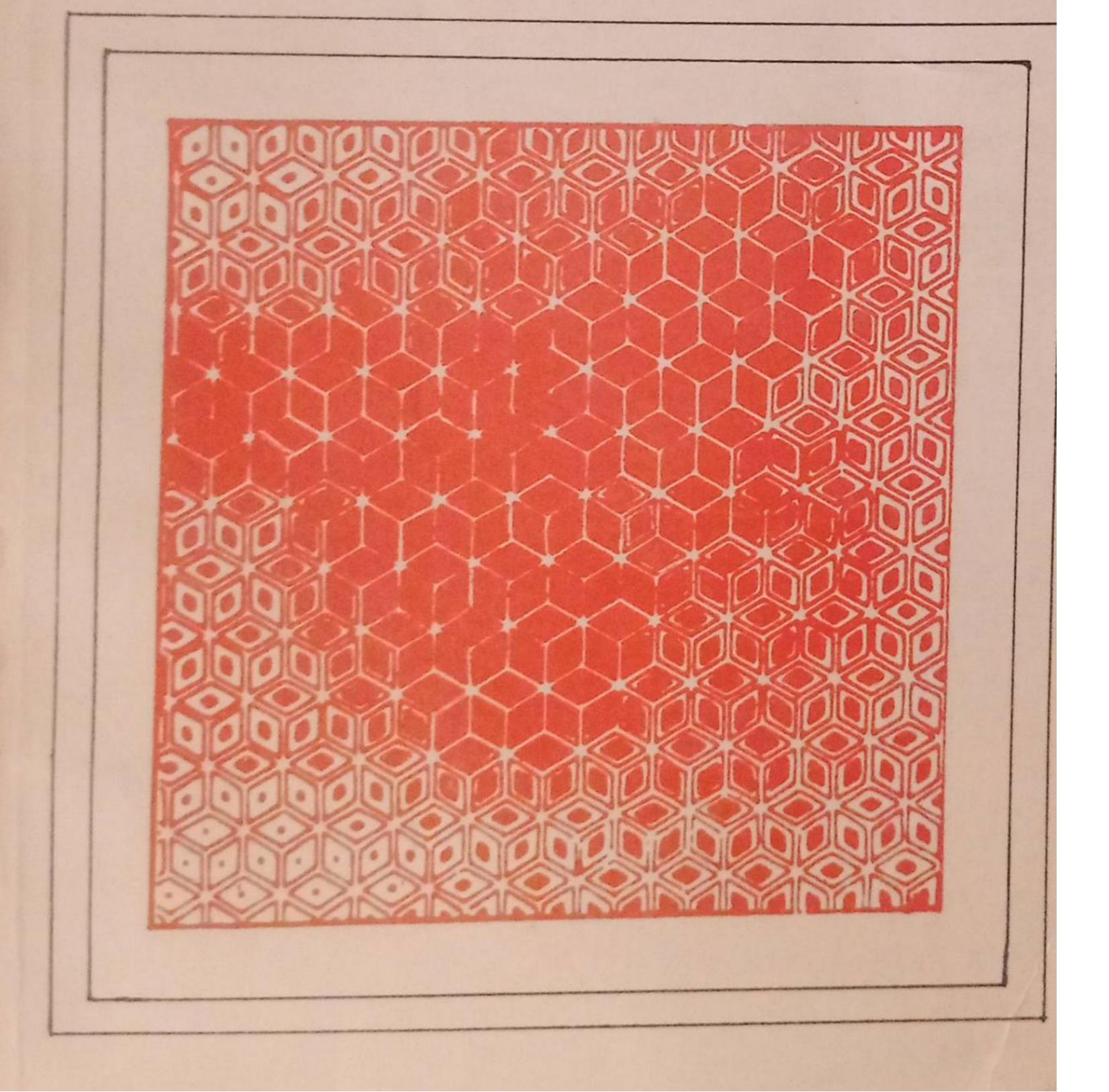
F.J. Monkhouse and H.R. Wilkinson

# MAPS AND DIAGRAMS



912

xi

xiii

XV

xvii

## Contents

PREFACE TO THE FIRST EDITION
PREFACE TO THE SECOND EDITION
PREFACE TO THE THIRD EDITION
ILLUSTRATIONS
1. MATERIALS AND TECHNIQUES
Drawing Instruments Pencils: Pens: Other instruments: Scribers: The drawing-table.
Inks and Colours Indian ink: Water-colours: Polymer colours: Other colours: Mechanical colour application.
Drawing Media Note-books and folders: Drawing- and tracing-papers: Graph-papers.
Map Compilation Map design: General seatures: Base-maps: Map-checking: Key-maps.
Scales and Scale-lines Definitions: Long line-scales: Diagonal scales: Short line-scales: Other scales.
Frames and Panels Margins: Cartouches: Key-panels: Legends: The north point: Lines of latitude and longitude: Grid lines.
Point-symbols Quantitative dot maps: Proportional symbols: The drawing of symbols: Adhesive symbols: The visual evaluation of symbols.
Graphs and Diagrams Line-graphs: Diagrams: Flow, linkage or cycle diagrams and charts.
Chorochromatic Maps
Chorographic Compage Maps
Isopleths and Choropleths Definitions: Isopleth maps: Choropleth maps.
Shading and Stipples Shading ranges: Line-shading technique: Hand-stippling technique: Mechanical stipples.
Colour The use of colour: Colour-washes.

Lettering The lettering-mask: Alignment, size and spacing of letters: Styles of lettering: Quill-lettering: Lettering-guides: Dry-transfer lettering: Mechanical lettering.

Reduction and Enlargement Graphical methods: Instrumental methods: Photographic methods.

Map Duplication and Reproduction Stencil reproduction: Photo-graphic methods: The production of printed maps.

Measurement of Area and Distance The method of squares: The strip method: The 'dot planimeter': The Blakerage Grid: Geometrical methods: Instrumental methods: Measurement of distance.

Automated Cartography

Models

Topological Maps

## 2. RELIEF MAPS AND DIAGRAMS

The Depiction of Relief Spot-heights: Contour-lines: Elaborations of the contour method: Layer-shading and -tinting: Hachures: Hill-shading: Landscape colour maps: Cliff- and rock-drawing: Physiographic (pictorial relief) maps: Landform type, 'terrain type' or 'geomorphological province' maps: Landscape evaluation maps: Configuration maps: Morphological maps.

Morphometric Analysis

Profiles The drawing of profiles: Serial profiles: Longitudinal profiles: Superimposed profiles: Composite profiles: Projected profiles: Reconstructed profiles.

Gradient and Slope The significance of slope determination: The calculation of gradient: Scales of slopes: Methods of average slope determination: G.-H. Smith's method of slope analysis: The Raisz and Henry method of average slope determination:

A. H. Robinson's method of slope analysis: A. N. Strahler's methods of slope analysis: Slope-zone maps: Divided slope histograms: Other methods of slope analysis: Area-height diagrams: Trend surface analysis: Hypsometric curves: Percentage hypsometric curves: Clinographic curves: A. N. Strahler's mean slope curve: De Smet's curve: F. Moseley's slope maps: Altimetric frequency analysis: F. Moseley's slope-height curve: Height-range diagrams: Triangular graphs for slope analysis.

Intervisibility Intervisibility exercises from contour-maps: 'Dead-ground'.

86

Regression Curves and Scatter Diagrams

Landscape Drawing and Field-Sketching Sketches from contourmaps: Sketching in the field: Sketching from a photograph.

Block-Diagrams Sketch block-diagrams of imaginary land-forms: Block-diagrams drawn from a contour-map: Perspective block-diagrams: Automatic drawing of block-diagrams: Three-dimensional diagrams.

Geological Maps Reproductions and tracings: Geological sections.

#### 3. CLIMATIC MAPS AND DIAGRAMS

191

Data Temperature: Rainfall: Wind: Sunshine and cloud: Humidity: Visibility: Synoptic charts and weather summaries: Measurement of streamflow and other hydrological data.

Isopleth Maps Isobars: Isohyets: Isopleths of duration: Date isopleths: Frequency isopleths: Isanomals: Equipluves: Equivariables: Equicorrelatives: Isomers: Isopleths of temperature range: Isopleths of accumulated temperature: Isopleths of aridity and moisture.

Columnar Diagrams Simple columnar diagrams: Percentage columnar diagrams: Superimposed columnar diagrams: Compound columnar diagrams: Special columnar diagrams: Weather integrals.

Line-Graphs Continuous tracings: Simple line-graphs: Polygraphs: Trend-graphs: Frequency graphs: Circular graphs: Isopleth graphs.

Wind-Rose Diagrams Octagonal wind-roses: Simple wind-roses: Compound wind-roses: Superimposed wind-roses: Wind- and Visibility-roses: Wind-stars.

Sunshine Record and other Duration Diagrams

Rainfall Dispersion Diagrams Construction of the diagram: Median and percentile values: Major, minor and graded breaks: Merits and demerits.

Climographs J. B. Leighly's climographs: G. Taylor's climographs: E. E. Foster's climograph: Special climographs.

ATTOUS

Symbols

Schematic Diagrams

259

### 4. ECONOMIC MAPS AND DIAGRAMS

Data Available sources: Agricultural statistics: Industrial statistics: Transport and communication statistics. Non-Quantitative Maps The chorochromatic technique: Delimitation of hinterlands: Linear patterns: Symbols.

Isopleth Maps Agricultural isopleths: 'Accessibility' isopleths: Isopleths and economic regions.

Choropleth Maps Agricultural choropleths: Industrial choropleths: Transport choropleths.

Quantitative Symbols Dots: Proportional symbols.

Graphs Line-graphs: Ergographs.

Columnar Diagrams

Divided Rectangles and Circles Divided rectangles: Divided circles.

Star-Diagrams Econographs.

Flow-Line Maps

#### 5. POPULATION MAPS AND DIAGRAMS

312

Data Totals and areas: Social structure: Sex and age structure: Ethnic structure: Occupational and industrial structure: Socio-economic indices: Natural replacement: Migration and movement: Population growth.

Non-Quantitative Maps The chorochromatic technique: Inscriptions.

Choropleth Maps Population density: Mapping by 'standard scores': The dasymetric technique: Urban population: Sex and age distribution: Ethnic and occupational structure: Replacement rates: Mortality and morbidity rates: Migrations: Growth of population: Daily movement of population.

Quantitative Symbols Dots: Proportional squares, circles and shaped symbols: Proportional spheres and cubes: Dots and circles: Dots and spheres: Grouped squares: Special proportional symbols.

Isopleths Population density: Expectancy of life and mortality: Population potentials: Ethnographic distributions.

Divided Circles Located divided circles.

Columnar Diagrams Located superimposed columnar diagrams.

Pyramids Age and sex pyramids: Compound pyramids: Superimposed pyramids.

Divided Rectangles Divided strips.

Star-Diagrams

Information Diagrams

Three Dimensional Diagrams Isometric block-diagram of age structure.

Arrows Directional diagrams.

Graphs Simple line-graphs: Polygraphs: Located graphs: Smoothed curves: Frequency graphs: Triangular graphs: Projected curves: Scatter-diagrams: Logarithmic and semi-logarithmic scales: Curve fitting: Deviational graphs: Cumulative graphs: Typology of population change.

Centrograms

Stereograms

Automatic Population Mapping Isopleth maps: Square net maps.

# 6. MAPS AND DIAGRAMS OF SETTLEMENTS

396

Data Distribution and forms: Structure of settlements: Relationships of settlements.

Facsimiles

Chorochromatic Maps

Traces Building patterns: Elements of the settlement pattern: Growth maps.

Symbols Individual buildings: Town and village symbols: Placename elements: Superimposed symbols.

Choropleth Maps Dispersion and concentration of settlements: Settlement groupings: Density of housing: Residential and social structure (Social Area Analysis): Multivariate analysis of urban areas: The use of grid maps in urban analysis.

Isopleth Maps Isochrones: Isostades: Mental maps.

Columnar Diagrams and Divided Rectangles Population and house-groupings: Compound columnar diagrams: Divided rectangles.

Special Diagrams Flow-line maps: Ray-diagrams: Ranking diagrams: Morphographical stars: Association analysis charts: Scalograms: Urban profiles: Sketch-maps: The ecological model of residual areas in a British town: Sketch-blocks: Stage-diagrams: Growth charts: Triangular graphs: Dendrograms.

Graphs Altitude graphs: Time-space diagrams: Three-dimensional graphs and diagrams: Statistical approach to town studies: Regression diagrams: Log normal distribution: Scatter diagrams.

The Use of Computer Graphics

Other Aspects Ordering of centrality values: Group image profile: Grouping of ranges of goods to demonstrate a hierarchy of shopping: A summary preference scale: Spatial association diagrams.

MECHANICAL TECHNIQUES, by R. G. Barry, Professor of Geography, University of Colorado, Boulder

472

Sampling

Mechanical Methods

The Statistical Treatment of Data Frequency distributions: Cumulative frequency: Averages: Variability: Mean deviation: Standard deviation: Probability: Time series: Significance tests: The concept of standard error: Student's 't' test: Non-parametric alternatives: Analysis of variance: Chi square test: Correlation: Linear regression: Further correlation methods: Classification and clustering.

· The state of the

Note: Symbols used in the Appendix

INDEX

518