with egg by a new pair, movements of eggs in dense colonies or laying on a temporarily unoccupied nest during prelaying exodus (Fisher, 1968; Del Hoyo *et al.*, 1992; Mougin, 2002). And so we can not accept any of them as true, without more information on the parent's identity of the first egg, precise studies based on monitoring and ringing program of adults are needed.

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