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THE ELECTRIC ILLUMINATION OF THE BLADDER.

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Mr. Buck, of Breslau, a dentist, was the first to employ the platinum loop, maintained at a white heat, by means of the galvanic current, as a source of light for examining internal cavities of the body. He constructed a light for the examination of the mouth, and also one for the stomach, which were tried at the Vienna Hospital, but found to be unpractical.

In 1877, Dr. Nitze, of Dresden, had instruments made that could be used on the living subject to illuminate the urethra, bladder and larynx; but they were very much complicated, as they had to be fitted with a water cooling apparatus in order to reduce the heat of the platinum wire, and they also failed to give a strong light, as a quill was used for the window which soon became scorched with the heat. Dr. Nitze at a later date went into partnership with Leiter, an instrument maker of Vienna, and in 1879 they produced an instrument known as the Nitze-Leiter cystoscope. The illuminating power of this instrument was maintained by the heating of a platinum wire by electricity, and had as a consequence to be fitted with a water cooling apparatus. With it the bladder could be very well illuminated, but on account of the instrument being cumbersome, extremely complicated and high priced it soon fell into disuse.

In 1887, two cystoscopes, made on the incandescent light principle, appeared almost at the same time. The one designed by Dr. Nitze (who had quarreled with his partner Leiter), and the other made by Leiter, of Vienna.

*Read before the Hamilton Medical and Surgical Society.

These two instruments are nearly the same in construction, only the lamp of the Nitze cystoscope is unprotected, and cannot be separated from the rest of the instrument, so that when the carbon filament of the light is burnt through, it has to be sent to the Berlin instrument maker to be repaired. The cystoscope produced by Joseph Leiter, of Vienna, which I have here to show you, is a highly finished instrument, and perhaps a word about its construction would not be amiss. It is in shape very much like a calculus sound of a 22 French gauge. It consists of three parts: 1, the beak, 2, shaft, and 3, ocular end.

1. *The beak* is a hollow hood which can be screwed on and off the shaft, it has a long oval aperture covered in with a thin pane of rock crystal, which protects the incandescent lamp, and at the same time allows the rays of light to pass, and illuminate the cavity. The terminals of the lamp fit into two sockets which are in direct communication, by means of insulated surfaces, with the battery; by this arrangement when a lamp burns out, a fresh one can be rapidly replaced, and if a lamp glass should break it is protected from doing harm by the hood.

2. *The shaft* forms a hollow tube furnished with a system of lenses, for increasing the size of the object examined. Rays of light from the object under examination enter the windows, situated at the end of the elbow, are reflected by the prism closing the window, and passing through the stem of lenses are magnified and perceived by the observer.

3. *The ocular end* has two binding screws for the battery wires, and a switch for opening and shutting the current. The small knob on the rim serves to show the direction in which the beak is pointing and thus helps us to localize the position of the lamp and the window in the bladder. In 1889, Mr. E. Hurry Fenwick, of St. Peter's Hospital, London, made what he then considered an improvement on Leiter's instrument. He had a perforated hood made for the lamp, which allowed the fluid in the bladder to circulate freely around the lamp and keep it cool. But this has since proved not to be of any great advantage, and Mr. Fenwick now uses Leiter's instrument without his own modification. This cystoscope has one valuable addition made by Mr. Fenwick, which is the swivel at the ocular end, which allows the instru-