

being composed of animal tissue, they would serve long enough to obliterate the artery, and be speedily removed by the absorbents, thus avoiding the difficulty, arising from a foreign body however minute. These ligatures were used in this country to a great extent, and Sir Astley Cooper demonstrated their superiority in his own operations. I quote as follows: "Dr. Hartshorn used strips of parchment for his ligatures. My friend, Dr. H. G. Jamieson, Professor of Surgery in Washington Medical College, Baltimore, has for a series of years been employing the animal ligature in an extensive surgical practice. He has used it in many amputations of the limbs, and of the mammae; he has tied the carotid, the iliac, the femoral, the radial, the posterior tibial, the spermatic, and other arteries, with the buckskin ligature, and in no instance had secondary hemorrhage; and he states that he has never seen anything of his ligatures, and, of course, his wounds have generally healed by first intention. Dr. Jamieson gives Dr. Physick the honor of having first introduced the animal ligature, but he contends that the practice of rubbing or drawing, to harden the leather, is highly reprehensible. He advises to tie the artery with a buckskin ligature very soft and little broader than the thickness of the skin, taking care not to tie it too tightly. He states, as the result of his observations and experiments upon sheep, dogs, and other animals, that a capsule will surround the ligature if the capillary vessels be not much disturbed, or the vessel will be surrounded by an abundance of lymph and the ligature dissolved."

The method of Aetius and Celsus, revived by Abernethy, of applying two ligatures and dividing the arteries between them, Dr. Jamieson condemned as unnecessary. Since by a single flat buckskin ligature the artery may be obliterated without destroying its continuity. Hence he opposed all indissoluble ligatures of whatever material; he declared it not only to be unnecessary, but highly hazardous, to cut the inner coats of the vessel, as recommended by Jones and others and agrees with Scarper as regards flat ligatures, but, by the use of the buckskin, he has no need, like him, to remove his ligature on the fourth day. For a very able and interesting account of his views, which are even now of high practical importance, I refer to the thirty-seventh number of the *Medical Recorder*, published at Philadelphia in 1827, and from which I quote the following extracts:

"We believe that the animal ligature will secure the patient from all these dangers except one, to wit, the awkwardness of the surgeon; and even in this respect the animal ligature is pre-