pigs with a suspension of lung tissue from a deceased victim of Legionnaire's disease and others with a lung tissue suspension from a patient who had Broad Street pneumonia. Within 1 to 2 days both those animals that were inoculated with Legionnaire's tissue and those inoculated with Broad Street tissue became ill with fever, watery eyes, and prostration. Some organism in the suspensions of lung tissue was making the guinea pigs sick.

Pursuing the organism further, the investigators prepared suspensions of spleen tissue from those sick guinea pigs and injected them into the yolk sacs of hens' eggs to see what effect there would be on the embryos. Within 4 to 6 days, a relatively long period as far as these things go, the embryos died. Most known pathogenic bacteria will kill chick embryos within a day or two. The thought that the organism might be an unusual rickettsial agent made sense. But upon examination, it was apparent that the organism was most likely a type of bacteria. In size, what they found is larger than a rickettsia. Furthermore, it does not react with any standard antigens to rickettsia. However, the bacteria-like organism fails to grow well on standard culture medium, making identification difficult and raising interesting questions about its true nature. "Bacteria by definition grow in artificial medium and we aren't sure this does. We aren't sure of its place in the bacterial world," Shepard noted at the CDC press conference which was piped live to the Department of Health, Education, and Welfare in Washington, D.C.

With their "unidentified" organism in hand as a likely cause of both Legion fever and Broad Street pneumonia, the next step for CDC scientists was to see whether the victims of the two diseases had antibodies to it in their blood. To their utter relief, the answer was yes. Of 33 Legionnaire patients tested as of 18 January, 29 had antibodies, indicating that they had been infected by the organism. Serums from two of four patients with Broad Street pneumonia were positive. Testing of other victims of each disease is continuing. Serums from individuals used as controls showed no significant concentrations of antibodies to the putative "bacterium" The circumstantial evidence is strong.

There is another case in CDC's "unsolved" file that seemed in many ways akin to Legionnaire's disease but, even though researchers were aware of the analogy early in their investigation, there was nothing they could do to pursue it. In 1966, during the summer, an epidemic of a pneumonia-like illness occurred at St. Elizabeth's hospital for the mentally ill in Washington, D.C. Ninety-four patients became ill; 16 of them died. As is its custom, CDC kept on hand frozen serums from many of those patients. By noon on the 18th, just a few hours before the press conference, CDC had tested 14 serum samples for evidence of antibodies to the new Legionnaire's microbe. Thirteen of them did, indeed, have antibodies. CDC may be able to solve two mysteries with a single microbe.

Although there are yet innumerable questions to answer and details to resolve, it is apparent in talking with persons associated with the investigation that the events of the past few weeks have done wonders for morale. Now, while the microbiologists go about characterizing the organism, the epidemiologists are ready to go out into the field again to see what associations they can find between the microbe and human disease. David Fraser, head of the epidemiologic effort, believes it will be possible to identify Legion fever with a new precision that will allow him to separate those cases of real Legionnaire's disease from cases of more ordinary pneumonia. Similarly, he expects to find that some of the individuals who had Broad Street pneumonia will be shown to have had Legionnaire's disease. By the time the study is over, there may emerge a new understanding of certain types of pneumonia generally, though scientists are reluctant to make sweeping predictions.

Even with the new leads, there remains one haunting question to which there is no apparent route to a solution. If the bacterium-like organism is, in fact, the cause of the disease, or diseases, how did it spread? Fraser notes that the one area in which giving the organism a name might make a difference is in thinking about its spread. "If we knew it were something associated with an animal, or dirt, or water, for instance, it might help us find its source," he says.

There is still some feeling, as there was at the outset of the investigation, that the disease-causing agent passed through the air-conditioning system at the Bellevue-Stratford, even though the newly established connection between Legion fever and Broad Street pneumonia argues against that hypothesis. Nevertheless, it will be checked out again in Philadelphia and, back in Atlanta, CDC scientists are considering testing the idea by adding a little motor oil to their culture media to see if that helps their new-found microbe grow. It seems that, at the hotel, a thin coating of ordinary motor oil was rubbed across the surface of some of the air-conditioning filters to help catch dust. It is just possible, investigators reason, that the organism likes oil and may have found the filters a happy place to live and multiply. That, at least, might account for the fact that the majority of persons becoming ill had some contact with the hotel.

Whatever happens next, however, there is still a long way to go before all the questions about Legionnaire's disease are answered—BARBARA J. CULLITON

APPOINTMENTS

James N. Hayward, former professor of neurology, University of California, Los Angeles, to first chairman, neurology department, School of Medicine, University of North Carolina, Chapel Hill. . . . **Thomas W. Tillack**, associate professor of pathology and of anatomy, Washington University School of Medicine, to chairman, pathology department, University of Virginia School of Medicine. . . . **James F. Shepard**, professor of plant pathology, Montana State University, to head, plant pathology department, Kansas State University. . . . **Louis R. M. Del Guercio**, former director of surgery, St. Barnabas Hospital, New Jersey, to chairman, surgery department, New York Medical College. . . . **Richard J. Sauer**, associate professor of entomology, Michigan State University, to head, entomology department, Kansas State University. . . . **Robert E. Lyle, Jr.**, professor of chemistry, University of New Hampshire, to chairman of chemistry, North Texas State University. . . . **Lawrence S. Wrightsman, Jr.**, professor of psychology, George Peabody College for Teachers, to chairman of psychology, University of Kansas. . . . **Ralph R. Rumer, Jr.**, professor of engineering and applied sciences, State University of New York, Buffalo, to chairman of civil engineering, University of Delaware. . . . **Harry N. Beaty**, professor of medicine, University of Washington, to chairman of medicine, University of Vermont. . . . **Stephen L. Wangensteen**, director, surgical research laboratories, University of Virginia, to chairman of surgery, University of Arizona. . . . **Richard R. Goldberg**, chairman of mathematics, University of Iowa, to chairman of mathematics, Vanderbilt University. . . . **Scott G. McNall**, professor of sociology, Arizona State University, to chairman of sociology, University of Kansas.