data). However, predation on species with well devel-NETT, 1935; SPERRY, 1941; BOND, 1942; JAKSIC & in pellets of Burrowing Owls (Errington & Ben-CERQUEIRA, 1990; E. M. GONZÁLEZ, unpublished oped skin glands is exceptional, because its secretions Marti, 1981; Belloco, 1988; Silva-Porto & Some authors have found digested anuran remains

repels potential enemies.

species of toad was very common in the park was between 8 and 15 cm. At the collecting time, this estimated by comparison with collection specimens and the limbs. The total length of the predated toads attached. Some specimens conserved the pelvic girdle which still conserved part of the skin of the bacl Among them, many mammals (González & Sarmens with micromammals traps. GONZÁLEZ (1997) reports the capture of some speciremains consisted in heads and part of the spines Anura: Bufonidae) remains were founded. Amphibian ALEGUI, 1996) and 14 Bufo arenarum (Amphibia: remains of several A. cunicularia nests from Santi Teresa National Park (Rocha Department, Uruguay) In January of 1995, the author gathered feeding

potential predators (DALY & WITKOP, 1966; LUTZ, secretions make them undesirable for most of the ticularly between the eyes and the scapulas, where the paratoides glands are located. 1966). The glands are distributed on the back and par-Toads of the genus Bufo has skin glands, whose

a toad. Using this strategy, the owls may be able to unpalatable secretion of their skin. Although it was use a locally abundant feeding resource. The fact that technique in a falcon (Falco sparverius) feeding or ingestion. HUERTAS & VALLEIO (1988) observed this not observed, a predation sequence of a Burrowing by Burrowing Owls after tasting the seemingly that amphibians are of secondary importance as prey attack them again. SCHLATER et al. (1980) consider can not kill neither ingest toads of the genus Bufo in the accommodation with the belly upwards, and the lowing sequences: the catch, the carrying to the nest Owl on a toad should be expected to follow the fol the 98,2% of the experimental induced cases that Falco sparverius (Falconiformes, Falconidae) for Burrowing Owls. These authors and THOMPSEN predator irritation, whom, after several attempts According to these authors, the attack caused the how did they do it. HUERTAS & VALLEIO (1988) said recorded (HUERTAS, 1980), though is not specified (1977) found killed but undigested anurans, rejected learned to recognise the repelling preys and did not toads are found in several nests in this population Despite this, falcons foraging on toads have been

with that of several carnivore mammals and most of

The circadian activity rhythm of toads coincides

the prey birds of the order Strigiformes, Athene

ularia is a little field owl considered an opportunist 1980), that forages during the day and the sundown

strictly nocturnal preys (GONZÁLEZ & SARALEGUI, at night, because part of its diet is composed of

(JAKSIC & BRAKER, 1983). Probably it may also hunt predator (Yañez & Jaksic, 1979, Schlater et al., cunicularia (MOLINA, 1782), among these. A. cunic3303: DO BURROWING OWLS EAT TOADS?

WITH BRIEF COMMENTS ABOUT HUNTING SELECTION

(KLOPFER, 1959) among individuals within the pop-

teristic of each species and is pointed to an optimum & Orlans is that, while the prey selection is characdifferences with the fourth level stated by CHARNOV product of individual or populational preference foraging performance, the populational or individual ing laws, is an unpredictable show of biological preferences, although respecting the optimal forag-(developed by learning) for certain kind of food. The ing method selection and d) kind of prey selection. A habitat selection b) hunting habitat selection c) hunt-(1973) establish four levels of hunting selection: a) the owls hunting selection. Charnov & Ortans shows the existence of a particular factor that affects ifth level may exist, where the selection may be This population preference for an unusual food

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## BIBLIOGRAPHY

- Belloco (M.) 1988 .- Dieta de Athene cunicularia ecosistemas agrarios de la Pampa, Argentina. Physis (Aves, Strigidae) y sus variaciones estacionales en Food of the Burrowing Owl in western Nevada. Con-(Bs. As.) Secc. C. 46 (110): 17-22. • BOND (R.) 1942.-
- CHARNOV (E.) & Orians (G.) 1973.- Optimal foraging E. & G. Orians Eds.) U.S.A. some theoretical explorations. Spec. Publ. (Charnov
- DALY (J.) & WITKOP (B.) 1966.- The venoms of amphibians. Mem. Inst. Butantan, 33: 425-433.
- ERRINGTON (P.) & BENNETT (L.) 1935.— Food habits of Burrowing Owls in northeastern Iowa. Wilson Bull.
- GONZÁLEZ (E. M.) 1997.- Vertebrados (Aves, Reptilia! Uruguay. Contr. Biol., 16: 4. Montevideo, 12(186):1-6. • GONZÁLEZ (E. M.) & SAR-Amphibia) capturados accidentalmente con trampas (Aves, Strigiformes) del Parque Santa Teresa, Rocha zoológicos en regurgitados de Athene cunicularia ALEGUI (A.) 1996.- Análisis de componentes mastopara micromamíferos. Com. Zool. Mus. Hist. Nat
- HUERTAS (M.) 1980.- Observaciones sobre el comportamiento alimentario de Falco sparverius (Falconiformes, Falconidae). Res. Com. 1 Jorn. C. Nat. Mon

records in other places suggests that the technique is may implies that many individuals have learn this feeding technique. Absence of toads foraging learned by imitation or "conspectic observation"

• THOMSEN (L.) 1971. - Behavior and ecology of Випоwing Owls on the Oakland municipal airport. Condor, 73: 177-192.

YANEZ (J.) & JAKSIC (F.) 1979 .- Predación oportunista de Speotyto cunicularia en el norte chico (Aves Strigiformes). Not. Mens. Mus. Nac. Hist. Nat.

CC 399 CP 11.000 Montevideo (Uruguay). Museo Nacional de Historia Natural Enrique M. González tevideo, 1: 81-82

 HUERTAS (M.) & VALLEJO (S.) 1988.— Algunos aspectos de la relación presa depredador entre Bufo granulosus Soc. Zool. Uruguay Za. Epoca, 4: 46-49. fernandezae y Falco sparverius cinnamominus. Bol

 Jaksic (F.) & Braker (H.) 1983. – Food niche, relation ecology of Athene owls in mediterranean-type ecosistems: a comparative analysis. Can. J. Zool., 59: 2331petition versus opportunism. Can. J. Zool., 61: 2230 ship and guild structure of diurnal birds of prey: com-2241. • Jaksic (F.) & Marti (C.) 1981.– Trophic

KLOPFER (P.) 1959.- Social interactions in discrimina tion learning with special reference to feeding behavior in birds. Behavior, 14: 282-299.

LUTZ (B.) 1966. - Biological significance of cutaneous secretions of toads and frogs. Mem. Inst. Butantan 33: 55-59.

SCHLATTER (R.), YANEZ (J.), NUNEZ (H.) & JAKSIC (F. · SILVA-PORTO (F.) & CERQUEIRA (R.) 1990.- Scaand its relation to prey size. Auk, 97: 616-619 sonal variation in the diet of Burrowing Owl Athene Bull., 53: 45. cia e Cultura 42, (12):1182-1186. • SPERRY (C. cunicularia in a restinga of Rio de Janeiro State. Cien-1941.- Burrowing Owl cat spadefoot toads. Wilson 1980.- The diet of the Burrowing Owl in central Chile