

**Leibniz-Institut
für Länderkunde**



Erwin Raisz' Atlases – an early multi-method approach to cartographic communication

(Eric Losang)

ICC-Preconference-Workshop:
Atlases and Infographics

Tokyo, 2019/ 07/ 13

Outline

- Erwin Raisz – biography and opus
- The concept behind Raisz' work
- Three Atlases
 - Atlas of Global Geography
 - Atlas of Cuba
 - Atlas of Florida
- Possible Importance of the three Atlases
 - Communication
 - Storytelling

Biography

- * 1 March 1893, Lőcse, Hungary
- 1914 degree in civil engineering and architecture
Royal Polytechnicum in Budapest
- 1923 Immigration US
- 1924/1929 Master/Ph.D. Geology, Columbia University
- 1931 Institute of Geographical Exploration at Harvard University
(proposed by W. M. Davies, teaching Cartography)
- 1938 *General Cartography* (first cartographic textbook in English)
- 1951 Clark University, Boston; from 1957 University of Florida
- + 1968, Bangkok while travelling to the IGU in Dehli.



Photo by Bachrach

Dr. Erwin Raisz

Landform (physiographic) Maps

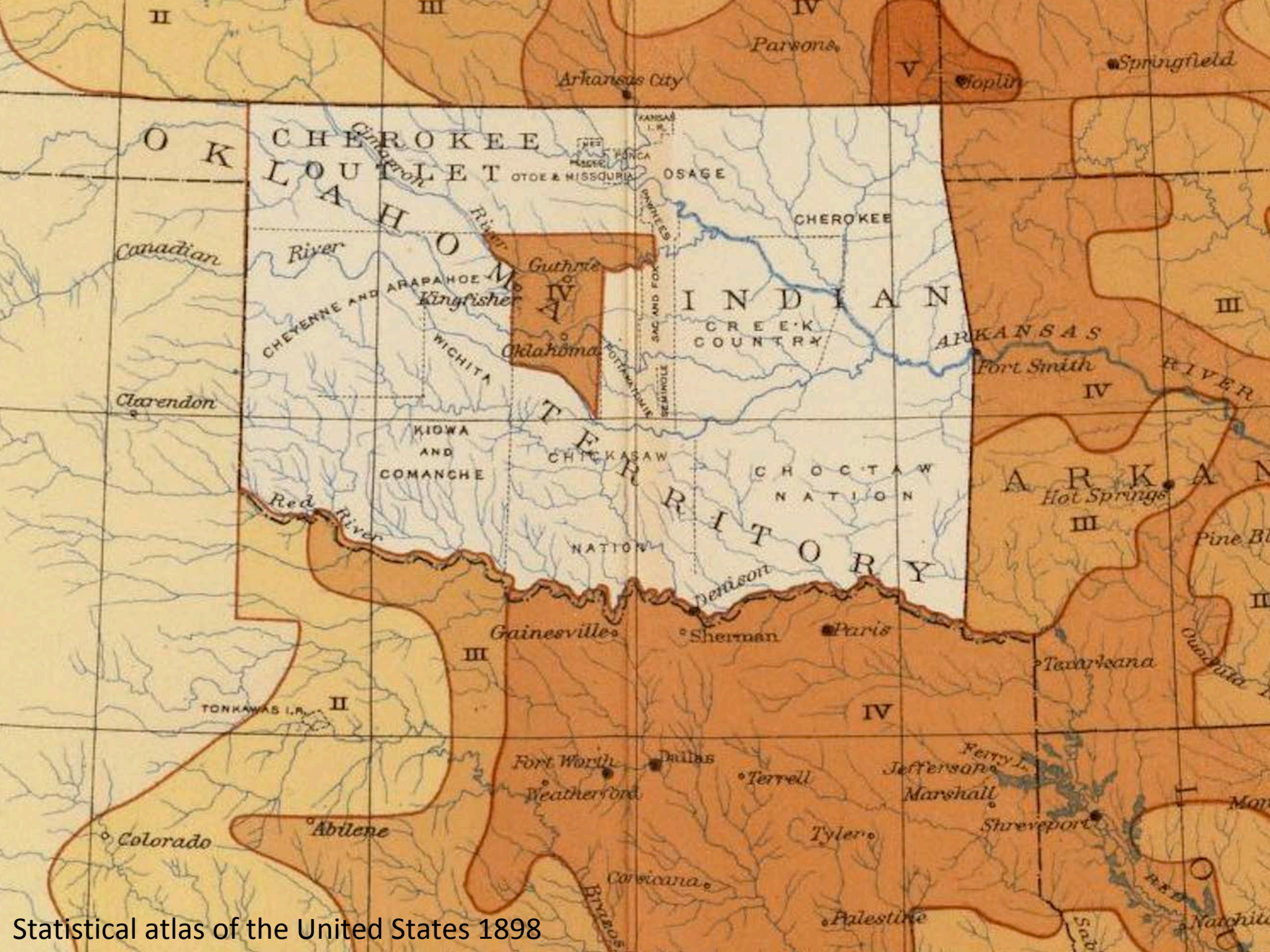
- Influenced by W.M. Davies, I. Bowman and N. Fenneman (physiographic provinces)
- Goal: explaining territory within its physiographic instead of (man made) county borders

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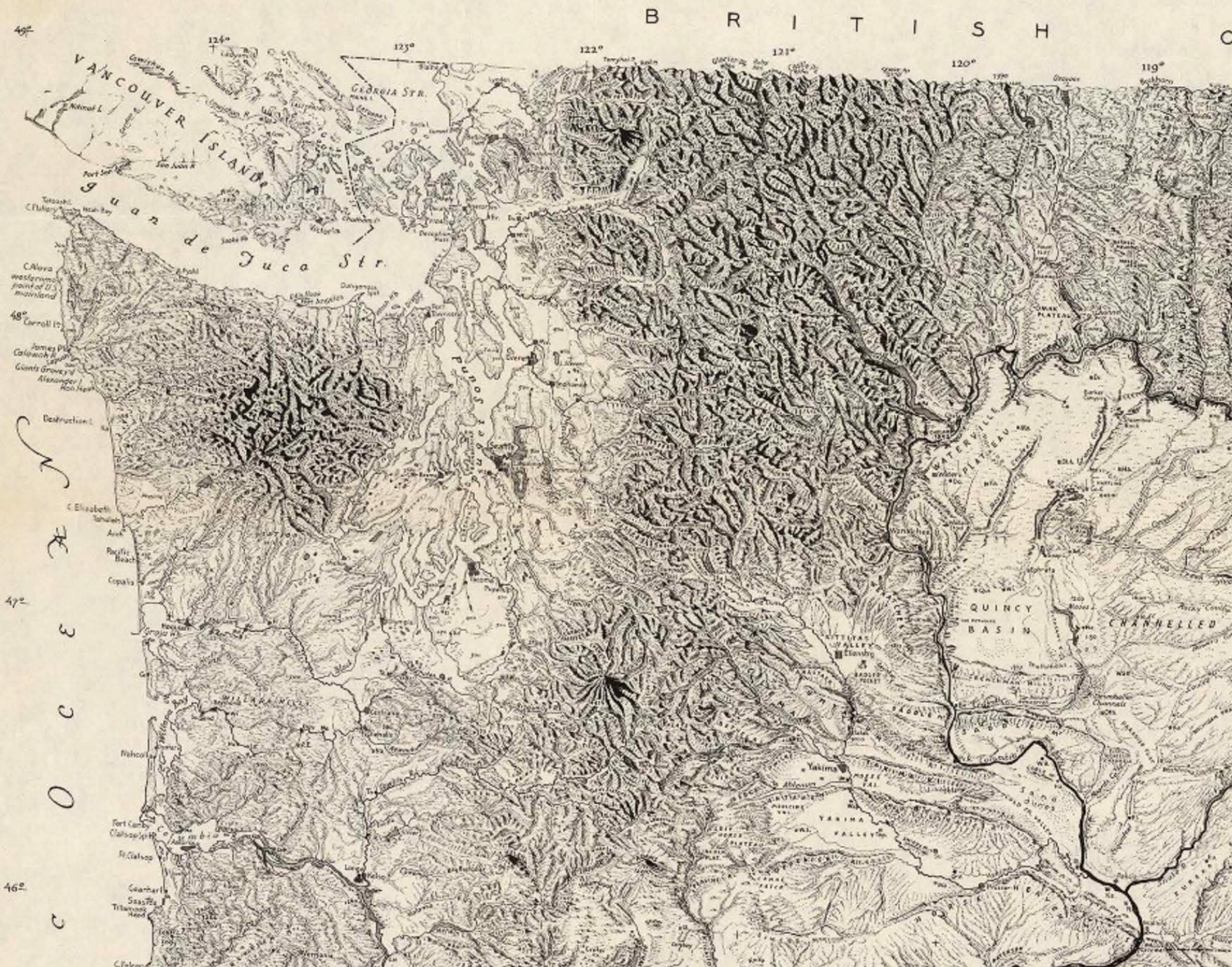


Statistical atlas of the United States 1898

Landform (physiographic) Maps

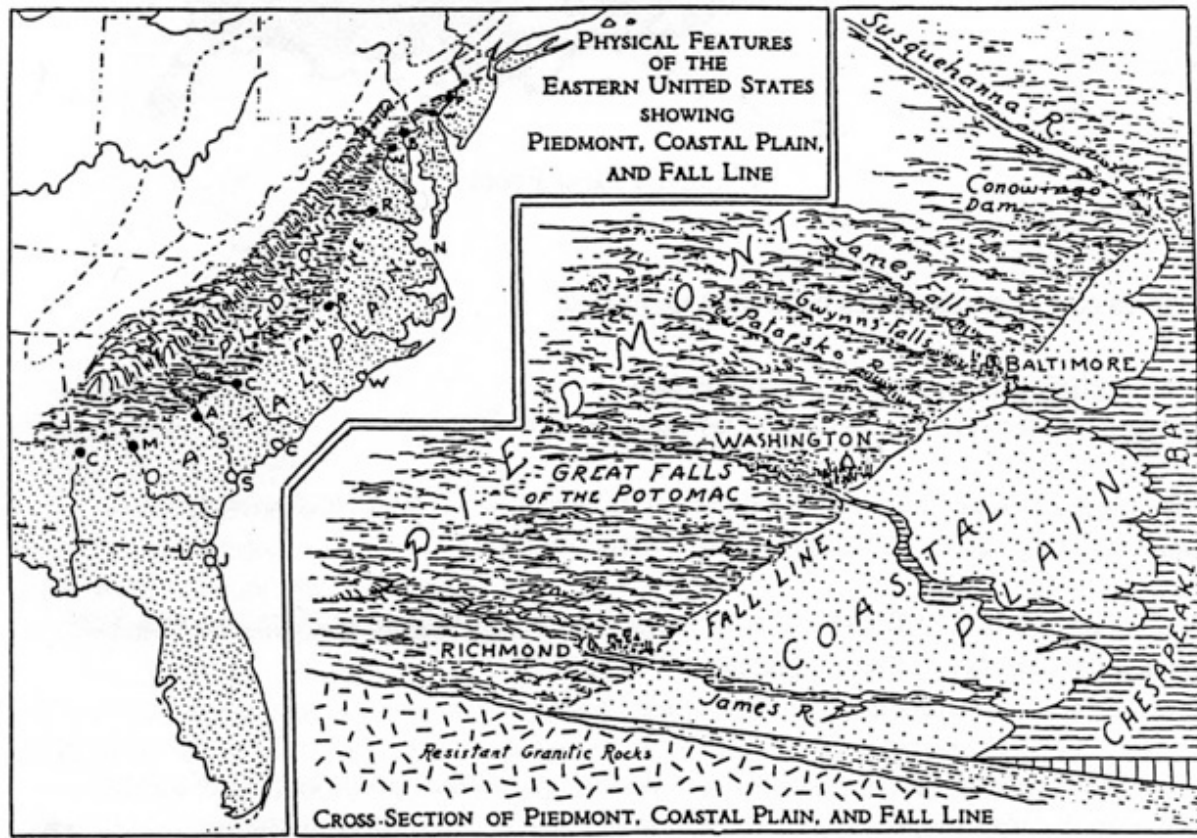
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- Method: Delineate the significant elements of the terrain in pictorial-diagrammatic fashion

Landforms of the Northwestern States, 1941



Landform (physiographic) Maps

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- Goal: explaining territory within its physiographic instead of (man made) county borders
- Geodeterministic answer to a prevailing statistical approach to geography (H. Gannett)
- Method: Delineate the significant elements of the terrain in pictorial-diagrammatic fashion
- Maps: what you see rather than what you count



Things Maps Don't Tell Us

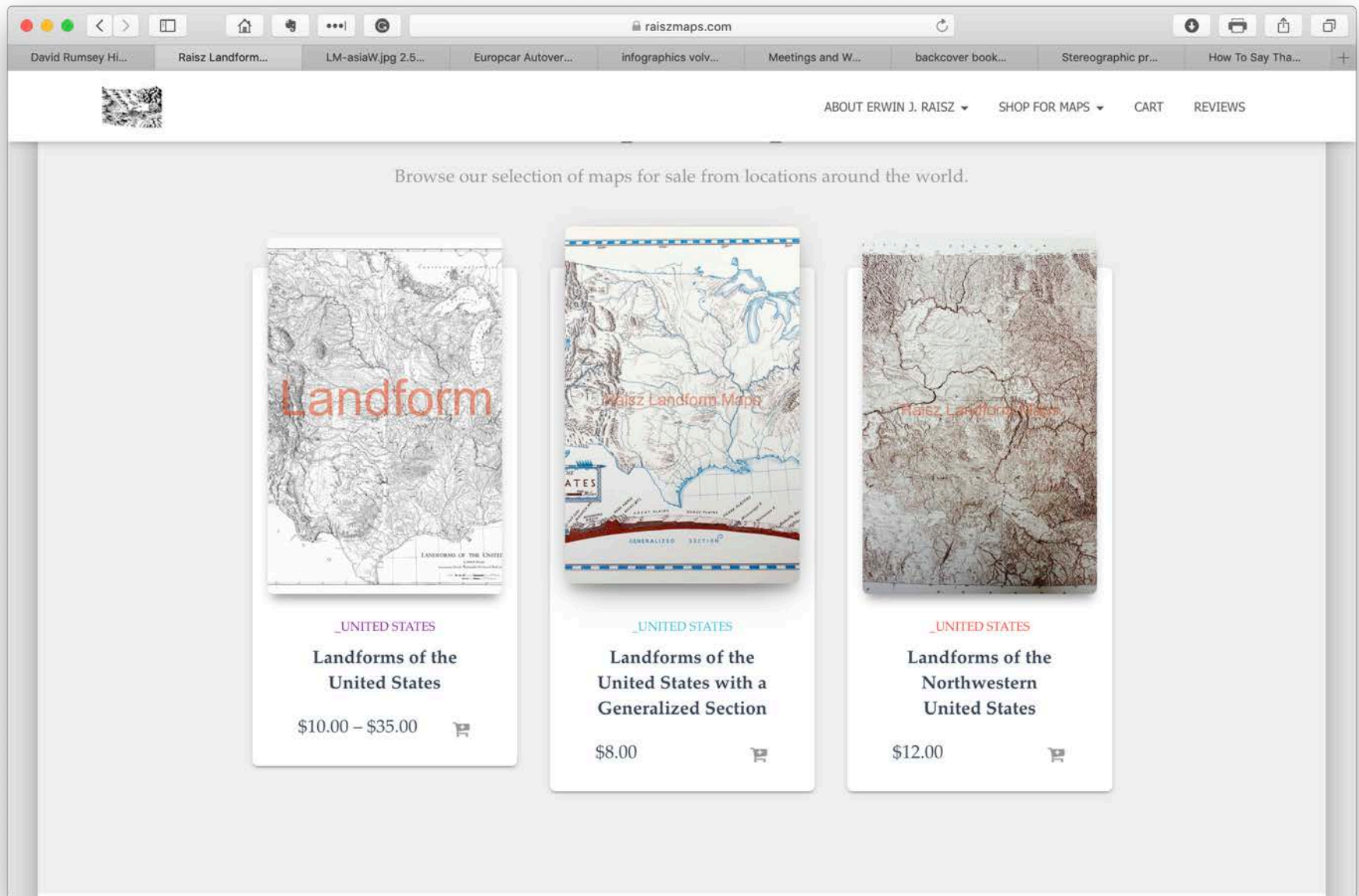
AN ADVENTURE INTO MAP INTERPRETATION

WITH A NEW FOREWORD BY MARK MONMONIER

Copyrighted Material

Lobeck, A.

Things Maps Don't Tell Us 1957



www.raiszmaps.com

Comprehensive geographic information

- Maps that show the world as it physiographically is
- Statistical graphics that unveil human impact
- Pictorial elements to show peculiarities or stereotypes
- Maps/drawings of historical sites
- Texts interconnecting the elements
- Focus on relevant information
- Appropriate use of cartographic techniques (projection, generalisation)

(Raisz, 1942)

Infographic

An infographic is a multi-section visual representation of information intended to communicate one or more specific messages.

(Cairo, 2016)

Iconic

Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Dressée par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite. Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les largeurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en travers des zones. Le rouge désigne les hommes qui entrent en Russie, le noir ceux qui en sortent. Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Chiers, de Legur, de Fezensac, de Chambray et le journal inédit de Jacoby, pharmacien de l'Armée depuis le 28 Octobre.

Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Prince Jérôme et du Maréchal Davout, qui avaient été détachés sur Minsk et Mohilow et qui rejoignirent Orscha et Witebsk, avaient toujours marché avec l'armée.

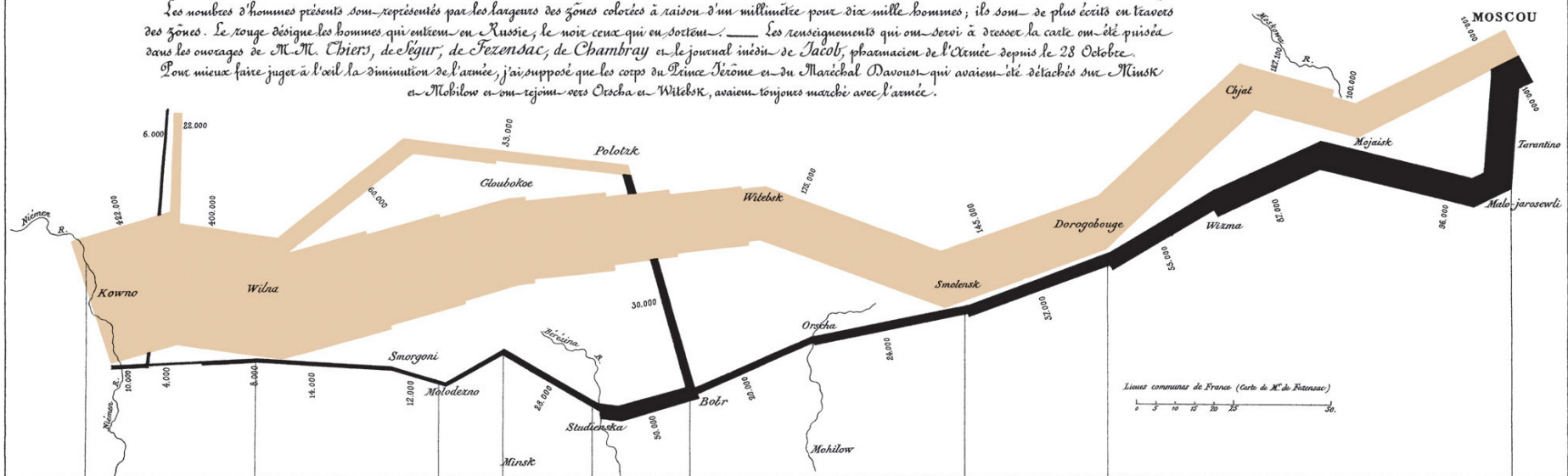
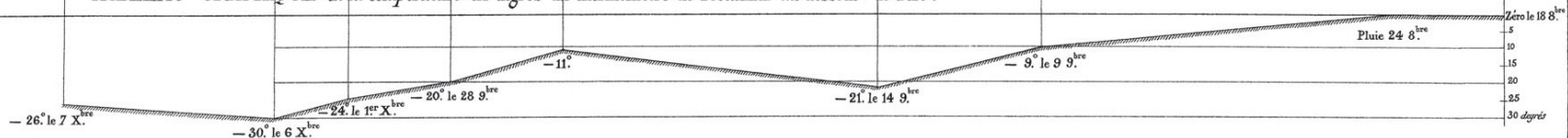


TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.



Les Cosaques passent au galop le Niémen gelé.

A good infographic

- 1. ... is **truthful**, as it's based on thorough and honest research.
- 2. ... is **functional**, as it constitutes an accurate depiction of the data, and it's built in a way that lets people do meaningful operations based on it.
- 3. ... is **beautiful**, in the sense of being attractive, intriguing, and even aesthetically pleasing for its intended audience.
- 4. ... is **insightful**, as it reveals evidence that we would have a hard time seeing otherwise.
- 5. is **enlightening** because if we grasp and accept the evidence it depicts, it will change our minds for the better.

Example

Thursday, October 9, 2014 www.thenational.ae

TheNational sport

TheNational sport

Thursday, October 9, 2014 www.thenational.ae

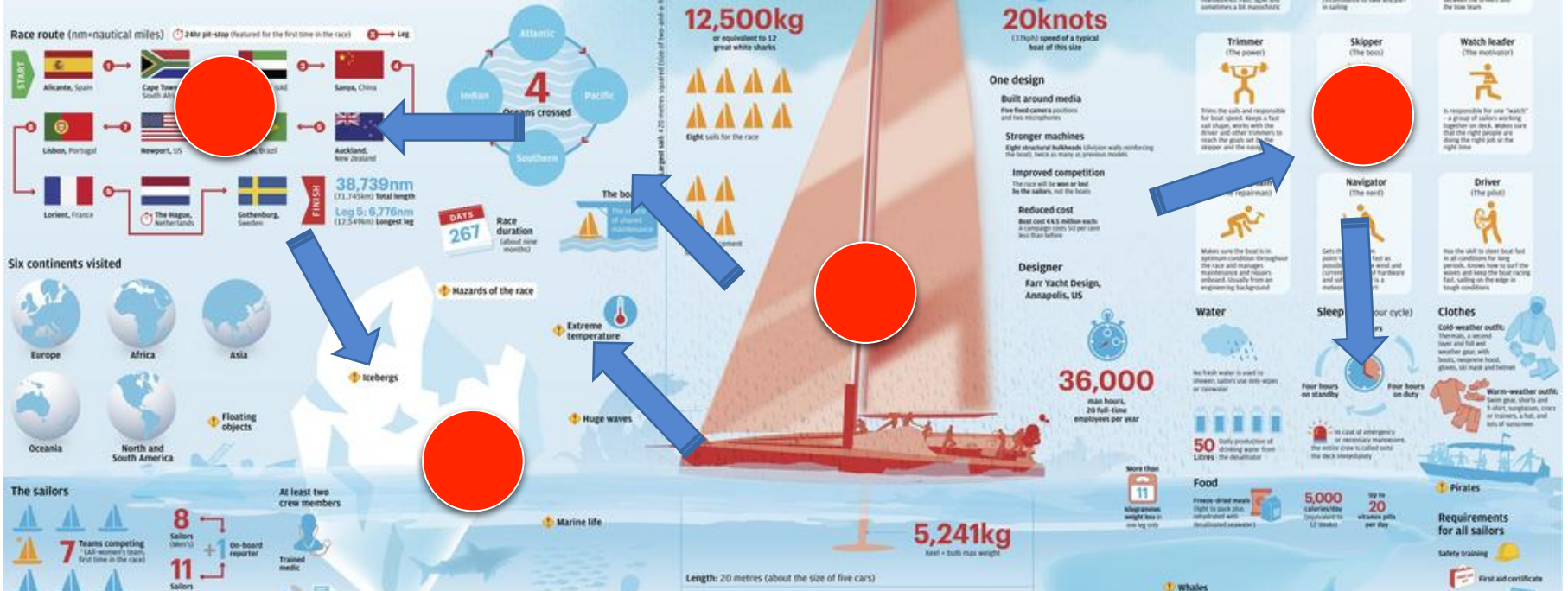
theraceinnumbers

Check out our dedicated Volvo Ocean Race homepage at www.thenational.ae/vor



Around the world

What you need to know, in terms of numbers and figures, about the seven-team, nine-leg competition, which starts on Saturday.



How infographics work

All Elements are visible (no split over several pages, no hidden folded sections)

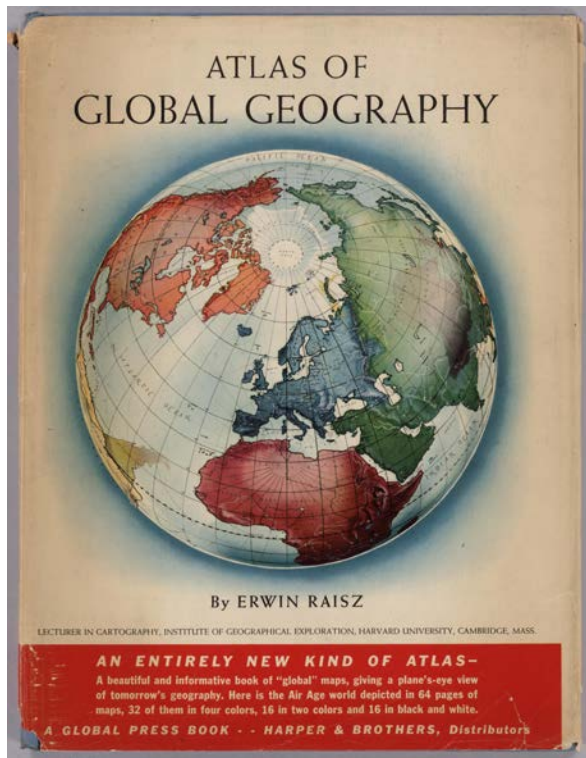
- Superfluous information is omitted
- Semantic relation
- ‚Spatial‘ relation (sequence, reading direction)
- Semiotic relation (color/patterns)

Comprehensive geographic information

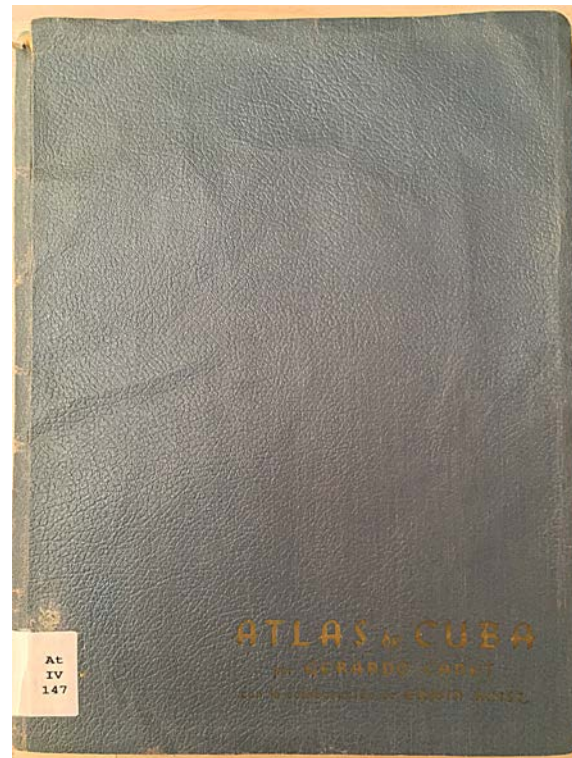
- Maps that show the world as it physiographically is
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(Raisz, 1942)

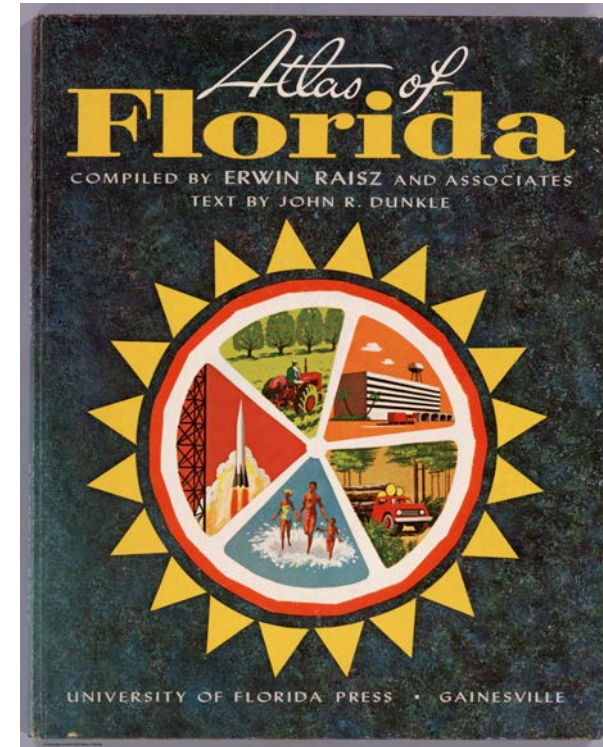
The three Atlases of Erwin Raisz



Atlas of Global Geography 1944



Atlas de Cuba 1949



Atlas of Florida 1964

The Air Age

This atlas is somewhat different from the usual atlas. Most maps are „global“, or more exactly, they are drawn in oblique projection. [...] It shows the ,geographic landscape‘

(Atlas of Global Geography, Preface)

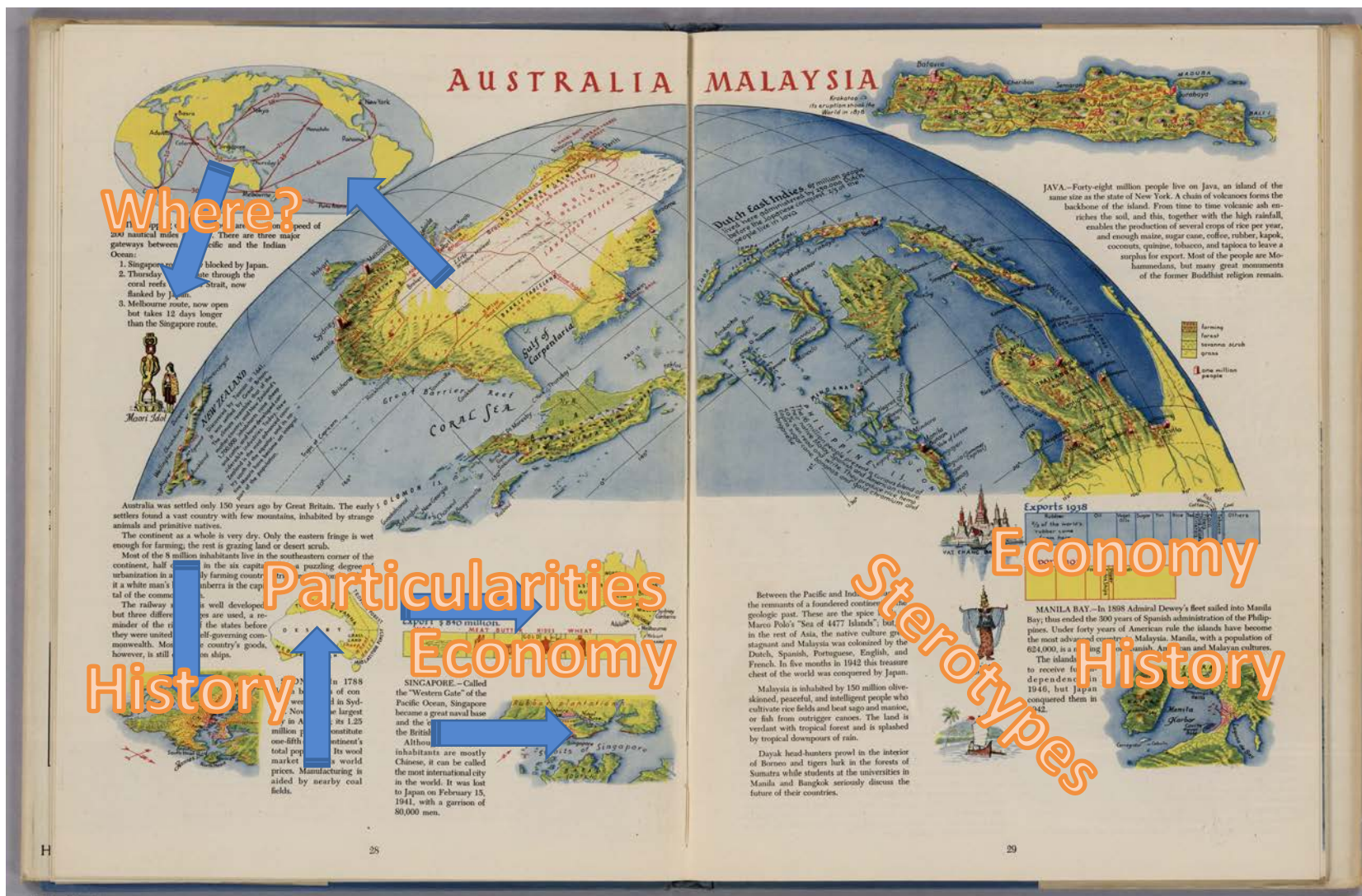
H



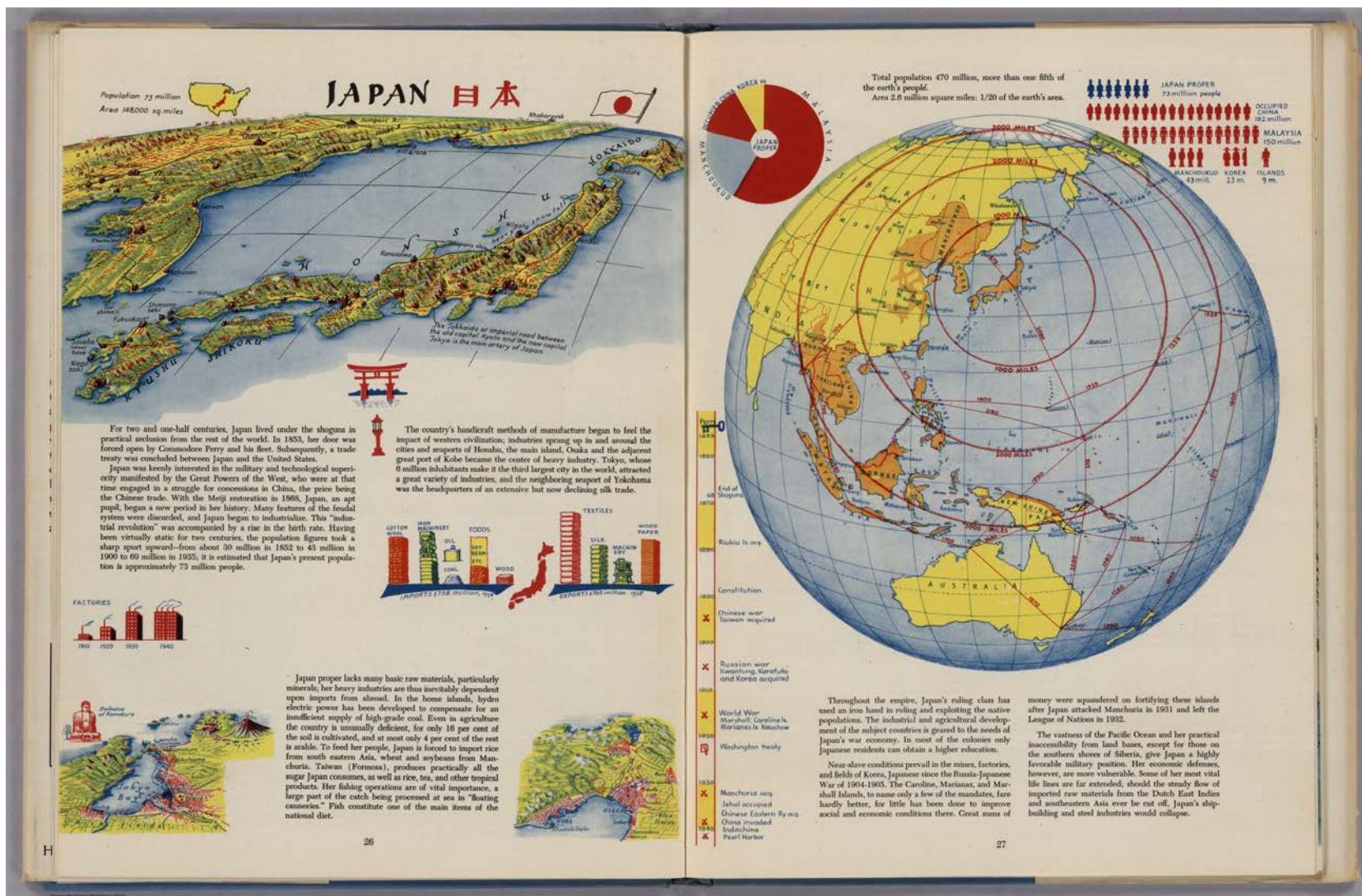
Atlas of Global Geography - Examples



Atlas of Global Geography - Examples



Atlas of Global Geography - Examples



What is where and how far is it away?

Atlas de Cuba 1949

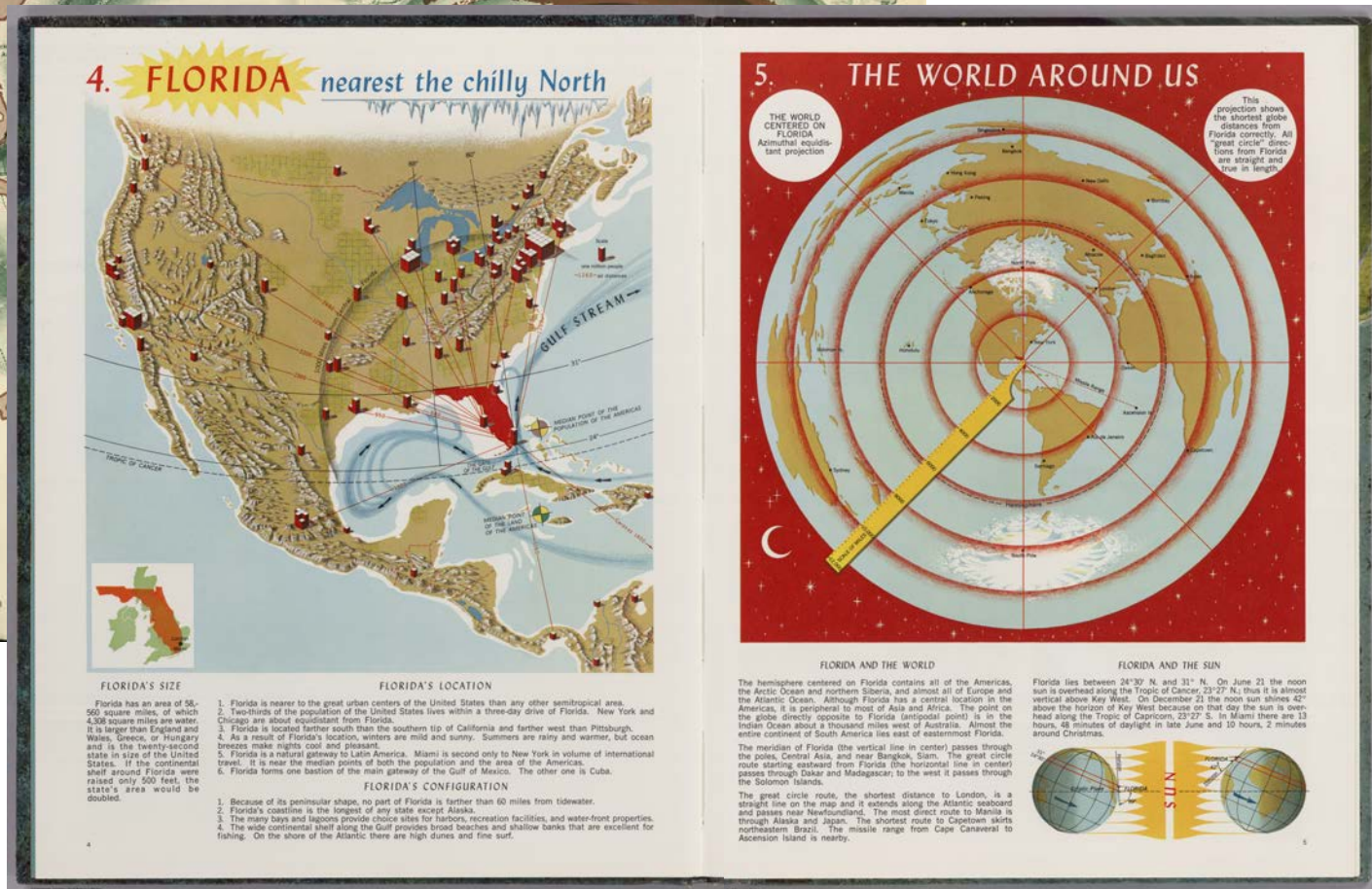


What is where and how far is it away?

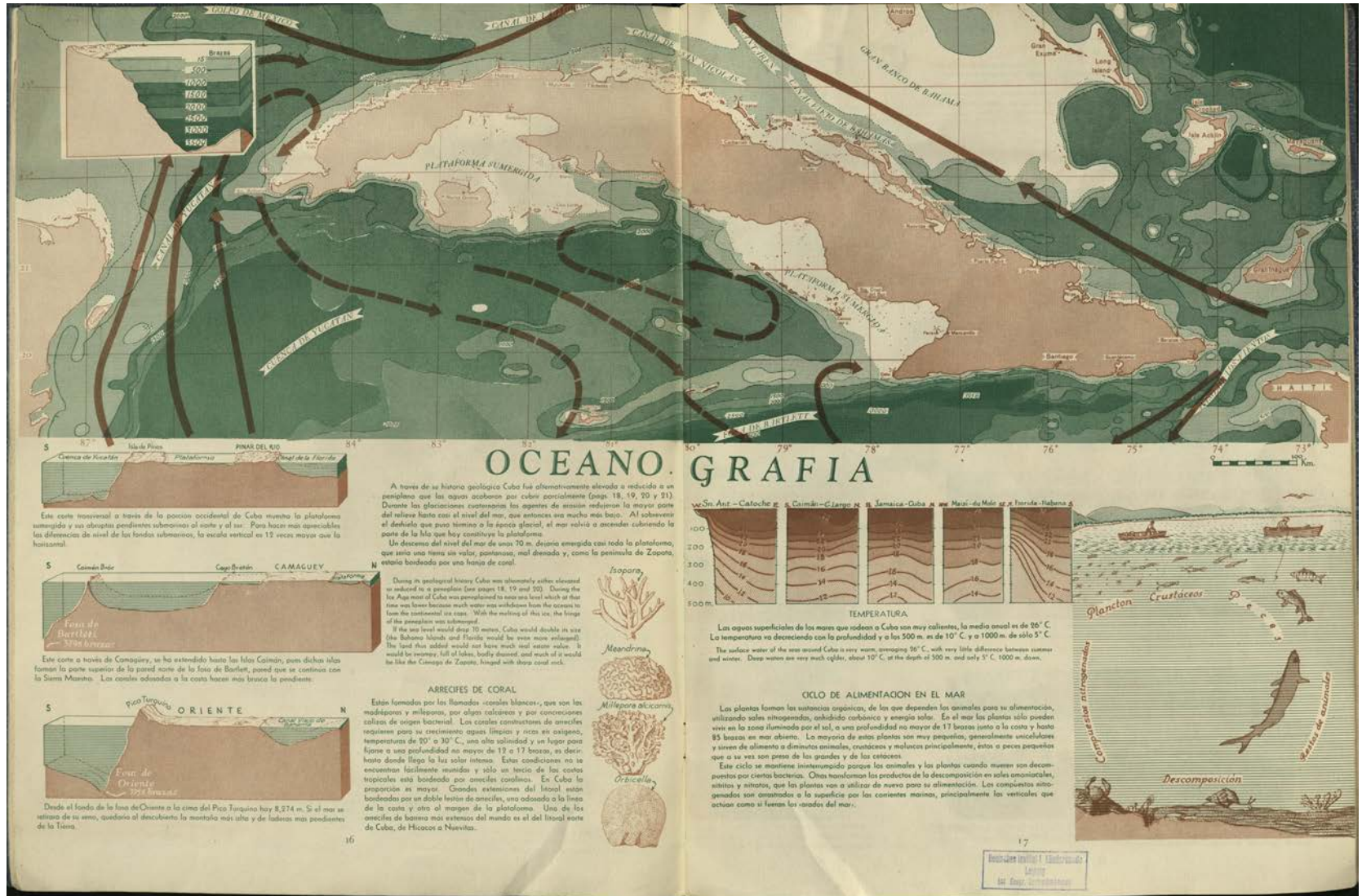
Atlas de Cuba 1949



Atlas of Florida 1964



Atlas de Cuba - Example



Atlas of Florida - Example

The land-form map of Florida is based on aerial photography. It brings out the innumerable lakes, sinkholes, and depressions typical of a limestone country which has emerged from the sea relatively recently. The map endeavors to show the general nature of the topography rather than to pinpoint every sink. Sinks develop on the surface even if the limestone is far underneath. The colors on the main map indicate the height of the land in a generalized way. The height in most places corresponds to terrace levels.



Typical west Florida upland area on the Florida-Alabama boundary line, northwest of Laurel Hill in Okaloosa County. Note the terraced fields and the contour plowing on the slopes. The rivers are cut deep and their banks are forested. Most of the land is in crops or pasture.



DeFuniak Springs in Walton County is built around a sinkhole in the west Florida upland. Rivers commonly have their sources in such sinks. Note the large lumber mill on the left side of the picture.

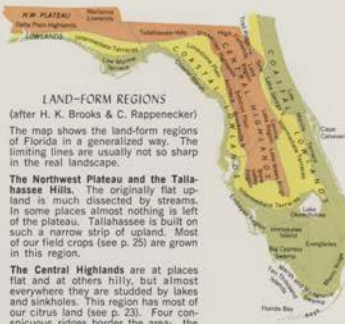


The delta at the mouth of the Suwannee River. This river builds its delta in quiet waters, which enables it to cut long channels. Note the sand bars on each side of the delta and the meandering tidal channels on the right.

8.-9. LAND



- 5^{ft} The number indicates the relative relief (height of hills above the nearby valleys) in tens of feet. The letters to the upper right of the number designate the type of land. 5^{ft} means 50-foot-high knobby land.
- s Sinks or depressions
 - d Sand dunes, often grown over by plants
 - m Mature land, almost all the land in slope
 - r Rolling land with gentle slopes
 - u Upland, flat or rolling
 - i Upland with incised rivers
 - k Knobs, knolls, rounded single hills
 - kn Karst, irregular limestone country with sinks and stony hills
 - F Flat land, often swampy with occasional rock outcrops
 - Swamp
 - Mangrove
 - Meandering river
 - Spring



LAND-FORM REGIONS

(after H. K. Brooks & C. Rappenecker)

The map shows the land-form regions of Florida in a generalized way. The limiting lines are usually not as sharp in the real landscape.

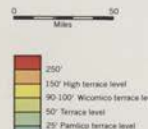
The Northwest Plateau and the Tallahassee Hills. The originally flat upland is much dissected by streams. In some places almost nothing is left of the plateau. Tallahassee is built on such a narrow strip of upland. Most of our field crops (see p. 25) are grown in this region.

The Central Highlands are at places flat and at others hilly, but almost everywhere they are studded by lakes and sinkholes. This region has most of our citrus land (see p. 23). Four conspicuous ridges border the area: the Archer, the Brooksville, the Trail, and the Lake Wales. They are thought to be ancient beach ridges.

The Coastal Lowlands are generally quite flat and covered with flatwoods. At the intermediate level, shown in yellow, we find some hills, knobs, and cut banks. The lower area shown in green is mostly swampy hammock land. Offshore beaches rim the land in the northwest and from Tarpon Springs to Naples. No bars developed elsewhere in spite of the very shallow mangrove-rimmed coast.

The Southern Lowlands are of the Everglades type, a swamp-sink flat with low subparallel swales. The east coast is rimmed by offshore bars for its whole length. Former beach ridges paralleling the coast are quite common for many miles inland.

FORMS



Sources: Air photographs, publications of the Florida Geological Survey, and topographic maps of the U. S. Geological Survey, chiefly on 1:350,000 scale.



Central Highlands near Lakeland. Relatively flat upland with sinkholes, most of them filled with lakes, some dry. Note the citrus groves, and the diggings for phosphate on the left, partially flooded.



Part of the Everglades. The parallel swales mark ancient beaches, which were used also as overflow channels of Lake Okechobee. Note the canal and fields of winter vegetables and the drained muckland. Most of the land is covered with tall marsh grass interrupted by clumps of trees.

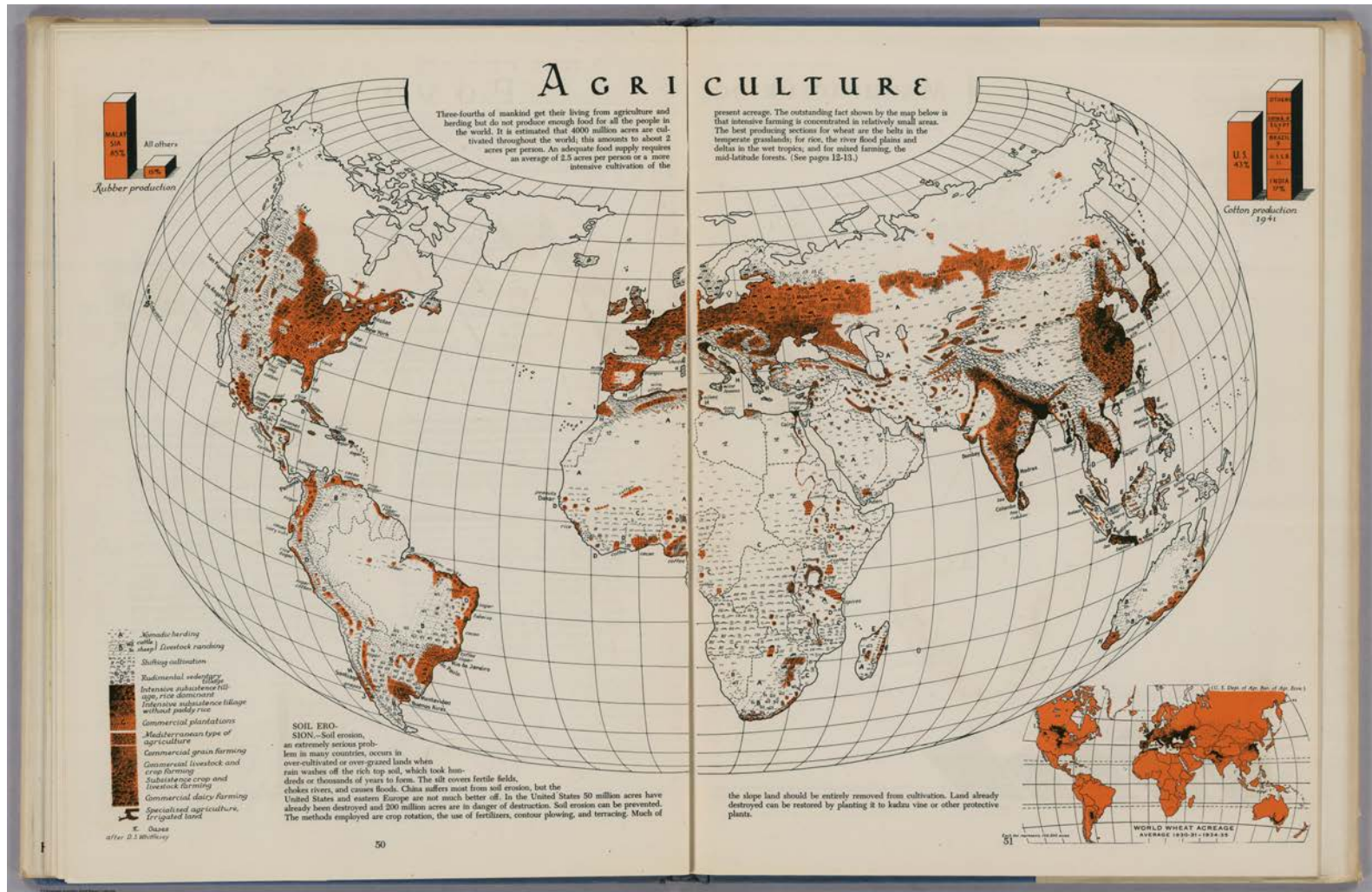


Miami Beach. This is a man-made land form. Note the ship canal at the bottom of the picture leading to Government Cut with its jetties at the lower right. The sand from dredging was used to build the MacArthur Causeway and the new islands at left. The small circular island is the Flagler Monument.

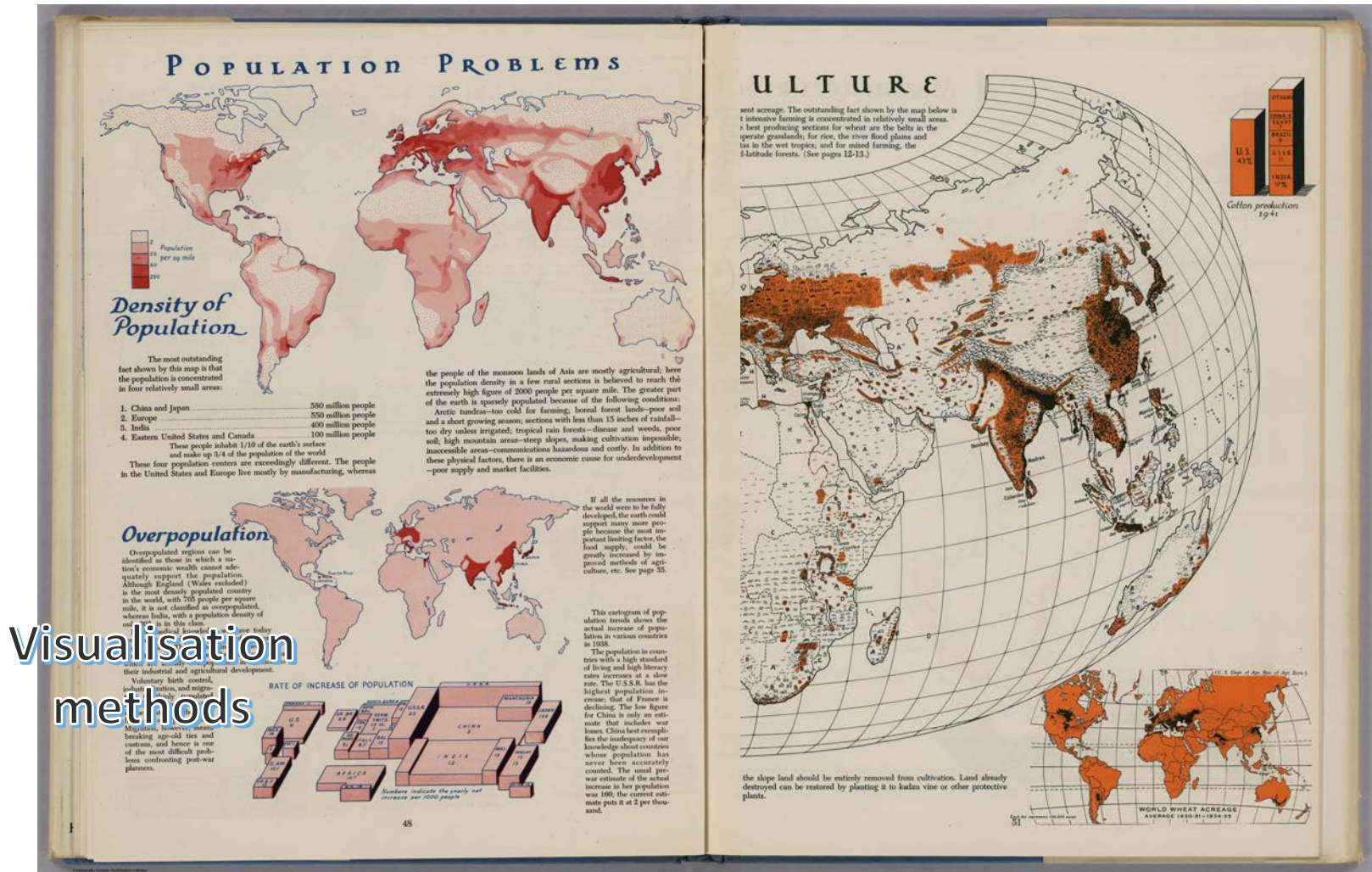
Atlas of Global Geography – Two Parts

*“Problems that are world wide in scope are thrust upon us suddenly and unexpectedly today. Since our immediate need is to understand these problems, **the second part** of this atlas is devoted to the geography of world problems-geopolitics, disease, hunger, poverty, overpopulation, etc. -presented by means of cartograms.”*

Atlas of Global Geography – Two Parts

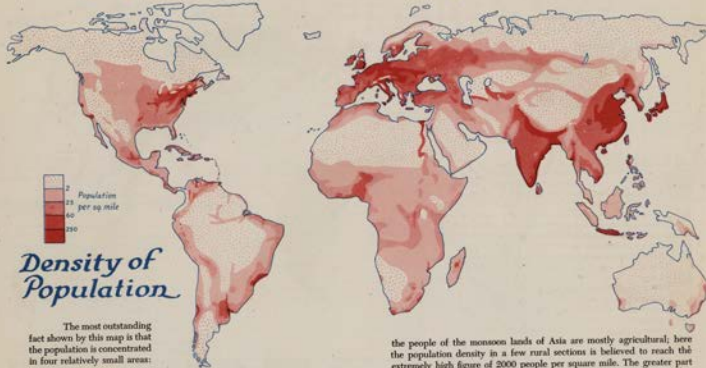


Atlas of Global Geography – Two Parts



Atlas of Global Geography – Two Parts

POPULATION PROBLEMS



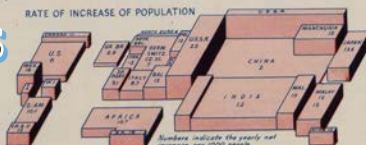
Overpopulation

Overpopulated regions can be identified as those in which a nation's economic wealth cannot adequately support the population. Although England (Wales excluded) is the most densely populated country in the world, with 750 people per square mile, it is not classified as overpopulated, whereas India, with a population density of 300 people per square mile, is in this class.

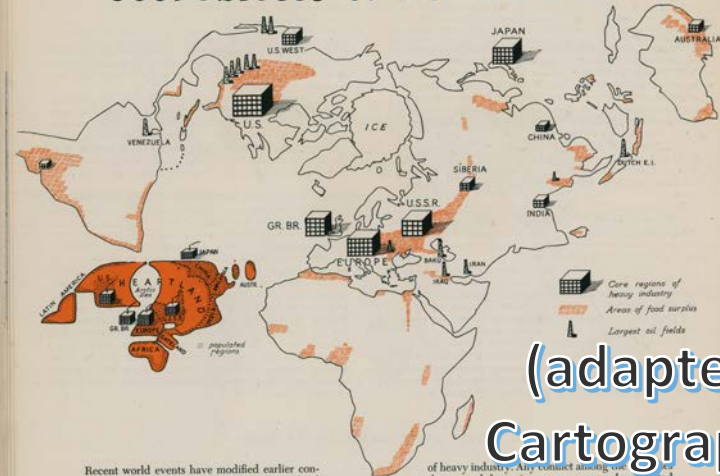
Overpopulation is a relative term, and it varies with the stage of a nation's industrial and agricultural development.

Voluntary birth control, education, migration, and migration are the most difficult problems confronting post-war planners.

RATE OF INCREASE OF POPULATION



GEOPOLETICS OF THE AIR AGE



Recent world events have modified earlier conceptions of geopolitics. The role of the Heartland as formulated earlier was based on land power as against sea power. The whole theory of geopolitics is now being extensively modified by the great advances in aviation that have made possible the crossing of the Arctic Sea. Mackinder's conception looks very different on a polar map. Aircraft of the future will be able to operate over greater distances; we may easily imagine a new Heartland that includes northern Canada.

Nations are likely to derive their strength through the concentration of power in certain core regions



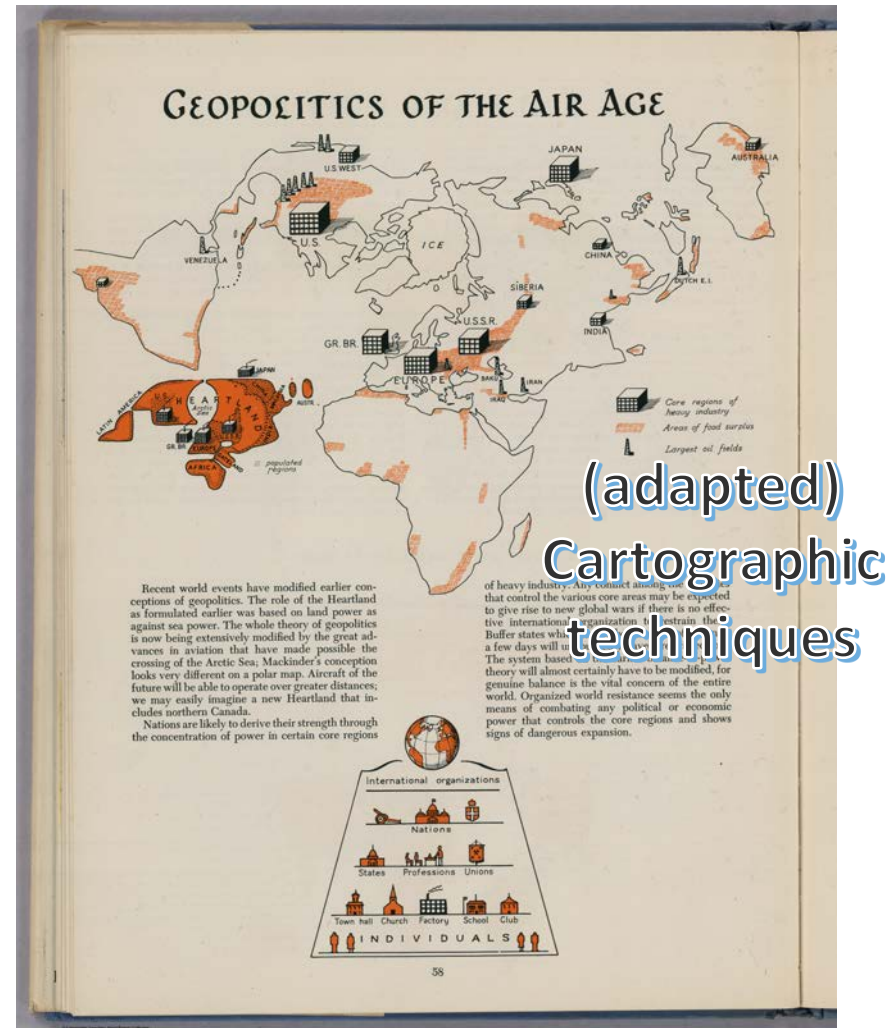
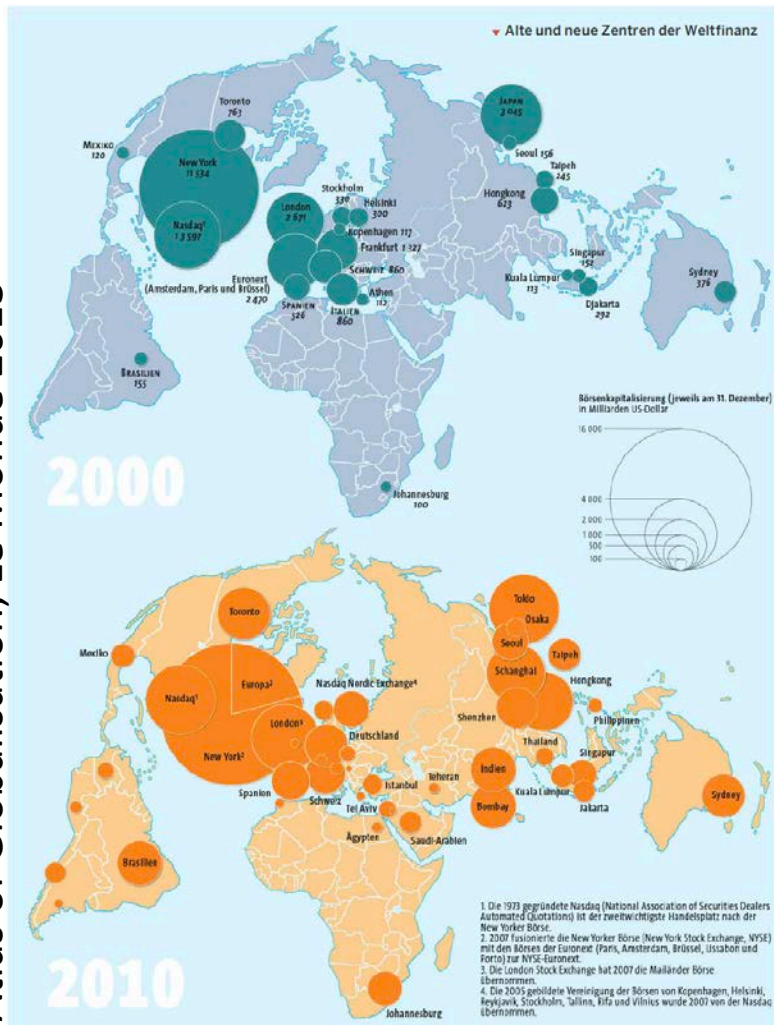
of heavy industry. Any contact among core areas that control the various core areas may be expected to give rise to new global wars if there is no effective international organization to restrain the Buffer states which may arise. The system based on the theory of geopolitics will almost certainly have to be modified, for genuine balance is the vital concern of the entire world. Organized world resistance seems the only means of combating any political or economic power that controls the core regions and shows signs of dangerous expansion.

Visualisation
methods

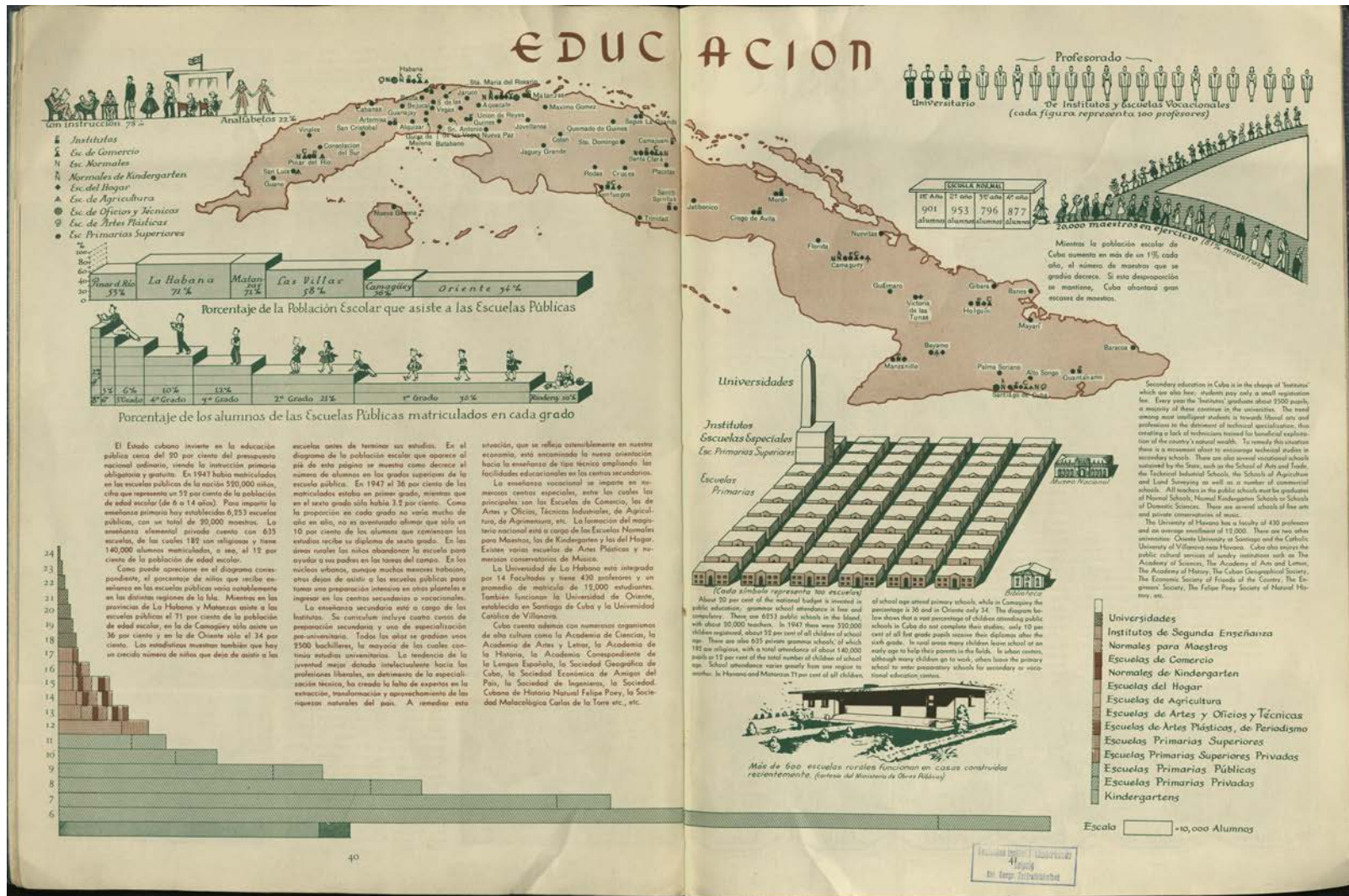
(adapted)
Cartographic
techniques

Atlas of Global Geography – Two Parts

Atlas of Globalisation, Le Monde 2013



Atlas de Cuba - Examples



Atlas of Florida - Example

44-45. CULTURE



Bok Tower, Lake Wales

In Florida, nature and art combine to provide outlets for man's cultural yearnings. Symbolic of these is the Bok Tower near Lake Wales in the midst of a bird sanctuary. Its carillon bells resound across rolling hills green with orange groves.

Cultural life in Florida has received considerable stimulus from people who have settled here from various parts of the country and of the world. Many have contributed their talents; others, as patrons of arts, have established numerous art galleries. The municipal auditoriums, fairs, flower shows, and hobby shows stimulate the talent of the local citizens. Thousands of people enjoy square dancing in the early American tradition. Schools and universities are key features in cultural growth and provide rooms and facilities for civic efforts. Florida has 14 symphony orchestras and a great number of museums and art galleries.

Nature groups are widespread. Plants, birds, reptiles, fish, shells, fossils, archaeological sites, and caves all have devoted adherents in organized local and national clubs. The Boy Scouts and Girl Scouts acquaint the young with nature's life starts early. Most schools have study clubs, school bands, and science fairs in addition to their regular curricular studies. Almost every city has some kind of public library, recreation hall, garden club, and various groups arranging cultural activities. They cannot all be shown on the map.

Sources: Florida Development Commission, Recreation Department, Florida Events, Tallahassee: Florida State Chamber of Commerce, Jacksonville: R. Matthe and R. S. Bismarck, Jr., Florida Tourist Guide, Winter Haven: local Chamber of Commerce folder, Department of Architecture, University of Florida, Gainesville.



- Museum
- National Park
- Symphony orchestra
- State Park
- Municipal auditorium
- Little theatre
- Art school
- Hobby show
- Flower show
- Carnival
- Amusement park
- Fairs, exhibits
- Indian mounds & ruins
- Bird refuges (indicated on map)

CULTURAL REGIONS

The map attempts to characterize the various sections of Florida. Although the character of the various sections is being changed by urbanization and industrialization, there is still a great difference between the flavor of the sub-sistence farm area of northern Florida and the sophisticated Gold Coast, between the Citrusland and the Ranchland, between the Old Plantationland and the beaches.



Plantation House of Art



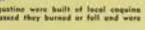
STONE HOUSE



THE OLDEST HOUSE in St. Augustine



PIONEER DWELLING, elevated on stilts, edged by a veranda, set the pattern for Florida farmhouses. Legs gave way to clapboards as sawmills became more numerous.



SPANISH HOUSES in St. Augustine were built of local coquina limestone. As the centuries passed they burned or fell and were rebuilt and redesigned.



"CARPENTER'S CLASSIC." This type was imported unchanged from the North. It was large enough to house a big family and to reveal the prosperity of its owner. Little attempt was made to adapt it to its Florida climate.

PLANTATION TYPE houses were built during the prosperous years just before the Civil War. Not many have survived, but their primitive classic style has been widely copied.

GOthic REVIVAL houses were built on farms and in cities of northern Florida in the mid-nineteenth century. Not many remain.

FLORIDA'S HOUSES

Only a few houses still survive from the Spanish era in St. Augustine and Pensacola. Local groups try to restore the old coquina and stone houses as they were built by the Spanish and altered by the English. As Americans settled in the years after 1820, the pioneer dwelling developed. This house was well adapted to Florida and the same general pattern is still to be seen in older farmhouses. As sawmills became more common and Florida grew more prosperous, the Gothic style came into vogue. All manner of "gingerbread" was added to porches and eaves. High ceilings provided summer coolness. The stately Greek style of the plantation house spread into northern Florida as it did throughout the South. Stone or brick walls suit Florida well; they are cool and insect-proof. The Gay Nineties brought the "Carpenter's Classic," a sometimes monstrous mixture of cabinet shop trimmings. Gables and towers, shingled walls and shutters, ornate chimneys, and ornamented lightning rods produced a bizarre variety. The boom of the 1920's promoted the "Spanish Revival," a sometimes monstrous mixture of cabinet shop trimmings. Gables and towers, shingled walls and shutters, ornate chimneys, and ornamented lightning rods produced a bizarre variety. The boom of the 1920's promoted the "Spanish Revival," a sometimes monstrous mixture of cabinet shop trimmings. Gables and towers, shingled walls and shutters, ornate chimneys, and ornamented lightning rods produced a bizarre variety. The boom of the 1920's promoted the "Spanish Revival," a sometimes monstrous mixture of cabinet shop trimmings. Gables and towers, shingled walls and shutters, ornate chimneys, and ornamented lightning rods produced a bizarre variety.

"Culture" has various meanings. It includes those activities in which people engage for self-improvement over and above the need for earning a living. Art, history, and nature provide the major outlets for cultural self-expression. Thus we build museums and galleries and support symphony orchestras. By the above definition sports can also be regarded as cultural activities. They are presented on page 40. Other pages, especially those concerning history, economy, and people, expand the picture of Florida's culture.



SPANISH STYLE houses became the fashion around 1920. The thick walls, flat roofs, and tile floors are well suited to southern Florida. Many mansions, hotels, and bungalows were built in this style.



MODERNISTIC houses are distinct from the traditions of the past. The use of steel, glass, cement, and plastics in combination with natural wood finishes allows new functional designs.

RELIGION

Religious activities are as vigorous and varied as the Florida population. New residents and visitors find in the church a welcome for the stranger. Many modern-styled new churches are to be found in the state. Gainesville alone has 40 churches of 21 denominations.

CHURCH CENTERS

- Baptist Conventions (location varies)
- Episcopal Dioceses
- Greek Orthodox Synods (location varies)
- Jewish Center
- Lutheran Center
- Methodist Conferences (location varies)
- Presbyterian Synods (location varies)
- Roman Catholic Dioceses

Other churches include Adventist, Apostolic, Assembly of God, Christian, Christian Science, Church of Christ, Church of God, Disciples of Christ, Mormon, Nazarene, Pentecostal, Quakers, Unitarian-Universalist, United Church of Christ.



AUDITORIUM AND EXHIBITION HALL in MIAMI BEACH

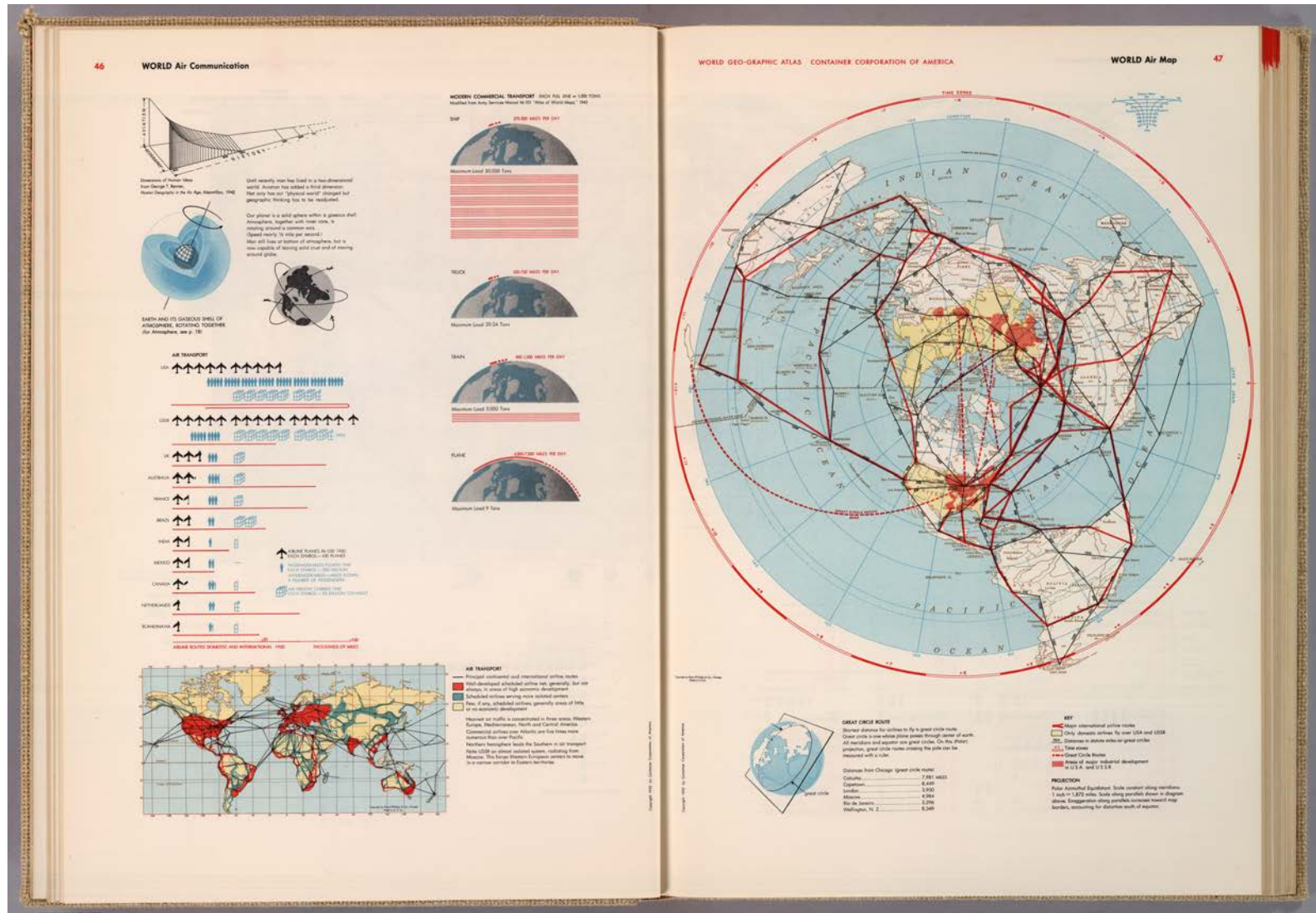


Every major city has a municipal auditorium and exhibit hall, although not all are so magnificent as the one pictured here. Because of the availability of large auditoriums and exhibit space, more and more national organizations are holding conventions in Florida. According to a local saying, if there is Florida sand in a visitor's shoe, he will return.

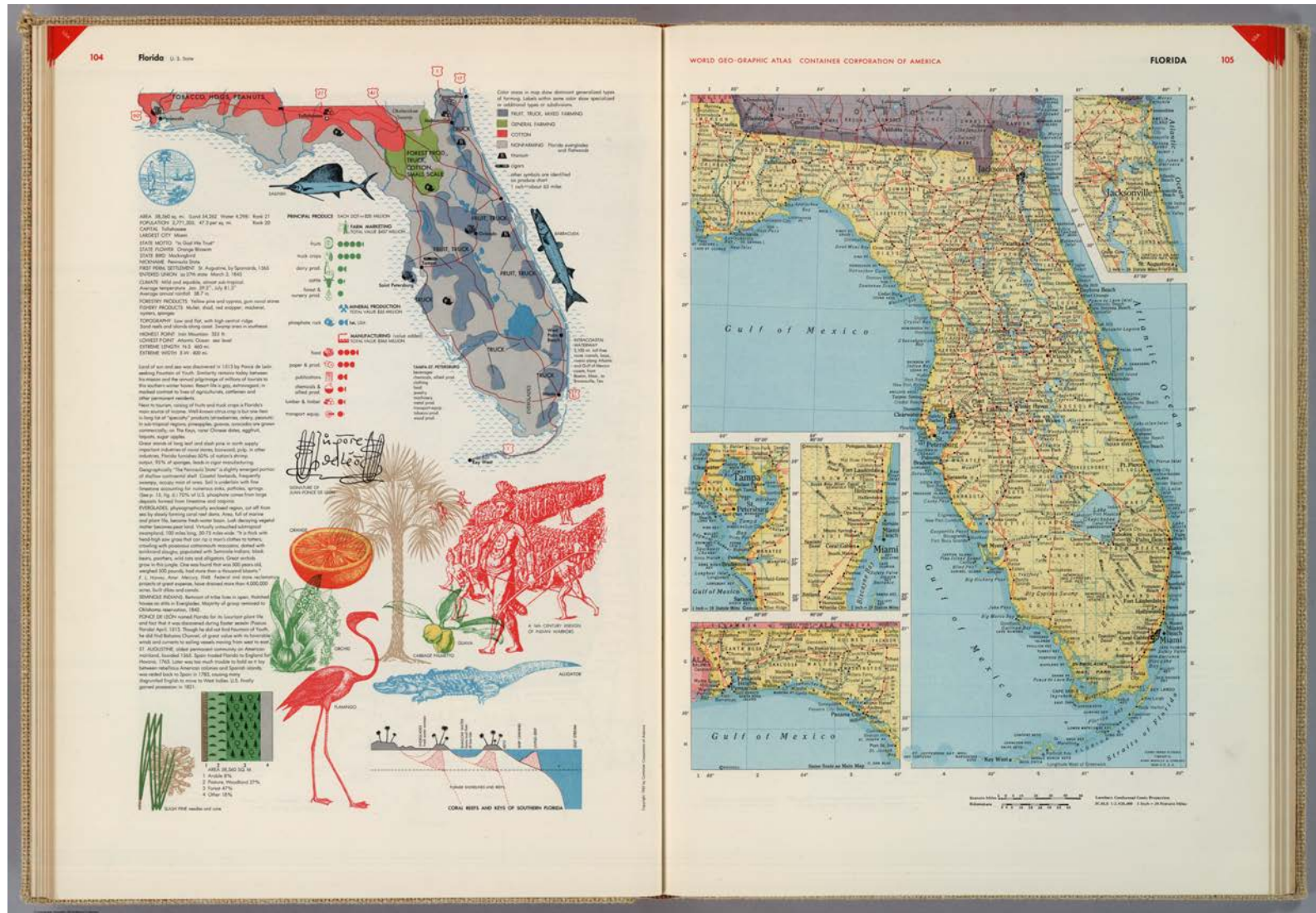
Important development

- Breaking up the prevailing structural division of atlases (maps/texts/graphics-parts)
- Inclusion of lately achieved/revived visualisation methods
- Integration of both stereotypes (recognition effect) and explanatory drawings
- Position of several entry points for the user to unveil complex information
- Enabling storytelling

Herbert Bayer: Geo-Graphic Atlas 1953



Herbert Bayer: Geo-Graphic Atlas 1953



Atlas of Florida 1964, Backcover



Leibniz-Institut
für Länderkunde



Doumo arigatou gozaimasu!

Thank you!

Eric H. Losang - Leibniz Institute for Regional Geography, Leipzig,
Germany, e_losang@ifl-leipzig.de