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
Dr. Paul Holinger
Dr. Chevalier L. Jackson
Dr. Gabriel Tucker
Professor A. B. Appleton
Mr. R. C. Brock
Professor T. Nicol
Dr. J. M. Lemoine
Dr. A. Soulas
Professor F. Eeman
Dr. P. Barretto
Dr. Tage Kjaer
Dr. T. Leegard

United States
United States
Great Britain
France
Belgium
Brazil
Denmark
Norway

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

1. Apical bronchus
2. Posterior bronchus
3. Anterior bronchus
4. Superior br.
5. Inferior br.
6. ditto
7. Apical bronchus
8. ditto
9. ditto
10. ditto

MIDDLE LOBE

4. Lateral br.
5. Medial br.
6. ditto
7. Medial basal (cardiac) br.
8. Ant. basal br.
9. Lateral " "
10. Post. " "

LOWER LOBE

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.”

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...
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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," "hyparterial," "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
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#### TABLE I

**The Proposed International Nomenclature Compared with Various Other Schemes**

<table>
<thead>
<tr>
<th>International Nomenclature</th>
<th>Brock</th>
<th>Jackson and Huber</th>
<th>Huizinga</th>
<th>Kourilsky et al.</th>
<th>Foster-Carter</th>
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<tbody>
<tr>
<td><strong>RIGHT</strong></td>
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<td><strong>Upper lobe bronchus</strong></td>
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<td>Apical (1)</td>
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<td>Anterior</td>
<td>Pectoral</td>
<td>Anterior</td>
<td>Anterolateral</td>
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<td>Posterior (2)</td>
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<td>Posterior</td>
<td>Axillary</td>
<td>Lat-</td>
<td>Posterolateral</td>
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<td>Apical</td>
<td>Apical</td>
<td>Apical</td>
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<td>Apical</td>
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<td><strong>Lower part of right main bronchus</strong></td>
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<td>Lateral (4)</td>
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<td>Medial (5)</td>
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<td>Medial</td>
<td>Medial</td>
<td>Anterior</td>
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<td><strong>Lower lobe bronchus</strong></td>
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<td>Apical (6)</td>
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<td>Superior</td>
<td>Upper</td>
<td>Apical</td>
<td>Dorsal</td>
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<tr>
<td>Medial basal (cardiac) (7)</td>
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<td>Medial basal</td>
<td>Cardial</td>
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<td>Cardiac</td>
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<td>Anterior basic</td>
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<td>Middle basic</td>
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<td>Posterior</td>
<td>Lower</td>
<td>Posterior</td>
<td>Posterior basic</td>
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<td><strong>LEFT</strong></td>
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<td><strong>Upper lobe bronchus</strong></td>
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<td><strong>Upper division</strong></td>
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<td>Apical (1)</td>
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<td>Apical</td>
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<td>Apico-posterior (1) and (2)</td>
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<td>Anterior</td>
<td>—</td>
<td>Apical</td>
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<tr>
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<td>Posterior</td>
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<td>Anterior (3)</td>
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<td>Anterior</td>
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<td><strong>Lingula (lower division)</strong></td>
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<td>Lower (lingual)</td>
<td>Anterior</td>
<td>Lingula</td>
<td>Lingula</td>
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<td>Superior (4)</td>
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<td>Upper</td>
<td>Lateral</td>
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<td>Inferior (5)</td>
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<td>Inferior</td>
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<td>Lower</td>
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<td><strong>Lower lobe bronchus</strong></td>
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<td>Apical (6)</td>
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<td>Superior</td>
<td>Dorsal</td>
<td>Apical</td>
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<tr>
<td>Anterior basal (8)</td>
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<td>Dorsal</td>
<td>Posterior basic</td>
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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