



## Letters to the Editor

## The heroic microbe



## To the Editor:

We read with interest the article by Perciaccante and Coralli<sup>1</sup> on a probable viral infection reported in the animated comedy *The Sword in the Stone* (1963). The authors supposed that Madam Mim might have contracted measles during the wizard's duel with Merlin. In their opinion, the high incidence of this disease in the United States during 1956-1960 could have influenced screenwriters to choose measles as the contagious illness that defeats the evil witch in the animated movie.<sup>1</sup> Actually, as the authors mention,<sup>1</sup> in the film it is a sole fictional germ, *malignalitaloptereosis*, that causes an apparently benign infection in the sorceress (Merlin says: "Oh, it's not too serious, madam. Ah, you should recover in a few weeks and be as good"), whereas in the homonymous novel, published by Terence Hanbury White (1906-1964) in 1938, several microbes contribute to killing and destroying the anthropophagous Madam Mim. The English novelist wrote in chapter 6: "The ingenious magician [Merlin] had turned himself successively into the microbes, not yet discovered, of hiccoughs, scarlet fever, mumps, whopping cough, measles and heat spots, and from a complication of all these complaints the infamous Madam Mim had immediately expired."<sup>2</sup> In his book, White cites several infectious diseases that were widespread in 1930s, some etiological agents of which were not yet isolated. Indeed, the writer generically used the term *microbes*. Although the original novel also listed measles among the infections that killed the witch, Disney screenwriters preferred to use a fictional and innocuous germ in the movie. This is even clearer if you consider that the animators explicitly cite another contagious illness in the film: Wart becomes Kay's squire instead of Hobbs, who contracted mumps. This infectious disease plays a decisive role in the movie. As a result of Hobbs being ill with mumps, Wart participates in the tournament in London at which he pulls the legendary sword from the anvil and is crowned King Arthur. If the screenwriters had wanted to refer to measles, they could have cited the infection as they did for mumps. Therefore, in our opinion, *malignalitaloptereosis*, one of many fictional germs created by filmmakers during the past decades,<sup>3</sup> should continue to be considered the heroic microbe that defeated the evil witch.

## References

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2. White TH. *The sword in the stone*. London, England: Collins; 1938.
3. Riva MA, Benedetti M, Cesana G. Pandemic fear and literature: observations from Jack London's *The Scarlet Plague*. *Emerg Infect Dis* 2014;20:1753-7.

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## The heroic fictional microbe and the real heroic vaccine



## To the Editor:

We thank Riva and Valsecchi for their comments.<sup>1</sup> They complete the analysis of the animated comedy *The Sword in the Stone* by Disney and add interesting details from the homonymous novel by Terence Hanbury White. They dispute our presumed diagnosis of measles, but we think they did not fully understand the message of our article. We established that the germ defeating Madam Mim was a fictional germ. Based on signs and symptoms, we speculated that the germ caused an exanthematous disease like measles. We found that in 1963 (the same year of the animated comedy's first release), John Franklin Enders developed a measles vaccine.<sup>2</sup> The *malignalitaloptereosis* is a benign germ, and indeed Madam Mim was defeated, but she didn't die. We agree with the screenwriters' choice to use a nonlethal germ because it is an animated comedy mainly intended for an audience of children.

The comments by Riva and Valsecchi confirm and validate that an animated comedy may conceal important information about medical knowledge and the social influence of diseases. Regardless of whether the germ was benign or lethal, Merlin used it to defeat Madam Mim, symbolically highlighting the danger of the infectious disease.

Our article was intended to provide a starting point to reflect on the utility of vaccines. Indeed, a vaccine against *malignalitaloptereosis* could have saved Madam Mim. Vaccinations are a very delicate topic in many countries, including Italy. In 1998, a case series by Wakefield et al<sup>3</sup> suggested that the measles, mumps, and rubella vaccine may predispose to behavioral regression and pervasive developmental disorder in children. The article was retracted,<sup>4</sup> yet it received