

International connections could boost parasites, study suggests

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Increased international links could lead to more virulent and dangerous parasites, a study published Wednesday suggests.

The outcome is a function of natural selection, said Geoffrey Wild, a mathematician who specializes in biology at the University of Western Ontario in London, Ont. He, along with two evolutionary biologists at universities in the United Kingdom, published their paper in Nature.

The authors studied the relationship between how aggressive parasites are and how closely they are connected to their hosts.

"Our results show that an increase in parasite dispersal rate leads to selection for increased growth and, hence, to higher virulence," they concluded. Virulence refers to the damage the parasite does to the host.

"The findings also suggest that as human activity makes the world more connected, natural selection will favour more virulent and dangerous parasites."

Wild said the study is not applicable to any specific disease, such as swine flu, but provides "a quick and dirty way of coming up with predictions for future parasite evolution."

Using a mathematical model, the authors set out to throw light on a scientific controversy, the relationship between the virulence of parasites and the distance they disperse. It's not about the spread of a parasite between members of a community, but the spread between communities.

The other authors are Andy Gardner of Institute of Evolutionary Biology at the University of Edinburgh and Stuart A. West from the Department of Zoology at the University of Oxford.

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