Georges Mathé was a French pioneer in bone marrow transplantation and cancer immunotherapy contemporaneous with E. D. Thomas and D. W. van Bekkum. He was the first to describe graft-versus-host disease (GVHD) in humans and to understand the potential of the graft-versus-leukemia (GVL) effect to treat human leukemia. Here, he described a 32-year-old man with relapsed refractory acute lymphoblastic leukemia who received a myeloablative transplant using a mixed bone marrow collection from 6 donors (mother, father, and 4 siblings). The patient engrafted and developed short-lived but severe acute GVHD, following which he was shown to have predominance of 1 donor’s cells. He recovered but developed recurrent GVHD after donor lymphocyte infusions from the predominant donor given to enhance GVL. Remarkably, his GVHD was controlled and he remained in remission at 12 months.