the land for the new institution did not discourage him. For four years only rebuffs and delays were encountered, but each year when the subject came up he was the first to say, "Renew the application."

During these four years much vexatious opposition was encountered from various sources. The jealousy of a neighboring institution in seeing a school established of a character such as to seriously interfere with some of her own departments was not the least of these oppositions. Politicians and men of narrow views were aroused and arrayed against the plan, and even a prominent member of the State Board of Education inaugurated a formidable opposition on the plea that the project, if carried out, would seriously interfere with the common schools, a plea that appears to-day as strange as it is absurd.

Despite these opponents Dr. Bigelow continued among the foremost to press the claims of the Institute, and none were more delighted than he when the grant was at last made.

At an early meeting of the Society of Arts, just before taking possession of the present building, he delivered the address before mentioned, on the "Limits of Education." His interest in the Institute continued unabated, and, until the infirmities of age caused him to give up public duties, he was a constant attendant at all meetings of the government.

His high hopes of the future of the Institute often caused him to speak of it with enthusiasm, inspiring all who heard him with faith in its ultimate success.

With such men to found and guard the early years of the institution, there is little cause for surprise at the success already attained and the widening prospects for its future.

For sixty-seven years Dr. Bigelow was a member of the American Academy of Arts and Sciences, and from 1847 to 1863 he was its president. He was an active and efficient member of the Massachusetts Historical Society and of other learned bodies.

For several years preceding his death, which took place on January 10, 1879, he was unable to leave his bed, and was further afflicted with total blindness. Despite these afflictions he continued cheerful till the last, and maintained an active interest in the doings of the world, and especially in the gratifying development of his favorite institution, for which he had labored hard and successfully, the Massachusetts Institute of Technology.

The Manufacture of Hair-Cloth.

The problem of inventing a machine for weaving hair-cloth was one of the most difficult among the various problems encountered in the modern application of the power loom. A peculiarity of the material, which for a long time puzzled inventors, is that it cannot be spliced into a continuous thread, so as to be carried back and forth by a shuttle, but each hair must be used of its natural length. For the same reason, long pieces of cloth are not made entirely of hair, but have usually a cotton or linen warp, while the hair is used only for the weft, the width of the fabric being limited by the length of a hair. The common hair-cloth used for covering furniture has a cotton warp, and is so woven that each hair passes alternately over four or more threads and under one, so that the hair shows principally on the right side of the fabric, and the cotton on the wrong side.

The hair used comes from horse's tails, and varies in length, that from the tails of some Russian horses being forty inches long, and of great evenness, elasticity, and gloss.

The only cloth made entirely of hair is used for the bottoms of sieves. In Anatolia and Roumelia, however, horse hair is twisted into a coarse yarn, and woven into sacking.

The old method of weaving hair-cloth on a hand loom required two persons, a weaver and an assistant, or "server," who was generally a child. The weaver used a sort of hooked shuttle, which he passed between the threads of the warp toward his left hand. The server's duty was to pick the hairs out of the bunch, tie a loop in the end of each, and place them one at