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Rift Valley Fever in Ruminants, Republic of Comoros, 2009

To the Editor: Rift Valley fever (RVF) is caused by a *Phlebovirus* (family *Bunyaviridae*) transmitted by a wide range of mosquitoes (1). This zoonotic disease is present in Africa, the Middle East, and Madagascar. Infections by RVF virus (RVFV) in ruminants cause massive abortions in livestock and high death rates in young animals, which result in major economic consequences. Humans are infected by mosquito bites, contact, or inhalation of aerosols. RVF is frequently unapparent or mild for humans, inducing an influenza-like illness that occasionally leads to more serious complications such as hemorrhage, meningoencephalitis, retinopathy, or even death (2).

Cattle are socially important in Republic of Comoros because massive slaughtering occurs during traditional wedding ceremonies known as "Grands Mariages," especially on the main island, Grande Comore. Because of low meat production (only 20,000 head of local cattle), a large number of live ruminants enter Grande Comore from Anjouan and Mohéli, the other 2 islands of the Republic, from Madagascar and Tanzania without quarantine or any other preliminary veterinary control.

We report results from a serosurvey of the ruminant populations on the 3 islands of the Republic of Comoros during the 2009 dry season (April–August). A total of 488 blood

samples were collected from randomly selected sheep, goats, and horned cattle and sent to laboratory facilities in Mayotte to be tested by an RVFV immunoglobulin (Ig) G competitive ELISA (3). Fifty IgG RVFV-negative and -positive serum samples were randomly selected for confirmation by a seroneutralization assay using the reference method described in the World Organisation for Animal Health manual (4,5).

Of the 488 serum samples tested, 160 were positive for RVFV, for a seroprevalence of 32.8% (95% confidence interval [CI] 28.6%–36.9%). The 3 species were positive for IgG, with prevalence of 30.6% (95% CI 24.2%–37.1%) for cattle, 33.5% (95% CI 27.6%–39.3%) for goats, and 39.0% (95% CI 24.1%–54.0%) for sheep. Using a χ^2 test, we found no statistically significant differences regarding species and gender, but more adults than young animals were seropositive for RVFV IgG ($p < 0.001$). Significant differences in RVFV seroprevalence were found between islands ($p < 0.005$), especially between Anjouan (26.6%; 95% CI 20.0%–33.3%) and Mohéli (45.8%; 95% CI 31.7%–59.9%); $p = 0.011$). Of the 50 samples tested in seroneutralization, 31/31 (100%) of RVFV IgG ELISA-positive serum samples were confirmed as positive for RVFV (Table).

The serologic evidence of RVFV circulation in the ruminant population of the Republic of Comoros is in accordance with the epidemiologic situation described in other countries in the area. Actually, the serosurvey was implemented after the RVF outbreaks

reported in several countries in eastern Africa in 2007 during El Niño rains (6). In August 2007, RVFV was detected in a young person from Comoros, and indigenous transmission of RVFV in Mayotte was confirmed in 2008 (7). RVF outbreaks were also reported in Madagascar during the 2008 and 2009 rainy seasons (January–May 2008 and November–March 2009) (8). To our knowledge, no circulation of RVFV in Republic of Comoros has been reported despite frequent legal and illegal movements of populations and goods between Republic of Comoros and eastern Africa, Mayotte, Madagascar, and the others islands of the area. With 1 of 3 ruminants having been in contact with RVFV, our results suggest that the human population in these islands have likely been widely exposed to this virus. However, several questions remain unanswered: Was RVFV recently introduced in the country? Has the virus settled down in a local reservoir for years without major clinical consequences before reemerging thanks to favorable conditions? Actually, no massive abortions in livestock or high death rate in young animals have been notified so far by the Comorian Sanitary Services. Therefore, the origin of infection is presently unknown because animals could have been infected on the island or in another country from where they have been imported.

Because live ruminants have been imported from neighboring countries for 20 years, the risk of introducing new diseases in the country is high. Despite efforts of the Comorian sanitary services, the Republic of Comoros is particularly vulnerable to

Table. Cross-sectional Rift Valley fever seroprevalence in sheep, goats, and horned cattle, Republic of Comoros, April–August 2009*

| Animal | Positive IgG results by animal age, % | Positive IgG results by sex, % | No. animals positive by IgG/no. tested (%) | | | | Animals with positive IgG results confirmed by SN |
|---------------|---------------------------------------|--------------------------------|--|---------------|--------------|----------------|---|
| | | | Grande Comore | Anjouan | Mohéli | Total | |
| Sheep | Y, 25.0; A, 42.4 | M, 12.5; F, 45.5 | 3/5 (60.0) | 9/26 (34.6) | 4/10 (40.0) | 16/41 (39.0) | 2/2 |
| Goats | Y, 6.1; A, 43.2 | M, 24.7; F, 37.4 | 55/139 (39.6) | 20/97 (20.6) | 9/15 (60.0) | 84/251 (33.5) | 17/17 |
| Horned cattle | Y, 15.1; A, 38.5 | M, 29.1; F, 31.2 | 35/127 (27.6) | 16/46 (34.8) | 9/23 (39.1) | 60/196 (30.6) | 12/12 |
| Total | Y, 11.4; A, 41.1 | M, 25.7; F, 35.3 | 93/271 (34.3) | 45/169 (26.6) | 22/48 (45.8) | 160/488 (32.8) | 31/31 |

*Serum positivity was established when titers were $>1:10$. Ig, immunoglobulin; SN, seroneutralization; Y, young (before reproductive age); A, adult.

pathogens intrusion. Blackleg (1970, 1995) and the contagious ecthyma (1999) were probably introduced into the country by live ruminants imported from Madagascar (9). Since 2002, importation of live animals from Tanzania has been common, increasing the risk of introducing continental pathogens or vectors as illustrated with outbreaks of East Coast fever in 2003 and 2004 in Grande Comore (10). RVFV circulation presented in this study is another example of the exposure of the Republic of Comoros to emerging pathogens and potentially bears major consequences for the local economy and for public health. The improvement of the Comorian veterinary services and the setting up of surveillance programs are essential to limit the risk of introducing devastating diseases in the area.

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Yersinia pestis in Small Rodents, Mongolia

To the Editor: Plague is known to be endemic in several areas of Mongolia, but transmission to humans seems to play only a minor role because the number of recognized cases is relatively low (Figure) (1). The first human cases in Mongolia were reported to the World Health Organization in 1980, and ≤ 20 human cases have occurred each year since then (2). However, human plague was first reported in 1897 (3), such infections have been documented since the 1940s, and *Yersinia pestis* can be found in many provinces of Mongolia (Figure; T. Damindorj, pers. comm.) (3,4).

The most common source of