BIBLIOGRAPHY

1) HANDBOOK OF APPLIED HYDROLOGY

Editor-in-Chief: VEN TE CHOW

published by McGraw-Hill Book Co., Inc., in 1964.
1467 pages, 614 illustrations. $ 39.50.

Publication of a 1467-page volume on water-resources technology has just been announced by the McGraw-Hill Book Company of New York. The giant volume entitled "Handbook of Applied Hydrology - A Compendium of Water-resources Technology" was prepared by a staff of 45 leading specialists from various major universities, consulting firms, and government agencies under the direction of Dr. Ven Te Chow, Professor of Hydraulic Engineering, UI Department of Civil Engineering. Dr Chow is the handbook's editor in--chief.

The contributors to the book include specialists from U.S. Agricultural Research Service, Area Redevelopment Administration, Army Corps of Engineers, Bureau of Reclamation, Forest Service, Geological Survey, Soil Consevation Service, Weather Bureau, Tennessee Valley Authority, and Australian Commonwealth Scientific and Industrial Research Organisation; from University of California, University of Chicago, Colorado State University, Columbia University, University of Illinois, Iowa State University, University of Michigan, University of Nevada, and University of Wyoming; and from a number of consulting firms in Baltimore, Maryland, St. Petersburg, Florida, St. Louis, Missouri, and New York City.

The handbook is a comprehensive manual on modern hydrology which presents a complete, practical review of the basic theories, principles, and data required for the study and management of water and water-resources projects. Although the practical aspects of hydrology are emphasized, basic theories and principles are thoroughly discussed whenever necessary for clear understanding of the measurement, analysis, and design involved in complex water problems.

The first 28 sections of the book are arranged to cover five major parts: branches of science related hydrology; various phases of the hydrologic cycle; specialized areas of hydrology; water-resources planning and design; and social, legal, and political aspects of water. Section 29 gives a summarized account of the various applications of both digital and analog computers in solving hydrologic problems.

Within the full spectrum of hydroscience, the book covers an array of topics including oceanography, meteorology, hydrogeology, geomorphology, soil physics, plant ecology, silviculture, fluid mechanics, statistics, probability, rainfall, snow, evaporations, transpiration, infiltration, groundwater, runoff, ice glaciers, sedimentation, drought, low streamflow, flow determination, flood routing, streamflow measurement, reservoir regulation, river forecasting, urban hydrology, agricultural hydrology, forestry and rangeland hydrology, airport hydrology, superhighway hydrology, lakes, swamps, arid and semiarid region hydrology, water resources planning, development, economics, and operations research, floodplain adjustments and regulations, water law, water policy, and electronic computers.

(From the authors).

Section 1 - Hydrology and its Development - Dr. VEN TE CHOW

Section 2 - Oceanography - Dr. VEN TE CHOW

Section 3 - Meteorology - Dr. Sverre PETTERSSEN

Section 4 - Geology

Part 1 - Hydrogeology - Dr. George B. MAXEY

Part II - Quantitative Geomorphology of Drainage Basins and Channel Networks - Dr. Arthur N. STRAHLER

Section 5 - Soil Physics - Dr. Don KIRKHAM

Section 6 - Ecological and Silvicultural Aspects - Dr. Howard W. LULL

Section 7 - Fluid Mechanics - Dr. Maurice L. ALBERTSON, and

Section 7 - Fluid Mechanics - Dr. Maurice L. ALBERTSON, and Dr. Daryl B. SIMONS

Section 8 - Statistical and Probability Analysis of Hydrologic Data

Part I - Frequency Analysis - Dr. VEN TE CHOW
Part II - Regression and Correlation Analyses - Dr. Vujica M. YEVDJEVICH
Part III - Analysis of Variance, Covariance, and Time Series - Mr. David R. DAWDY, and Dr. Nicholas C. MATALAS
Part IV - Sequential Generation of Hydrologic Information - Dr. VEN TE CHOW

Section 9 - Rainfall - Dr. Charles S. GILMAN

Section 10 - Snow and Snow Survey - Mr. Walter U. GARSTKA

Section 11 - Evapotranspiration - Dr. Frank J. VEIHMEYER

Section 12 - Infiltration - Mr. G. W. MUSGRAVE
Mr. H. N. HOLTAN

Section 13 - Groundwater - Dr. David Keith TODD

Section 14 - Runoff - Dr. VEN TE CHOW

Section 15 - Streamflow Measurement - Mr. Marion Clifford BOYER

Section 16 - Ice and Glacier - Dr. Mark F. MEIER

Section 17 - Sedimentation

Part I - Reservoir Sedimentation - Mr. L. C. GOTTSCHALK
Part II - Channel Sedimentation - Dr. Hans A. EINSTEIN

Section 18 - Low Streamflow and Droughts - Mr. H. E. HUDSON Jr. ,and Mr. Richard HAZEN

Section 19 - Quality of Water - Mr. Sheppard T. POWELL

Section 20 - Hydrology of Urban Areas - Mr. Stifel W. JENS, and Mr. M. B. MCPHERSON

Section21 - Hydrology of Agricultural Lands - Mr. Harold O. OGROSKY, and Mr. Victor MOCKUS

Section 22 - Hydrology of Forest Lands and Rangelands - Mr. Herbert C. STOREY, Mr. J. Marvin ROSA, and Mr. Robert L. HOBBA

Section 23 - Hydrology of Lakes and Swamps - Dr. James H. Zumberge, and Dr. John C. AYERS

Section 24 - Hydrology of Arid and Semi-arid Regions - Dr. Ralph O. SLATYER, and Mr. J. A. MABBUTT

Section 25 - Hydrology of Flow Control

Part I - Flood Characteristics and Flow Determination - Mr. Tate DALRYMPLE
Part II - Flood Routing - Mr. Edward A. LAWLER
Part III - Reservoir Regulations - Mr. Edward J. RUTTER, and Mr. Le Roy ENGSTROM
Part IV - River Forecasting - Mr. T. J. NORDENSON, and Mr. M. M. RICHARDS
Part V - Floodplain Adjustments and Regulations - Dr. Gilbert F. WHITE

Section 26 - Water Resources Planning and Development

Part I - Planning and Development - Mr. J.W. DIXON
Part II - System Design by Operations Research - Dr. VEN TE CHOW

Section 27 - Legal Aspects - Mr. Frank J. TRELEASE University of Wyoming

Section 28 - Water Policy - Dr. S. V. CIRIACY-WANTRUP

Section 29 - Applications of Electronic Computers in Hydrology - Dr. VEN TE CHOW

2) USA.

WATER RESOURCES RESEARCH

A NEW SCIENCE QUARTERLY
PUBLISHED BY THE AMERICAN
GEOPHYSICAL UNION

Papers in Snow - Lakes - Floods - Hydrology - Glaciology - Limnology - Hydraulics - Water Law - Precipitation - Stream Flow - Soil Moisture - Sedimentation - Ground-Water - Water Quality - Water Planning - Systems Analysis - Water Economics - River Morphology - Evapotranspiration - Watershed Management.

Water, water every where,
Nor any drop to drink.

This quotation about mid-ocean frustation could easily apply to the situation on well-watered land areas as well. The nation and the world are becoming aware of the increasingly acute shortage of water. To increase this awareness and to facilitate the steps now being taken to meet the problems involved, the American Geophysical Union is etablishing a new quarterly journal to be called *Water Resources Research.*

In the coming decade an adequate supply of water is certain to be an increasingly critical matter in the United States as well as in the rest of the world. Critical shortages are natural in arid and semi-arid regions, and studies to make the use of the limited water supply more effective have long been underway. But shortages will become more widespread even in areas which have a heavy amount of rainfall each year.

As a nation we are now spending about $10 billion annually on water resources development, and our expenditures may soon reach $20 billion in order to avoid critical water shortages. There is much refinement and improvement needed in the work to be undertaken that can only be attained through a deeper understanding of the physical processes of water. And there is much to be gained through closer ties with the social sciences.

In an effort to brigde the physical and social sciences and so to meet the challenge of the future, *Water Resources Research* has been established as essential to a coherent development of all the sciences of water.

The new journal is also to serve new activities in water science. On the world scene, the International Hydrological Decade, to begin in 1965, is an effort by UNESCO and International Council of Scientific Unions to develop an appraisal of water resources, to study the problems, and to encourage all nations to increase their scientific study of water. At home, the quickening pace of water research has been recognized by the establishment of a Universities Council on Water Resources to upgrade water resources research and teaching including its socio-economic implications, and by the establishment of water resources institutes in each state made possible by the Water Resources Research Act of 1964 signed by President Johnson on July 17.

With so much activity, both private and governmental, the American Geophysical Union saw the necessity for establishing a common ground for communication, and so the new journal, serving as a medium for papers relating to water resources, will be issued on a quarterly basis beginning in 1965. The emphasis will be upon the sciences of water—whether physical, chemical, biological, or social—rather than upon water engineering or water projects.

Papers in the physical, chemical, or biological sciences should be sent to Walter B. Langbein, U.S. Geological Survey, Washington, D.C. 20242.

Papers on the social sciences, including economics or law, should be sent to Allen V. Kneese, Resources for the Future, 1755 Massachusetts Avenue, N.W., Washington, D.C. 20036.

Streams II: Classifications. Terms: influent, effluent, perennial, intermittent, ephemeral, loosing and gaining streams, channel habit or pattern, straight, braided, anabranching (anastomosing) meandering, point bar, thalweg, longitudinal bar, cutbank, cutoff, pool, riffle, oxbow lake, natural levee, backswamp, suspended-load channel, mixed-load channel, bedload channel, helical flow, hydraulic geometry, graded stream, steady state equilibrium, stream power, dynamic equilibrium, aggradation, degradation, transport limited, supply limited, youth, mature, old.Â The tendency is for streams to increase discharge downstream as their drainage networks expand. However, there are a number of The basic and derived morphometric parameters (linear, areal and relief aspects of drainage network) for the basin were determined using ASTER DEM (30 m resolution) and Geographic Information System (GIS). These parameters describe the basin drainage network, geometry, texture, and relief characteristics. The hypsometric curve, hypsometric integral and clinographic curve were also prepared using topographic maps of 1:50,000 scale. Findings have revealed that W. Kerak is in the youth-age stage of geomorphic evolution.Â Strahler, A. (1964) Quantitative Geomorphology of Drainage Basins and Channel Networks. In: Chow, V., Ed., Handbook of Applied Hydrology, McGraw Hill, New York, 439-476. [12]. If two drainage basins are geometrically similar, all corresponding length dimensions will be in a xed ratio. Dimensionless properties include stream order numbers, stream length and bifurcation ratios, junction angles, maximum valley-side slopes, mean slopes of watershed surfaces, channel gradients, relief ratios, and hypsometric curve properties and integrals.Â :ve geomorphology on dimensional analysis and. principles of scale-model similarity [Strahler, 1954a, p. 343; 1957]. Figure 1 illustrates the concept of geometrical similarity, with which we are pri marily concerned in topographical description.Â as the sum of the channel lengths divided by basin area. Division of length by area thus yields a number with the dimension of inverse of length.