

Interactive comment on “A probe into the different fates of locust swarms in the plains of North America and East Asia” by G. Yu et al.

Anonymous Referee #2

Received and published: 26 November 2012

This paper raises the interesting question of why it is that, whereas locust plagues have virtually disappeared from the North American Plains (NAP) they are still a prevalent and serious hazard in the Eastern Asian Plains (EAP). Why should this be when both areas had similar levels of plagues in the mid to late 19th century?

They consider the possibility that the difference might lie in the more extensive early use of pesticides in the NAP – but wonder whether the amounts in use during the 19th century (before the development of organophosphates and later, more toxic, chemicals would really have been sufficient to exterminate the problem locusts of the NAP.

Accordingly they consider alternative causes and, in particular, investigate whether the different fates might be due to differences in the way that climate has changed in the two areas over the past 150 years.

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They provide a broad swathe of evidence that this is indeed the case: lower winter temperatures with higher summer temperatures, or higher annual precipitations were much more likely to occur in NAP than in EAP. These conditions are the least favourable for locust plagues. Conversely higher winter and spring-summer temperatures, with drier springs and summers, were much more likely to occur in EAP than in NAP. These conditions are more normally associated with locust outbreaks.

The authors use these differences in observed climate patterns between the two areas to suggest that the climatic conditions in the NAP during the late 19th and early 20th centuries were sufficiently unfavourable to drive the locust populations there to such low levels that the combined effects of changes in land use, and the use of [albeit rudimentary] insecticides was sufficient to lead to the demise of the problem locusts.

This paper should certainly be published, though the authors should perhaps be more circumspect in their conclusions. On the one hand the analysis of the meteorological data seems to be thorough and convincing: on the other, however, the evidence is still largely circumstantial and the authors might, accordingly, like to discuss what other factors might have been responsible for the different fates.

As a final note, I did remark in an earlier discussion of this paper, that the manuscript needs to be severely edited by a person who both has English as “mother tongue” and has sufficient fluency with the subject to make sense of the paper. At present, through no fault of the Chinese authors, the quality of the paper is severely prejudiced by the standard of the language.

Interactive comment on Biogeosciences Discuss., 9, 11179, 2012.

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