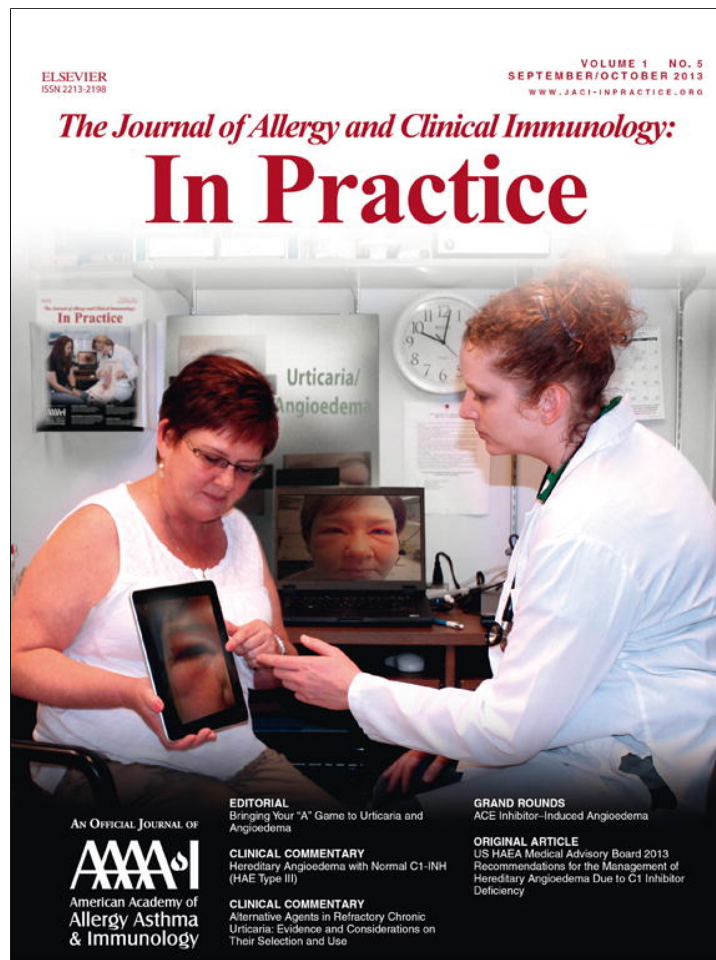




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Correspondence and Replies

Re: Integrated research on the association between climate change and *Bjerkandera* allergy

TO THE EDITOR:

Barnes et al¹ reviewed the effects of climate change and environment on respiratory and allergic disease and emphasized that the approach of allergists and/or environmental physicians to global climate change should be as integrated and anticipatory as possible rather than solely reactionary. Recently, *Bjerkandera adusta* has attracted attention because of its potential role in enhancing the severity of allergic fungal cough by sensitization to this fungus.² *B. adusta* is generally classified as a wood decay basidiomycetous fungus; however, it actually is a mushroom spore that grows mostly in fields. The frequent detection of this fungus in both indoor and outdoor samples in France was previously reported.³ Furthermore, yellow sand dust directly sampled with a bioaerosol sampler, at a height of 400 m, by using a tethered balloon over Noto peninsula, Suzu City, Ishikawa prefecture, was reported to contain *B. adusta*.⁴ Yellow sand dust with the long-range transport of atmospheric pollutants that originated from the Taklamakan and Gobi Deserts was shown to reach not only Asia but also North America and Europe.⁵ Therefore, when discussing the influence of yellow sand dust on human health,⁶ we should not overlook exposure to particulate matter less than 2.5 µm in diameter as an air pollutant⁷ or mushroom spores as fungal antigens.

In the report by Barnes et al,¹ indoor and outdoor aspects of human responses to climate change were widely reviewed. However, the question remains regarding how best to deal with such mushroom spores to prevent sensitization to this fungus. Are air-filter systems recommended to reduce mushroom spores in the indoor environment? Should we open or shut the windows? As noted by Barnes et al,¹ integrated research, which would not be possible by a solely reactionary methodology, may contribute to the protection of human health against *Bjerkandera* allergy enhanced by climate change.

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REPLY:

The information in the correspondence from Ogawa et al¹ is a good illustration of the impact that changing environmental conditions and long-distance transport of allergenic organisms can have on allergic disease. Long-distance transport of organisms in the atmosphere falls under the general category of aerobiology, an area of strong interest for many allergists. Ogawa et al points to the results of long-distance transport of a basidiospore in dust that likely originated from desert areas of China or even Africa.^{2,3} Due to space limitations and significance considerations, we did not include long-distance transport and increasing desertification in the climate change article.⁴ Yet, these topics do deserve some attention as Ogawa et al pointed out. For example, a more familiar long-distance transport event that impacts allergy practice in large areas of the central United States is the transport of cedar pollen from the Edwards Plateau in Texas to areas as far as Kansas City, Missouri, or London, Ontario, Canada. This transport is documented during the cedar pollen season on a daily forecast at <http://pollen.utulsa.edu/current.html>. In areas where daily pollen levels are forecasted to be high, sensitive individuals are advised to limit outdoor activities.⁵ Moreover, with increasing northern movement in the US floristic zones, these cedar trees are expanding their territory, and this pollen may see even longer-ranging dispersal on strong winter storm fronts. One caveat to long-distance transport is that response to allergens is, at least in part, dose related. So detectable amounts of allergens may have little clinical impact if they are not also present in sufficient quantity, whatever that may be for a given organism. Conversely, plant species that are transported and reproduce where they settle have the potential to alter their new environment and may need