

Unknown, *Saint Lazarus*, 1484. Fresco, dry-powder pigment and plaster. Hermitage of San Alberto di Butrio, Panzini, Italy. Photograph provided by Paolo Mazzarello. Used with permission.

Lazarus and the Dogs—from Healing Symbol to Zoonotic Risk

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This month's cover image for *Emerging Infectious Diseases* reproduces a late 15th Century fresco preserved at the Hermitage of San Alberto di Butrio, a medieval monastic complex in northern Italy. The work depicts Lazarus, described in the Gospel of Luke (Luke 16:19–31), lying with ulcerative skin lesions while 2 dogs approach to lick his wounds (Figure). Although the lesions have sometimes been interpreted as manifestations of leprosy or other disease, the biblical text does not specify a diagnosis, and any retrospective medical interpretation remains speculative. Other infectious possibilities suggested by the disseminated eruption include varicella and orthopoxvirus infections like smallpox. However, the apparent absence of facial lesions would be atypical of the classic smallpox exanthem

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and further limits any diagnosis on the basis of the image alone.

Although little is known about the anonymous artist, the fresco belongs to the rich tradition of late medieval religious wall painting, in which biblical narratives were used to convey moral and spiritual lessons to pilgrims and worshippers. The scene presents a striking image of suffering met with an unexpected form of care. The animals' gestures evoke compassion and instinctive tending, reflecting a longstanding belief that nature, and specifically canine saliva, might offer healing where human aid is absent. At once tender and evocative, the image captures an enduring tension between perceived therapeutic benefit and the ambiguous biologic reality of animal contact with injured tissue.

This symbolic motif persisted across centuries, reappearing in literary and observational accounts of animal behavior. In his novel, *The Call of the Wild* (*1*), Jack London describes a dog tending to another's wounds with what he calls a "doctor trait," reinforcing the notion that animals might instinctively participate in healing. Many species instinctively clean and care for wounds by licking injured areas of their bodies (*2*), a behavior that combines mechanical cleansing with the application of saliva. Experimental studies have shown that wounds accessible to licking might heal faster than those that are not (*3*), suggesting a biologically plausible basis for that longstanding belief. Saliva contains enzymes, such as lysozyme and lactoferrin, along with growth factors that could contribute to antimicrobial activity and tissue repair (*4*). Those findings lend partial support to historical interpretations, yet they also invite closer scrutiny of the balance between potential benefit and risk.

Despite enduring representations of healing, modern microbiology reveals a more complex and potentially hazardous reality. Canine saliva harbors a diverse polymicrobial flora, including zoonotic pathogens capable of causing severe human infection (*5*). Among those, the bacterium *Capnocytophaga canimorsus* is of particular clinical concern because it can, although rarely, lead to fulminant sepsis, especially in immunocompromised persons and those with underlying conditions (*6*). Although such infections remain uncommon relative to the widespread human exposure to dogs, case reports have demonstrated that serious disease can occasionally occur even after apparently minor exposures, including licking of broken skin (*6*). *Pasteurella multocida*, another common commensal organism in the oral cavities of dogs, has been associated with soft tissue infections in humans whose wounds are contaminated by canine saliva (*7*). In addition, canine saliva contains a range of aerobic and anaerobic bacteria that might complicate wound healing rather than promote it. Thus, although licking can provide superficial cleansing, it also introduces microbial risks that are inconsistent with modern standards of antiseptic wound care.

The enduring narrative of dogs as natural healers, from Lazarus to Jack London, illustrates how cultural observation can precede scientific understanding. The French proverb "Le meilleur médecin, c'est la bouche du chien" (The best doctor is the dog's mouth), as discussed by Joseph Alpert (*8*), encapsulates the belief in the healing power of canine saliva. Benjamine Hart and Karen Powell (*9*) demonstrated that dog saliva exhibits bactericidal activity against *Escherichia coli* and *Streptococcus canis*, lending some biological plausibility to that traditional view. Such beliefs likely originated in historical contexts, such as the Middle Ages, when standards of personal hygiene differed substantially from those of modern times (*9*,*10*). However, as emphasized by Alpert (*8*), those properties do not justify the use of dog saliva as a substitute for appropriate medical wound care. Excessive licking can delay healing, exacerbate tissue damage, and increase the risk for infection.

The fresco of Lazarus thus serves not only as a powerful visual metaphor of compassion and neglect but also as a reminder of the evolving relationship between observation and evidence in medicine. What was once interpreted as a natural form of care is now understood within a framework of microbiological risk. That shift underscores the value of critically reexamining traditional beliefs in light of modern scientific knowledge and reinforces the need for evidence-based approaches to even the most seemingly intuitive practices.



Figure. Unknown, *Saint Lazarus*, 1484 [detail]. Close-up of dogs licking lesions on the subject's legs. Fresco, dry-powder pigment and plaster. Hermitage of San Alberto di Butrio, Panzini, Italy. Photograph provided by Paolo Mazzarello. Used with permission.

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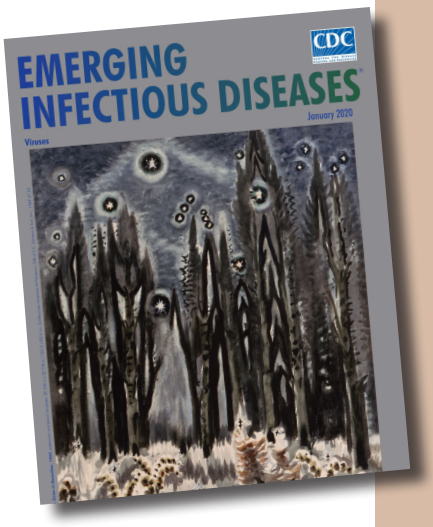
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etymologia revisited

Picobirnavirus
[pi-ko-burr′nə-vi″rəs]

Picobirnavirus, the recently recognized sole genus in the family *Picobirnaviridae*, is a small (*Pico*, Spanish for small), bisegmented (*bi*, Latin for two), double-stranded RNA virus. Picobirnaviruses were initially considered to be birna-like viruses, and the name was derived from birnavirus (bisegmented RNA), but the virions are much smaller (diameter 35 nm vs. 65 nm).

Picobirnaviruses are reported in gastroenteric and respiratory infections. These infections were first described in humans and black-footed pigmy rice rats in 1988. Thereafter, these infections have been reported in feces and intestinal contents from a wide variety of mammals with or without diarrhea, and in birds and reptiles worldwide.



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