For centuries, the discipline of surgery has been fortunate in having a number of investigators whose contributions have been of basic scientific significance as well as practical clinical application. The great medical historian, Garrison, selected three surgeons whom he considered the greatest of all time—Ambroise Paré, John Hunter, and Joseph Lister (Fig. 1). It was Paré who re-introduced the ancient use of the ligature in the control of hemorrhage and placed it upon a firm, systematic, and practical basis. He also introduced the concept of the controlled experiment into surgery when he treated two wounded soldiers with similar wounds lying side by side in a tent near the field of battle. The first soldier’s wound was managed by the standard method of routine cauterization with boiling oil. The second was managed by debridement, cleansing, and the application of a clean dressing. He commented that he spent a restless night, feeling that the second patient would do very poorly. However, his wisdom was demonstrated the following morning when he found the second patient to be essentially without systemic symptoms whereas the former had high fever, tachycardia, and disorientation. When he was congratulated on the outcome of his first successful case, he very humbly replied: “Je le pansait, Dieu le guerit” (“I treated him, God cured him”), a quotation that is inscribed on his statue.

To John Hunter is due the primary credit for the introduction of the experimental method by using animals to develop surgical techniques prior to their application to humans. His philosophy and practice are appropriately summarized in his often-quoted response to a question from Edward Jenner, the noted developer of smallpox vaccination. When Jenner was speculating with ideas concerning hibernation in the hedgehog, Hunter responded tersely, “I think your solution is just; but why think? Why not try the experiment?” (1). Joseph Lister will forever be remembered for his great concern with wound infections and the hazards they posed to the expansion of surgery. He was confident that wound infections could be prevented and was the first to apply the bacteriological studies of Louis Pasteur to clinical practice when he initiated aseptic surgery.

It is clear today that the original patterns of surgical training were established in Europe during the last half of the nineteenth century, particularly in the university clinics of Germany, Switzerland, and Austria. It was in this setting that the surgical giants, who were all-powerful in their respective schools, established the principle of stepwise assumption of responsibility in residency training programs, culminating in the concept of the chief resident. Most medical historians regard Bernhard von Langenbeck, Professor of Surgery at the University of Berlin (Fig. 2), as the father of our modern training programs. An extraordinary teacher, clinical investigator, and master surgeon, he is credited with devising 33 original operative procedures (2). At the famed Charite Hospital in Berlin, he attracted a remarkable group of trainees, including Billroth, Kocher, and Trendelenburg, among others (Fig. 3). Each was later to become the leader of his own school and a great contributor in his own right. Langenbeck was also the first to initiate a journal solely devoted to surgery, Archiv fur Klinische Chirurgie, which...
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is also known as “Langenbeck’s Archiv” (Fig. 4). After completing Langenbeck’s program, Billroth became Professor of Surgery at Zurich and later at the University of Vienna where he was Chief Surgeon to Allegemeines Krankenhaus. Theodor Kocher was chosen to be Professor at the University of Berne at the amazingly early age of 31, and Trendelenburg was appointed to the Chair in Leipzig.

In the United States, the development of surgical residency training programs owes a clear debt to the Langenbeck-Billroth school, as introduced by William Stewart Halsted (Fig. 5).

Generally regarded as the most outstanding surgeon in North America, Halsted regularly visited the major surgical clinics of Europe beginning