

# *flea*

## NEWS **67** *December 2010*



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Recipients are urged to contribute items of interest to the profession for inclusion herein, including: Flea research citations from journals that are not indexed in Agricola or Medline databases, Announcements and Requests for material, Contact information for a Directory of Siphonapterists (name, mailing address, email address, and areas of interest - Systematics, Ecology, Control, etc.), Abstracts of research planned or in progress, Book reviews, Biography, Hypotheses and Literature Reviews, and Anecdotes. Send to:

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### Announcement

The archives of Flea News, previously on the Entomological Society of America (ESA) networks, are being reorganized. The editors hope to establish a website where Flea News is accessible to non-ESA members, and we plan to keep you informed of developments. Any of the volumes in the archive are available through the editors.

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### Meetings

Southwestern Association of Naturalists Annual Meeting in Tyler, Texas on April 21-24, 2011.

2011 SOVE Annual Conference, Sep. 25-29th, 2011, Flagstaff, Arizona. <http://www.sove.org>

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### Featured Research

Darriès-Vallier, A. & Beaucournu, J.-C.- Contribution à l'étude de l'aire de répartition de *Xenopsylla cunicularis* Smit, 1957, ectoparasite spécifique du Lapin de garenne *Oryctolagus cuniculus* (Linné, 1758) (Lagomorpha) : nouvelles stations dans le sud-ouest de la France (Siphonaptera, Pulicidae). [Contribution to the knowledge of the distribution area of *Xenopsylla cunicularis* Smit, 1957 (Siphonaptera, Pulicidae), specific ectoparasite of the wild rabbit *Oryctolagus cuniculus* Linnaeus, 1758 (Lagomorpha): new records in South-West of France.]

*Bulletin de la Société entomologique de France*, **115** (2), 2010 : 159-165.

*Xenopsylla cunicularis* is a specific flea of the wild rabbit *Oryctolagus cuniculus* (L.), found in the extreme southwest of France. This flea could be used as a potential vector of a vaccine against myxomatosis, in order to vaccinate wild rabbit populations. For that reason, we wanted to identify the northern limit of its geographical range. New sites have been found in the Gers, Tarn and Haute-Garonne departments. Factors which play a role on *X. cunicularis*

geographical range are discussed.

Keywords. – Siphonaptera, Pulicidae, *Xenopsylla cunicularis*, natural site, geographical range, new records, France, myxomatosis, *Oryctolagus cuniculus*

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Ricci J.-C., Darriès-Vallier A., & Beaucournu J.-C.- Nouvelles stations d' *Odontopsyllus quirosi* (Gil Collado, 1934) en France; présence en Catalogne française d'hybrides de *O. q. quirosi* et de *O. q. episcopalis* (Siphonaptera, Ceratophyllidae). [New sites for *Odontopsyllus quirosi* in France; occurrence in French Catalogne of hybrids between *O. q. quirosi* and *O. q. episcopalis* (Siphonaptera, Ceratophyllidae).]

*Bulletin de la Société entomologique de France*, **115** (3), 2010 : 285-288.

New captures in France of *Odontopsyllus quirosi*, oioxene parasite of the European wild rabbit, lead us to reconsider the distribution of this flea species, its subspecies and hybrids, and hence, the importance of studying the parasites for the comprehension of their host history.

Keywords. – Siphonaptera, *Odontopsyllus quirosi*, European wild rabbit, *Oryctolagus cuniculus*, distribution, hybrid

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Abstracts of flea-related presentations from the American Society of Mammalogists,  
90th Annual conference, June 9-16, 2010.

Nathanael L. Brown<sup>1</sup> and David S. Jachowski<sup>2</sup>. Mitigating plague risk in prairie dogs: A systemic approach to flea control. (pg. 69)

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Sylvatic plague continues to be a serious threat to prairie dogs (*Cynomys* sp.) and to the recovery of their specialized predator, the black-footed ferret (*Mustela nigripes*). Current management efforts have focused on application of Deltamethrin dust to control flea populations and lower the incidence of epizootic plague outbreaks among prairie dog populations. However, large-scale application of Deltamethrin is costly and is potentially detrimental to non-target arthropods. Our research focuses on evaluating a new systemic approach to flea control through application of a bait containing the chitin inhibitor, Imidacloprid. We applied a grain bait containing Imidacloprid to selected colonies of black-tailed prairie dogs *Cynomys ludovicianus* and Utah prairie dogs *Cynomys parvidens*. In comparisons of paired treated and untreated areas, we observed a significant reduction in flea prevalence and abundance in several treatment populations of both the Utah and black-tailed prairie dogs. Further investigation of the timing, frequency, and quantity of bait application will be conducted to determine if biologically significant reductions.

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Joseph R. Burger<sup>1,2</sup>, Luis A. Ebensperger<sup>3</sup> and Loren D. Hayes<sup>2</sup>. Exotic ectoparasite decreases direct fitness but is not a cost of group living in the South American rodent *Octodon degus*. (pg. 50)

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Social animals are susceptible to high infection of contagious parasites due to increased conspecific interaction; exotic parasites are known to have adverse fitness consequences on native hosts. We examined the influence of social group size on exotic ectoparasite loads, and adult infection levels on direct reproductive fitness and offspring survival in the plurally breeding rodent, *Octodon degus* in central Chile. Neither total group size nor number of females per group predicted the abundance of either exotic flea species documented. Per capita direct fitness was negatively correlated with mean abundance of the flea, *Leptopsylla segnis* but not mean abundance of the flea, *Xenopsylla cheopis*. On adult degus, *X. cheopis* abundance was 3-folds greater than *L. segnis* but had no significant effect on per capita direct fitness. *L. segnis* abundance was negatively correlated with peak body mass in adult females during pregnancy. Adult ectoparasite loads did not predict offspring survival. So our results suggest that the abundance of *L. segnis* has deleterious effects on adult females but is not a cost of sociality. Investigation of the prospects of the exotic flea *L. segnis* as a vector for a deleterious pathogen, negatively impacting native populations of *Octodon degus* is warranted.

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Sean P. Maher and Robert M. Timm. 2010. Patterns of flea diversity along an elevational gradient. (pg. 49)

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Analyses of host-parasite relationships have focused primarily on broad scale patterns, or on more local patterns such as variation in parasite load and the diversity of parasites on a single host. The patterns of host-parasite relationships at landscape scales, however, are poorly known, even where hosts are well studied. We conducted a survey of hosts and fleas over a 1000 m elevational gradient in northern Colorado, at sites in and around Rocky Mountain National Park. We found that host species richness (the number of species) was related positively to flea species richness, but that flea community structure (incorporating richness, evenness, and species identity) was independent of the host community. Flea species richness was positively associated with elevation, and the community was positively associated with elevation. While some flea species exhibited host specificity, most flea species were found on multiple host species. Our data suggest that patterns of host-parasite relationships are scale-dependent, and that host richness impacts flea species richness. However, local environments likely play a significant role in determining the make-up and community of parasites.

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Pigage<sup>1</sup>, Helen K., Jon C. Pigage<sup>2</sup>, and John R. Demboski<sup>3</sup>. Preliminary survey of Siphonaptera on 9 species of chipmunks (*Tamias* spp.) from 8 western states. (pg. 112)

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One hundred thirty-one Siphonaptera representing 10 species were examined from 396 chipmunks in the collection of the Denver Museum of Nature & Science. These included 13 *Tamias amoenas*, 7 *T. canipes*, 24 *T. cineriacollis*, 35 *T. dorsalis*, 198 *T. minimus*, 5 *T. panamintinus*, 41 *T. quadrivittatus*, 11 *T. rufus* and 62 *T. umbrinus* from 8 states. *Tamias minimus* was the most abundant chipmunk, had the widest distribution, and harbored the greatest number of flea species (6); the infestation rate was 25.25%. Three other species of chipmunks (*T. dorsalis*, *T. quadrivittatus* and *T. umbrinus*) had more than 1 species of flea, 2, 4 and 2 respectively. *Tamias quadrivittatus* exhibited the highest infestation rate of all the chipmunks, 39.02%. All species of chipmunks except for *T. panamintinus* were infested with *Eumolpianus eumolpi*. This flea is commonly found on chipmunks and occasionally other squirrels and ranges from western North America northeastward into the Great Lakes region.

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### **Siphonaptera Literature - June 2010-December 2010**

Note: please check all citations for accuracy. Some citations list authors in incorrect order, or were published before, or after, the above span of time.

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## Obituaries

Editor's note: R.E. Elbel's obituary was published in Flea News 66 (June 2010). The following photographs of him accompany that obituary.



Figure 1. Bob Elbel (second from left) with his family on holiday on the Pacific Northwest (Oregon, U.S.) coast (December 1992).

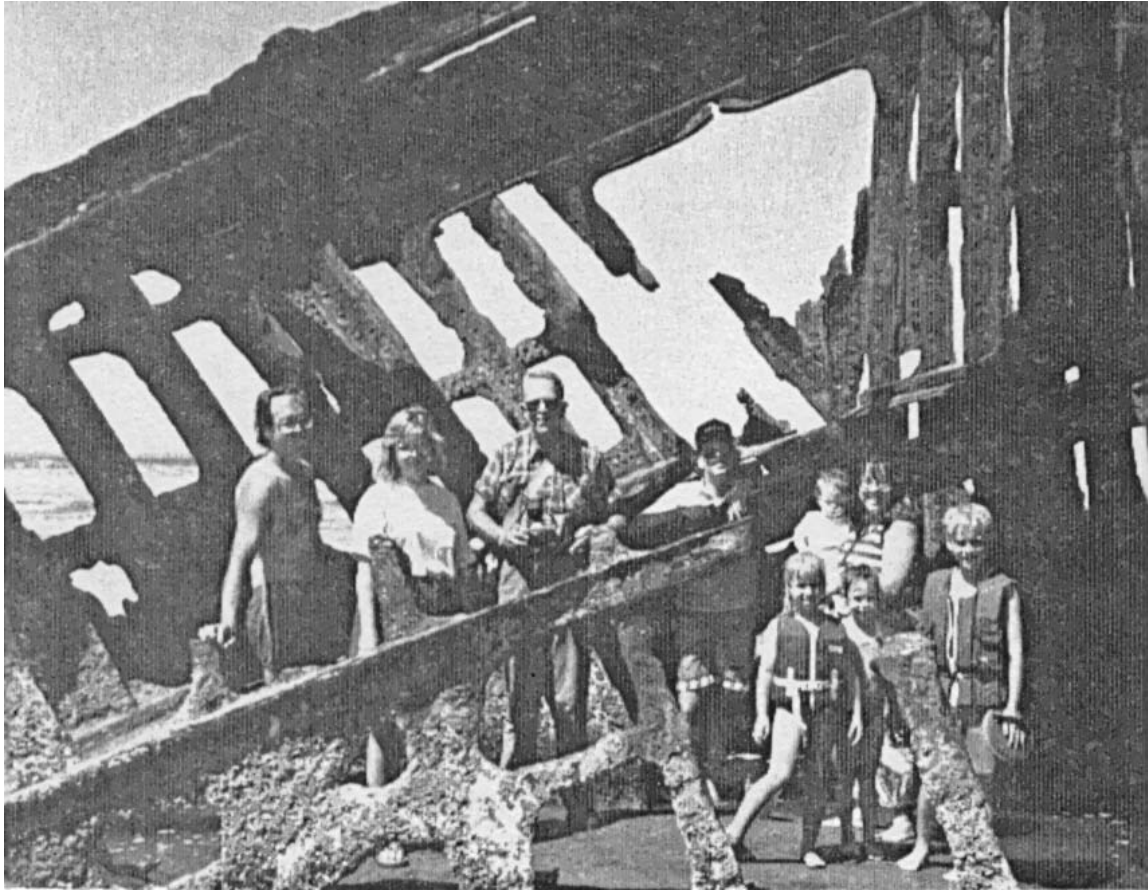


Figure 2. Bob Elbel (third from left) examining a shipwreck on the Pacific Northwest coast (December 1992).

