reprints would have multiplied their value and utility had these been printed with some editor's introduction explaining their relevance, limitations and the purpose of reprinting his books without revising them. Even the opportunity has not been availed of to correct the earlier misprints, something mentioned as advanced information in context of those times still remains as such thus confusing the readers. Even the Colon Class Numbers printed on the verso of the title pages are according to old editions. The *Prolegomena* has been mentioned as Volume 1; what the other volume(s) will comprise of is not told. The second edition (1960) of the *Elements* has been reprinted, while in 1962 its 3rd revisions edition was brought out and used widely in India. Ignoring these venial omissions, the Ranganathan scholars will gratefully appreciate the bonanza of his books. Thanks to the Endowment for such a thoughtful initiative which is a part of Ranganathan's birth centenary celebration on a large scale with a variety of programmes throughout the year from August 1991 to August 1992.

M.P.Satija

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MEISS, Brigitte: **Thesaurus, integriert, online, dynamisch - Neues Arbeiten mit DOMESTIC.** (Thesaurus, integrated, online, dynamic - A new way of working with DOMESTIC). München: KTS Informationssysteme 1989. 103p.

An "integrated thesaurus" as described in this book is installed into the literature documentation program in such a way that one may have interactive access to it at all times without having to leave the program. Even while literature analysis is going on, such a thesaurus may be expanded, reorganized, reduced as well as amended, and after any such operation it is immediately available again in its modified form for continued work. All this is shown by means of examples and with the aid of DOMESTIC, a PC-assisted literature documentation program.

For any subject from the field covered by the documentation concerned the indexer or querier can display the relevant parts of the thesaurus on his or her screen and thus readily make an optimal selection, which is facilitated furthermore by the alphabetic and systematic access provided to the thesaurus. These improvements thus have the effect of increasing indexing and retrieval quality.

They positively affect indexing also insofar as the integrated thesaurus offers improved possibilities of revising the indexing of documents. This is desirable when the framework of interests of the system users has changed or when a special field needs to be indexed more specifically. A further important, but rarely discussed problem can likewise be tackled in this connection: it is often particularly important, and not only in patent documentation, to retrieve the earliest documents on a given subject. However, in such an early developmental stage of a subject, no keyword suitable for thesaurus use has usually been developed yet in the

technical language for the given subject, which of necessity was expressed at the time concerned by paraphrasing, definition-type linguistic constructions.

This precluded its proper indexing at the time concerned. In such cases one may attempt, through full-text searching in the texts stored, to round up the relevant documents by using as search criteria the expressions presumably occurring in the paraphrasings. The texts thus found may then, in a single step, be re-indexed using a suitable new descriptor.

Nor is one obliged, in indexing with the aid of an integrated thesaurus, to use one simple specific word as a descriptor. Other words with identical meaning occurring in linguistic usage may likewise be used after having been admitted to the vocabulary in a suitable function. Machine-internally they will then be converted into the corresponding descriptors. Moreover, an interactively maintained thesaurus - unlike a printed one - is always fully up to date, an advantage of great importance particularly in joint indexing operations, such as are possible when working in a network. It is not in the last place due to these advances that, as the author correctly notes, the thesaurus is currently experiencing a renaissance as a tool of information science and practice.

No major progress does the author expect for the increased employment of integrated thesaurus in commercial online databanks and for improved indexing. Where she does perceive possible advances owing to integrated thesauri is the field of the designing and operation of a *user's own, internal documentation.* (This is not surprising, for in the online data banks the procedure shun the costs of any careful indexing. The costs for such omissions are then left to the user, who initially, however, usually underestimates these costs as well as the magnitude of the information loss inherent in working without a thesaurus. In a self-managed project, however, *both* types of costs make themselves felt, and one is responsible oneself for the information loss occurring).

Access to the contents of the book is provided by an index, albeit rather a succinct one; however, it is supported by a well-arranged table of contents. The printing is outstandingly clear and overseeable and free of errors. Some flaws noted are the facts that at many points in the book the distinction between "concept" and "descriptor" is blurred and that among the few existing rival products of DOMESTIC named in the book the possibly most serious competitor, at least in Germany, is not mentioned.

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MEINL, Franz: **Sachmerkmale, Schlüssel zur technischen Gestaltung, Beschreibung und Information.** (Subject characteristics. Key to their technical formation, description and information). Ehningen: Expert Verlag 1990. 374p. ISBN 3-8169-0051-8

Although written by a technician mainly for technicians, this book also outlines the incorporation of the "Subject Characteristics Classification System" into the economic process and the technical-organizational functions of a given enterprise. In his former function in

German industry the author supervised the elaboration of an EDP-assisted subject information system designed for a versatile assortment of goods. The experience gathered and insights gained by him in this task as well as in his cooperation on the DIN standard committee "Sachmerkmale" (Subject Characteristics) (NSM) are exploited as well as deepened and expanded in this book. Though mainly conceived for self-study, it can also be used as a teaching aid.

Its central topic is the analysis of the interactive relationship between a group of objects of basically arbitrary nature and the associated structure of characteristics. This central topic is treated in an inductive fashion and illustrated by significant examples whose similarities and differences are lucidly worked out. From this analysis the exact conceptual clarification of the thematic field is derived. In an almost natural way the author arrives at an application of Boolean algebra which he terms "Merkmalalgebra" (algebra of characteristics). As his unique scientific achievement one may regard his having brought the structuro-logical interrelationships to the "mathematical point". In the chapter "Parallelen" (Parallels) he finds an elegant connection to the Formal Concept Analysis according to R.Wille, which he expects to furnish a broad scientific foundation for the subject characteristics classification. This connection is then used for a comparison of product and literature information. Both in the one and the other, however, the formalizability of the interrelationship and thus also the applicability of EDP depends on the limits of model formation: a rigid descriptive scheme cannot encompass "reality in its entirety". Among the non-quantifiable properties this is true already of the object's own, inherent characteristics and even more so of its relationships with the technical-economic environment as described by the relation characteristics. Also deserving of mention here is the purpose-specific inter-linkage of various groups of objects as required for expert systems. Awareness of existing limits and of the problems still to be solved is not repressed by any means, for it is just as indispensable for the sovereign development and handling of subject information systems as the structuro-logical weaponry.

Although mathematical formulations make up a sizable portion of the work, the reader is not expected to have advance knowledge surpassing 'lower algebra'. What is expected, however, is his concentrated participation and effort to acquire an overall view. The author endeavors to make reading easier by means of comparisons and thrown-in quotations, while it is also quite noticeably supported by three Annexes. Of these, Annex A alphabetically and systematically lists and explains the technical terms used, Annex B presents the aforementioned subject information system from the author's industrial practice, while in Annex C a realistic economy calculation is performed to show conclusively that the not inconsiderable expense of establishing a subject information system is certainly worth while if such a system is professionally and energetically developed and utilized.   Josef Hölzl

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GOTTSTEIN, Klaus (Ed.); BEHRMANN, J., BOCK-WERTHMANN, W., MENACHE, G.(Comps.): **Directory of International Cooperation in Science and Technology.** Index of Institutions in the Federal Republic of Germany Cooperating with Developing Countries. 2nd, rev.& enlarged ed. München, etc.: K.G.Saur 1989. 256 p., ISBN 3-598-10626-2. A Publication of the Research Unit Gottstein in the Max Planck Society.

This directory lists institutions in the Federal Republic of Germany including West Berlin which cooperate with institutions in developing countries in science, technology or letters, or which work on problems related to developing countries. For each institution, a brief description of its respective activities is given. Altogether 595 institutions are listed (p.25-200) with their addresses, descriptions, partner countries and partner institutions. The book is written in English to facilitate the transfer of information to scientists, science administrators, students and government agencies in developing countries, interested to establish contacts with institutions in Germany. Of special importance are the indexes to this directory (p.201-256), numbering seven, partly established from the fields of an entry, viz.: 1) Subject index, 2) Name index, 3) Index of cities in which German institutions are located, 4) - of partner countries, 5) - of partner institutions, 6) Name index of German institutions in English translation, and 7) Index of abbreviations and acronyms.

The Preface (p.1-24) includes also listings of the references and a selection of additional literature, of 29 databases supplying electronically stored information, of 15 Federal Ministries involved in cooperation with developing countries, of 16 Ministries of Regional Governments involved in cooperation with developing countries, and finally of a summary of the topics of the projects described in the volume: in the fields of energy, health, nutrition, raw materials, communication/documentation, history/culture, and environment.

All in all, a very useful book indeed, especially for all colleagues interested in international cooperation, communication and understanding. In 1979 it has had its first edition, however, as the editor stated, "far from complete". Work towards this second edition started in 1980. At the end of 1990, facing the enlargement of Germany by its Eastern part, a new situation is given, calling also for a necessary new updating of the directory. May it not take another decade for the collection and presentation of its data!

I. Dahlberg