Fungi Geneticist Warns of Sick Building Syndrome

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WASHINGTON, Oct. 29 -- It was the smell of her Hurricane Katrina-damaged home that transformed fungi geneticist Joan Bennett, Ph.D., from a sick building syndrome skeptic into a believer.

Dr. Bennett, who had spent years studying the genetics of fungi, was so cynical about claims of sick buildings that she had even testified as an expert witness for insurance companies, heaping scorn on homeowners' claims about pathological mold and fungi.

But when Dr. Bennett stepped into her New Orleans home after the hurricane-driven floodwaters had receded from the brick and plaster structure, her dubious shell began to crack.

"The overwhelming obnoxiousness of the odor and of the enveloping air made me start to believe in something I never had before -- sick building syndrome," she said at the Interscience Conference on Antimicrobial Agents and Chemotherapy, held jointly with the Infectious Diseases Society of America meeting.

Dr. Bennett's confession came during a press conference before a symposium on the links between human disease and molds.

Absent actual infection, such as athlete's foot, Dr. Bennett's had thought fungi could not cause illness, especially the seemingly disparate sick buildings afflictions -- impotence, headaches, and hemorrhages.

Then came Katrina.

The hurricane left her home uninhabitable and many of her possessions had to be destroyed -- victims of the way fungi "eat."

"Fungi have a strange way of gaining nutrition," Dr. Bennett said. "They put enzymes and acids into the environment, they turn everything out there to slime, then they reabsorb it. They literally live in their food and in their waste."

That process, she now thinks, may release volatile organic compounds that can have an effect on human health.

"Perhaps what we're dealing with was not spores associated with fungi, but some volatile compound," suggested Dr. Bennett, who left Tulane University in New Orleans after the hurricane to work at the School of Environmental and Biological Sciences at Rutgers.

Dr. Bennett is in the early stages of analyzing the fungi in New Orleans homes and then testing the biological effects of fungus-generated volatiles on worms.

In the long run, she hopes to understand -- with the help of animal models -- how fungi might affect the health of humans.

There are more than 3,000 volatile compounds produced by each individual fungus, making it difficult for researchers to pinpoint which fungus produces which volatile compound and what effect it might have on human health, said David Denning, M.D., of North Manchester General Hospital in Manchester, England.

"You've got multiple different fungi, multiple different chemicals, and different susceptibilities and symptoms to work there," Dr. Denning said. "It's quite a complex area."

Dr. Denning's own work, presented here, concerned a randomized clinical trial in which 60 severe asthma patients were treated with the antifungal medication itraconazole or given placebo.

He said the patients given the itraconazole had a "very significant benefit in quality of life," among 60% of the patients. They also relied on fewer steroids and inhalers to manage their asthma.

The reason for the success of the treatment, he suggested, is that some people are "hypersensitive" to fungi.

"These individuals are sensitized so we can detect an abnormal immune response, and those fungi seem to aggravate their asthma," he said.

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