

by Mr. Lister, resulting about the cat-gut ligatures surrounding the arteries?

I instituted a series of experimental histological studies, upon the lower animals, and demonstrated that, along the track of an aseptically buried suture, cell-proliferation rapidly supervenes, and that new cells invade the softened structure, and, *pari passu* with its absorption, a living band of connective tissue cells replaces the suture. If rapidly absorbed, the proliferated cells are minimized; as the process goes on more slowly, the change becomes more distinctive until, in young animals, in ten to fifteen days all trace of the suture as a foreign material is lost. The value of such reinforcement of the tissue along the line of the sutures became at once apparent in their application to the cure of hernia, and, little by little, I early extended their use to the closure of wounds of every description, publishing from time to time my results.

In the pursuance of my studies, I early had occasion to examine a great variety of the specimens of cat-gut offered in the market, although from the first I adopted what seemed to me the wise precaution of preparing my own sutures. In cat-gut there are of necessity certain inherent defects. Its method of preparation is not generally known to the profession, who have rarely questioned the product beyond the conditions in which it is offered for sale, as prepared for the musician. The best of these varieties usually comes from Italy, prepared from the intestine of the sheep of the mountainous districts. The small intestine necessarily undergoes maceration, until the strong connective tissue layer, which, as a fibrous sheath unites the mucous and muscular coats of the intestine, is loosened and can easily be separated, in a manner not unlike that practised in the preparation of the intestine of the pig for the making of sausages. This is split by a cork, armed with sharp blades, drawn through the circular sheath, dividing it into sections to produce the desired size. These ribbons are twisted, dried, and often-times sand-papered, to give evenness of surface, and usually put up in skeins from twelve to fifteen feet in length—the cat-gut of commerce.

The connective-tissue cells of the fibrous coat of the intestine are irregularly disposed, the fine fibres more commonly crossing diagonally to the longitudinal axis of the intestine, a wise distribution of this strengthening portion of the intestine to allow considerable change in its shape. When carefully examined under a low-power lens, the fibres are seen to be irregularly interlaced, not unlike a strip of cloth cut diagonally. The gut, even in