"Current Comments"

# What Your Air-conditioner May Be Giving You Besides Relief

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In my weekly scanning of *Current Contents®/Engineering & Technology* last week an interesting title stired my memory and reactivated an old anxiety.

While that article concerned air-conditioning equipment as a source of infection in operating theatres,[1] it recalled another paper by Charles Reed of the University of Wisconsin.[2] In his report on a "newly observed interstitial pulmonary disease" caused by the spores of mold growing in air-conditioning systems, he described the disorder as a hypersensitivity pneumonitis.

I have discovered through the *Science Citation Index®* that Reed's article has been cited 68 times since it appeared; that's about 7 times as often as the average scientific article would have been cited during a comparable period.[3] Thus, I am concerned, though not surprised, that Dr. Kanz's article[1] seems to indicate that nothing has been done about the problem of air-conditioner-borne infection. Even though Dr. Reed's article has evidently been well noted by other research workers, a perusal of the citing works does not indicate much progress towards a solution.

The mold in the air-conditioner is but another example of how well some forms of life can adapt themselves to the fruits of our technology. However, there is much in the literature nowadays to suggest that we ourselves may be having considerable difficulty with it. A rather startling example of adaptation to a type of pollution was contained in a title listed in the May 24 issue of *Current Contents/Life Sciences*. There I was startled to learn that the pallid treponome has learned to grow with healthy virulence in a culture medium "polluted" with penicillin.

When I first read Dr. Reed's article on hypersensitivity pneumonitis, I was disappointed to discover after some effort that none of the manufacturers I contacted had given any thought to antimicrobial treatment of air-conditioning filters--or of any other filters for that matter, for the problem is more widespread than air-conditioning would imply. Any climate-control system can contribute to the spread of spores. Such a problem, it seemed to me, would lend itself to a number of interesting research investigations, as well as useful and helpful commercial exploitation.

Most owners of air-conditioners know that filters must be cleaned, but human inertia being what it is, any system that depends upon regular preventive maintenance by users is doomed to failure. In this respect, legislation is often necessary to accomplish what human inertia will neglect. In a highly

technological society one could spend his life just engaging in preventive "medicine". The "planned obsolescence" for which Detroit and other manufacturers are so roundly denounced may be as much an integral part of the technological life style as it is a product of business maneuver.

One of the most significant barriers to effective detection and prevention is the unavailability of simple and inexpensive diagnostic tests, whether the problem involves machinery or living organisms. One ought to be able to test for the presence of spores in the air at minimum expense. The average homeowner, however, doesn't possess even a fire-alarm, much less a humidity gauge, and an automatic spore counter. Admittedly, with the installation of noise, air, and water pollution detectors, the homeowner's control panel begins to look quite formidable. But despite human inertia, my marketing sense tells me that it must be much easier to sell a total systems concept, whether for maintenance of the home environment or for maintenance of an automobile, than it is to promote individual detecting and preventive components no matter how inexpensive separately. Let's hope that VW proves this point with its new computer diagnosis technique.

The environment of the home should, on the other hand, command no greater concern than the internal environment of the human body. We badly need a similar approach to self-diagnosis. If that word offends some of my medical acquaintances, then self-monitoring may be more appropriate. How many medical emergencies, indeed disasters, might be prevented if some of the routine, and not really complicated testing now confined to offices and hospitals could be regularly performed in the home? I'm convinced that the proper combination of engineering know-how with scientific knowledge can help us take giant steps forward, if we can agree on the desirability of our objectives.


1. Kanz, E. Klimaanlagen, ein Infectionsrisiko fur Operationsraume. *Umschau Wiss. Technik* 72(13):424-425, 1972.
2. Reed, C.E. et al. Pigeon-breeders lung, a newly observed interstitial pulmonary disease. *J. Amer. Med. Assoc.* 193:261, 1965.
3. *Science Citation Index 1970 Guide & Journal Lists.* (Philadelphia: Institute for Scientific Information, 1971), p. 14. For the years 1964-1970, the number of citations per year per cited article has been, respectively, 1.6, 1.65, 1.65, 1.66, 1.67, and 1.73.
4. Collart, P. et al. Persisting virulence of T. pallidum after incubation with penicillin in Nelson-Mayer medium. *Brit. J. Venereal. Dis.* 48(1):29-31, 1972.