The subject has a definite description—medical journals—yet a great deal that concerns medicine and science also concerns general and non-scientific periodicals. Some scientific journals have obvious differences: in chemistry, the formulae, and in mathematics, the equations, are examples of this. Medicine and its related subjects are not necessarily more difficult. Whereas medicine and science are the very embodiment of scientific order and rule—practical, conceptual, disciplined—finding concepts and headings in history or economics is quite different, and often far more time-consuming.

Medicine, because of its synonyms, adjectivally-controlled phrasing, drugs' proprietary and pharmaceutical names, syndromes, near-equivalent descriptions, Latin words, and assorted lay terms, produces problems of its own. 'New' subjects, with in-depth scientific terms that are unfamiliar even to the average doctor—and, indeed, often do not appear in reference books (understandably, because the purpose of a scientific journal is to publish new work and research)—are the bane of an indexer. Usually the only course on these occasions is to contact the journal's editor for the relevant information. Guess-work and assumption should never be used, however scientifically qualified the indexer may be. Some terms can be used wrongly even by authors. The time-honoured example of coronary heart disease is one example. 'Coronary' and 'heart' are almost synonymous. CORONARY ARTERY DISEASE should be used. Later, when cross-references are discussed, it will be seen that so-called synonymous terms like KIDNEY and RENAL should be looked at carefully.

The example of coronary heart disease has a direct bearing on how to index a medical journal, because all terms must be consistent within one volume, though the next volume need not necessarily follow the same headings. Some reasons for this will be obvious: last year's headings may no longer be used; an issue may be devoted to one particular subject and repetition of headings undesirable; or a new editor may change terminology. The importance of this topic will be mentioned again, but it should be noted that this has a bearing on indexing by computer.

At an early stage decisions should be taken on what to include in the index. As with most journals, medical journals often include sections of interest other than the main articles. It is relatively easy to decide whether to include general society notes and news, obituaries, calendars, book reviews and general instructions, but three sections require more thought: proceedings, correspondence and abstracts. Proceedings can overtake the original papers two or three-fold, sometimes more, but they are often a most important part of the publication and should be included; this also applies to correspondence. Abstracts sections should be considered in the light of the importance of the section.

Quite often an indexer is asked to produce an index from keywords, and sometimes the person requesting this does not know exactly what he means, believing that a keyword is the only way to find the paper in the index, and the title 'turned round' is enough. For a great number of journal paper headings it is sufficient to twist the title round with extraneous words left out, and prepositions not left at the end of the entry, but there are enough titles like the following examples to make the wise indexer say that keywords are not always good practice:

1) Visual evoked potentials in Negro carriers of the gene for tyrosinase positive oculocutaneous albinism.
2) Changes in neutrophil activation and free radical activity after thrombolysis for myocardial infarction in man.

In these examples it can be seen that if the title were rotated each time the entry in the index would be too long, and if an attempt were made to use keywords too many entries would be envisaged. What is really needed is a four or five-word paraphrase of the title, keeping the subject intact. This is where there is no substitute for expertise in this kind of indexing.

The indexer is advised to scan each paper for headings that may not be apparent from the title. It is not unusual for words in the title never to be used again in the paper; nor for the editor or author to allow a title to contain irony, a question, or a clever play on words which if used in the index would mean nothing. Occasionally, a word like 'drugs' will appear in the title, when the whole paper is on one particular drug, a group of drugs, or a combination, and it is only by scanning the papers that these and other problems are discovered.

Cross-references
In medical journals cross-references are among the most important part of the index. They cause many pitfalls. For example, HEPATIC is not always the equivalent of LIVER. We do not have liver arteries—they are always known as hepatic arteries. Similarly, KIDNEY and RENAL, and LUNG and PULMONARY. So often, too, an adjective is used to describe an area, whereas the noun is
a specific organ, and, although it may be considered bad practice to use adjectival entries, sometimes there is no alternative. RENAL FAILURE, ADRENAL CORTICAL FAILURE, ATRIAL FIBRILLATION, FARMER'S LUNG and RHEUMATIC FEVER are examples of these; and even ACUTE ABDOMEN and CHRONIC BRONCHITIS, which are very specific, can be used, although these are the only examples when ACUTE and CHRONIC may be allowed in this way. Cross-references should be used where diseases are eponymous, cross-referring the named term and the specific medical description, and they must be used to prevent repetition of sub-entries and synonyms.

Types of journals

There are, of course, many different types of medical journals. British Medical Journal, The Lancet and Journal of the American Medical Association are examples of general medicine, while British Journal of Industrial Medicine, British Heart Journal and Journal of Medical Genetics are specialty journals. Some journals are published by societies: for instance, Archives of Disease of Childhood is the journal of the British Paediatric Association. Others publish abstracts only, and in recent years a different type of journal has appeared—one that commissions reviews of particular subjects and covers all work on that subject over a given period of time—for example, Current Opinion in Anaesthesiology.

The different types of journal are mentioned because the style of the publication influences the indexing and method of indexing, some putting more emphasis on techniques, clinical methods or surgical procedures, while others are interested in occupation, community medicine or pure research. For instance, in Annals of Clinical Biochemistry the name of a technique would be included in the index, but it is unlikely that this would be needed in the index for British Journal of Industrial Medicine, although it may be mentioned in the paper.

The method of preparing the index, the words and headings used may vary between indexers, but all entries must be consistent. The use of adjectival entries has been mentioned. A suitable way to avoid using the adjective and to keep all entries together, where the noun has also been used, is to employ the 'Atrium (atrial)' type of heading. Similarly, singular and plural words can be grouped.

Cumulative indexing requires further thought about subject headings. It has been observed that headings from volume to volume may vary, providing that cross-references are used, but in the cumulative volume these must be brought together. For example, STABLE ANGINA, VARIANT ANGINA and PRINZMETAL ANGINA: in an annual volume, if there were only one paper on each subject, there would be entries under each word of the heading. In the cumulative volume all would be under ANGINA, with a cross-reference from each first word.

An unseen problem in medical journal indexing is the progress of medicine, the becoming obsolete of certain expressions, and the recognizing of new phrases or those becoming standard phrases. In the Journal of Medical Genetics, for example, for many years 'chromosomes' dominated the papers and scientific reports. Although by no means obsolete, the word has become less used, and recourse to the editor confirmed that other headings were more suitable. DNA probes were being used a lot—did they warrant entries or should they be entered differently? Answers had to be found. There are many such problems in this as in all fields of medicine, and the indexer has to watch for the possibilities.

Author indexes have to be prepared, of course, and mostly they are similar to those in other journals. In medicine and science, in particular, there is a great tendency for multiple-author papers. Sometimes as many as ten or twenty names will be given, and the decision to include them all has to be made. In publications like Index Medicus and services like MedLars only the first three or five names will be indexed, but there is a special reason for an annual journal index to include them all, if possible. It is not unusual for the most important author to put his or her name at the end, or for all the names to be placed in alphabetical order. This means that the author likely to be remembered by the user may not be indexed. Other problems concerning cataloguing rules for cross-references for double-barrelled names, names beginning with von, de la, de and other non-English usages have to be dealt with at an early stage, as does the indexing of Arabic and Chinese spellings.

Whether the subjects and authors should be combined as in a dictionary catalogue or kept separate is a matter for discussion between publisher and indexer, but the separate form is usually preferred. Practical methods of indexing vary among indexers. Some publishers accept indexes on slips, some require a typescript, and others like to receive computer-prepared indexes on discs. Financially, there is little difference to the indexer.

Co-operation with publishers is important. Journals may be weekly, monthly, bi-monthly, quarterly or irregular, and published as one, two or more volumes per year. The programme for publishing must be obtained from the publisher early on, and deadlines noted. Proofs of the last parts of the journal are sent to the indexer as soon as pagination is known, so that if the index is to be placed at the end of the last issue it can be prepared in advance of the publication of the final part.

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