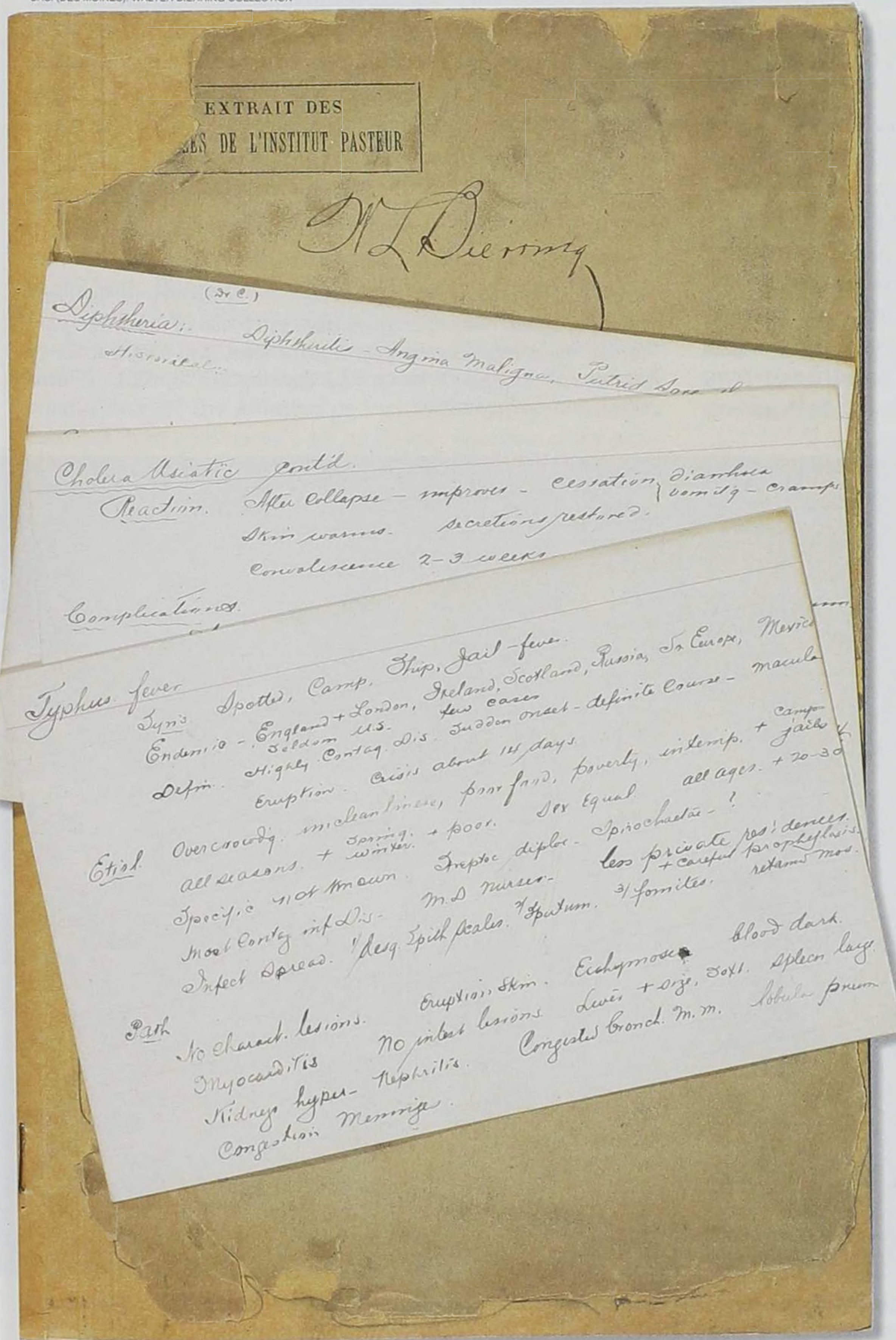


Deadly Diphtheria and Walter Bierring

SHSI (DES MOINES): WALTER BIERRING COLLECTION



Iowan Walter Bierring diligently made these notes on diphtheria, cholera, and typhoid while studying in bacteriology at the Pasteur Institute in Europe. Bierring had completed the State University of Iowa's three-year course to become a physician in a half year. Lawrence Littig, the first faculty member to teach bacteriology, in 1889, sent Bierring to Vienna in 1892 for post-graduate work. Bierring returned to Europe in 1894; his study there resulted in significant advances for Iowa.

by Susan C. Lawrence

For many in Iowa, the awareness that science was rapidly producing new knowledge [arrived at that moment] when a physician, armed with a swab, demanded a throat culture from a sick child, with the peculiar news that it would be sent away to a laboratory to confirm a diagnosis of diphtheria, and prepared a syringe to inject a substance derived from the blood of horses. Bacteriology more than any other biomedical research of the late 19th century, brought a new kind of science into the homes of Iowans, although hearing about mysterious germs and getting strange injections hardly translated into public support for the laboratory or for science in general.

In the summer of 1894, Walter Bierring returned to Paris for the ten-week intensive summer course in bacteriology at the Pasteur Institute. Near the end of the summer, he watched Emil Roux take the stu-

dents step-by-step through the process of making diphtheria antitoxin by injecting horses with diphtheria toxin, recovering the serum, and using it on patients at the institute's hospital. The success of the antitoxin treatment was announced to the world in Budapest that fall, and it became a major news item in the popular press. Bierring's return to Iowa thus brought more than his sound preparation to teach medical students. At the same time that . . . a newspaper campaign [was being orchestrated in New York City] to fund production of antitoxin by the New York City Board of Health, Bierring was making antitoxin in Iowa.

Bierring did produce about 300 doses, which were used to treat diphtheria that year, but otherwise physicians had to purchase it from commercial sources. Physicians did use the antitoxin, usually with excellent results, but suspicions about the "horse juice" remained among both doctors and lay people well into the 1920s.

Diphtheria was a frightening childhood disease; mortality could be as high as 60 percent during an epidemic of a particularly virulent form. The antitoxin was by no means an infallible cure, as it needed to be given

early and in large enough doses to be effective. Before the creation of the antitoxin, the Iowa State Board of Health had tried to manage the disease with notification and quarantine, as diphtheria spread rapidly in schoolrooms and was taken home to infect preschool children, who were the most susceptible. After 1895, the antitoxin lowered the mortality rate among those who received it, but the disease continued to take its toll in regular epidemics. Bacteriologists soon confirmed what a few physicians had already suspected: mild cases were often undiagnosed, convalescents could carry the bacillus for weeks or months after recovery, and there could even be asymptomatic carriers. Public health measures became even more vital as the complexities of the disease undermined the initial expectations that available cure meant easy eradication. ❖

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SHSI (DES MOINES) DES MOINES REGISTER AND TRIBUNE



Mothers await their turn in a children's clinic set up for diphtheria and smallpox immunization in Des Moines, 1935. The local health department and parent-teacher associations sponsored the clinics.