

**ABSTRACT JOURNALS
ON IRRIGATION, DRAINAGE
AND WATER RESOURCES
ENGINEERING**

INTERNATIONAL INSTITUTE FOR LAND RECLAMATION AND DRAINAGE

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ABSTRACT JOURNALS ON IRRIGATION, DRAINAGE AND WATER RESOURCES ENGINEERING

A selected bibliography

Compiled by
L. F. Abell



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F O R E W O R D

In 1976 the International Commission on Irrigation and Drainage (ICID) appointed a Committee to advise on the ICID policy of issuing Annual Bibliographies.

To serve as a working document in the Committee's considerations, Mr. L.F. Abell, Librarian of the International Institute for Land Reclamation and Improvement (ILRI), The Netherlands, prepared a selected list of abstract journals on irrigation and drainage of agricultural land and on water resources engineering.

As it was felt that Mr. Abell's list would be a useful tool to those seeking relevant abstract journals, ILRI decided to publish it in its own series of bibliographies.

*M.G. Bos
Irrigation Engineer, ILRI,
and Member of the ICID
Bibliography Committee*

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I N T R O D U C T I O N

Research workers today are all familiar with the feeling that they are in danger of being swamped by the immense volume of literature streaming from the printing press. To curb this great flood of literature and to divert it into properly regulated channels, extensive remedial measures are being taken. In library circles, these measures have earned the title of "The Great Flood Rescue Operation". The operation comprises a variety of bibliographical activities: reference journals, literature reviews, bibliographical lists. Nowadays almost every field of science has its own substantial bibliographical auxiliary apparatus.

Of all bibliographical aids, the reference journal is by far the best. Every month or every two months, a reference journal appears listing the most recent articles, books, and reports in a particular branch of knowledge. At the end of each year, an alphabetical subject index and an author index are published, serving as a guide to what has been written on a certain subject or by a certain author in the year in question.

Two types of reference journals can be distinguished. One contains titles plus abstracts of articles, books, and reports, while the other merely lists titles without abstracts. Although, strictly speaking, only the first is an actual abstract journal, the second being simply an indexing journal, both are referred to as abstract journals. This is an established custom which, for the sake of simplicity, will be followed in the present paper.

The value of an abstract journal is determined by the extent to which it covers its field, by the quality of the individual abstracts and, above all, by the usability of the subject index. If the subject index is badly compiled or virtually non-existent, the data assembled in the journal are, to all intents and purposes, inaccessible. It is not a practical proposition to search through every single issue of an abstract journal for publications on a certain subject, especially if the series goes back over a number of years.

The coverage of abstract journals in most branches of science is good. In a few it is less satisfactory. What can be said of the situation in water resources engineering and in irrigation and drainage?

To answer this question I made a survey of current abstract journals and services, making liberal use of the data contained in *A Survey of the World Agricultural Documentation Services* by P.J. BOYLE and H. BUNTROCK, FAO Documentation Centre, Rome, 1973, and in the excellent work of H. WELLISCH, *A Survey of Indexing and Abstracting Services for Water Resources Engineering*, Tech. Rep. No. 11, University of Maryland, c. 1973. I found that during the last twenty years, the number of abstracting services devoted wholly or partially to water resources engineering and to irrigation and drainage has increased vastly. One is faced with a wide variety of abstracting services that cover the subjects exhaustively but which overlap one another considerably.

From this confusing multitude I have made a selection which is presented in the following pages. Only those journals that I considered to be of particular value are listed. They are found under the separate headings:

Selected Abstract Journals on Irrigation and Drainage,
Selected Abstract Journals on Water Resources Management.

Other journals and services that were considered but were not included in the selection can be found in the Annex. My selection was confined to publications in the major languages of English, French, and German.

For irrigation and drainage, it is interesting to note that from January 1975 onwards, practically every publication of importance issued anywhere in the world can be found in one individual abstract journal: *Irrigation and Drainage Abstracts*, which is issued by the Commonwealth Agricultural Bureaux in the United Kingdom. For earlier publications, one must resort to a combination of the other abstract journals mentioned in the selected list.

SELECTED ABSTRACT JOURNALS
ON THE IRRIGATION AND DRAINAGE OF AGRICULTURAL LANDS¹

BIBLIOGRAPHY OF AGRICULTURE

Journal: 12x; \$170,000 per volume; annual cumulation index \$145,00;
1942-
Magnetic (CAIN) tapes; 12x; \$45,00 per issue

National Agricultural Library, Beltsville, Md. 20705, USA

Journal published by Oryx Press, 3930 East Camelback Road, Phoenix,
Arizona 85018, USA.

Magnetic tapes issued by National Agricultural Library, Beltsville,
Md. 20705, USA.

Agriculture in general.

120,000 references produced. 103,500 title citations published.

Enriched titles. Titles of printed output in EN, titles on magnetic
tapes in original language and EN.

Output arranged by subject (own classification) and titles of primary
journals.

Subject index (modified KWIC, 6 keywords) and author index, each issue
and annually. Controlled vocabulary.

Input source: 6,500 primary journals.

This journal contains publications on all aspects of irrigation and
drainage of agricultural land, subdivided under the following headings:
Plant Science, Soils and Fertilizers, Agricultural Engineering, Water
Resources and Management, etc. The annual subject index is detailed.
One disadvantage is that the "Bibliography" gives only titles but no
abstracts. A further criticism, which should not be overstressed however,
is that strictly scientific publications are listed side by side
with popular articles. For instance, a theoretical treatise by
Don Kirkham concerning the flow of water in the soil can be found
side by side with a practical description by a farmer from the
American South West of a method for lining irrigation ditches. Needless
to say, the "Bibliography" has a strong American bias, although this
does not imply that other countries are inadequately represented.

¹ Except for the comments, the data in this section were taken from
P.J. Boyle and H. Buntrock, Survey of the World Agricultural Document-
ation Services, FAO, Rome, 1973. The prices were brought up to date.

FIELD CROP ABSTRACTS

Journal; 4 x; £30,- in CAB-associated countries; £68,- elsewhere; 1948-

*Commonwealth Bureau of Pastures and Field Crops, Hurley, Berks.
SL6 5LR, UK.*

*Unit of Commonwealth Agricultural Bureaux, Farnham Royal, Slough
SL2 3BN, UK.*

Published by Commonwealth Agricultural Bureaux, Farnham Royal, Slough
SL2 3BN, UK.

Agronomy and biology of temperate and tropical annual cereal, legume,
sugar, oil and fibre crops and of tobacco.

5,550 abstracts in EN. Titles in EN. Author addresses.
Arrangements by subject (own classification).

Subject index (alphabetical, 8 keywords), annually. Author index,
each issue and annually.

Input source: 1,200 primary journals, 6%-from secondary sources.

The four British abstract journals of the Commonwealth Agricultural Bureaux (Field Crop Abstracts, Forestry Abstracts, Herbage Abstracts, and Horticultural Abstracts) all deal with the growth of plants, including the relationship of this subject to that of soil conditions and water management. In view of this fact the irrigation and drainage specialist can find much in them that will be useful to him. In the way in which they are compiled these four CAB-journals greatly resemble the other CAB-abstract journals mentioned in this survey (Soils and Fertilizers, World Agricultural Economics and Rural Sociology Abstracts, and Irrigation and Drainage Abstracts). The CAB abstracting journals are all excellent. The abstracts are good, the subject indexes are practical, and a thorough coverage is provided. The selection is such that no unimportant popular articles obtrude. Taken all in all, the CAB-journals are perfect examples of what abstracting journals should be. Computer production methods were introduced in 1972 for all CAB-journals, and a consolidated data base was created. The data in the journals are now available in machine-readable form on magnetic tape. From 1977 onwards, the CAB-journals will be available on-line through Lockheed's DIALOG Retrieval Service.

The journals of the Commonwealth Agricultural Bureaux are subsidized by contributing countries. These countries are:

the United Kingdom of Great Britain and Northern Ireland, Canada,
Australia, New Zealand, India, Pakistan, Ceylon, Ghana, Malaysia,
Nigeria, Cyprus, Sierra Leone, Tanzania, Jamaica, Trinidad and
Tobago, Uganda, Kenya, Malawi, Zambia, The Gambia, Guyana,
Barbados, Dependent Territories and the Republic of Ireland,
Botswana, Fiji, Mauritius.

FORESTRY ABSTRACTS

Journal; 4x; £35,- in CAB-associated countries; £78,- elsewhere;
1939-

Card service (title citations only); £18,- in CAB-associated countries;
£31,- elsewhere (also available in subject sections and on airmail
paper).

*Commonwealth Forestry Bureau, Commonwealth Forestry Institute, South
Parks Road, Oxford OXI 3RD, UK. Unit of Commonwealth Agricultural
Bureaux, Farnham Royal, Slough SL2 3BN, UK.*

Published by Commonwealth Agricultural Bureaux, Farnham Royal, Slough,
SL2 3BN, UK.

Forestry, covering factors of the environmental biology, silviculture,
work science, harvesting of wood, logging and transport, forest
engineering, forest injuries and protection, mensuration, increment,
development and structure of stands, surveying and mapping, management,
business economics, administration, marketing of forest products,
economics of forest transport and wood industries, forest products and
utilization, social economics of forestry.

7,900 references produced, 6,850 abstracts in EN and
450 title citations published.

Titles in EN and partly in original language.

Output arranged by subject (ODC).

Subject index (alphabetical; 4 keywords) and
geographical index, annually.

Author index, each issue and annually.

Subject index arranged by scientific names, woody species and by
diseases and invertebrate pests.

Controlled vocabulary.

Input source: 1,100 primary journals, 5% from secondary sources.
(See Field Crop Abstracts).

HERBAGE ABSTRACTS

Journal; 4x; £20,- in CAB-associated countries; £45,- elsewhere;
1931-

*Commonwealth Bureau of Pastures and Field Crops, Hurley, Maidenhead,
Berks. SL6 5LR, UK. Unit of Commonwealth Agricultural Bureaux, Farnham
Royal, Slough, SL2 3BN, UK.*

Published by Commonwealth Agricultural Bureaux, Farnham Royal, Slough
SL2 3BN, UK.

Agronomy, utilization, composition and nutritive value and biology of
temperate and tropical herbage and fodder plants, grasslands, range-
lands and browse plants.

3,200 abstracts in EN. Titles in EN. Author addresses.

Output arranged by subject (own classification).

Subject index (alphabetical, 7 keywords), annually. Author index, each
issue and annually.

Input source: 1,200 primary journals, 8% from secondary sources.
(See "Field Crop Abstracts").

HORTICULTURAL ABSTRACTS

Journal 4x; £35,- in CAB-associated countries; £78,- elsewhere; 1931-

*Commonwealth Bureau of Horticulture and Plantation Crops, East Malling
Research Station, Nr. Maidstone, Kent, UK.
Unit of Commonwealth Agricultural Bureaux, Farnham Royal, Slough,
SL2 3BN, UK.*

Published by Commonwealth Agricultural Bureaux, Farnham Royal, Slough,
SL2 3BN, UK.

Temperate and tropical fruits and nuts, vegetables, perennial fibre,
oilseed and sugar crops, stimulant and medicinal crops, other industrial
ornamentals.

10,100 abstracts in EN. Titles in original language and EN.
Author addresses.

Output arranged by subject (own classification).

Subject index (alphabetical, 7 keywords) annually and 5-yearly.
Author index, each issue, annually.

Input source: 1,200 primary journals, 5% from secondary sources.
Computerized 1973
(See "Field Crop Abstracts")

IRRICAB, CURRENT ANNOTATED BIBLIOGRAPHY OF IRRIGATION

Journal; 4 x; \$23,00; Oct. 1976-

*Publ. by International Irrigation Information Center, P.O. Box 49,
Bet Dagan, Israel.*

On-farm irrigation (irrigation water; farm irrigation systems; climate and irrigation; irrigated crops and irrigated soils; effects of irrigation on environment; equipment and agrochemicals; resource data and planning).

Arrangement: By subject headings.

Author and subject indexes, each issue and annually. Computerized.

This publication deals primarily with on-farm irrigation, and excludes drainage, water engineering, hydrology, water resources, etc. The decision to limit the subject matter was consciously made in the hope that a comprehensive in-depth survey of all relevant literature would be provided within this narrower framework. The International Irrigation Information Center is a non-profit corporation, whose activities are supported by the State of Israel and the International Development Research Center, Ottawa, Canada.

IRRIGATION AND DRAINAGE ABSTRACTS

Journal; 4x; £20,-; 1975-

Commonwealth Bureau of Soils, Rothamsted Exp. Sta., Harpenden.

Published by Commonwealth Agricultural Bureaux, Farnham Royal, Slough, UK.

Irrigation, drainage, and related subjects.

Arrangement: By subject headings.

Author index, each issue. Annual subject and author indexes have not been published up till now.

The Commonwealth Agricultural Bureaux publish more than 20 abstract journals. The journals are produced by computer techniques, and a consolidated data base has been created. Regular periodic collections of abstracts from this data base are reproduced on specialized topics. "Irrigation and Drainage Abstracts" is one such specialized collection.

(See "Field Crop Abstracts")

LANDWIRTSCHAFTLICHES ZENTRALBLATT

Abt.I Landtechnik; journal; 9x; 225 M; 1954-

Abt.II Pflanzliche Produktion; journal; 12x; 240 M; 1955-

Published by Akademie der Landwirtschaftswissenschaften der D.D.R.

*Institut für Landwirtschaftliche Information und Dokumentation,
108 Berlin, Krausenstrasse 38-39.*

This journal has four sections, two of which have an important bearing on irrigation and drainage, viz. the 'Abteilung Landtechnik' (Agricultural Engineering Section) and the 'Abteilung Pflanzliche Produktion' (Plant Production Section). The former section is issued every two months and the latter every month. Both sections have good subject indexes. The journal has a strong East European bias, although this does not imply that other countries are inadequately represented.

SOILS AND FERTILIZERS

Journal; 6x; £30,- in CAB-associated countries; £68,- elsewhere; 1938-

Commonwealth Bureau of Soils, Rothamsted Experimental Station, Harpenden, Herts, UK. Unit of Commonwealth Agricultural Bureaux, Farnham Royal, Slough, SL2 3BN, UK.

Published by Commonwealth Agricultural Bureaux, Farnham Royal, Slough, SL2 3BN, UK.

Soils; fertilizers; plant nutrition; tillage and soil cultivations. 5,300 abstracts in EN and 100 title citations. Titles in EN. Author addresses.

Output arranged by subject (own classification).

Subject index (alphabetical, 4 keywords) annually. Author index, each issue and annually. Controlled vocabulary.

Input source: 1,750 primary journals, 5% from secondary sources.

'Soils and Fertilizers' covers the theoretical and practical aspects of soil science and also deals with plant growth insofar as the latter is dependent on the soil.

(See "Field Crop Abstracts")

WORLD AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY ABSTRACTS
(WAERSA)

Journal; 4x; £20,- in CAB-associated countries; £45,- elsewhere; 1959-

Commonwealth Bureau of Agricultural Economics, Dartington House, Little Clarendon Street, Oxford OX1 2HH, UK. Unit of Commonwealth of Agricultural Bureaux, Farnham Royal, Slough SL2 3BN, UK.

Published by Commonwealth Agricultural Bureaux, Farnham Royal, Slough SL2 3BN, UK.

Agricultural economics, including policy, supply, demand and prices; marketing and distribution; international trade; finance and credit; economics of production; cooperation; education and training, rural sociology.

5,500 abstracts in EN. Titles in original language and EN.
Author addresses.

Output arranged by subject (own classification).

Subject index (alphabetical; 4 keywords) and author indexes, each issue and annually.

Geographical index, each issue.

Controlled vocabulary.

Input source: 1,076 primary journals, 15% from secondary sources.

Of the abstracting journals concentrating on the subjects of agricultural economics and sociology, 'World Agricultural Economics and Rural Sociology Abstracts' is by far the most important from an irrigation and drainage point of view.

(See "Field Crop Abstracts")

SELECTED ABSTRACT JOURNALS
ON WATER RESOURCES ENGINEERING¹

BULLETIN SIGNALTIQUE

*Centre de Documentation, Centre National de la Recherche Scientifique,
26, rue Boyer, 75 Paris 20e, France*

1940. 10 times per year, except section 226 which is a monthly.

Abstracts: See below under each section

Coverage: Periodicals, reports, theses, conferences

Arrangement: By subject headings and own classification system

Indexes: See below under each section

Languages of abstracts: French

The service was originally published in a few large sections, each of which covered a broad subject range. Gradually, the sections were split up and became more specialized, until there are now 44, of which 6 are pertinent to the field of water resources engineering. All sections carry a mixture of index entries and abstracts, but it is not possible to discern a definite policy behind this difference in level of treatment; one must assume that those documents which for some reason cannot be abstracted by the service's own abstracters, or which are not already accompanied by an abstract in the original, are listed only as index entries. Although the abstracts are in French, the value of this service is considerable if used as an indexing tool by engineers not fluent in this language because of the broad international coverage, including East European periodicals. The sections reviewed in this survey and their relevant data are:

¹ This section was taken verbatim from H.WELLISCH: A survey of indexing and abstracting services for water resources engineering, Techn. Rep. No.11, University of Maryland, c. 1973.
The prices were brought up to date.

Section 130. Physics

F. 400.-

400 entries/year, 50 words/abstract, interval 5 months
Indexes: author and subject index annually

The subsection Mécanique des fluides appliquée is the one most relevant to water engineers.

Section 226. Hydrologie. Géologie de l'ingenieur. Formations superficielles

F. 360.-

1200 entries/year, 50 words/abstract, interval 3 months
Indexes: author and subject index in each issue, cumulated annually

This section has existed as an independent issue since 1972. Formerly it formed a subsection of section 214 Hydrogéologie. The subsection Hydrologie covers both surface and ground water hydrology, with the emphasis on the latter. Some of the entries in the other two subsections are also relevant to water resources engineering.

Section 885. Eau et assainissement now entitled Nuisances

F. 380.-

3200 entries/year, 50 words/abstract, interval 3 months
Indexes: author, subject and organization indexes (the latter only for patents) in each issue, cumulated annually.

This section was first published independently in 1971, having earlier constituted a subsection of section 880 Chimie appliquée. It is mainly devoted to drinking water, water and sewage treatment, water pollution and its prevention, and other chemical and hygienic aspects of water engineering.

Section 890. Industries mécaniques. Génie civil

F. 370.-

800 entries/year, 50 words/abstract, interval 5 months
Indexes: author, subject and organization indexes (the latter only for patents) annually.

Hydraulic turbines and pumps are covered in the first part of this section, while the second part deals with all hydraulic structures, water supply, pumping and storage devices, construction of pipelines, coastal engineering, river improvement works, harbour construction and aqueducts. It complements section 885, and both are highly valuable documentation tools for the practising water engineer.

CHANNEL; since 1974 entitled CIVIL ENGINEERING HYDRAULICS
ABSTRACTS.

(1948-1967: British Hydromechanics Research Association. Bulletin)

British Hydromechanics Research Association. Cranfield, Bedford, U.K.

1968. Monthly. U.K. £25.25 Europe: \$60.00 U.S. \$88.00
1900 abstracts/year, 140-500 words/abstract, interval 1-3 months

Coverage: Periodicals, books, reports, theses, standards, conferences
(incl. individual papers).

Arrangement: By subject headings

Indexes: author, subject, organization and place/structure index
half yearly

Language of abstracts: English

This is one of six specialized abstract services published by the BHRA, devoted to civil and structural engineering aspects of fluid mechanics with particular reference to the hydraulics of open and large closed conduits, coastal processes and structures, estuary and river flow including sediment transport, spillways, stilling basins and similar appurtenances, reservoirs and lakes, pressure surges, instrumentation and model testing in these fields, hydraulic aspects of thermal and hydroelectric power generation, irrigation, sewage treatment and water supply. The abstracts are sometimes quite extensive and may range up to 500 words and more. The coverage is international and the documents abstracted are on a high scientific level. This is an excellent bibliographical tool for scientists and research-orientated engineers both for current awareness and retrospective searches through semi-annually published indexes which are computer-produced. From time to time, full-length articles are also published, as are announcements on forthcoming conferences and courses.

DOKUMENTATION WASSER

*Deutsche Dokumentationszentrale Wasser (DZW), Rochusstrasse 36,
4 Düsseldorf, Germany.*

1960. Monthly. \$ 90.70

3840 abstracts/year, 100 words/abstracts, interval 6-12 months

Coverage: Periodicals, books, reports, theses, patents, conferences
(incl. individual papers)

Arrangement: By UDC

Indexes: None

Language of abstracts: German

The coverage of this service is very extensive. It scans regularly over 2000 periodicals in many languages, a list of which was originally published in 1964 and supplemented in 1967. It abstracts documents in many different fields of water resources engineering, ranging from legal and administrative matters to practically all scientific and engineering aspects. It also covers questions of solid waste disposal which are related to municipal waste water treatment and disposal.

All abstracts are arranged by UDC and are also accompanied by German keywords, taken from the service's own thesaurus *Ordnungssystematik zur Dokumentation Wasser, Teil II: Thesaurus*. The thesaurus is in three languages (German/English/French) and is issued in loose-leaf form in order to keep it constantly up to date. An appendix to the thesaurus lists all periodicals scanned. The form of publication, i.e. 8 cards on a perforated sheet of card stock, makes this service convenient for personal documentation and for card files in engineering firms, but if one does not wish to keep extensive arrays of card drawers and to expend the necessary time for filing the cards (over 40,000 of them during the first 10 years of the service, or roughly 40 card drawers), the service can only be used for current awareness purposes, because no indexes are provided which would make it possible to conduct also retroactive searches. Even though each monthly issue is arranged in the sequence of UDC numbers, a retrospective subject search through one years' issues alone would entail the look-up of 12 individual issues at the appropriate number. Searches for authors cannot be performed at all. Despite these limitations, this service is the best (because most comprehensive) for German-speaking engineers and scientists, particularly those who wish to keep up to date with the East European literature (not normally covered in English-language services).

ENGINEERING INDEX

Engineering Index Inc., 345 East 47th St., New York, N.Y. 10017, USA.

1884. Monthly: \$ 795.00. Annual bound volumes: \$ 335.00

Weekly batches of cards (Card-A-Lert service): \$50.00 or \$100.00
(depending on subject)

2000 abstracts/year, 100 words/abstracts, interval 3-8 months.

Coverage: Periodicals, books, reports, standards, conferences (incl. individual papers)

Arrangement: By subject headings

Indexes: Author index in each issue, cumulated in annual volume

Language of abstracts: English

Out of the over 85,000 abstracts in the 1971 volume, an estimated 2000, taken from over 120 periodicals, pertain to the field of water resources engineering. These can also be obtained on individual cards through the service's "Card-A-Lert" system which offers an array of various subject groups, yielding from 500 to 1000 cards per year (many entries may appear in more than one group if the abstract is relevant to more than one subject). The service is also available on microfilm and on magnetic tape under the trademark COMPENDEX. The tape service can also be purchased in parts arranged by certain subject groups (e.g. Water and Waterworks Engineering); details about subjects and prices are available on request from the publishers.

This is one of the few English-language abstract services in the field which covers non-English literature extensively, and for this reason it is highly valuable for those who do not have a working knowledge of foreign languages yet wish to keep up to date on developments outside the U.S. If needed, translations of articles may be ordered from the Engineering Societies Library which is closely associated with the service and whose holdings form the basis for the literature abstracted.

INFORMATION EAUX

(1950-1969: Eaux et Industries)

*Association Française pour l'Etude des Eaux (AFEE), 25 avenue Marceau
Paris 16. France.*

1950. 10 times per year. F.385.- Each series of Fiches documents
F.1000.-

2500 abstracts/year, 50-100 words/abstract, interval 6-10 months

Coverage: Periodicals, books, reports, theses, conference proceedings
(incl. individual papers)

Arrangement: See below

Indexes: Subject index half-yearly

Languages of abstracts: French

This service has some unique and remarkable features which make it unlike any other abstracting journal. Entries consist (in this order) of one to ten keywords, taken from the organization's own thesaurus¹, a code number indicating language, class of user for whom intended, grade of quality (explained in more detail below) and code letters indicating one or two of 17 broad subject fields, the title in French (but neither the name of the author nor the original title of the document), a short abstract in "telegraphic" style and the source where the document was published. These abstracts (called *fiches d'analyse*) are published in three sections which are first classified according to the level of reader for which they are intended: X3 "for specialists", X2 "for persons already informed" and X1 "for persons not having any particular knowledge about the subject". Each section is further subdivided by language (French, English and German) and finally, within each language group, there are three grades of quality: "Strongly recommended", "Recommended" and "Good document". The service does not make it clear according to which criteria this intricate grading system is applied; in any case, such an evaluation (except for language) must necessarily be subjective, both regarding the professional level of the presumptive reader and the intrinsic value of a document. However, all this is only the "first stage of the documentation system" according to the explanations given on the preliminary pages of each issue.

The entries are also reprinted under each keyword in chronological order and this arrangement is called *fiches inversées ou panoramiques*. These *panoramic abstracts*, however, are not part of the journal but form the next higher "stage of documentation", together with individual *fiches documents* for the listed documents in which the abstract of each document

¹ *Thésaurus national de l'eau, Paris, AFEE, 1971. Periodically updated by supplements.*

is reprinted together with a fuller summary containing details of methods, accompanying graphs, charts, tables, etc., as well as conclusions and results. These *fiches documents* may comprise one or more pages, and are issued in 23 quarterly series, each of which is devoted to a certain well-defined subject area, (such as Dams or River pollution, etc) and is covered by about 30 different descriptors. Each series may be subscribed to individually for the price of F.1000 per year (about \$20.00). The whole operation is computerized, and once the keywords, short abstracts and the grading by level and quality have been decided upon by the editors, all listings are stored on magnetic tape and are automatically printed-out for the journal and for the different series (in which, of course, one document may appear more than once, according to the keywords given and the field under which it has been classed). Original articles (in photocopy or on microfilm) and translations of foreign-language articles are provided on request. This multi-level, multiple-graded and classed arrangement must be one of the most intricate formats ever conceived for an abstracting system, and one wonders whether the users should not also have a thorough grounding in Cartesian philosophy (as indeed the system of grading and classing is demonstrated in the explanatory pages of the journal in an intricate matrix). Despite the unusual format, this service is probably of more value to the practising engineer in France than are the various sections of Bulletin Signalétique, because all aspects of water resources engineering are covered by one single publication and the access points (through keywords) are more numerous than those provided by Bull. Signal. The latter, on the other hand, provides better coverage of foreign languages and has a smaller time-lag. An engineer outside France who wishes to keep himself informed about advances made in that country, which was always famous for its contributions to the theory of hydraulics and for its early and sometimes spectacular achievements in the construction of canals, dams, hydro-power stations and irrigation networks, would probably also be well served by this service, once the intricacies of its use have been mastered.

LITERATURBERICHTE ÜBER WASSER, ABWASSER, FESTE ABFALLSTOFFE
UND LUFT

(1909-1943: Wasser und Abwasser)

Verein für Wasser, Boden- und Lufthygiene. Postfach 431, 7000 Stuttgart 1, Germany.

1950. Bi-monthly. \$42.60

500 abstracts/year, 150 words/abstract, interval 6 months

Coverage: Periodicals, books, reports, patents

Arrangement: By subject headings

Indexes: Author index in each issue, author and subject indexes annually

Language of abstracts: German

This is the world's oldest abstracting service especially devoted to water engineering. The predecessor of the present journal, founded in 1909, covered material on water supply and sewage treatment, mostly from German sources, for 34 years and ceased to appear due to publishing difficulties in the latter part of World War II. It was revived five years after the end of the war and is now the second-largest abstracting service on water resources in German (and the only one in journal form). The emphasis, as indicated in its title, is now on environmental health aspects in general, covering documents on water, sewage, solid wastes and air pollution in seven languages. Although the number of abstracts and the range of sources covered is considerably smaller than in *Dok. Wasser*, and there is a certain degree of overlap, this service has the advantage of providing retrospective search facilities through its conventional journal form and its thorough indexes. Adequate coverage of the German scene in water resources engineering will probably need a subscription to both services.

METEOROLOGICAL AND GEOASTROPHYSICAL ABSTRACTS

(1950-1959: Meteorological Abstracts and Bibliography)

*American Meteorological Society, 45 Beacon Street, Boston, Mass.
02108 USA*

1950. Monthly. \$400.00 (\$200.00 for universities and libraries)

3000 abstracts/year, 300 words/abstracts, interval 4-12 months

Coverage: Periodicals, books, reports, theses, patents, conferences
(incl. individual papers), maps, atlases, data compilations

Arrangement: By subject heading and UDC

Indexes: Author, subject, geographic and contracts/grants index in each issue. Author and classified subject indexes cumulated for 10 years (1950-1959) and for 20 years (1950-1969). The 20-year indexes are published in 1972 by G.K. Hall & Co. in 8 volumes

Language of abstracts: English

The section Hydrosphere/Hydrology of this comprehensive discipline-orientated service is the one most relevant to water resources engineering, primarily for hydrologists but also for engineers engaged in groundwater exploitation, river training and flood control engineering.

Some subsections of Meteorology, particularly those dealing with radiation and temperature, aqueous vapors and climatology are also partially relevant, as are the entries under Glaciology in countries where snow and ice phenomena have to be taken into consideration in water resources planning and engineering.

Several features make this service particularly valuable for both current and retrospective information retrieval: its international coverage, its timeliness (despite the provision of long and very detailed abstracts, in most instances the time-lag is below 6 months), and its excellent indexes which are now also available in a unique 20-year compilation (see details above).

POLLUTION ABSTRACTS

*Oceanic Library and Information Center, 6811 La Jolla Blvd., POB 2369
La Jolla, Calif. 92037, USA*

1970. Bi-monthly. \$95.00

3000 abstracts/year, 100 words/abstract, interval 1-2 months

Coverage: Periodicals, books, reports, theses, standards, patents, conferences (incl. individual papers), newspapers

Arrangement: By subject headings

Indexes: Author, subject, rotated keyword indexes in each issue and annually, organization index annually

Language of abstracts: English

The growing interest in the ecology, environmental pollution and its control and prevention led to the establishment of this service which is entirely devoted to the literature on these problems. It has rapidly become the foremost bibliographical tool for all topics in environmental protection and will be indispensable for information retrieval in the field of water resources engineering. The coverage of documents in the English language is good, with a natural preponderance of American material; foreign contributions are also abstracted, but are as yet not as numerous as they could be which might change in future volumes when more experience has been gained. The typographical layout makes it easy to scan the relevant details, and computer-generated indexes provide for good retrospective search facilities. The service is also remarkable in that it provides "working couples" of most original documents abstracted for which purpose special order blanks are included in each issue.

SELECTED WATER RESOURCES ABSTRACTS

*Water Resources Scientific Information Center, U.S. Dept. of Interior,
Washington, D.C. 20240, USA*

1968. Bi-monthly. \$75.00 in U.S. \$95.00 abroad.

(Available from National Technical Information Service, Springfield, Va.)

14,000 abstracts/year, 200 words/abstract, interval 6 months

Coverage: Periodicals, books, reports, theses, conferences (incl. individual papers)

Arrangement: By subject headings and own classification system

Indexes: Author, subject, organization and accession number index in each issue and annually

Language of abstracts: English

This journal is "designed to serve the scientific and technical information needs of scientists, engineers and managers as one of several planned services of the Water Resources Scientific Information Center (WRSIC).

...The Center is pursuing this objective by coordinating and supplementing the existing scientific and technical information activities associated with active research and investigation program in water resources."

(From the foreword to each issue). The service's coverage is international; however, except for American research, the contributions listed are not always of recent date, but are included as they appear at the so-called "centers of competence" where the actual abstracting is being done. These "centers" are located at 18 selected organizations and provide the input to the journal, together with 51 Water Resources Research Institutes and with information gathered from grantees and contractors of the Office of Water Resources Research and other U.S. federal agencies.

It should be realized by users of this comprehensive service that, although it covers practically every aspect of water resources engineering, it is specifically orientated towards research and thus does not normally report on technical applications and the execution of actual projects. The abstracts are generally quite extensive and contain detailed numerical data, particulars on chemical compounds, etc. Good typographical layout and computer-produced indexes are valuable aids to the rapid retrieval of information from this service which should be indispensable for a documentation center concerned with research in the field.

A N N E X

OTHER ABSTRACTING JOURNALS AND SERVICES
ON THE IRRIGATION AND DRAINAGE OF AGRICULTURAL LAND
AND WATER RESOURCES ENGINEERING

A. IRRIGATION AND DRAINAGE OF AGRICULTURAL LAND

AGRINDEX

Journal; 12x; 1975-
Food and Agriculture Organization of the United Nations (FAO)

Agris Coordinating Centre, via Terme di Caracalla, 00100, Roma, Italy

Agriculture in general, including sections on water resources and management, and drainage and irrigation

Output arranged by subject. Titles without abstracts.

Subject index and author index each issue.

BULLETIN SIGNALTIQUE

Section 380. Agronomie, Zootechnie, Phytopathologie.

Journal; microfiches; magnetic tape; 10 x; 1940-

Centre National de la Recherche Scientifique (CNRS), Centre de Documentation, 26, rue Boyer, 75971 Paris, France.

Agriculture in general and related sciences, including irrigation and drainage.

Author addresses

Output arranged by subject (own classification).

Subject index (alphabetical) annually. Author index in each issue and annually. Controlled vocabulary.

Input source: primary journals.

Computerized.

BIOLOGICAL ABSTRACTS

Journal; 24x; 1926-

Microfilms

Magnetic tapes (BA Previews)

*Biosciences Information Service of Biological Abstracts, 2100 Arch Street,
Philadelphia, Pennsylvania 19103, USA.*

Biological sciences, including biochemistry, biophysics, cell biology, genetics, systematic biology, bioinstrumentation, radiation biology, animal and plant physiology and pathology, parasitology, virology, toxicology, veterinary science, microbiology and bacteriology, environmental biology, public health, nutrition, agriculture.

140,000 abstracts in EN. Titles in original language and EN.
Author addresses.

Output arranged by subject (own classification).

Subject index (KWOC), Biosystematic, CROSS index and author index, each issue and 6-monthly.

Input source: 7.000-8.000 primary journals

Computerized.

DOKUMENTAČNÍ LÍSTKOVÁ SLUŽBA (DLS)
(AGRICULTURAL INFORMATION CARD SERVICE)

Card service; 1969-

Ústav vědeckotechnických informací (ÚVTI) (Institute for Scientific and Technical Information) Praha 2 - Vinohrady, Slezská 7, Czechoslovakia

Rostlinná výroba, řada I - XII
(Plant production, series I-XII)

6 - 12 x.

Plant production; soil science, fertilization and plant nutrition,
irrigation, land reclamation.

13,700 references produced, 11,160 abstracts plus 1,700 title citations
published.

Input source: 400 primary journals.

FAO DOCUMENTATION, CURRENT BIBLIOGRAPHY

Journal; 12 x; 1967-

*Food and Agricultural Organization of the United Nations (FAO),
Documentation Centre, Via Terme di Caracalla, 00100, Roma, Italy.*

Agriculture in general, including forestry, fisheries and nutrition.
4,500 title citations. Mini abstracts (15 keywords). Titles in original
language and EN.

Output arranged chronologically by accession number.

Subject index (KWIC, 15 keywords) and author index, annually; monthly
editions on microfiche only. Geographical index incorporated in subject
index. Controlled vocabulary.

Input source: FAO papers.

INFORMATIONSDIENSTKARTEI (IDK) BODENKUNDE, BODENERHALTUNG
UND PFLANZENERNÄHRUNG

(INFORMATION CARD INDEX SERVICE FOR SOIL SCIENCE CONSERVATION
AND PLANT NUTRITION)

Card service; irregular; 1966-

*Bodenkunde, Bodenerhaltung und Pflanzenernährung
in der Forschungsanstalt für Landwirtschaft (FAL), D-33
Braunschweig-Völkenrode, Bundesallee 50, Germany.*

Soil science; soil conservation; plant nutrition; some aspects of
microbiology.

1000 abstracts in GE plus 800 title citations. Mini abstracts. Titles in
original language and GE. Author addresses.

Output arranged by subject, author and numerical sequence.

Controlled vocabulary

Input source: 100 EN, FR and GE primary journals.

LANDBOUWDOCUMENTATIE

(AGRICULTURAL DOCUMENTATION)

Journal: Card service; 1945-

*Centrum voor Landbouwpublicaties en Landbouwdocumentatie (PUDOC), Prinses
Marijkeweg 19, P.O. Box 4, Wageningen, Netherlands.*

Agriculture in temperate climates

7,500 abstracts in NE. Titles in original language.

Output arranged by subject (UDC)

Subject index (alphabetical 2-3 keywords) annually. Controlled vocabulary.

Input source: 800-1000 primary journals.

REFERATIVNYI ZHURNAL

*Vsesoiusnyi institut nauchnoi i tekhnicheskoi informatsii (VINITI),
Baltiyskaya ul-14, Moscow A219, USSR.*

Several sections of importance.

TROPICAL ABSTRACTS

Journal; Card service; 12 x; 1946, in English 1953-

*Royal Tropical Institute, Department of Agricultural Research, Advisory
and Documentation Division, 63, Mauritskade, Amsterdam-O, The Netherlands*

Agriculture of tropical and subtropical regions, including irrigation
and drainage of agricultural land.

7,000 abstracts in EN. Titles in original language and EN. Author
addresses.

Output arranged by subject (UDC).

Subject index (1,3 keywords), geographical, taxonomic and author indexes,
annually.

Input source: 1,600 primary journals.

B. WATER RESOURCES ENGINEERING

AMERICAN SOCIETY OF CIVIL ENGINEERS. PUBLICATIONS ABSTRACTS

American Society of Civil Engineers, 345 East 47th St., New York, N.Y. 10117, USA.

1966. Bi-monthly.

1000 abstracts/year, 150 words/abstract, interval 1-2 months

Coverage: Periodicals, reports

Arrangement: By Journal Divisions of the society (broad subject groups)

Indexes: Author, subject, keyword in each issue

Language of abstracts: English

In 1966, ASCE began to append abstracts to every paper published in their monthly Civil Engineering and in their 13 Journals (issued at different intervals and together forming the Proceedings of the ASCE). The abstracts are printed in a separate section of each journal issue.

AQUATIC SCIENCES AND FISHERIES ABSTRACTS

(1969-71: Aquatic Biology Abstracts)

Information Retrieval Ltd., 38 Chancery Lane, London, U.K.

1971. Monthly

500 abstracts/year, 250 words/abstract, interval 3-4 months

Coverage: Periodicals, books, reports, conferences

Arrangement: Subject headings, taxonomic order

Indexes: Author, geographic, taxonomic in each issue, subject index annually

Language of abstracts: English

The sections that are relevant to water resources engineering are "Physical and Chemical Limnology" and "Pollution"

BIBLIOGRAPHY ON IRRIGATION, DRAINAGE, RIVER TRAINING AND FLOOD CONTROL

Printed bibliography; ix; 1959-

*International Commission on Irrigation and Drainage, Central Office,
48 Nyaya Marg, Chanakyapuri, New Delhi 21, India.*

Irrigation, drainage, flood control, river training, hydrology, irrigated agriculture, protection of water from pollution, reclamation, soil science.

3,275 title citations. Titles in EN or FR. Some abstracts in EN or FR.
Output arranged by subject (UDC)

Author index, annually

Input source: 200 primary journals; 5% from secondary sources.

Irrigation and drainage of agricultural land and water resources engineering are covered by the Bibliography on Irrigation, Drainage, River Training and Flood Control, which is drawn up and published by the Central Office of the International Commission on Irrigation and Drainage in New Delhi. This publication appears only once a year; i.e. it is an annual. The material handled consists of the subjects mentioned in the title of the publication. A great disadvantage of the Bibliography is the lack of a subject index, and the considerable interval of time which elapses between the period covered and the date of appearance. Less significant disadvantages are that unimportant treatises are also included and that abstracts accompany only some of the items listed. Nor does international literature receive particularly full coverage.

BIBLIOGRAFIA ITALIANA DI IDRAULICA

(1950-1953 Idraulica - Bibliografia Italiana)

Instituto di Idraulica nell'Università di Padova, Centro di Documentazione Idraulica, Via Loredan 20, 35100 Padova, Italy.

1950. Quarterly.

500 abstracts/year, 80 words/abstract, interval 3-12 months

Coverage: Periodicals, books, reports, conferences (incl. individual papers)

Arrangement: By subject headings and by UDC

Indexes: Subject index in each issue, author index annually

Language of abstracts: Italian

This service provides extensive coverage of the Italian scientific and technical periodical literature in which works on all aspects of water resources engineering appear.

BIBLIOGRAPHIE SIGNALETIQUE HEBDOMADAIRE SELECTIONNEE
(WEEKLY SELECTIVE INFORMATION BIBLIOGRAPHY)

Journal; card service; 52 x;

Météorologie National, Service Météorologique Métropolitain - Division documentation, 2, avenue Rapp, 75340, Paris Cedex 07, France.

Agricultural meteorology and hydrology
3,000 references produced, 110 title citations or abstracts in FR published. Titles in original language and FR.

Output arranged by subject (UDC) and author.

Input source: 310 primary journals.

BULLETIN METEOROLOGY - CLIMATOLOGY

Journal 10 x; 1972-

Hydrometeorologický ústav - Oborové informační středisko, Praha 5, Holečkova 8, Czechoslovakia.

Agricultural meteorology and climatology.

3,000 references produced, 300 abstracts in CZ published. Titles in original language and CZ or SL.

Output arranged by subject (UDC).

Input source: primary literature.

CÍMJEYZEK A BEL-ES KÜLFÖLDI FOLYOIRATOKBAN MEGJELEN VIZÜGI
VONATKOZÁSÚ KÖZLEMENVEKRÖL

(TITLE LIST OF DOMESTIC AND FOREIGN PERIODICALS RELATED TO PROBLEMS OF
HYDROLOGY)

*Vízgazdálkási Tudományos Kutató Intézet, Könyvtári és Tájékoztatási
Csoport (Scientific Research Institute on Water Resources, Library and
Information Group), Budapest, Hungary.*

Monthly: since 1954; 3,000 references a year to 100 world journals;
subject classification with Universal Decimal Classification numbers added.

Subject: hydrology.

CHEMICAL ABSTRACTS

*Chemical Abstracts Service Division of the American Chemical Society,
Columbus, Ohio 43219, USA.*

1907. Weekly

3,500 abstracts/year, 125-150 words/abstract, interval 3-4 months.

Coverage: Periodicals, books, reports, patents, conferences (incl. individual papers)

Arrangement: By subject headings, then by form (periodical articles, books, patents)

Indexes: Author, keyword subject, patent indexes in each issue; author, subject, molecular formula, hetero-atom-in-context, ring system and patent indexes semi-annually and every five years.

Language of abstracts: English

The two sections of this service which are relevant to water resources engineering are No.60 Sewage and Wastes and No.61 Water.

CURRENT LITERATURE ON WATER (CLOW)

Journal; 12 x; 1966-

National Institute for Water Research, P.O. Box 395, Pretoria, South Africa.

Freshwater biology; biotechnology; physio-chemical technology of water supply; aqueous solid waste treatment; treatment and disposal of mineralized effluents; desalination.

3,700 title citations. Mini abstracts (6 keywords). Titles in EN.

Output arranged by subject (own classification) and author.

Subject index (KWOC) and author index, annually.

Input source: 245 primary journals.

DESALINATION ABSTRACTS

*Centre of Scientific and Technology Information, P.O.B. 20125,
Tel Aviv, Israel.*

1968. Quarterly.

700 abstracts/year, 120 words/abstract, interval 6 months

Coverage: Periodicals, reports, patents, conferences (incl. individual papers)

Arrangement: By broad subject headings, and by UDC under each heading

Indexes: Author, subject and patent indexes in each issue, cumulated annually

Language of abstracts: English

This service is highly specialized and geared to the particular information needs of scientists and engineers working in the field of sea water desalination.

EUTROPHICATION

(1969-1971: Eutrophication Abstracts)

*Water Resources Center, University of Wisconsin, Madison, Wis.,
53706 USA.*

1969. Bi-monthly.

1000 abstracts/year, 100 words/abstract, interval 2-3 months.

Coverage: Periodicals, reports, conferences (incl. individual papers)

Arrangements: By subject headings

Indexes: Subject index in each issue and cumulated annually.

Language of abstracts: English

The title of this service indicates its subject specialization, but since many activities of water engineers, from irrigation and drainage to industrial waste treatment, may contribute to the eutrophication of surface waters, the service should be of interest.

EXCERPTA MEDICA, section 46 - ENVIRONMENTAL HEALTH
AND POLLUTION CONTROL (1971)

Excerpta Medica Foundation, P.O. Box 1126, Amsterdam C, The Netherlands

Published by Associated Scientific Publishers, Jan van Galenstraat,
Amsterdam, The Netherlands.

12x;

Pollution of water and soil, effects of pollution on plants and animals,
measurement and control of pollution, pesticides, food toxicology.

6,600 references produced.

Output arranged by subject (own classification).

Subject index (alphabetical, 4 keywords) and author index in each issue
and annually.

Input source: 20,000 primary journals.

LA HOUILLE BLANCHE

*Association pour la diffusion de la documentation hydraulique, 5, chemin
des Marronniers, 38 Grenoble, France.*

1946. 8 times per year.

2000 index entries/year. Interval 3-6 months.

Coverage: periodicals, books, reports, theses, conferences (incl.
individual papers).

Arrangement: by subject headings

Indexes: none

The index entries form the main part of the section *Documentation of*
this scholarly journal which is one of the primary scientific media for
the reporting of research in the fields of theoretical and applied
hydraulics and hydrology.

HYDATA

*American Water Resources Association, P.O. Box 434, Urbana,
USA.*

Monthly; since 1965

It generally comprises the following:

- a) The reproduction of the whole table of contents of the most important periodicals in the water resources field.
- b) The listing of pertinent titles from periodicals not entirely devoted to water resources.
- c) The listing of titles of non-periodical literature on water resources.
- d) The computer-produced Key Term Index. This is an alphabetical listing of significant terms in titles. Each term is followed by a reference number. The reference number locates the title in the current issue of HYDATA where the full title is given. Terms in foreign languages are also given and they are intermixed with the English Key Terms.

HYDROLOGIE UND WASSERWIRTSCHAFT

Zentralinstitut für Information und Dokumentation, Berlin

Since 1956.

References to the world literature, printed on cards;
classified by UDC scheme.

Subjects: hydrology and water resources.

INTERNATIONAL BIBLIOGRAPHY ON HYDROLOGY

Published under the auspices of the International Association for Scientific Hydrology (IASH) by 37 national member associations in various countries.

The bibliography has been published continuously since 1934 (except for a break during World War II) and is intended to cover each country's national contributions to hydrology, irrespective of the language in which they are written.

It is published in a standardized format, including the arrangement of entries by a standard framework of subject headings used uniformly by all participants, which makes searching through the bibliographies of different countries especially easy.

MÜSZAKI LAPSEMLE. MEYÉPITES, VIZEPITES

(1948-1961: Közlekedés, melyépítés, vizépítés)

*Országos Műszaki Könyvtár és Dokumentációs Központ, Muzeum-utca 17,
Budapest VIII, Hungary.*

1948. Monthly

(3000) abstracts/year, 30 words/abstract, interval 6 months

Coverage: Periodicals, books, reports, standards, patents, conferences

Arrangement: By subject headings and by UDC

Indexes: Subject index annually

Language of abstracts: Hungarian

The National Technical Library and Documentation Center in Hungary publishes a series of abstracting journals in order to provide Hungarian scientists and engineers with abstracts of the world's literature in their respective fields. This section, devoted to Building construction and Water engineering, covers a large number of original Hungarian documents and periodicals in a wide range of other languages.

POLLUTION LOOKOUT

Journal 12x; 1971-
Magnetic tapes.

*Biomedical Documentation Centre, Karolinska Institutet, Fack, S-10401
Stockholm 60, Sweden.*

Environmental sciences (air and water pollution, health effects, effects on animals and plants, analyses).
6,000 references produced, 1,430 title citations published. Mini abstracts (3-4 keywords). Titles in EN. Author addresses.
Output arranged by subject (own classification)
Subject index (KWOC) and author index, annually
Input source: 20 primary journals; 90% from secondary sources.

PRZEGŁAD INFORMACYJNO-DOKUMENTACYJNY HYDROLOGII,

METEOROGII I OCEANOLOGII

(1949-1956: Przeglad Meterologiczny i Hydrologiczny)

*Państwowy Instytut Hydrologiczno-Meteorologicznej, ul. Podleśna 61,
Warsaw, Poland.*

1949. Monthly.

600 abstracts/year, 100 words/abstract, interval 12 months

Coverage: Periodicals

Arrangement: By subject headings and UDC

Indexes: None

Language of abstracts: Polish

This is a current-awareness tool for Polish scientists and engineers, covering a large number of periodicals in no less than 18 languages, including, of course, original Polish contributions. As indicated by its title, the main subjects covered are hydrology, meteorology and oceanology; some work related to hydraulic engineering is also abstracted.

REFERATIVNYI ZHURNAL

*Vsesoiusnyi institut nauchnoi i technicheskoi informatsii (VINITI),
Baltiyskaya ul. 14, Moscow A 219, USSR.*

The All-Union Institute for Scientific and Technical Information, better known by its Russian acronym VINITI, publishes the world's largest abstracting service in 61 series; these are subdivided into sections, some of which are published together in a so-called *Svodnyi tom* (joint volume), while others are published individually as *Vypusk Ref. Zh.* (section of Ref. Zh.).

The following sections were considered relevant to water resources engineering. The data given pertain to the situation in 1971.

Gidroenergetika i Vetroenergetika

2,500 abstracts/year, 150 words/abstract, interval 4-6 months
Indexes: Author, subject, patent number indexes annually

Gidrogeologiya

2,500 abstracts/year, 150 words/abstract, interval 4-6 months
Indexes: Author and subject indexes annually

Gidromekhanika

2,500 abstracts/year, 150 words/abstract, interval 4-6 months
Indexes: Author and subject indexes in each issue and annually

Vodnyi perevozki

1,200 abstracts/year, 100 words/abstract, interval 4-6 months
Indexes: Author and subject indexes annually.

VA NYTT

K-Konsults bibliotek, Fack 103 10, Stockholm 2, Sweden

1966. 10 times per year.

1,500 abstracts/year, 50 words/abstract, interval 1/2-3 months

Coverage: Periodicals, books, reports, theses, conferences (incl. individual papers)

Arrangement: By subject headings

Indexes: None

Language of abstracts: Swedish

The Swedish title of this service is a kind of acronym for "Water and sewage news" but it may also be loosely interpreted as "What's new"; the translated subtitle is "literate survey on environmental protection". It is published by a private firm of consultants in the public health field in cooperation with the Swedish Government's Office for Environmental Protection, and is aimed at engineers as a current-awareness tool covering various aspects of the environment, its pollution, protection and preservation. The main emphasis, however, is on water resources.

CARD SERVICES - WATER MANAGEMENT

Výskumný ústav vodného hospodárstva (Research Institute for Water Management), Karloveská cesta 9, Bratislava, Czechoslovakia.

Card service; 12 x; 1962-

Hydrology, hydraulics, water supply, waste water and effluents.

2,300 abstracts in CZ or SL. Titles in original language and CZ or SL.

Output arranged by subject (UDC) and author.

Input source: 180 primary journals.

WATER RESOURCES ABSTRACTS

American Water Resources Association, Box 434, Urbana, Ill. 61801, USA

2,000 abstracts/year, 140 words/abstract, interval 2-3 months

Coverage: Periodicals, reports, theses, conferences (incl. individual papers)

Arrangement: By subject headings

Indexes: None

Language of abstracts: English

1968. Monthly.

The abstracts in this service are largely based on material listed in the same organization's contents-page journal *Hydata*. Although the promotional literature for the service claims that it "provides comprehensive coverage in abstract form of the world's water literature", its actual scope is much more restricted, since the coverage extends primarily to English-language literature, more particularly of American origin, and foreign material is only included if English abstracts or summaries are available in the original document. A large number of abstracts are reprinted from the publications of ASCE and other sources which provide abstracts to their own publications, and scarcely any original abstracting seems to be done by the service's own abstracters.

The service is published on loose-leaf sheets, with three 3x5" abstract frames on each page.

LIST OF AVAILABLE PUBLICATIONS

PUBLICATIONS

- (3/F) Erich H. Jacobi, *Remembrement en Europe*. 1959, 152 pp.
- (3/D) Erich H. Jacobi, *Flurbereinigung in Europa*. 1961, 157 pp.
- (6) *A priority scheme for Dutch land consolidation projects*. 1960, 84 pp.
- (7) *An assessment of investments in land reclamation from the point of view of the national economy*. 1969, 65 pp.
- (8) F. Hellinga, *Local administration of water control in a number of European countries*. 1960, 46 pp.
- (9) L. F. Kamps, *Mud distribution and land reclamation in the eastern Wadden Shallows*. 1963, 91 pp.
- (11) P. J. Dieleman, ed. *Reclamation of salt affected soils in Iraq*. 1963, 175 pp.
- (12) C. H. Edelman, *Applications of soil survey in land development in Europe*. 1963, 43 pp.
- (13) L. J. Pons, and I. S. Zonneveld. *Soil ripening and soil classification*. 1965, 128 pp.
- (14) G. A. W. van de Goor, and G. Zijlstra. *Irrigation requirements for double cropping of lowland rice in Malaya*. 1968, 68 pp.
- (15) D. B. W. M. van Dusseldorf. *Planning of service centres in rural areas of developing countries*. 1971, 159 pp.
- (16) *Drainage principles and applications*. Vols I/IV (1972-1974), 1455 pp.
- (17) *Land evaluation for rural purposes*. 1973, 116 pp.
- (19) M. G. Bos, and J. Nugteren. *On irrigation efficiencies*. 1974, 89 pp.
- (20) M. G. Bos, ed. *Discharge Measurement Structures*. 1976, 464 pp.
- (21) N. A. de Ridder, A. Erez. *Optimum use of water resources*. 1977, 250 pp.
- (22) FAO. *A Framework for land evaluation*. 1977, 87 pp.

BULLETINS

- (1) W. F. J. van Beers. *The auger hole method*. 1958, 32 pp. Rev. offprint 1970.
- (1/D) W. F. J. van Beers. *Die Bohrloch-Methode*. 1962, 32 pp.
- (3) W. F. J. van Beers. *Acid Sulphate Soils*. 1962, 31 pp.
- (4) B. Verhoeven. *On the calciumcarbonate content of young marine sediments*. 1963, 27 pp.
- (5) P. J. Dieleman and N. A. de Ridder. *Studies of salt water movement in the Bol Guini Polder, Chad Republic*. 1964, 40 pp.
- (6) A. J. de Groot. *Mud transport studies in coastal waters from the western Scheldt to the Danish Frontier*. 1964.
- (7) *Code of practice for the design of open watercourses and ancillary structures*. 1964, 80 pp.
- (8/F) W. F. J. van Beers. *Quelques nomogrammes pour le calcul des espacements des drains*. 1966, 21 pp.
- (9) D. J. Shaw. *The Managil South-Western extension to the Gezira Scheme*. 1965, 37 pp.
- (10) F. Homma. *A viscous fluid model for demonstration of groundwater flow to parallel drains*. 1968, 32 pp.
- (11) G. P. Kruseman, and N. A. de Ridder. *Analysis and evaluation of pumping test data*. 1970, 2nd ed. 200 pp.
- (11/F) G. P. Kruseman, and N. A. de Ridder. *Interpretation et discussion des pompages d'essai*. 1973, 2nd ed. 213 pp.
- (11/S) G. P. Kruseman, and N. A. de Ridder. *Analisis y evaluacion de los datos de ensayos por bombeo*. 1975. 212 pp.
- (12) J. G. van Alphen, and F. de los Rios Romero. *Gypsiferous soils*. 1971, 44 pp.
- (13) J. H. Edelman. *Groundwater hydraulics of extensive aquifers*. 1972, 216 pp.
- (14) Ch. A. P. Takes. *Land settlement and resettlement projects*. 1975, 44 pp.
- (15) W. F. J. van Beers. *Computing drain spacings*. 1976, 47 pp.
- (16) C. A. Alva, J. G. van Alphen et al. *Problemas de drenaje y salinidad en la Costa Peruana*. 1976, 116 pp.

BIBLIOGRAPHIES

- (4) L. F. Abell, and W. J. Gelderman. *Annotated bibliography on reclamation and improvement of saline and alkali soils*. 1964, 59 pp.
- (5) C. A. de Vries, and B. C. P. H. van Baak, *Drainage of agricultural lands*. 1966, 28 pp.
- (6) J. G. van Alphen, and L. F. Abell. *Annotated bibliography on reclamation and improvement of saline and sodic soils* (1966-1960). 43 pp.
- (7) C. A. de Vries. *Agricultural extension in developing countries*, 125 pp.
- (8) C. J. Brouwer, and L. F. Abell. *Bibliography on cotton irrigation*. 1970, 41 pp.
- (9) S. Raadsma, and G. Schrale. *Annotated bibliography on surface irrigation methods*. 1971, 72 pp.
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