TOPIC (choose ONE of these 10 topics; erase the rest):
10) Arthropod-borne diseases of veterinary importance

APPROACH (choose ONE of these 4 approaches; erase the rest):
2. Vector biology and eco-epidemiology

Detection of *Rickettsia* spp. in ectoparasites of cricetid rodents from Gran La Plata, Buenos Aires Province, Argentina

Keywords: arthropod-borne diseases; veterinary importance; vector biology; eco-epidemiology; *Rickettsia* spp; ectoparasites; rodents.

MELIS, Mauricio E.[1]; BALCAZAR, Darío[1]; NAVA, Santiago[2] & LARESCHI, Marcela[1]

[1] Laboratorio de Ectoparásitos, Centro de Estudios Parasitológicos y de Vectores (CEPAVE) (CONICET-UNLP), La Plata, Buenos Aires, Argentina.
[2] Instituto Nacional de Tecnología Agropecuaria, Estación Experimental Agropecuaria Rafaela, Santa Fe. Argentina.
E-mail: mmelis@cepave.edu.ar

Rickettsia spp. are obligate intracellular Gram-negative bacteria, worldwide distributed. The genus includes more than 20 species, many of them causing a group of diseases in humans and animals known as Rickettsiosis, usually transmitted by arthropod vectors. Although in Argentina Rickettsiosis have a low prevalence, clinical cases have been reported in Gran La Plata area. Rodents are usual hosts of ectoparasites, some of which have been involved in the enzootic life cycle of rickettsial species. The aim of this work was to detect bacteria of the genus *Rickettsia* in fleas, mites and ticks associated with cricetids in Gran La Plata. Rodent samplings were carried out in three localities between 2017-2019 by using Sherman-like traps. Captured rodents were anesthetized with ether and sacrificed by cervical dislocation. Ectoparasites were collected in field by brushing the furs of the rodents and stored in alcohol 96% until further molecular studies. DNA was extracted with phenol-chloroform method from individual ticks and from a subsample of mites organized in pools each one of five specimens. For fleas, individual DNA extraction was carried out with Chelex® after an incision at abdominal level to preserve the exoskeleton for further identification. For taxonomic identification at optic microscope, fleas were cleared in 10% KOH and mounted in Canada Balsam and mites were cleared in lactophenol and mounted in Hoyer's medium. Ticks were identified under stereoscopic binocular microscope. A conventional PCR targeting the *gltA* gene (citrate synthase) was performed to detect *Rickettsia* spp. Rodents were identified as: *Oxymycterus rufus* (n=115)*, Akodon azarae* (n=106), *Oligoryzomys flavescens* (n=57); *Scapteromys aquaticus* (n=33); *O. nigripes* (n=12) and *Deltamys kempi* (n=3). A total of 739 ectoparasites collected were examined for the presence of *Rickettsia*: 87,2% were mites (Mesostigmata), 11% fleas (Siphonaptera) and 1,8% ticks (Ixodida). Mites belonged to the family Laelapidae (n=495) and Macronyssidae (n=150), fleas to Rhopalopsyllidae (n=79) and Stephanocircidae (N=2), and ticks to Ixodidae (n=13). PCR amplification of *gltA* showed that from the 81 analyzed fleas, 15 were positive to the presence of *Rickettsia* (18%) (14 of the genus *Polygenis*, Rhopalopsyllidae, and 1 *Craneopsylla*, Stephanocircidae); 23% of the ticks (3 nymphs of *Ixodes*) were positive, while all mites were negative to the presence of *Rickettsia*. This is the first detection of the genus *Rickettsia* in fleas and ticks of cricetid rodents from Gran La Plata. Prevalence of *Rickettsia* among these ectoparasites suggests that they could have a significant role in the enzootic cycle of these bacteria and their importance may be underestimated. Further studies are

needed to the specific identification of *Rickettsia* and to examine vectorial capacity and competence of these parasites.