THE EPIPHARYNX

By PROFESSOR A. J. E. CAVE (London)

By an ancient tradition extending back to the Vesalian age anatomists have regarded the pharynx as, essentially, a fibro-muscular bag reaching from the cranial base to the beginning of the œsophagus and as conveniently divisible, for descriptive purposes, into three components, termed respectively naso-pharynx, oro-pharynx and laryngo-pharynx. This traditional concept of the pharynx, based exclusively upon descriptive considerations, still obtains, unaffected by those well-intentioned but dilletante periodic revisions of nomenclature which, since the end of the last century, have so modified the older anatomical terminology. (Such revisions include the well known *Basle Nomina Anatomica* (1895), the *Birmingham Revision* (1933) thereof and the *Nomina Anatomica* issued (1955) by the International Anatomical Nomenclature Committee, whose indefatigable operations continue).

The traditional concept of the pharynx has proved a simple, reasonable and intelligible way of dealing topographically with a somewhat complicated region of the body and one sufficiently well suited both to the requirements of anatomical teaching and to those of clinical practice. That it contained hidden intrinsic defects, bound to become manifest in the fulness of time, is not to be blamed upon the pioneers of formal, descriptive anatomy, whose task was sufficiently difficult of itself. Nevertheless, this convenient and traditional concept of pharyngeal anatomy, admirable enough from the purely utilitarian viewpoint, remained essentially defective. For it ignored completely all consideration of those morphological fundamentals upon which alone any accurate nomenclature must rest: it paid no recognition to the basic Hunterian concept of structure as the morphological expression of function and hence did nothing to clarify —but rather much to obscure—the true nature, extent and mechanism of the human pharynx. And the historical priority of human anatomical terminology was to exert an equally obscurantist effect upon comparative mammalian terminology. For the pioneers of comparative anatomy approached their own studies equipped with an established pharyngeal terminology borrowed in its entirety from human anatomy and hence with preconceived notions of pharyngeal structure such as prevented their independent establishment of a strictly morphological nomenclature for the parts included under the general term "pharynx". This mischance is

https://doi.org/10.1017/S0022215100057169 Published online by Cambridge University Press

less surprising than might at first sight appear, particularly when it is recalled that many of the earlier comparative anatomists were human anatomists also, that the human pharynx of description is simpler in arrangement and more easily appreciable than are the pharyngeal arrangements of many lower forms, and that convenience—an important factor in any terminology—may sometimes best be served by the adoption of an accepted, though by no means ideal, nomenclature.

Since successive (and more or less official) revisions of human anatomical nomenclature have curiously left undisturbed the traditional concept of the pharynx, this region of the body is in all standard anatomical texts, and in established anatomical teaching, defined as extending from the cranial base to cricoid cartilage level and as descriptively divisible

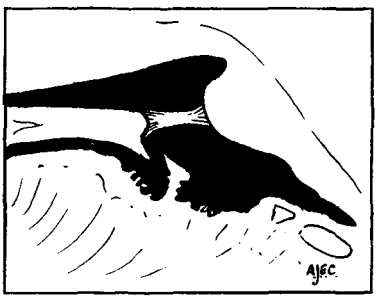


FIG. 1.

Fœtal Gorilla. Epipharynx, hiatus nasopharyngeus and associated parts. The tongue has been depressed and the epiglottis dislodged from its contact with the uvula.

into three parts. These parts are (1) the naso-pharynx, defined as that part of the pharynx communicating anteriorly with the nasal fossae and limited inferiorly by the level of the hard palate, (2) the oro-pharynx, communicating with the mouth cavity and bounded by the levels of hard palate superiorly and of hyoid bone inferiorly, and (3) the laryngo-pharynx, communicating with the laryngeal aditus and lying between the levels of hyoid bone superiorly and sixth cervical vertebra inferiorly. This notion of a tri-partite pharynx, though purely descriptive and doing violence to morphology, proves—and for long has proved—eminently satisfactory in anatomical and clinical practice; and until quite recently it has, for the most part, been uncritically accepted by both anatomist and clinician as affording sufficient precision of topographical reference and as permitting a logical terminology in respect of pharyngeal pathology.

But in recent years this traditional concept of the pharynx has been challenged from both the anatomical and the clinical direction. Anatomists working in the Hunterian tradition—Negus (1929) implicitly, Wood Jones (1940) more explicitly—have made abundantly plain the true morphology

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of the mammalian (and human) pharynx. The data of vertebrate evolution and of comparative anatomy have been utilized to clarify and render functionally intelligible the entire arrangement of the human "pharynx". The nasopharynx has been recognized for what it really is—a respiratory compartment situated above the dorsal muscular wall of the pharynx proper, itself disrupted that communication may be established between this epi-pharyngeal chamber and the larynx. The "nasopharynx" of



FIG. 2.

Four-year-old Gorilla, showing floor of epipharynx and hiatus nasopharyngeus in apposition with laryngeal aditus.

description is demonstrated irrefutably to be of non-pharyngeal provenance and nature and the term "pharynx" itself is properly restored and restricted to that part only of the alimentary tract which connects the buccal cavity with the œsophagus—as in Galen's original definition. It is, perhaps, both deplorable and significant that Wood Jones's admirably cogent demonstration of the true order of things pharyngeal should, two decades later, still have escaped embodiment in the standard anatomical treatises, as well as the attention of those anatomists who are so industriously and continuously occupied with the establishment of uniformity in international anatomical nomenclature. Meantime, on the clinical side, the rhinolaryngologist has obviously grown dissatisfied with the term

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"nasopharynx" and is in process of replacing it by the more morphologically apt, but nevertheless unfortunate, designation of "postnasal space". Lambert (1960) in particular has so wholeheartedly advocated the general and immediate adoption of this latter term that his plea therefor—well enough based on Wood Jones's analysis of pharyngeal morphology—will doubtless appeal to many of his clinical brethren.

But nomenclatorial changes, even when desirable, or inevitable in the light of a fuller appreciation of underlying structure and function, should not be introduced uncritically or in the interest of a single discipline only: others beside the specialist have an interest in the aptness of such changes.

If there be genuine need—as seems indeed to be the case—for some new and more satisfactory term whereby to designate the "nasopharynx" of formal description, it were wisest to select some term acceptable equally to the morphologist, the anatomist, the pathologist and the clinician, a term, moreover, which embodies morphological validity, descriptive accuracy and convenience of pathological terminology. And herein, unquestionably, the term "postnasal space" cannot commend itself as an ideal, or even adequate, substitute for the canonical "nasopharynx". For in ignoring the nasopharyngeal parietes and concentrating nominally upon the cavity which these circumscribe this term substitutes the negative for the positive and the part for the whole. Further, it renders awkward, not to say nonsensical, any convenient local pathological nomenclature, inasmuch as a cavity may contain the phenomenon of, but cannot itself give rise to, inflammatory, degenerative or neo-plastic processes. (For example, "tumour of postnasal space" is literally meaningless, because implying a physical impossibility: such a phrase intends, not some mythical vacuoma, but a tumour occupying the space though arising outside it). Moreover, "postnasal space" literally implies a cavity *behind* the nasal chambers, whereas the whole burden of Wood Jones's (1940) classic paper on the velum of the soft palate was to demonstrate beyond all cavil that the space in question was essentially nothing other than "the posterior part of the nasal chambers" themselves. The term "postnasal" therefore conveys no immediate sense of functional and morphological participation in the machinery of the nasal (respiratory) passage and in this regard must be held to be much inferior to the accepted "nasopharynx", a term which (no matter how morphologically unsatisfactory) does at least imply some active association of a particular space with the business of respiration.

Somewhat surprisingly Wood Jones (1940), concentrating upon the true nature of the soft palate as the actual roof of the morphological pharynx, upon the functionally inevitable isthmus nasopharyngeus and its guardant sphincter (*M. palatopharyngeus*), did not allot any more specific designation to the so-called nasopharynx than "the posterior part of the nasal chambers", as truly indeed it is. But some apt and accurate term is

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clearly desirable for this respiratory region lying behind the nasal fossae and above the true pharynx, and it were confusing as well as impracticable to devise any nomenclatorial label inclusive equally of the accepted nasal fossae and the more posteriorly disposed respiratory space.

In view of all these considerations it is suggested that the most obviously appropriate descriptive label for the ancient "nasopharynx" or modern "post-nasal space" is the dignified, topographically accurate and morphologically explanatory term, "epipharynx", a term which proclaims unequivocally the distinctness of the region named from the pharynx proper, is anatomically precise and is readily conducive to the establishment of an intelligible, concise and euphonious pathological nomenclature.

The human epipharynx is definable as that post-choanal respiratory chamber, continuous anteriorly with the nasal fossae and communicating inferiorly with the pharynx proper through the nasopharyngeal isthmus: superiorly it is limited by the basis cranii, inferiorly by the velum palatini and *M. palatopharyngeus* (*sensu stricto*), posteriorly by the meeting of its superior and inferior parietes. Its lower lateral limit is Passavant's ridge (or the underlying palatopharyngeus fibres) and it is lined throughout by a vascular mucosa rich in lymphoid tissue and provided with a respiratory (ciliated) epithelium.

REFERENCES

LAMBERT, V. (1960) *J. Laryng. and Otol.*, **74,** 1.
NEGUS, V. E. (1929) *The Mechanism of the Larynx.* London: Heinemann.
WOOD JONES, F. (1940) *J. Anat.* (*Lond.*), **74,** 147.

Dept. of Anatomy,
St. Bartholomews Medical College,
Charterhouse Square, E.C.1

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