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RODENT DIE-OFF - BOLIVIA (04)

A ProMED-mail post
<<http://www.promedmail.org>>
ProMED-mail, a program of the
International Society for Infectious Diseases
<<http://www.isid.org>>

[1]
Date: 2 Dec 2002
From: Pablo M Beldomenico <pbeldome@hotmail.com>

I do not have my own data on incidence of rodentborne disease in humans, but I can contribute some data on sigmodontines. Our group has been trapping mice in north western Argentina, Salta province. The species we trapped belonged mainly to the genus *Akodon* (*spegazzini*, *simulator*, and others), but we also trapped *Oryzomys legatus*, *Oligoryzomys chacoensis*, *Calomys venustus*, and *Oxymycterus paramensis*.

Trapping was scarce in spring, when animals were principally adults; peaked in summer with a majority of juveniles; and slightly declined during fall, when mainly young adults were captured.

Only 0.5 per cent of the mice died in the trap. We attributed these deaths to hyperthermia. In the rest we did not find any apparent disease, only external parasites including fleas, mites, lice, and ticks.

In a few mice, we found botflies (*Cuterebra* spp.) and *Tunga penetrans*. All of them tested negative for **hantavirus**. Around 40 per cent were *Leptospira* seropositive, but kidney cultures were all negative.

Other agents for which they were tested included *Rickettsia rickettsii*, *Anaplasma phagocytophila*, and *Ehrlichia canis*. Antibodies against the first were found in 15 per cent of the mice in summer and in 51 per cent in fall.

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[2]
Date: 1 Dec 2002
From: Kenneth L Gage <klg0@cdc.gov>

Various species of Akodon (I'm not sure what the original author is including when she says Akodontines) and Oryzomys (some include Oligoryzomys as a subgenus of Oryzomys) are considered to be the primary sylvatic reservoirs in various regions of South America. Oryzomys also has been reported to be infected in Bolivia. With the exception of some more recent work in Brazil (see Almeida and colleagues 1980s, 1990s), most of the South American references are quite dated and should be viewed with caution.

Nevertheless, I think the evidence for the involvement of Oryzomys in sylvatic plague cycles in some regions of South America (Brazil especially) is pretty solid. Also, Dr Emmons was trapping rice rats when she came down with plague in 1989. If you need a description of rodents reported to be involved in plague foci in different regions of the world, see the chapter I wrote for Topley and Wilson's Microbiology and Microbial Infections - Bacterial Infections (volume 3), which is on the web and can be downloaded from Norm Gratz's chapter from the WHO Plague Manual (go to the World Health Organization site and do search for plague; the manual should pop up. It's downloadable as PDF files).

Epizootics involving Oryzomys have been noted in Brazil (De la Barrera, 1960). With the possible exception of Brazil, it's difficult to find hard data for plague foci in South America. In general, I think it's safe to say that these rodents are involved in sylvatic plague cycles and that severe epizootics are likely to occur among susceptible populations. This will be especially true when populations of these rodents increase to high numbers for one reason or another.

Severe epizootic equals massive die-off. Oryzomys, like Sigmodon and many other species, can experience irruptions followed by rapid declines in population densities. These might be due to starvation, stress, other diseases, etc. Plague could cause a huge die-off.

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[This would seem to close this thread. Die-offs within a rodent population may be caused by plague as well as other causes, but so far no infectious disease or toxin has been related to this rodent die-off. Unless other information becomes available, this thread is cut. - Mod.TG]

[see also:
Rodent die-off - Bolivia (03) [20021130.5932](#)
Rodent die-off - Bolivia (02) [20021128.5915](#)
Rodent die-off - Bolivia: RFI [20021119.5848](#)]

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