Guy Rondeau's article (pp. 152--158) is a linguist's realistic reminder that terminological data (foreign equivalents) are to be looked for in texts (good translations) and that computers can help in the process.

Specialized lexicography and the problems of analytic comparison of corresponding terminologies in different languages expressing divergent cultures is the topic of Alexander Lane's report on legal and administrative terminology (pp. 77–84).

The numerous facettes of computer-assisted terminological work are discussed, for example, in the accounts presented by Friedrich Lang (pp. 143–144), K.H. Brinkmann and Eberhard Tanke (pp. 180–186) and Marcel Paré (224–233).

Ingetraut Dahlberg's approach to classification through the intermediary of terms designating subject fields reemphasizes the significance of terminology for the construction of classification systems (pp. 61–71; see also Intern. Classificat. 2 (1975), 31–37).

Of the reports on translation services could be noted for example those by J. Albert Bachrach, dealing with the joys and miseries of translating and interpreting (pp. 108–117) and by J. Goetschalckx, characterizing the work of a bureau for terminology (pp. 137–140).

A balanced description of the problems facing a committee serving users by coining new terms and wording definitions was presented by Pierre Agron (pp. 44–55) and the problems of terminological advisory activities were sketched by Miroslav Roudný (pp. 92–95).

J.-D. Gendron's is an interesing account of centralized terminological activities resulting from a concentrated effort to improve and enrich the terminology of a language entering into new functions previously performed by another language (pp. 130–136).

The report by S. Czerni surveys more than thirty years of extensive experience in publishing specialized dictionaries and technical literature and in linking terminological standardization to technical publishing (pp. 126–129).

The longest report in the volume is by J. S. F. Laurent and provides information about the activities of a national standardization institution (AFNOR) and about its terminological bank of standardized terms, NORMATERM (pp. 193–223).

From the viewpoint of Infoterm, the essential result of the symposium was the participants' recommendation "that Infoterm take immediately appropriate action with a view to establishing a world-wide network for the co-ordination of terminological work" (p. 322) This endorsement can be considered a success and an encouragement for further steps in this vast and ambitious international project. Rostislav Kocourek

SCHNEIDER, Klaus: **Computer aided Subject Index System for the Life Sciences.** München: Verlag Dokumentation 1976. XIII, 205 p., DM 36,–. ISBN 3-7940-2810-4.

The system CASIN (*C*omputer *A*ided *S*ubject *I*ndex) was developed to produce the subject index to *Food Science and Technology Abstracts* (FSTA), and has been applied since the start of Volume 7 in 1975. The manual being reviewed is a reference tool for the practising indexer, but the standard of production is far higher than average for works of this type. The size (approximately A5) is convenient, and type faces have been well-chosen; a sensible use has been made of different types to emphasise points in the text or to represent examples of working documents and output. As an extra bonus, the text is punctuated at various points by well-chosen examples of the computer graphics of Manfred Mohr. The work is divided into three sections covering: (a) a general account of the system; (b) working with the indexing input form; (c) data recording and processing. Explanatory text appears on recto pages, and examples are shown on the facing verso pages.

The production of the CASIN manual emphasizes the point that we are now in the age of the computer-aided subject index. Inevitably, then, the system has to stand comparison with other indexes of this type, such as: (a) the Articulated Subject Index (ASI) developed by Armitage and Lynch at Sheffield University in England, and currently used in *World Textile Abstracts*; (b) PRECIS (*PRE*served *C*ontext *I*ndex *S*ystem), the system used in the *British National Bibliography*, the *Australian National Bibliography*, and various other catalogues and bibliographies. (A brief account of PRECIS was printed in an earlier issue of *Intern. Class.* 1 (1974) No. 2, p. 91–94, and the PRECIS 'Manual' was reviewed in a later issue, 2 (1975) No. 2, p. 116–117).

In these, as in other systems of the same type, it is the computer, not the human indexer, which formats the index entries, and the indexer's task is limited to writing machine-readable input in accordance with the rules of the system. Entries in all three systems can occupy two lines in the index if they refer to compound subjects. In CASIN, as in the ASI, the first line consists of bold face *heading*, supplemented by further information on the second line. The format of PRECIS is slightly more complex, insofar as the first line contains two positions, i. e. a bold face *lead term*, followed by other terms in roman or italic, called the *qualifier*, which establish the 'context' in which the lead has been considered in the subject to hand. The second line in PRECIS is called the *display*, and this shows those terms which are themselves context-dependent upon the lead. Examples of subjects taken from the CASIN manual, but treated in accordance with PRECIS procedures, are shown below for comparison.

The ASI differs from both CASIN and PRECIS in its lack of formal guidance to indexers on the preparation of input. No particular rules are laid down which regulate the order in which concepts should be organised into input strings: it is usually enough to write a 'title-like' phrase, close to natural language, but favouring the use of prepositions as much as possible. Terms which are needed as headings are indicated by special marks, and the prepositions then function as articulation points when the index is being produced. Little or no provision is made in ASI to indicate extra-subject factors, such as the type of document, or the class of users for whom it is intended.

A space for writing a title-like phrase is also provided on the CASIN input form, but the articulation of the phrase,

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generally by simple inversion, is not controlled by the prepositions, but is indicated by a special mark, ⌶, written after a preposition. Any term in the phrase required as a heading is written in a special 'keyword' box, as well as in the phrase itself. In addition, the indexer can assign terms to extra boxes which hold names of bibliographic forms and place names. For example, if the indexer wrote a phrase such as:

aflatoxins in ⌶ cheese

– and also filled in extra boxes indicating a place element, 'USA', and two form elements, '(for Regulations)' and '(for Review)', the computer would produce the following entries:

Aflatoxins
cheese, aflatoxins in, Regulations, Review, USA

Cheese
aflatoxins in cheese, Regulations, Review, USA

Regulations
cheese, aflatoxins in, Review, USA

Reviews
cheese, aflatoxins in, Regulations, USA

United States of America
cheese, aflatoxins in, Regulations, Review

When the elements written in the separate boxes (form and place names) appear in the second line of the entry, they are printed in pre-determined positions known as *type trailers* and *country trailers.* It is interesting to compare these entries with those produced for the same subject by PRECIS, assuming the same terminology:

United States
Cheese. Components: Aflatoxins – *Regulations – Reviews*

Cheese. United States
Components: Aflatoxins – *Regulations – Reviews*

Aflatoxins. Cheese. United States
– *Regulations – Reviews*

Regulations
United States. Cheese. Components. Aflatoxins – *Regulations – Reviews*

Reviews
United States. Cheese. Components. Aflatoxins – *Regulations*

It seems clear, from some of the examples in the manual, that the articulation mark can only handle subjects up to a certain level of complexity. For example, a subject such as 'Effects of fertilizers on the composition of tomatoes' would be input as:

fertilizers & composition of ⌶ tomatoes

and this would generate the entries:

Fertilizers
tomatoes, fertilizers & composition of

Tomatoes
fertilizers & composition of

To the present reviewer, these entries appear to be more ambiguous than those produced from the treatment of this subject by PRECIS:

Tomatoes
Composition. Effects of fertilizers

Fertilizers
Effects on composition of tomatoes

The author of the manual acknowledges certain difficulties in the treatment of compound terms, particularly adjectival constructions. These are inverted to emphasise the noun, though it is recognised that ". . . this way of ordering the adjectives may be slightly wrong from a linguistic point of view, but for indexing purposes it is desirable." (p. 45). To reinforce this point, the author later adds that ". . . Since the noun represents the essential information of the [concept], I would recommend that the indexer place the qualifying adjective after the noun it modifies . . . The user should accept this unusual ordering in the subject index because it is to his advantage". Nevertheless, the present reviewer is not sure how far a user is prepared to accept entries such as:

equipment automatic for
equipment computerized for

– particularly the user accustomed to a PRECIS index, in which term inversion does not occur, but entries can nevertheless be generated under any part of a compound term, e. g.

Automatic equipment

Computerized equipment

Eqnipment
Automatic equipment
Computerized equipment

It would appear that CASIN operates with a fairly restricted vocabulary. At present, its scope is limited to the food sciences, and this comprises 2056 recognised entry terms, including 567 *See* references and 1923 *See also* references. Certain terms are assigned to one or another of the following categories:

m-type: materials, media, constituents etc.
p-type: properties, processes etc.
t-type: technical equipment, instruments, containers etc.

To that extent, therefore, CASIN incorporates a rudimentary machine-held thesaurus: a facility lacking altogether in the ASI, but more highly developed in PRECIS, which allows terms into the system as soon as they have been encountered in literature, then assigns them to a machine-held network organised according to the principles set out in the new International Standard, IS 2788.

Any prospective user of CASIN will find that the manual deals clearly with detailed procedures, such as filling in the input form and recording the data. It then goes beyond this, and explains how the data are processed – an aspect of computerized indexing which is frequently not explained in manuals of this kind, though it must be of benefit to the indexer.

There is little doubt that a system such as CASIN would be effective in a limited subject field. Reference is made in the manual to experiments with materials from sources other than the FSTA, such as AGRINDEX, ASFA (Aquatic Science and Fisheries Abstracts), and others. It is also stated (p. 27) that the name of any organic material, or a product made from organic material, could be used as a keyword, which suggests that the author has wider applications in mind. However, it is not certain that a completely general application would be effective within the acknowledged limitations imposed by the system.

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