

Perspectives

Anecdotal, Historical and Critical Commentaries on Genetics

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A MOUSE PHOENIX ROSE FROM THE ASHES

FORTY years ago, in October of 1947, the State of Maine experienced a short-term disaster which developed, at least for biomedical research and mammalian genetics, into a long-term benefit. To appreciate this situation, one must be aware of oddities of Maine weather, the status of biological research shortly after World War II, and the very special qualities of CLARENCE COOK LITTLE, mentioned in this column in January, 1987.

Down-easterners are fond of saying, "If you don't like Maine weather, wait a minute." Usually it does change frequently and usually there is plenty of rain and fog, but all of 1947 was dry, and in the fall the weather continued to be entirely too beautiful—nothing but glorious sunny days from late August until late October. Trees and bushes became dry tinder, and tiny brush smudges grew into raging forest fires. Most of the state was declared a disaster area, including Mt. Desert Island where both Acadia National Park and The Jackson Laboratory are located.

A brush fire started October 12 or 13 in a swamp about eight miles from the main Jackson Laboratory near Bar Harbor. I can remember seeing its small plume of smoke of October 14 while sitting in a staff meeting at nearby Hamilton Station, the newly acquired dog and rabbit branch of the Laboratory. We were told then that the fire was under control, but I also remember seeing this same fire, three days later, spreading to capture the crowns of successive pine trees, despite concerted fire-fighting efforts of local and imported fire engines. The tiny fire we had seen from the Hamilton Station continued to grow, fanned by strong winds, burning much of Acadia National Park and the middle of Mt. Desert Island. The fire extended to mountains east of the main laboratory, mercifully heading toward the sea.

On the afternoon of October 23, however, a sudden wind shift turned the flames directly back toward Bar Harbor and the Jackson Laboratory. The population of Bar Harbor was evacuated that evening in a car-convoy, driving 15 miles westward, often with burning trees on both sides of the road, to the only bridge

connecting to the mainland. Next day we learned that most of the Jackson Laboratory was gutted, with roof, inner partitions, floors, and mouse boxes completely gone.

Would there ever again be a Jackson Laboratory? C. C. LITTLE never doubted. He called us together in Ellsworth, on the mainland not far from the Island, assured mouse box-changers that they still had jobs, and assigned responsibilities to staff and research assistants. When he viewed the ashes around the wreck of the old Lab, he said, "Now we can see the sea." He saw to it that money appeared to continue building the new animal wing. Our needs were dramatic, and inspired both publicity and very welcome assistance.

In 1947, the young, small but growing Jackson Laboratory was emerging from serious financial struggles. It had been founded in 1929 by LITTLE with a group of seven researchers who had worked in the mouse genetics laboratory which he had maintained in Ann Arbor while President of the University of Michigan (1925–1929). The beginning of the great depression was not an ideal time to establish what the concerned group of Detroit industrialists had intended to be a research institute supported entirely by private funds. When anticipated support failed to materialize, LITTLE persuaded his coworkers to "live sparsely" while pushing forward with research on genetics and cancer.

Despite its precarious situation, the early Laboratory was a happy place. Prexy, as LITTLE was called, appreciated and supported everyone's research efforts. Every month, staff, box-changers and their families loved to go to the All-Lab Party. The Laboratory managed to survive, and in 1933 the entire staff jointly published an important scientific contribution ("The existence of non-chromosomal influences on the incidence of mammary tumors in mice," *Science* **78**: 465–466). LITTLE devoted great efforts to seeking money for the Laboratory and to persuading the federal government and the public that support of research was a national responsibility. Providing genetically controlled mice, gleaned from each research-

er's own colony to supply other institutions, became one of the Lab's means of support.

In 1947, the Jackson Laboratory was still a small place with 18 doctoral-level investigators plus a few research assistants and animal caretakers. College and pre-college students and visiting investigators came in the summer months. But the Laboratory showed potential for growth in the post-war expanding world of science. In the summer of 1947 foundations had been laid for a big new animal wing, with much of the construction supported by the new National Cancer Institute which LITTLE had helped found.

Living through the winter of 1947–1948 was quite an experience. Until the end of December we were all piled on top of one another in a hallway at the Hamilton Station. Most of the records, as well as the animals, were lost. I was very lucky because a fine assistant, KAY HAMILTON, had rescued an invaluable file of data on pigment granules. However, most of the others' research at that time involved waiting for cancers to appear. With treated and control mice destroyed, all experiments in progress had to be repeated from the very beginning. We also needed to build up animal resources to supply critical needs of researchers in other institutions. Where would the necessary mice come from?

Almost immediately after the fire, a very welcome pile of letters began to pour in. Investigators who had recently received pedigreed mice from the Jackson Laboratory, and geneticists who maintained inbred mouse colonies stemming from our stocks, wrote to offer "starts" of almost all the strains we had lost, plus some valuable new types. LITTLE assigned to me the exciting responsibility of accepting the most pertinent offers, and as quickly as possible we built up a common foundation colony from which both in-house individ-

ual research colonies and a separate animal resources colony were supplied on an equal basis. By spring of 1948, mice were moved into the new animal wing. Ground was also broken for a new research wing, with funding from the National Cancer Institute and the American Cancer Society. The Ladies Auxiliary of the Veterans of Foreign Wars provided us with a Summer Laboratory and living quarters for summer students. From that time on, the size and productivity of The Jackson Laboratory increased rapidly. During the next five years the research staff increased from 19 to 33, resulting in broader research programs and increased scientific publication. More and more mice were provided to outside investigators.

The 1947 fire came at a propitious time for the scientific community. Just as large numbers of researchers were coming to depend on animals from outside suppliers, disruption by the fire focused attention on the importance of selecting the right animals for a particular project. The Laboratory's losses in the fire, and rescue by gifts from other mouse geneticists, gave the staff a heightened sense of genetic responsibility. In addition to contributing through their own research, they now wanted to apply genetic know-how to guarantee ready availability and continuity of pertinent, genetically uniform, well-characterized mice for the growing biomedical research community. The Laboratory had added a new phase to its scientific mission.

Biomedical and genetic research are deeply indebted to the foresight of C. C. LITTLE in establishing inbred lines of mice. The Jackson Laboratory was both founded and rescued by his confidence, his personality, and his unfailing optimism.

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