Society by Dr. Stokes, an accurate diagnosis of the case had been made by Dr. Hayden from the existence of the murmur now referred to.

I have to thank the members of the Academy for the patient way in which they have listened to a tedious disquisition upon a subject so trite as that which I have just discussed. It would be difficult, indeed, to add much that is fresh and novel to the literature of cardiac disease, though, in some points, I do not think what I have ventured to bring before you is open to the criticism—"that what's true is not new, and what's new is not true."

In reviewing the literature of cardiac disease we have good reason to regard with pride the work that has been done by the Dublin School; and though it is not given to many to rival the genius of Corrigan, the philosophic teaching of Stokes, or the erudition of Hayden, it is open to each one, and incumbent on him, to pay the debt which he owes to his profession, by adding to the general storehouse of facts which help to build up the science of medicine.

ART. XXV.—On the Quantitative Estimation of Albumin, Urea, and Sugar in Urine. By F. R. Cruise, M.D., Univ. Dublin; President of the King and Queen's College of Physicians in Ireland, and Consulting Physician to the Mater Misericordiae Hospital, Mercer's Hospital, and the National Lying-in Hospital, Dublin.

Last year I brought under the notice of the Academy of Medicine in Ireland some brief observations on the value of the waters of Contrexéville in the treatment of various morbid conditions of the urinary secretion. On the present occasion I intend to supplement those experiences by pointing out simple methods for the quantitative determination of albumin, urea, and sugar in urine.

It is hardly needful for me to premise that the present communication is not intended to be an exhaustive one, but merely a contribution, from a clinical point of view, towards a subject the interest of which daily increases.

*Read before the Medical Section of the Academy of Medicine in Ireland, Friday, December 18, 1885, and Friday, April 30, 1886.*
Last autumn I spent a fortnight at Contrexéville, and had the advantage of working daily in the laboratory of Dr. Debout D’Estrées, the accomplished Medical Inspector of that station. There I had the opportunity of extending and confirming my knowledge of the beneficial effects of these waters, especially in reducing albumin and sugar in the urine, and of observing the rapidity and precision with which Dr. Debout D’Estrées verifies the progress of the cases under his observation. Amidst much that I saw to admire in his examination of urine, chemical and microscopical, I was particularly struck with the methods he used for ascertaining the quantity of albumin and sugar in any given specimen, and I propose to describe them now. In addition, I shall detail a very simple and rapid mode of determining the quantity of urea.

It is quite unnecessary for me to allude here to the importance, in any given case of albuminuria, of being able to ascertain with facility the quantities of albumin and of urea present from time to time. The amount of albumin often indicates the extent of renal mischief, especially of the inflammatory type—an element hardly ever quite absent even in chronic organic kidney disease, and frequently playing a very leading part. The quantity of urea is a still more critical item, inasmuch as its presence in sufficient quantity is a fair guarantee of the absence of present danger to life in chronic cases, while its marked deficiency points to imminent risk.

The simple method I am about to describe for albuminometry is that devised in 1880 by Dr. Esbach, Chief of the Chemical Laboratory at the Hôpital Necker, in Paris. Very few physicians engaged in active practice are able to spare sufficient time to determine the quantity of albumin by the conventional method—namely, boiling a given quantity of the urine so as to precipitate the albumin, then filtering, and finally drying and weighing the deposit. This process occupies several hours of attention, requires suitable apparatus, and not a little manipulative skill. Most of us are habitually contented with the rough and ready plan of boiling the urine in a test tube, then allowing the deposit to settle, and finally guessing the amount from the depth of that deposit. Now, Dr. Esbach’s method is nothing more or less than this latter rude device, carried out in a most ingenious and scientific fashion. He takes a glass tube, Fig. 1, of fixed capacity, and graduated according to the