communicated with the abscess in the kidney. Both kidneys were in a softened condition, and their cortical substance was almost entirely destroyed." D. F. C.

ART. XIV. *Dissertatio Medica Inauguralis de Cartilaginum articularium ex morbis mutatione.* Auctore L. H. SCHUMER, Jr. Groningen, 1836. 8vo. pp. 64.
An Inaugural Dissertation on the Morbid Changes occurring in the Articular Cartilages. By L. H. SCHUMER, Jr.

THE object of this dissertation is to prove that the articular cartilages are inorganic, so far at least as regards the non existence in them of either nerves, blood vessels or lymphatics. The author endeavours to show, with much plausibility, that the proper articular cartilages are the result of an exudation from either the synovial membrane, or from the vessels of the extremity of the bones which form the joint, and consequently that all the morbid changes these cartilages undergo, are dependent solely upon disease of the parts by which they were originally produced. He has attempted to prove by direct experiments on animals, that where the most violent inflammation is excited in the joints, the cartilages present no indications, in any instance, that the disease extends to them; and even when to all appearance a part of them has been removed by ulceration, or they are entirely destroyed, leaving the ends of the bones denuded, this is merely the result of a softening of the cartilage caused by its immersion in the pus poured into the cavity of the joint from the inflamed vessels of the synovial sac.

The inorganic character of cartilages is, in the opinion of the author, established by the fact, that no vessels can be shown to enter in their structure by the minutest examination by the naked eye or by the microscope, even after the most accurate injection of the surrounding vessels—that blood has never been seen to flow from them when wounded, nor have they ever been observed to become reddened, like other of the white tissues, when subjected to irritation. In evidence of these statements, he adduces the testimony of Sebastian, Soemmering, Chassaignac, &c., and the results of his own experiments on living animals.

To show that the formation, nutrition and morbid changes of the articular cartilages are capable of a ready explanation, without supposing the existence in them of blood vessels and absorbents, the author adduces several facts of the production, reparation after injuries, and mutation from disease, of other parts of the body universally acknowledged to be inorganic in the proper acceptance of the term; as for instance, the cuticle, the lens of the eye, &c. There exists, he conceives, a very close resemblance between the physiological condition of the ocular lens and the cartilages of the joints. Both have their appropriate membranes, the lens its capsule and the articular cartilages the synovial sac, over both of which blood vessels are distributed. In the eye a fluid is interposed between the lens and its capsule, and in the joints, the synovia is found between the cartilages and the membrane.* The existence of blood vessels in the substance of the lens, or in that of the articular cartilages, has never been demonstrated. The author remarks that the lens has been supposed to be formed from and sustained by the fluid of its capsule, and he considers it possible that the articular cartilages may in the same manner be formed from, and sustained by, the synovial fluid which contains in solution all the principles that enter into their composition; he, nevertheless, considers it as more probable that the cartilages are secreted, and any reparation which takes place in them when injured, or morbidly affected, is caused by the blood vessels of the spongy extremity of the bones which they envelope.

The leading facts and experiments detailed by the author are certainly interesting, and important—his reasoning is very generally correct, and his main conclusions coincide with the opinions maintained by several of the most distinguished of the continental physiologists. D. F. C.

* "In articulis inter cartilaginem et synovialem membranam itidem humor sc. synovia."