

in Crosse's work, and another is presented here (fig. 8); the growths are numerous, evidently rapidly

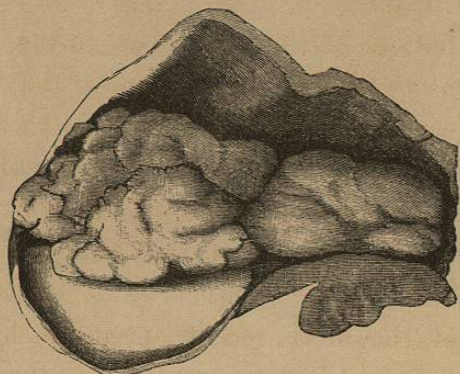


FIG. 8.—Polypoid growths (myxoma), from a child 1½ year old, under Mr. Marshall at University College Hospital. From Museum, No. 1471 E.

formed, soon fill the bladder, and in the case of female children sometimes issue by the external meatus, and present in the vagina.<sup>1</sup>

The operators have described the first-named

<sup>1</sup> One example of polypoid growths in a child is given in Dr. M. Baillie's series of engravings illustrating the morbid anatomy of the human body, &c. (London, 1799, fasc. vii. vol. iv. fig. 2, p. 151). This is now Prep. No. 1999 R.C.S. Museum. Crosse's example is shown at pl. xx. fig. 2 of the *Treatise on Calculus* (London, 1835), and is Prep. No. 2000 in the same museum. Three other specimens are in Guy's Hospital Museum: one, a girl aged five years—No. 2104<sup>30</sup>—described by Mr. Birkett in *Trans. Med. Chir. Soc.*, vol. xli. p. 311; another, 2104<sup>32</sup>; and a boy, No. 2104<sup>34</sup>.

One is in St. Bartholomew's Museum, 2419, described in *Path. Soc. Trans.*, vol. iii. p. 127; one in St. Thomas's, B B 28; and one in University College, 1471 E, carefully described in *Path. Trans.*, vol. xxxiv. pp. 150-1—by Mr. S. G. Shattock. An interesting case is reported by Mr. Howard Marsh in the *Path. Soc. Trans.*, vol. xxv. pp. 178-80, carefully examined by Mr. Butlin and by Mr. M. Beck.

kind when fresh as soft, gelatinous, and translucent; conditions which are lost in the preparation by immersion in spirit.

In all but one of the eight cases in the museums the age was two years or less, and in the exception was five years only. It is not unlikely that some of these may be congenital, while the structure shows them to be composed of embryonic elements. I have never met with anything of this kind in the adult bladder.

Two of the more recent specimens have been carefully examined and reported on at the Pathological Society, and are referred to in the note below, forming in fact the two specimens last on the list there given. One, examined by Mr. Butlin and Mr. Beck, was 'found to be composed almost entirely of small round cells of a lymphoid type embedded in a basis, homogeneous or nearly so on the surface, but becoming more and more fibrous towards the pedicle, until at the base the fibrous tissue forms the bulk of the growth, the cells being only scattered here and there, either singly or in groups.' The other, examined by Mr. Shattock, is described as displaying 'oval and more elongated cells lying in an abundant intercellular substance, either albuminous or mucous, and scantily traversed by fibres; no stellate cells are present.'

In regard to the cases of vesical tumour in which

I have myself operated, they fall naturally, as do those of other regions, into two distinct categories: namely, those which consist only of elements identical with the normal tissues of the bladder, 'homoeoplastic'; and those which consist, more or less, of other elements never found in the tissues of the healthy bladder, or 'heteroplastic.'

The first category offers at least three forms of growth, but passing insensibly from one to the other, being apparently diverse developments of the same structural change. Two of them may be spoken of as papilloma, which appears in two typical forms. Before describing them I shall give a representation of healthy vesical mucous membrane for the purpose of comparing the epithelium and its underlying tissues in the bladder with the analogous tissues in papilloma. It is a drawing from a very successful section made immediately after death from the emptied bladder of an ape by Dr. Gibbes (Plate I.). It shows a minute fold of the mucous membrane, resulting from that duplicature of it which takes place when the bladder is contracted. And thus it has, in this temporary condition, a strong resemblance to the permanent form which a single papilla exhibits when papillomatous growth is present in the bladder.

1. *Fimbriated Papilloma*.—I employ this term to designate that product which has been familiarly known as the 'villous' growth, which is admitted

PLATE I.



SECTION OF HEALTHY MUCOUS MEMBRANE, MADE DIRECTLY AFTER DEATH, FROM THE APE: SHOWING NATURAL FOLDING OF THE MEMBRANE IN THE EMPTIED CONDITION OF THE BLADDER, AND THE RESEMBLANCE THE FOLD BEARS TO A PAPILLA:  $\times 160$ .

to be objectionable on several grounds. The most obvious character of the growth is a structure in which the vesical mucous membrane is developed into fine papillæ, which consist of long fimbriated processes of extreme tenuity, and usually form a group arising from a small circumscribed base. This last-named part contains other and more solid structure than that which enters into the papillæ themselves. Sometimes the processes are almost single thread-like forms, arranged side by side, and undivided for a considerable distance; others are bifid, generally more compound still; some may be described as digitate, and occasionally the processes radiate and suggest forms resembling those of leaves. Immersed in fluid, the long fimbriated growths float out like slender-leaved aquatic plants in deep water; and when removed to air, collapse and form a soft mass resembling a small strawberry. Usually one only is found in a bladder; sometimes there are two or three, and sometimes minute growths of the same kind may be found affecting, more or less, the lining membrane of the cavity (see figs. 9 and 10; also fig. 1 at p. 11). The microscopic structure, which has been often well described,<sup>1</sup> may be given

<sup>1</sup> Examples of these have been presented to the Pathological Society of London by several observers; among them by myself as early as 1856. *Vide* vol. v. p. 200, and vol. vi. pp. 213-4, both relating to the same case. Another, vol. vii. pp. 256-7. Also vol. viii. pp. 262-4; vol. xi. pp. 153-5; vol. xviii. pp. 176-8; vol. xxi. pp. 239-44 and 265-6; vol. xxxiii. p. 220; vol. xxxiv. pp. 157-60.

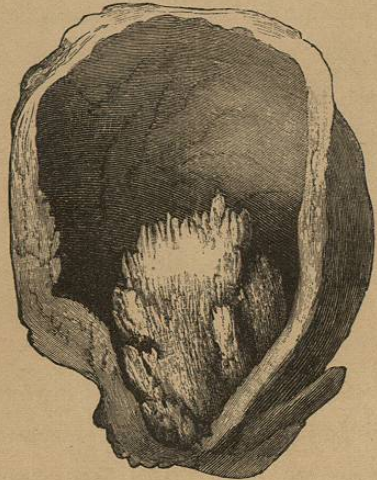


FIG. 9.—Fimbriated papilloma ('villous'), arising from a single peduncle. From Museum of University College, No. 1471 A.

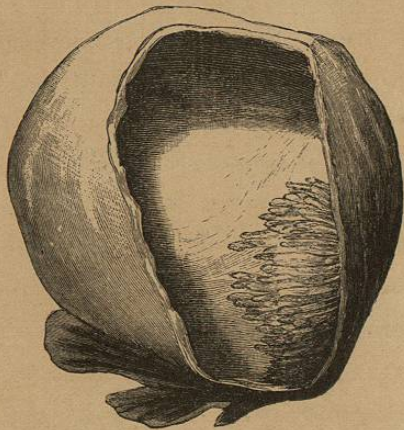


FIG. 10.—Fimbriated papilloma ('villous'). From Museum of Royal College of Surgeons, No. 2005.

briefly as follows: 'Each of these delicate papillæ or "villi" consists of a connective-tissue ground-

## PLATE II.



FIMBRIATED PAPILOMA, SHOWING TWO OF THE SLENDER PAPILOMATOUS PROCESSES OR, SO CALLED, 'VILLI':  $\times 160$  (FROM CASE 15 OF THE TABLE.)

work, covered by layers of columnar cells, resting on a fine basilar membrane, and exactly resembling those of the normal bladder. In the deeper part there are bands of non-striated muscle. These bands do not run into the papillæ, only two or three isolated fibres enter their bases. The growth is well supplied with blood-vessels; capillaries running up and into the villi, and branching directly under the basement membrane. They are large, and have very delicate walls.' (Dr. H. Gibbes.) The case of T. H. B., aged 40, case No. 15, is the best example of this in the series: see Plate II., in which drawing, as in those which follow, the structures have been faithfully and very admirably represented.

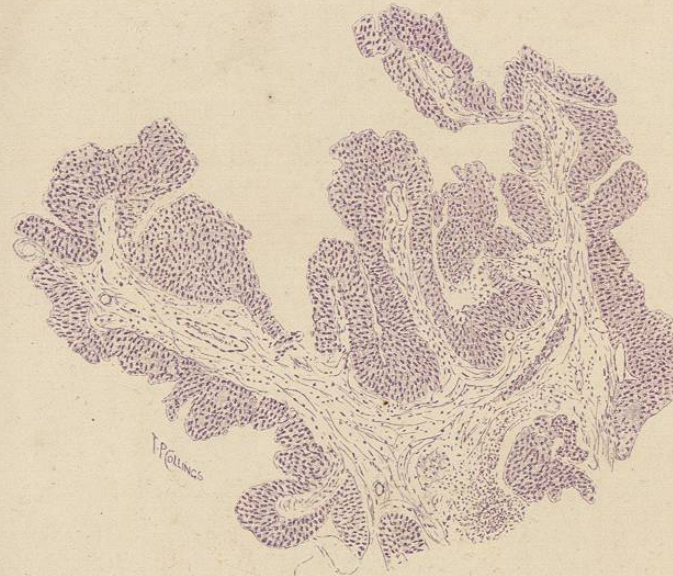
2. *Fibro-Papilloma*.—I prefer this term to that of 'Ordinary papilloma' as first suggested, because it more correctly indicates the difference between the structure now in question and that described as 'fimbriated.' Thus in 'fibro-papilloma,' the papillary processes, although present in more or less abundance, do not constitute the chief part of the structure, which is accordingly more solid, consisting of the constituents, unstriated muscle, and connective-tissue fibres of the submucous tissues of the vesical coats. The papillæ are sometimes shorter, less developed than the 'fimbriated' processes of the previous division. The microscopical report of the solid part or groundwork

of the tumour in a typical case is as follows: 'Here there is a distinct outgrowth from the wall of the bladder, of trabeculae composed for the most part of non-striped muscle-tissue. From these trabeculae arise secondary trabeculae, into which the non-striped muscle-tissue is continued in varying amount, according to their size. The growth is covered with layers of columnar epithelial cells, exactly similar to those of the normal bladder.' Of this class the case of Dr. MacC., No. 4, is one of the best examples. See Plates III and IV.

It may be remarked here that the mere presence of papillae on a tumour, whether met with in the simple form which has been just referred to, or when assuming the long fimbriated form previously described, does not serve in any way to identify or characterise a growth, since such papillae may be met with springing from the surface of heteroplastic growths, as epithelioma and cancer.

3. *Tumours of a Transitional Type.*—The third type above referred to, although related with the preceding, inasmuch as the basic structures are still homologous with those of the bladder, appears to be best indicated by using the term 'transitional' to describe it, as perhaps occupying a place between papilloma and a formation of malignant type, sarcoma. Thus there is not only a peculiarity in the arrangement of the basic fibres, but the presence of

PLATE III.



FIBRO-PAPILLOMA: UNDER A LOW POWER ( $\times 80$ ) TO SHOW GENERAL ARRANGEMENT OF STRUCTURE. (FROM CASE NO. 4 OF THE TABLE.)

PLATE IV.



FIBRO-PAPILLOMA: UNDER HIGH POWER ( $\times 340$ ) SHOWING A CAPILLARY VESSEL AND A FEW NON-STRIPED MUSCLE-FIBRES. (FROM CASE No. 4 OF THE TABLE.)