FIRST RECORD OF *ORNITHODOROS (ALECTOROBIUS) MARITIMUS* VERMEIL & MARGUET (ACARI : ARGASIDAE) IN SPAIN

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TICK
ORNITHODOROS MARITIMUS
YELLOW-LEGGED GULL
LARUS CACHINNANS
SPAIN

ABSTRACT : Ornithodoros maritimus is recorded for the first time in Spain, on chicks of the yellow-legged gull *Larus cachinnans*, collected on Medes islands (Mediterranean sea). Some notes about prevalence and parasitation rates are included.

TIQUE
ORNITHODOROS MARITIMUS
GOÉLAND À PATTES JAUNES
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ESPAGNE

RÉSUMÉ : Ornithodoros maritimus vient d'être trouvé pour la première fois en Espagne sur des poussins du goéland à pattes jaunes *Larus cachinnans*, aux Iles Medes (Méditerranée). Nous ajoutons quelques notes sur sa prévalence et son taux de parasitisme.

In 1954, HOBART and WHALLEY reported the presence of *Ornithodoros* sp. (*talaje* group) on Puffin Island (North Wales), chiefly under stones, but also parasitizing birds. Later, VERMEIL (1954) stated that adults of *Ornithodoros coniceps* were extremely common under rocks near nests of gulls on Zembretta Island (Tunisia). VERMEIL and REHEL (1965) also mentioned that numerous larvae of one species in the *Ornithodoros coniceps-capensis* complex were taken from birds on Dumet Island. VERMEIL and MARGUET (1967) described and illustrated the larva of *Ornithodoros coniceps maritimus* n. sp., from specimens collected on Dumet Island, and associated this sample with others from Zembra Island (Tunisia). Finally, HOOGSTRAAL *et al.* (1976) redescribed the larva, described and illustrated other stages in the life cycle, and gave full specific status to *Ornithodoros maritimus*. To date, this argasid has been collected under the stones of colonies of marine birds as well as on its pelagic hosts. In this note, we report for the first time the presence of *O. maritimus* on the yellow-legged gull, *Larus cachinnans*, in Spain, giving some notes on the habitat and the parasitation rates.

RESULTS AND DISCUSSION

Our report is based on many larval and one nymphal specimen collected on Medes Islands (42°0'47" N, 3°13'15" E, NE of Spain), in a calcareous environment covered with herbaceous vegetation, composed mainly of *Hordeum* sp. No adult ticks were collected because rocks under and around the nests were not studied and because captures were made only during the daytime. *O. maritimus* has been reported from several islands in the Atlantic and Mediterranean seas : Ireland (Inishtearagth Island), Normandy (Chausey and St. Marcouf Islands), Brittany (several islands in Mor-

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bihan golf), southern France (Porquerolles, Port Cross and Riou Islands, Corsica), Italy, Tunis (Aegimures Islands), and Morocco (mediterranean and atlantic coasts) (BAILLY-CHOUMARA and PÉREZ, 1978; GUIGUEN 1982; GUIGUEN *et al.*, 1986; MANILLA, 1990). It commonly inhabits rocky, sparsely-vegetated islands and is collected mainly from under stones surrounding nesting sea birds.

Marine birds are the preferred hosts of *O. maritimus*. This species has been recorded from terns (*Sterna* spp.) in France, herring gull (*Larus a. argentus*) in Brittany, common murre (*Uria aalge albionis*), black-legged kittiwake (*Rissa t. tridactyla*), razorbill (*Alca torda islandica*), and shag (*Phalacrocorax a. aristotelis*) all in Ireland, and yellow-legged gulls in Italy (HOOGSTRAAL et alt., 1976; MANILLA, 1990.) However, one collection has been reported from nests of the little egret, *Egretta g. garzetta,* in Tunis.

Mortality of immature birds is commonly associated with the presence of *O. maritimus*, mainly because the presence of Soldado virus (Nairovirus of the Hughes serogroup) and Meaban virus (Flavivirus) (CONVERSE *et al.*, 1976; CHASTEL *et al.*, 1981; CHASTEL *et al.*, 1985); sometimes, the capture of hundreds and even thousands of specimens from immatures is also reported to be an factor inducing mortality. We collected the larval specimens observed on randomly selected immatures of *L. cachinnans*; sometimes a given bird was examined twice, with several days interval between the observations. The results are shown in Table I, with notes on the age of chicks and number of parasites collected. The larvae were collected from the metatarsus (interdigital membrane) of hosts aged 10 days at most, while parasites were recorded from legs and venter of hosts aged more than 10 days. Other authors (VERMEIL and REHEL, 1965) stated that immature ticks were observed mainly on the head of chicks of the common tern, *Sterna h. hirundo*.

In our data, the parasitation rate is about 94 % of the birds examined, with an average number of 3.21 ticks/chick (maximum : 9; minimum : 1). DANCHIN (1992) suggested that the age of the colony is an important factor in the rate of infestation of *R. tridactyla* by *Iodes uriae*, being

Date	Age (days)	Presence of ticks	No. of ticks/chick
April 28, 1992	5	+	NC
April 29, 1992	6	+	NC
May 5, 1992	11	+	9
May 13, 1992	19	+	3
May 17, 1992	22	+	1
	23	+	9
May 21, 1992	27	+	1
	26	+	2
	27	+	1
May 25, 1992	28	+	1
	37	+	3
	32	+	3
May 29, 1992	36	+	3
	35	+	5
	38	+	1
	41	+	6
	39	+	2+1n
	34	+	1
June 2, 1992	43	+	NC
	40	+	NC
	39	+	NC
	41	+	2
	41	+	NC
	42	+	NC
	45	+	NC
	39	+	6
	43	+	NC
	36	+	NC
	41	+	NC
	38	+	NC
	41	+	NC
	45	-	
	41	+	NC
	41	+	NC
	39	+	1
	40	-	

Table 1 : Capture data for *O. maritimus* larvae and one nymph (n) on chicks of *Larus cachinnans*, with number of ticks/chick recorded (NC : not collected).

increased with the age of kittiwake colony during the 30 years, after which it levelled off. The colony at Medes Islands is an important breeding area dating from thirty years ago, with approximately 3,000 nests (BALCELLS, 1964). On the other hand, transmission of parasites between colony birds is greatly enhanced when nests are located close to each other, as mentioned by WITTENBERGER and HUNT (1985). In our collecting area (Vall de Gregal at Medes Islands) an average number of 2.3 nests positioned at a distance of less than 4 meters was noticed (unpublished data). Hence, the *L. cachin-*

nans colony reported here fills the requirements for high parasitation rate, because of its long history and the close spatial relationships between nests. No data about virus infection or mortality of chicks were obtained during this study.

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