

THE NOMENCLATURE OF BRONCHO-PULMONARY ANATOMY *

AN INTERNATIONAL NOMENCLATURE ACCEPTED BY THE THORACIC SOCIETY

The need for uniformity in the nomenclature of broncho-pulmonary anatomy has long been apparent, and the Thoracic Society appointed a subcommittee to report on the matter. The members of this subcommittee were:

Mr. V. E. Negus (Chairman)
Professor A. B. Appleton
Mr. R. C. Brock
Dr. A. F. Foster-Carter

A meeting was held on May 4, 1949, and a scheme was agreed to. It was, however, reported that Professor E. Huizinga had proposed that an international committee should be formed to discuss the same subject on the occasion of the International Congress of Otolaryngology which was to be held in London in July, 1949, under the presidency of Mr. Negus.

The advantages of reaching agreement on an international plane being obvious, it was agreed that Mr. Negus, Professor Appleton, and Mr. Brock should attend this larger committee and that the recommendations made by the Thoracic Society subcommittee should desirably be used as a basis for discussion. If general agreement could be reached the common nomenclature thus decided upon should be submitted for approval to the Thoracic Society as the final recommendation of their subcommittee. It was realized that some small points of difference might have to be yielded for the sake of common agreement.

The international committee was formed and met on July 21, 1949, in the Council Room of King's College, London.

Those present were:

Chairman, Mr. V. E. Negus (Great Britain)	
Secretary, Professor E. Huizinga (Holland)	
Dr. Louis H. Clerf	} United States
Dr. Paul Holinger	
Dr. Chevalier L. Jackson	
Dr. Gabriel Tucker	
Professor A. B. Appleton	} Great Britain
Mr. R. C. Brock	
Professor T. Nicol	
Dr. J. M. Lemoine	} France
Dr. A. Soulas	
Professor F. Eeman	Belgium
Dr. P. Barretto	Brazil
Dr. Tage Kjaer	Denmark
Dr. T. Leegard	Norway

* The Editors are indebted to Mr. R. C. Brock for this report and for the use of his diagrams.

It is worthy of mention that Dr. Lemoine made a special journey from Paris to attend this meeting.

It was understood that such a committee formed without any official power lacked the authority to come to a binding decision and therefore the most it could do was to recommend a suitable nomenclature.

The preliminary report made by the representatives of the Thoracic Society was accepted as a basis for discussion and, indeed, only a few alterations were made as can be seen from Table I. The need for final agreement was recognized by all, and in this spirit agreement was reached after a full and cordial discussion lasting about four hours.

THE BASIS OF A COMMON NOMENCLATURE

It was agreed that the discussion should deal chiefly with the nomenclature applied to the major broncho-pulmonary segments and the bronchi related to them, and should not concern itself with minor divisions or with anatomical variants. Study of the various writings on the subject reveals that there is now fairly general agreement on the number and arrangement of these chief segments.

In the report published by a French committee (Kourilsky *et al.*, 1948) the following points are laid down for an acceptable nomenclature.

1. It should be understood by all and not only by specialists.
2. It should conform with those anatomical arrangements that have been established with certainty.
3. It should be easily understood and should conform to the classical descriptive anatomy.
4. The creation of an entirely new nomenclature should be avoided.
5. It should be as simple as possible.
6. The terms employed should be easily translated into other languages.

Conformity With the Usual Terms of Descriptive Anatomy.—Conformity with the terms usually employed in descriptive anatomy is especially important, and after discussion the following basic terms were accepted.

(i) *Medial* and *lateral* as opposed to internal and external.

The only dissenters were the two French representatives, who felt that “interne” and “externe” were so widely used and accepted in France that they should be retained and that “medial” and “lateral” were not satisfactory. It was pointed out that an international committee on general anatomical nomenclature would be deliberating within a year and that probably the French would accept the final recommendations of this committee. In the meantime “interne” and “externe” were to be used by the French.

(ii) *Lateral* instead of axillary.

(iii) *Anterior* and *posterior* instead of ventral and dorsal.

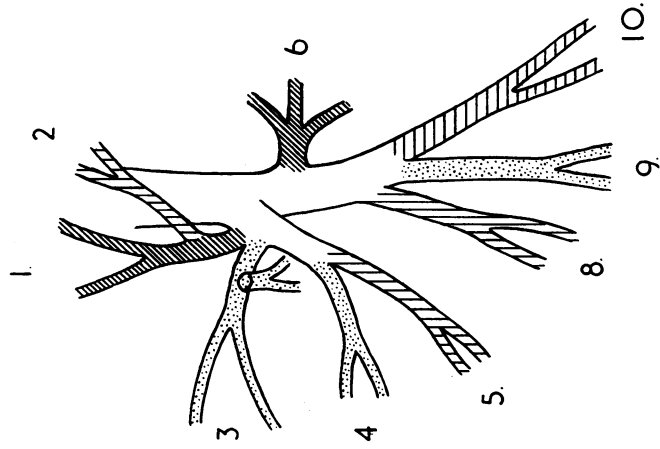
It was also agreed that each broncho-pulmonary segment should receive a standard number which is indicated in the succeeding scheme (Fig. 1).

THE RIGHT LUNG

The Right Upper Lobe.—The bronchus to the right upper lobe should not be called the eparterial bronchus; the direct descriptive term is better, viz., upper lobe bronchus.

R

LEFT LATERAL



UPPER LOBE

- 1. Apical bronchus
- 2. Posterior bronchus
- 3. Anterior bronchus

LINGULA

- 4. Superior br
- 5. Inferior br

MIDDLE LOBE

- 4. Lateral br
- 5. Medial br

LOWER LOBE

- 6. Apical bronchus
- 7. Medial basal (cardiac) br
- 8. Ant. basal br
- 9. Lateral " "
- 10. Post " "

RIGHT LATERAL

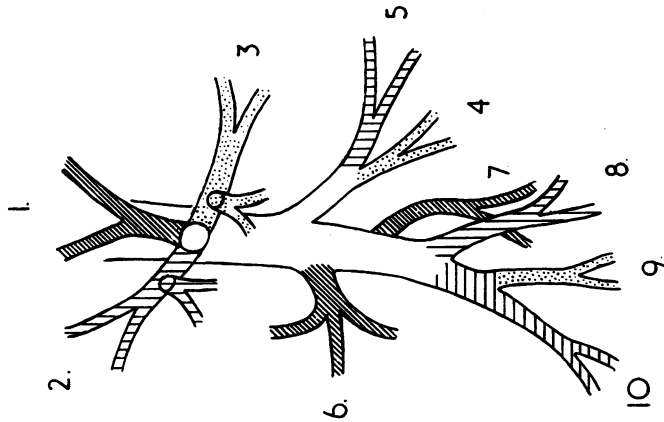


FIG. 1.—Diagram of scheme of nomenclature of the segmental bronchi.

It was agreed that there are usually three main divisions of the right upper lobe bronchus and three main segments in the lobe ; in a certain proportion of cases (probably 10%) one of the lateral divisions may arise directly or almost directly from the right upper bronchus so as to constitute an apparent fourth division, and in such cases the bronchus should be called the lateral bronchus and its segment the lateral segment. The three constant bronchi and segments should be named :

1. Apical bronchus and segment.
2. Posterior bronchus and segment.
3. Anterior bronchus and segment.

The Middle Lobe.—The two branches and segments should be named :

4. Lateral bronchus and segment.
5. Medial bronchus and segment.

The Right Lower Lobe.—The number and arrangement of the chief branches and segments were not disputed although some uncertainty was expressed as to the degree of importance of the subapical segment and the frequency of its presence. The following names were accepted :

6. Apical bronchus and segment.
7. Medial basal (cardiac) bronchus and segment.
8. Anterior basal bronchus and segment.
9. Lateral basal bronchus and segment.
10. Posterior basal bronchus and segment.

There was considerable discussion about the terms “apical” and “superior,” and “apical” was finally accepted on a vote 8 : 5. This allows the term “subapical” to be used, when needed, to describe the appropriate bronchus and segment. Subapical was felt to be a better and more euphonious term than “subsuperior.”

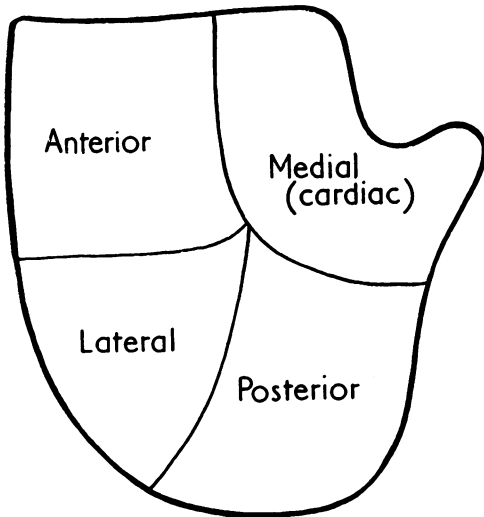


FIG. 2.—Diagram of basal view of right lung to demonstrate the arrangement of anterior, posterior, medial (cardiac), and lateral segments.

There was also considerable reluctance to reject the term “cardiac” since it was well used ; it indicated a segment which had no independent supply on the left side and was of value in comparative anatomy in which it applied to a separate lobe. On the other hand the simplicity for teaching purposes of anterior, posterior, medial, and lateral was remarked upon and it was agreed to retain “cardiac” in brackets (Fig. 2).

THE LEFT LUNG

The Left Upper Lobe.—It was agreed that the lower division of this bronchus should be called the *lingular* bronchus and its distribution the *lingula* ; also that the segments of the lingula should be called superior and inferior. A proposal that the lingular bronchus should be called the lower division was defeated by 11 votes, chiefly because it was felt that the term would cause confusion when translated

into other languages and would also not be used much in practice. It was agreed that the "lower division" should be put in brackets.

That portion of the left upper lobe bronchus immediately after the origin of the lingular bronchus and before further branching has occurred should be called the *left upper division*.

The recommendations are therefore:

Upper Division Bronchus

1. Apical bronchus and segment.
2. Posterior bronchus and segment.
3. Anterior bronchus and segment.

Lingular (Lower Division) Bronchus

4. Superior bronchus and segment.
5. Inferior bronchus and segment.

The Left Lower Lobe.—The arrangement of the left lower lobe should be described as follows:

6. Apical bronchus and segment.
8. Anterior basal bronchus and segment.
9. Lateral basal bronchus and segment.
10. Posterior basal bronchus and segment.

It should be noted that the absence of a medial basal (cardiac) segment involves omission of segment 7 in the left lung.

This report of the international committee was submitted to a general meeting of the Thoracic Society on February 24, 1950, and was accepted as an official nomenclature. It is hoped that other societies throughout the world will act similarly.

The Right Bronchus.—As the international committee was about to break up and several members had already left, some discussion occurred about a name for that portion of the right bronchus between the upper lobe and the middle lobe branches. No agreement was reached on this matter, but a number wished to press for acceptance of the term "right stem bronchus"; others thought it should be included in the term "right main bronchus."

This matter was discussed fully by the Thoracic Society since international agreement had not been reached. It was pointed out that a number of terms had been suggested, such as "bronchus impar," "hyarterial," "stem," "intermediate," "descending," etc., and that none of these was really acceptable. It was agreed that the bronchus in question is part of the right main bronchus, which, arising at the carina, gives off a branch to the upper lobe, a branch to the middle lobe, and then becomes the lower lobe bronchus. It was therefore proposed, and accepted unanimously, that that part of the right main bronchus from

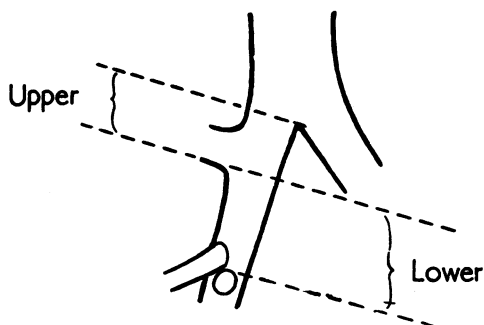


FIG. 3.—Diagram to show the suggested nomenclature of the right main bronchus, in particular that portion between the origin of the right upper lobe bronchus and the apical lower bronchus.

the middle lobe, and then becomes the lower lobe bronchus. It was therefore proposed, and accepted unanimously, that that part of the right main bronchus from

TABLE I

THE PROPOSED INTERNATIONAL NOMENCLATURE COMPARED WITH VARIOUS OTHER SCHEMES

International Nomenclature	Brock	Jackson and Huber	Huizinga	Kourilsky <i>et al.</i>	Foster-Carter
<i>RIGHT</i>					
<i>Upper lobe bronchus</i>					
Apical (1)	Pectoral	Anterior	Pectoral	Anterior } Lat-	Anterolateral Posterolateral Apical
Posterior (2)	Subapical	Posterior	Axillary	Posterior } eral	
Anterior (3)	Apical	Apical	Apical	Apical	
<i>Lower part of right main bronchus</i>					
					Descending
<i>Middle lobe bronchus</i>					
Lateral (4)	Lateral	Lateral	Lateral	Lateral	Lateral
Medial (5)	Medial	Medial	Medial	Anterior	Anterior
<i>Lower lobe bronchus</i>					
Apical (6)	Apical	Superior	Upper dorsal	Apical	Dorsal
Medial basal (cardiac) (7)	Cardiac	Medial basal	Cardial	Medial	Cardiac
Anterior basal (8) ..	Anterior basal	Anterior basal	Upper ventral	Anterior	Anterior basic
Lateral basal (9) ..	Middle basal	Lateral basal	Lower ventral	Lateral	Middle basic
Posterior basal (10) ..	Posterior basal	Posterior basal	Lower dorsal	Posterior	Posterior basic
<i>LEFT</i>					
<i>Upper lobe bronchus</i>					
<i>Upper division</i>					
Apical (1)	Apico-pectoral	Upper division	—	—	Ascending
Apico-posterior (1) and (2)	Apical	Apical	Apical	Apical	Apical
Posterior (2)	—	Apical-posterior	Middle	—	Apico-posterior
Anterior (3)	Subapical	Posterior	—	Posterior	Posterolateral
	Pectoral	Anterior	—	Anterior	Anterolateral
<i>Lingula (lower division) ..</i>					
	Lingula	Lower (lingular) division	Anterior	Lingula	Lingula
Superior (4)	Upper	Superior	—	Upper	Lateral
Inferior (5)	Lower	Inferior	—	Lower	Anterior
<i>Lower lobe bronchus</i>					
Apical (6)	Apical	Superior	Dorsal	Apical	Dorsal
Anterior basal (8) ..	Anterior basal	Anterior-medial basal	Lateral-ventral	Anterior	Anterior basic
Lateral basal (9) ..	Middle basal	Lateral basal			Middle basic
Posterior basal (10) ..	Posterior basal	Posterior basal	} Dorsal-medial	Lateral Posterior	Posterior basic

the carina to the lower lip of the right upper lobe bronchus should be called "upper" and that part from the lower lip of the upper lobe to the upper lip of the apical lower bronchus should be called "lower." That is, the portion of bronchus on which no final agreement was reached at the international committee should be called "the lower part of the right main bronchus" (Fig. 3).

It is not expected that this term will necessarily be accepted internationally as it is a decision made by the Thoracic Society alone, but it is hoped that it will indeed be so accepted.

Table I is submitted for convenience in showing how the international scheme corresponds with the various others with which people are familiar.

REFERENCE

- Kourilsky, R., D'Hour, H., Garraud, R., Lecoeur, J., and Lemoine, J. M. (1948). *J. franc. Méd. Chir. thorac.*, 2, 1.