

a classified scheme and its thesaurus in *Sports* from the descriptors of the Deutsche Bibliothek (12) and also in establishing a classification scheme for the field of classification and indexing, as we use it in the annotated bibliography "Classification Literature" in every issue of *Int. Classif.* This scheme will be published soon.

A version of ICC with its classes elaborated to the third level (some 700 classes) is available in a preliminary version in German and English together with its indexes. I hope to be able to publish a more extended version (some 7000 classes) by 1983.

#### References:

- (1) Dahlberg, I.: Grundlagen universaler Wissensordnung. Probleme und Möglichkeiten eines universalen Klassifikationssystems des Wissens. Pullach bei München: Verlag Dokumentation 1974. 384 p.
- (2) Dahlberg, I.: The terminology of subject fields. In: *Int. Classif.* 2(1975)No.1, p.31-37
- (3) Dahlberg, I.: Wissensmuster und Musterwissen im Erfassen klassifikatorischer Ganzheiten. In: *Studien zur Klassifikation*, 9(1980)p.294-315
- (4) Dahlberg, I.: *Ontical structures and universal classification*. Bangalore, India: Sarada Ranganathan Endowment for Library Science 1978. 64 p.
- (5) Ranganathan, S.R.: *Prolegomena to library classification*. 3rd ed. Bombay etc.: Asia Publ. House 1967. 640 p.
- (6) Neelameghan, A.: Computer simulation of some steps in classifying: built-in features of a theory-based scheme for classification. In: *Libr. Sci. Slant Docum.* 9 (1972) No. 4, p.499-522
- (7) Dahlberg, I.: A referent-oriented, analytical concept theory for Interconcept. In: *Int. Classif.* 5(1978)No.3, p.142-151
- (8) BSO. Broad System of Ordering. Schedule and Index. 3rd Rev. The Hague-Paris: FID and UNESCO 1978. 102+82 p.
- (9) Judge, A.J.N.: Representation, comprehension and communication of sets: the role of number. (In three parts) In: *Int. Classif.* 5(1978)No. 3, p.126-133, 6(1979)No.1 and 2.
- (10) Körner, H.G.: Optimale Klassengröße, die mathematische Konstante e und Notationsfragen. In: *Studien zur Klassifikation* 9(1980)p.50-67
- (11) Diemer, A.: Informationswissenschaft. Zur Begründung einer eigenständigen Wissenschaft und zur Grundlegung eines autonomen Bereichs "Informationswissenschaften". In: *Nachr. Dokum.* 22(1971)No. 3, p.105-113
- (12) Dahlberg, I.: Die Pilotstudie DB-Thesaurus. Forschungsbericht für die Deutsche Bibliothek Frankfurt. Eggenstein-Leopoldshafen: FIZ Energie, Physik, Mathematik GmbH 1980. 74 p. = BMFT-FB-ID 80-015

## Reports and Communications

### Computer Applications in Archaeology 1982

The European Branch of The Classification Society held its Annual General Meeting on March 27 in connection with the meeting on Computer Applications in Archaeology at the University of Birmingham 26-27 March 1982. Papers on classification and quantitative methods were scheduled for March 27. There had not been any meeting of this Society during the last twelve months. The chairman of the society is at present Dr. A.F.Parker-Rhodes, Cambridge, the European Branch Secretary: Mrs. S.Laflin-Barker, University of Birmingham, P.O.Box 363, Birmingham B15 2TT, England.

### The Classification Society, NAB, Montréal 1982

The annual meeting of the North American Branch (NAB) of The Classification Society took place at the Université de Québec at Montréal (UQAM) from May 30 to June 2nd, 1982. President of the NAB conference was Dr.J.D.Carroll from Bell Labs., program chairperson was Pascale Rousseau from the Department of Mathematics, UQAM. The conference was a joint meeting of the NAB together with the Psychometric Society, which, however, had its own program of 83 papers in 15 sessions (according to its preliminary program) some of which can also be regarded as highly relevant for classification. At the NAB meeting 55 papers were presented in 12 sessions. There were two plenary sessions in the mornings (from 8-10 and 10:15 to 12:15) and two parallel sessions in the afternoons. In the following the papers are listed as stated in the program:

#### CLASSIFICATION IN BUSINESS.

Chair: Wayne DeSarbo

Willie, R.R.: An interactive program for categorical analysis of market segments (CAMS). - Carroll, J.D., Clark, L., DeSarbo, W.S., Green, P.E.: Synthesized clustering: a method for amalgamating alternative clustering bases with differential weighting of variables. - Whaley, C.P.: Overlapping cluster procedures. - Harshman, R.A., Lundy, M.E.: Fuzzy clustering and multi-dimensional scaling based on analysis of asymmetrical relationships: progress report on DEDICOM.

#### MATHEMATICAL STATISTICS.

Chair: John Van Ness

Peck, R.W., Van Ness, J.W.: Approximate confidence bounds on the number of clusters. - Milligan, G.W.: Some validation results of procedures for determining the number of clusters in a data set. - Bozdogan, H., Scolve, S.L.: Multi-sample cluster analysis using Akaike's information criterion. - Wong, A.M.: Lenington, R.K., Sorensen, C.T.: Resolution of highly overlapped cluster using the CLASSY approach to the normal mixture problem.

#### APPLICATION IN PSYCHOLOGY.

Chair: Phipps Arabia

Heiser, W.J.: Metric multidimensional unfolding with restrictions on the configuration. - Pruzansky, S., Sen,

T.K., Carroll, J.D.: Use of multidimensional scaling to study perceived stress and reported job satisfaction. - Jones, C.L.: Clustering, scaling and blocking analyses of occupational mobility tables. - Berkowitz, S.D.: Structural and non-structural models of elites: a critique. - Holland, P.F., Laskey, K.B., Leinhardt, S.: Stochastic models.

#### COMPARISON IN CLASSIFICATION.

Chair: William Day

Culik, II, K., Wood, D.: Some results on tree-to-tree distance measures. - Jarvis, J.P., Luedeman, J.K., Shier, D.R.: On computing the similarity of binary trees. - Boland, R.P., Brown, E.K., Day, W.H.: Approximating minimum-length-sequence metrics: a cautionary note. - Meacham, C.A.: Comparison and evaluation of axioms for tree metrics. - McMorris, F.R.: Methods of consensus for trees. - Day, W.H.E.: Comparing classification with valuation metrics: a tutorial.

#### CLASSIFICATION IN PSYCHIATRY.

Chair: Juan Mezzich

Mezzich, J.E., Coffman, G.A.: Intro-axial and inter-axial patterns and the DSM-III diagnostic system. - Skinner, H.A.: Increasing the impact of cluster analysis research: Pt.1. Factors influencing the acceptance of clustering research. - Blashfield, R.K.: Increasing the impact of cluster analysis research: Pt.2. Methodological developments needed to increase scientific quality. - Lepage, Y.: Chernoff faces: a technique for the analysis of multi-dimensional data. - Strauss, J.S.: Psychiatric diagnosis by profile interaction?

#### APPLICATIONS.

Chair: David Sankoff

MacAulay, J.: The world brain again: this time with feeling. - Gastaldy, S. Davidson, C.H.: Methods for compressing thesauri for improved information retrieval. - Cameron, J.A.: An application of multidimensional scaling in nuclear structure determinations.

#### CLASSIFICATION METHODOLOGY.

Chair: Urs Maag

Toussaint, G.T., Bhattacharya, B.K.: Efficient algorithms for computing distance between sets of points. - Gowda, K.C.: Gravitational clustering using the concept of mutual nearest neighbourhood. - Johnson, M.C.: An adaptive classifier for separating patterns of data into two groups. - Sclove, S.: On segmentation of time series.

#### CLASSIFICATION IN SOFTWARE.

Chair: H. Friedman, R. Blashfield

Warwick, K., Berry, E.: Some practical experiences with French and Japanese software. - Pruzansky, S.: SINDSCAL: a computer program implementing the INDSCAL model for individual differences multidimensional scaling. - Sarle, W.S.: Clustering and multidimensional scaling in SAS. - Arabie, P., Carroll, J.D.: MAPCLUS and INDCLUS: computer programs for fitting the Shepard-Arabie (1979) ADCLUS model and its 3-way (individual differences) generalization. - Wishart, D.: Statistical model building and hypothesis testing with CLUSTAN 2.1. - Rohlf, J.: Current status of the NTC. - Friedman, H.P.: Algorithms and software. - Jambu, M., Leveaux, M.-O. et al: Data analysis and classification library (D.A.C.L.82).

#### CLASSIFICATION IN CRIMINOLOGY AND CRIMINAL JUSTICE:

The emerging use of taxometric methods.

Chair: Tim Brennan

Brennan, T.: Potential contributions of numerical classification in criminal justice research: problems and prospects. - Gottfredson, S.D.

Gottfredson, D.M.: Numerical taxonomies in criminological research: replication of structures vs. validation for predictive intents. - Mezzich, A.C.: On classification of violent juveniles. - Camilli, G.: Assignment of new cases into numerical classification in criminal justice.

#### CLASSIFICATION IN BIOLOGY.

Chair: John McNeil

McNeil, J.: Measures of Gilmor-naturalness and optimal hierarchical classification. - Hansel, R.: Some classes of information: optimizing algorithms. - Schueler, F.: Patterns of correlation between geographic variation in North America and climatic factors. - Gholston, L.R., Scheetz, J.P.: Human palatal morphology in adult males and females. - Michalski, R.S., Stepp, R.E.: Conjunctive conceptual clustering: further results.

#### CLASSIFICATION IN PSYCHOLOGY.

Chair: Art Kendall

Chignell, M.H.: Coping with individual differences in normative data. - Morris, R., Blashfield, R., Carter, R., Satz, P.: The developmental classification of learning disabled children. Hirtle, S.C.: The use of ordered trees to uncover hierarchies in the cognitive maps of adults.

#### CLASSIFICATION METHODOLOGY.

Ciampi, A., Hogg, S.: Recursive partition classification of survival curves. - Jambu, M.: Fast and exact algorithms for hierarchical clustering of large data sets. - Furnas, G.W.: The generation of random trees for Monte Carlo studies of clustering.

An invited address was given on June 1, by E. Diday on "Inversions and crossings in hierarchical clustering".

#### Databases in Systematics

The Systematics Association in conjunction with the Biology Department of Southampton University announces an international symposium to be held from 15-17 December 1982 at Southampton University. The theme will be computer databases and their role in systematics. The established use of databases in biogeographical, nomenclatural and curatorial activities will be reviewed and recent developments highlighted. The use of microcomputers and commercial software will be included. Particular attention is to be paid to developments in databases for the collation, storage and retrieval of descriptive information about organisms themselves. There will be demonstrations of operational databases.

The 3-day programme is outlined as follows:

1. Biogeographical, curatorial and nomenclatural databases  
reviews of the application of database techniques to curatorial management, biological mapping and conservation,

- advances in established curatorial database projects,
  - new local and continental biogeographic projects.
2. Database software
- reviews of commercial software, including that for microcomputers and of the principal types of data structure,
  - developments in software designed for the taxonomist.
3. Descriptive databases
- new approaches to taxonomic information services,
  - individual applications containing e.g. species morphology cultivar field trial data, wood anatomy, phytochemical records
  - the nature of taxonomic descriptions and the special problems of their manipulation by machine.

Speakers will include: J.Burley (Oxford), B.Charlwood (Kings, London), M.Dallwitz (SCIRO, Canberra), G. Estabrook (Michigan), M.Freeston (Computer Science, Southampton), A.Gomez-Pompa (Xalapa, Mexico), V.H.Heywood (Reading), K.Mitchell (Reading), P.L. Nimis and E.Feoli (Trieste), R.J. Pankhurst (BMNH, London), P.J.Winfield (DAFS, Edinburgh), R.Allkin and F.A.Bisby (Southampton).

The Systematics Association was founded in 1937 as The Association for the Study of Systematics in Relation to General Biology. The aims of the Association were fully discussed (see *Nature*, 140(1938)p.163) at an open meeting held in the Rooms of the Linnean Society on June 25, 1937.

For further details contact: Dr.R.Allkin, Biology Department, Bldg 44, University, Southampton SO9 5NH, England.

#### International Classification Society

In a meeting of the Council of The Classification Society, North American Branch, together with representatives from France and Germany at Montréal, May 30, 1982 the possibilities of forming an international federation of classification societies were discussed and the desire was expressed to found such a society at the next possible occasion, which proved to be the afternoon of July 2nd, after the Augsburg FID/CR Conference (see the report on p.97). Prof. R.Sokal from the State University of New York at Stony Brook had prepared a draft of the Statutes which were shaped according to the statutes of the Biometric Society. This draft was discussed by the following 16 persons present at the July 2nd meeting: F.A.Bisby, U.K.; H.H.Bock, FRG; J.D.Carroll, USA; T.C.Craven, Canada; I.Dahlberg, FRG; O.Gekeler, FRG; E.de Grolier, France; P.Ihm, FRG; M.Jambu, France; H.Leclercq, Belgium; M.Mikacic, Yugoslavia; Y.Nakamura, Japan; W.Nedobity, Austria; J.Perreault, USA; M. Richey, France; R.R.Sokal, USA.

Several issues, among which the problem of the seat of the Society, its status as a federation of existing societies, and the possible journal(s) could not be resolved at this meeting. Thus it was decided to wait for a new version of the statutes to be prepared by Prof. Sokal and to vote on these by mail through the representatives of the four existing classification societies in England, USA, France and Germany.

#### Establishment of an Integrated Thesaurus in the Social Sciences, Working Group Meeting, London, May 18, 1982

The meeting was supported by the Unesco Division for the International Development of the Social Sciences. It was held at the British Library in London and comprised 15 participants from 5 countries, including 2 developing countries. The two reports which had been prepared for this meeting and which were distributed beforehand were:

J.Aitchison: Integrated thesaurus of the social sciences, design study; and J.C.Sager, P.Whitelock: Feasibility study of the creation of a descriptor bank of social science terms.

Special points of discussions were: the subject scope of social sciences; selection of indexing languages for the study; the descriptor bank requirements; the subject field analysis; the relationship between descriptor bank and integrated thesaurus; the computer system for the integrated thesaurus; its presentation and publication, its work plan, administration and cost. Also the computational aspects of the descriptor bank were discussed as well as the subject of a pilot project (to be "labour economics" because of similar work at Budapest), its methodology, presentation and evaluation, administration, costs and timing.

A list of ten Recommendations to Unesco were formulated and attached to the minutes of this meeting. For further information contact:

Mrs.E.Ronquillo, Social Sciences Documentation Center, Unesco, 7, place de Fontenoy, F-75700 Paris.

#### BSI ROOT Thesaurus Newsletter I

As a follow-up of information on the developments after the availability of the ROOT Thesaurus, the British Standards Institution (Hemel Hempstead, Herts. HP2 4SQ) started to issue a newsletter. No.1 reports on the successful launching into 36 different countries, the remarkable sales figures, the ongoing translations into German, Spanish and soon also into Danish, the updating work, the probable availability of an experimental French edition, a.o.

#### Further Session on Numerical Taxonomy at Augsburg

In the afternoon of July 1, 1982 the morning session D.1 on numerical taxonomy was continued as D.2 (see the program of the 4th Int.Study Conf.on Classification Research in *Int.Classif.9(1982)No.1*, p.33-35). This session was at the same time the meeting of the Special Interest Group on Numerical Classification of the German Society for Classification. The following papers were given and discussed:

H.Späth: Effiziente Implementation der L<sub>1</sub>-Cluster-Methode bei großen Binärdatenbeständen. - D.Nagel, H.Sator, W.Vogt: Vergleich der Clusteranalyse von KMEANS mit verschiedenen Startkonfigurationen und Betrachtungen zur Stabilität. - F.Vogel: Ein Verfahren zur Klassifikation von Merkmalsträgern anhand komparativer und gemischter Merkmale. - L. Fahrmeir: Zur Klassifikation zeitabhängiger Daten.