FOIPA COVER SHEET

FREEDOM OF INFORMATION AND PRIVACY ACTS

SUBJECT: BARKER/KARPIS GANG

BREMER KIDNAPPING

FILE NUMBER: 7-576

SECTION : BULKY BOX 3 PART 7

FEDERAL BUREAU OF INVESTIGATION

SUBJECT Barker/Karpis Gang (Bremer Kidnapping)

FILE NUMBER 7-576 Bulky Box 3 Part 7

SECTION NUMBER ✓

SERIALS ✓

TOTAL PAGES 323

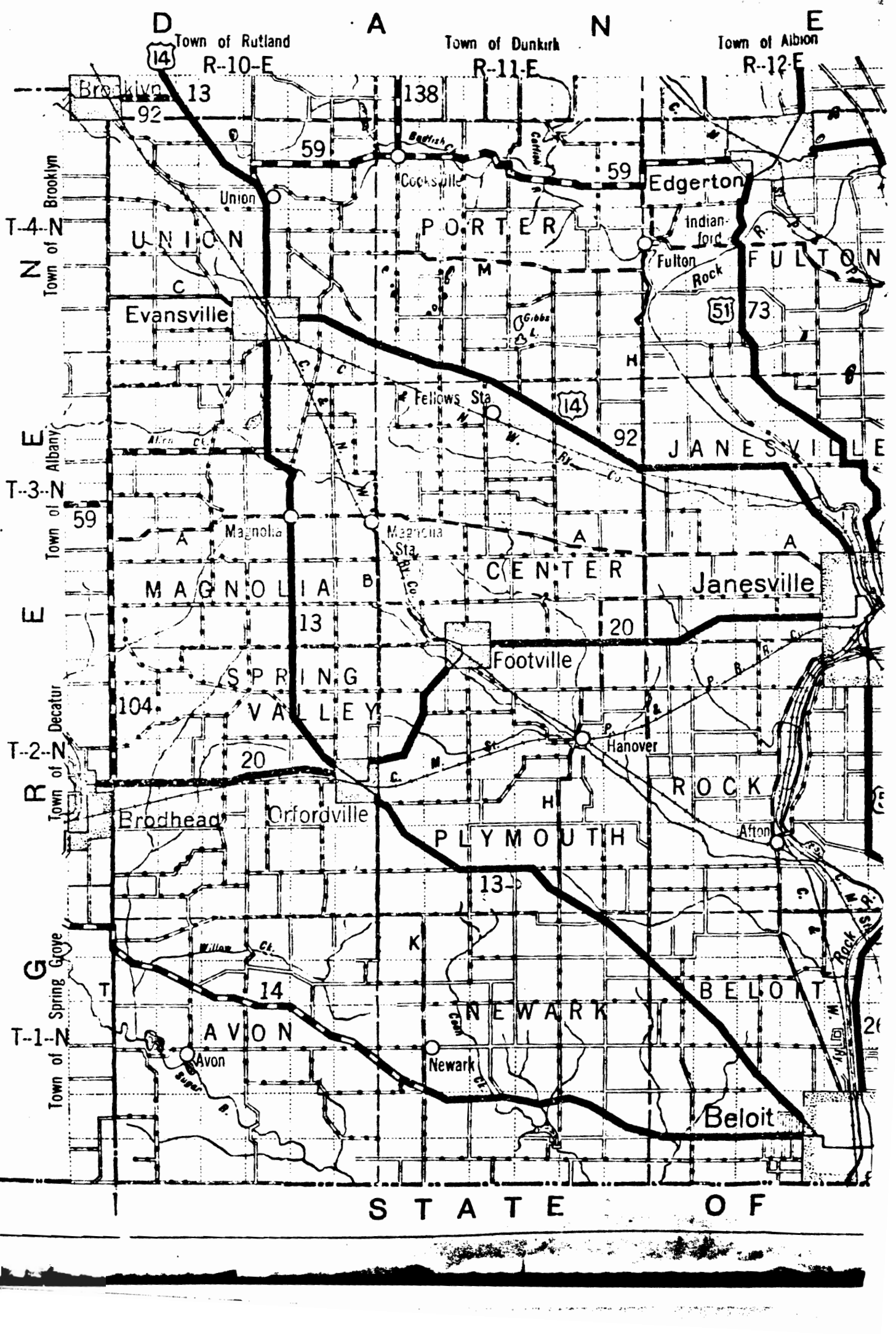
PAGES RELEASED 323

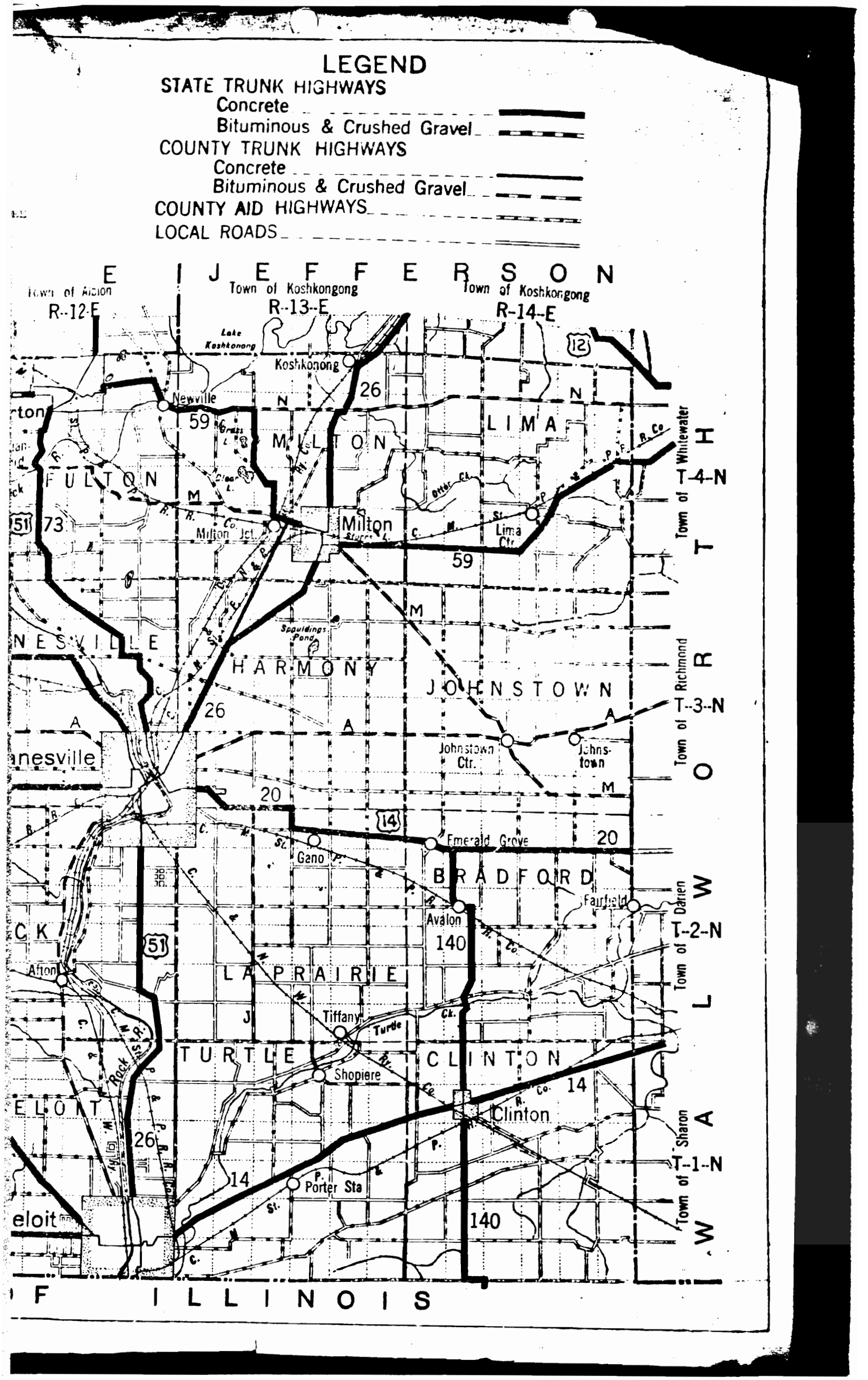
PAGES WITHHELD 0

EXEMPTION(S) USED -

1933
OFFICIAL HIGHWAY MAP
of
ROCK COUNTY, WISCONSIN
issued by the
Rock County Highway Committee
Janesville, Wisconsin

COUNTY HIGHWAY COMMITTEE
T. A. M. ARTHY, Chairman
FRANK HAEFMAN
T. K. HUNTER




LEGEND
STATE TRUNK HIGHWAYS
Concrete
Bituminous & Crushed Gravel
COUNTY TRUNK HIGHWAYS
Concrete
Bituminous & Crushed Gravel
COUNTY AID HIGHWAYS
LOCAL ROADS
E
J E F F E R S O N
Town of Albion
R-12-E
Town of Koshkonong
R-13-E
Town of Koshkonong
R-14-E
Lake Koshkonong
Koshkonong
Newville
59
26
N
12
LIMA
MILTON
FULTON
Milton
Milton Jct.
Milton Jct.
Lima Ctr.
Otter Ck.
59
51
73
M
Town of Whitewater
T-4-N
Spaulding's Pond
HARMONY
JOHNSTOWN
Johnstown Ctr.
Johns-town
Town of Richmond
T--3--N
26
A
20
14
Gano
Emerald Grove
20
BRADFORD
Fairfield
Avalon
140
Town of Darien
T--2--N
LA PRAIRIE
Afton
Tiffany
Turtle Ck.
TURTLE
CLINTON
Shopiere
Clinton
14
26
14
Porter Sta
140
Town of Sharon
T--1--N
L O W E R
W I S C O N S I N
F I L L I N O I S

1933
OFFICIAL HIGHWAY MAP
of
ROCK COUNTY, WISCONSIN
issued by the
Rock County Highway Committee
Janesville, Wisconsin

CHAS. E. MOORE,
County Highway Commissioner

SCALE 1 INCH - 2 MILES

COUNTY HIGHWAY COMMITTEE
D. A. McCARTHY, Chair
FRANK HAFEMAN
T. R. HARPER

DANE

Town of Rutland R--10-E
Town of Dunkirk R--11-E
Town of Albion R--12-E

Brooklyn
Union
Cooksville
Edgerton
Indianford
Fulton
Rock
Evansville
Fellows Sta
Magnolia
Magnolia Sta
Footville
Janesville
Hanover
Brodhead
Orfordville
Afton
Avon
Newark
Beloit

UNION
PORTER
FULTON
JANESVILLE
MAGNOLIA
CENTER
SPRING VALLEY
ROCK
PLYMOUTH
AVON
NEWARK
BELOIT

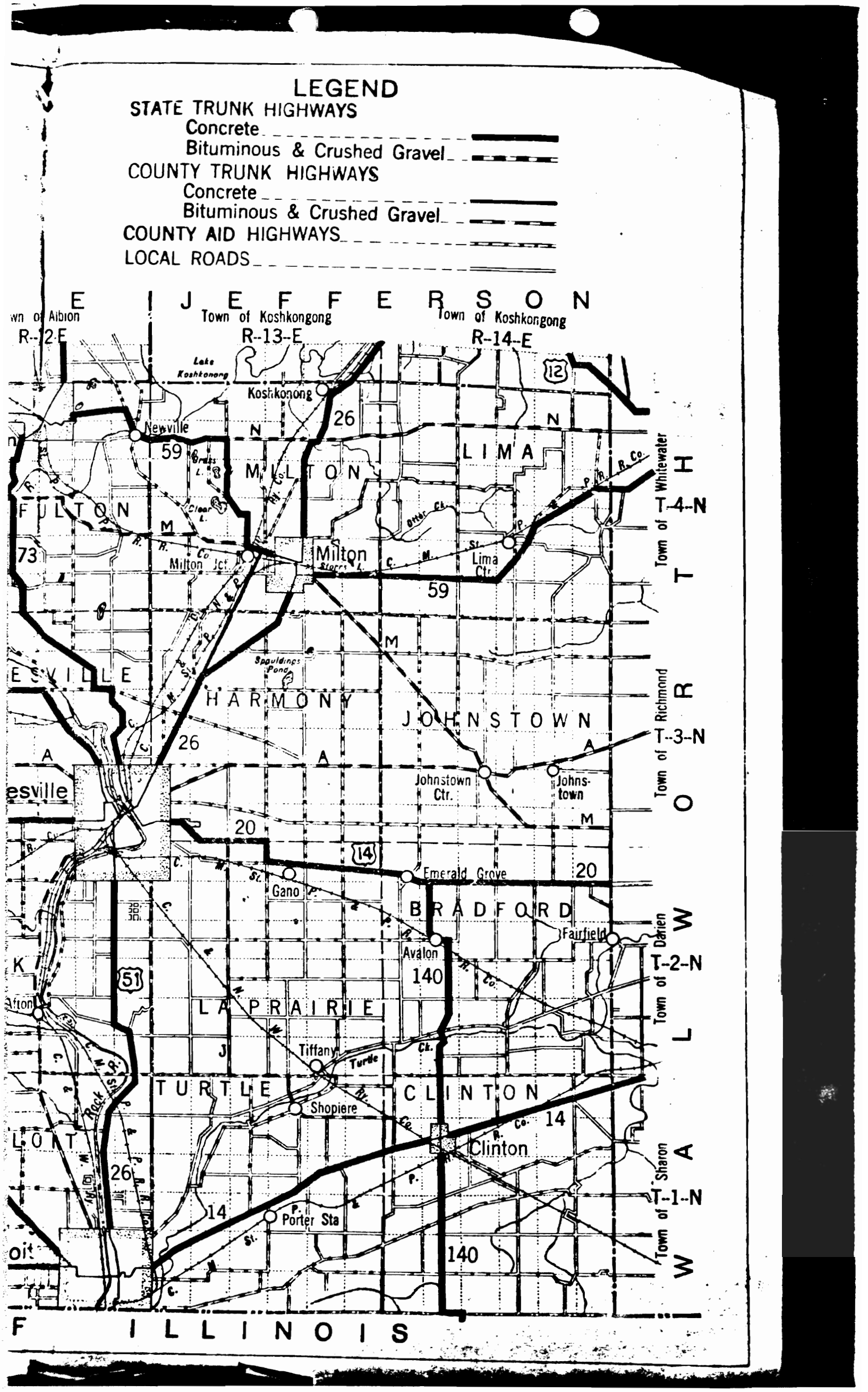
Town of Brooklyn
Town of Albany
Town of Decatur
Town of Spring Grove

T-4-N
T-3-N
T-2-N
T-1-N

R E E G

Allen Ck.
Badfish Cr.
Catfish R.
Willow Ck.
Turtle Cr.
Rock R.
Big Sugar R.
Gibbs L.

STATE OF I


LEGEND
STATE TRUNK HIGHWAYS
Concrete
Bituminous & Crushed Gravel
COUNTY TRUNK HIGHWAYS
Concrete
Bituminous & Crushed Gravel
COUNTY AID HIGHWAYS
LOCAL ROADS
E J E F F E R S O N
Town of Albion
R-12-E
Town of Koshkonong
R-13-E
Town of Koshkonong
R-14-E
Lake Koshkonong
Koshkonong
Newville
59
26
12
FULTON
MILTON
LIMA
Milton
Milton Jct.
Lima Ctr.
Otter Ct.
Clear L.
73
59
Town of Whitewater
T-4-N
HARMONY
JOHNSTOWN
Spaulding Pond
Johnstown Ctr.
Johns-town
Town of Richmond
T-3-N
esville
26
20
14
Gano
Emerald Grove
BRADFORD
Fairfield
Avalon
140
Town of Darien
T-2-N
LA PRAIRIE
Tiffany
Turtle Ck.
51
TURTLE
CLINTON
Shopiere
Clinton
14
Porter Sta
26
14
140
Town of Sharon
T-1-N
ILLINOIS
O R
L W
A
W

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

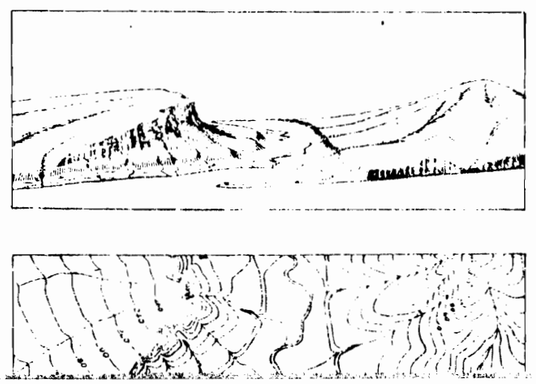
A topographic survey of Alaska has been in progress since 1898 and in [illegible]

boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

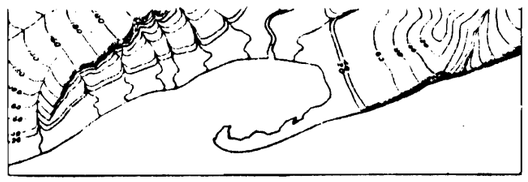
The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{31,680}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

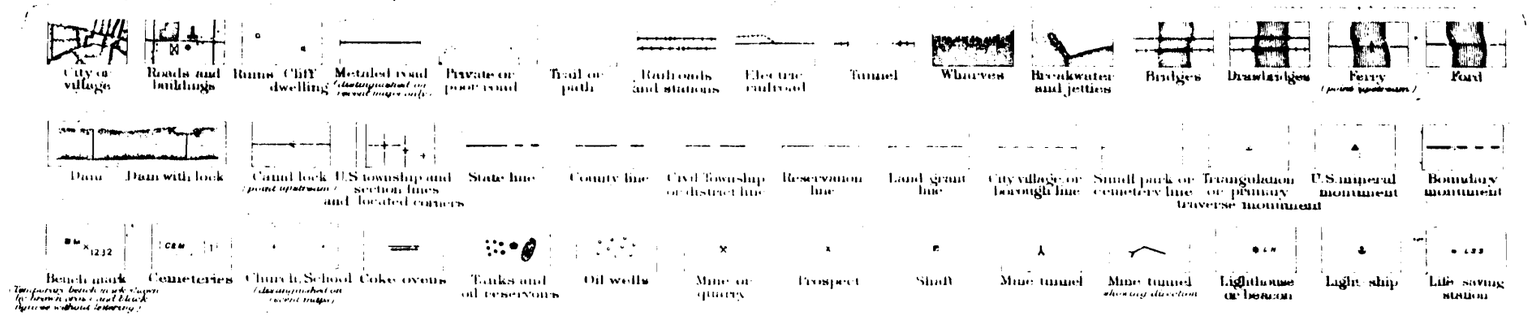
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

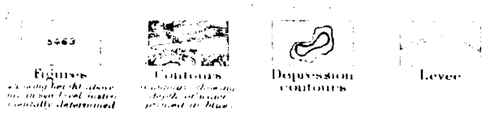
January, 1924.

CONVENTIONAL SIGNS

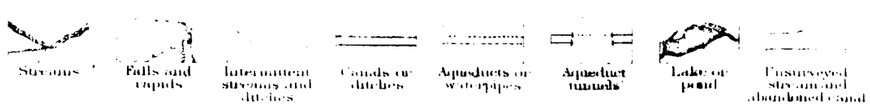
CULTURE
(printed in black)



RELIEF
(printed in brown)



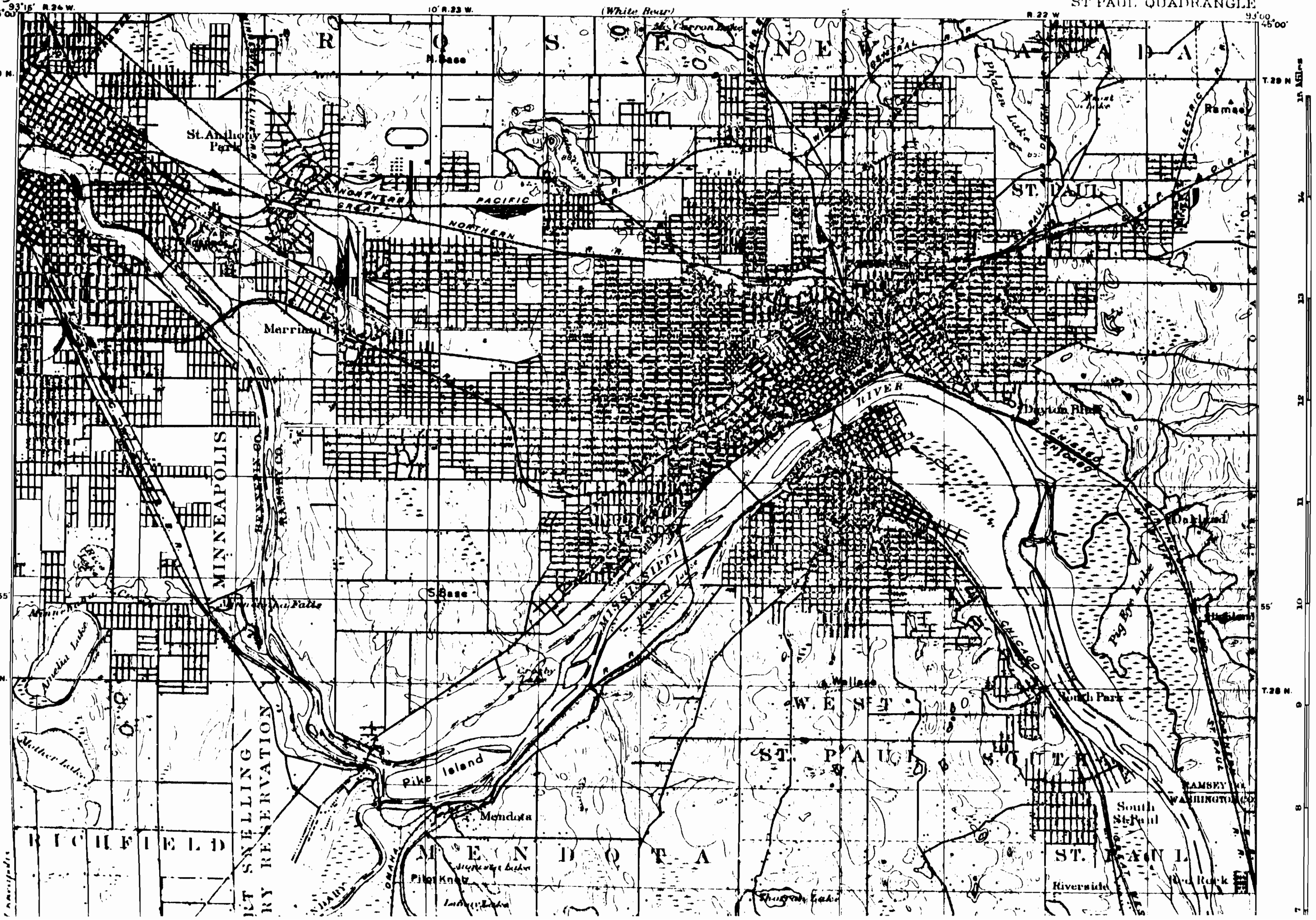
WATER
(printed in blue)

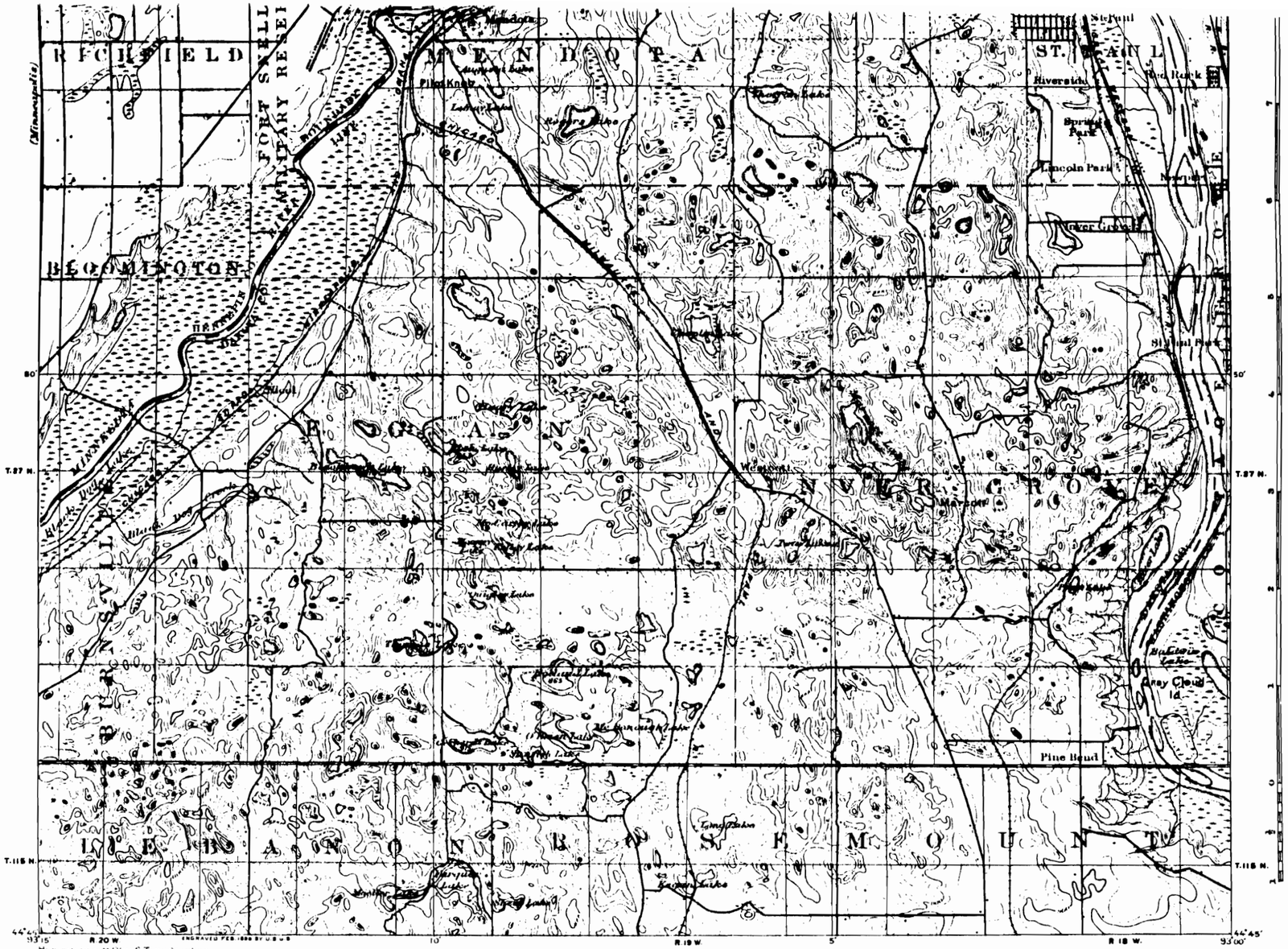


WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

MINNESOTA
ST PAUL QUADRANGLE





Henry Gannett, Chief Topographer.
Jno. H. Renshawe, Topographer in charge.
Triangulation by U.S. Coast and Geodetic Survey.
Topography by H.L. Baldwin Jr.
Surveyed in 1894.

Scale 62500

Miles

Kilometers

Contour interval 20 feet.
Datum is mean sea level.

Edition of Oct 1896, reprinted 1928

Polyconic projection. To place on North American datum move projection lines 100 feet south and 650 feet east.

ST. PAUL, MINN.

#22

NOTE: Geologic Folio No. 201, price 25 cents, treats of the geology and the sand, gravel, building stone, road material, brick clay, and underground water resources of this area.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

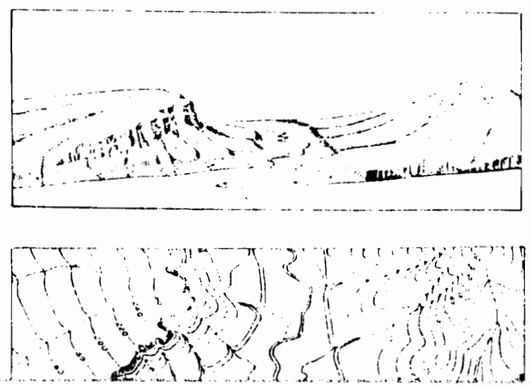
A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnoissance surveys.

All maps are printed in colors. The features represented are classified as follows: (1) Water features, (2) relief features, (3) culture features (works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope, lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,500 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

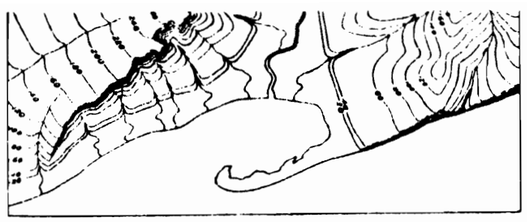
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic

100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

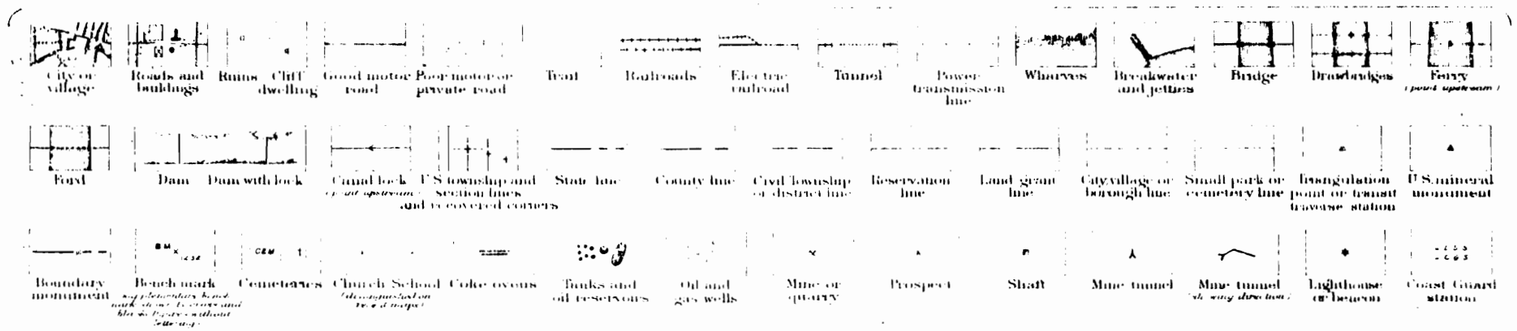
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

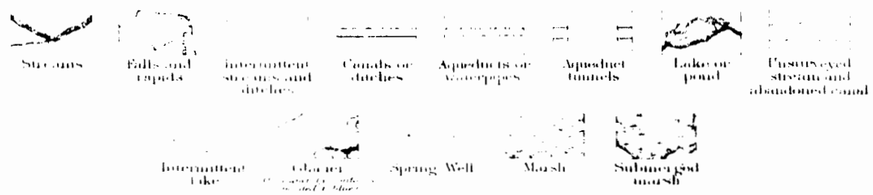
STANDARD SYMBOLS

CULTURE
(printed in black)



RELIEF
(printed in brown)

WATER
(printed in blue)

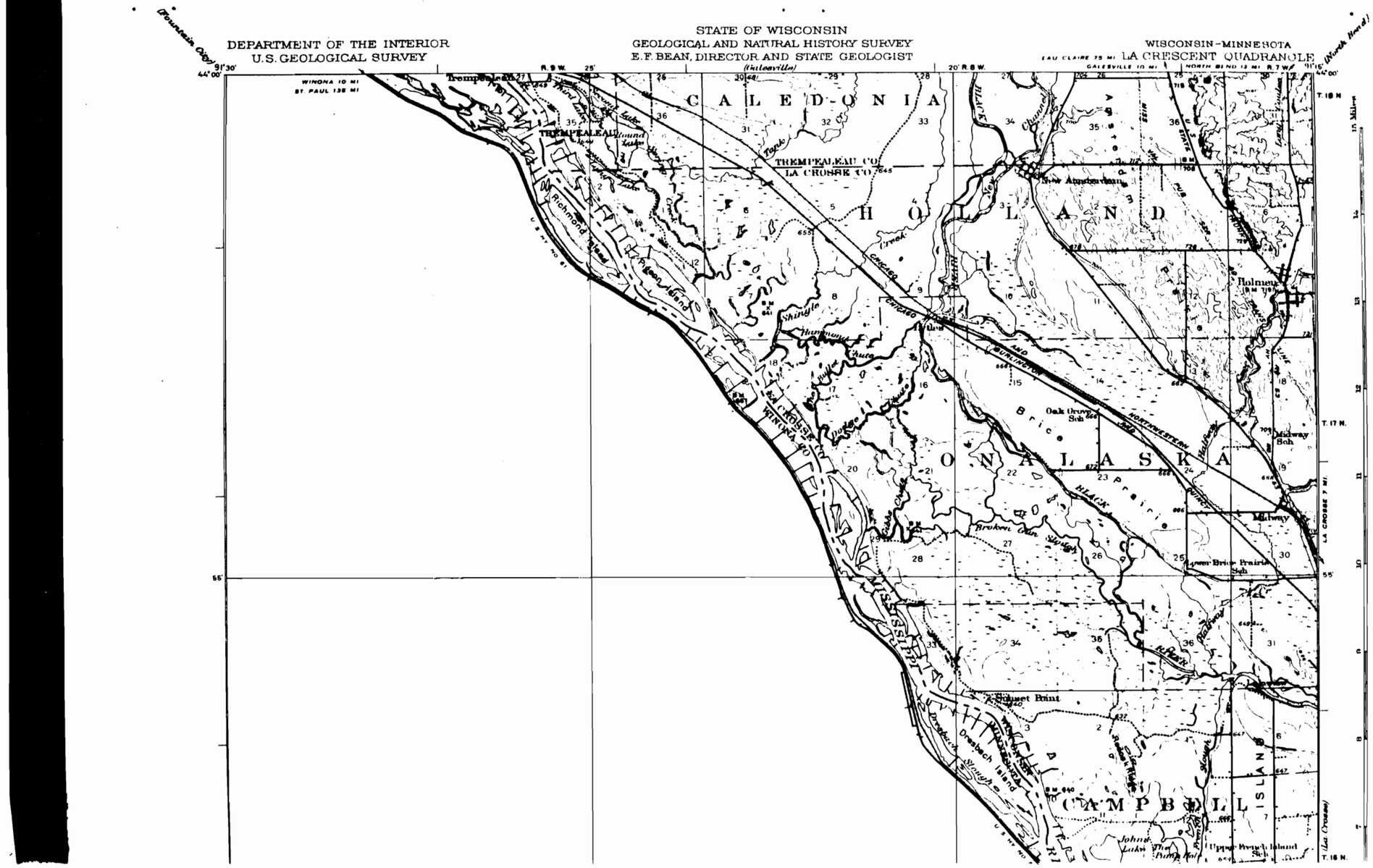


WOODS
(when shown, printed in green)

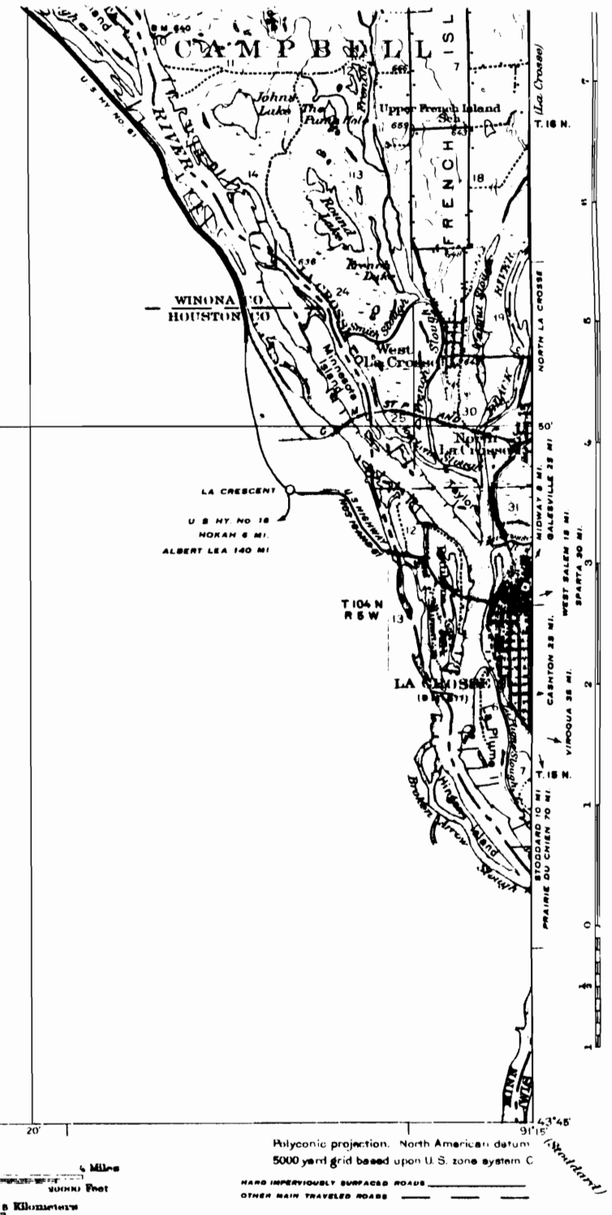
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
E.F. BEAN, DIRECTOR AND STATE GEOLOGIST

WISCONSIN-MINNESOTA
LA CRESCENT QUADRANGLE



PRELIMINARY EDITION
UNSURVEYED AREA



Topography by J.G.Steack
Drainage in part compiled from aerial photographs
taken by Air Corps, U.S. Army
Control by U.S.Geological Survey and Mississippi River Commission
Surveyed in 1926–1927

APPROXIMATE MEAN DECLINATION 1927

Scale 1:62500

1 0 1 2 3 4 Miles
1 0 1 2 3 4 5 Kilometers

Contour interval 20 feet
Datum is mean sea level

Polyconic projection. North American datum
5000 yard grid based upon U.S. zone system C

HARD IMPERVIOUSLY SURFACED ROADS
OTHER MAIN TRAVELED ROADS

LA CRESCENT, WIS.-MINN.
Edition of 1930

#21

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

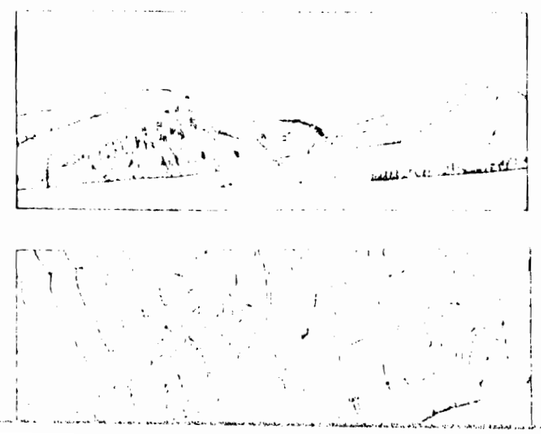
A topographic survey of Alaska has been in progress since 1898, and nearly 15 per cent of the area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an inch.

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 5,300 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

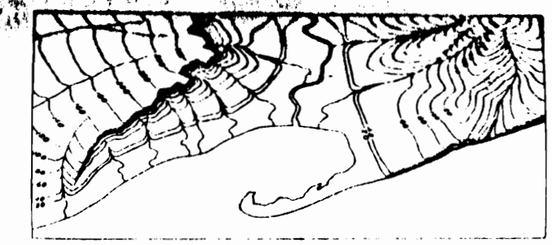
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained [illegible] topographic maps may be obtained [illegible] some special maps are sold at different prices. [illegible] per cent is allowed on an order for maps [illegible] the price. The geologic [illegible] the price depending [illegible] folios will

Region of ANGLE of New Mexico, and mapped with sufficient accuracy to be used in the publication of maps on a scale of 1 inch (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of 1/250,000, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of 1/62,500, but about 4,000 square miles has been mapped on a scale of 1/31,680 or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of 1/62,500.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; and (3)



The sketch represents a river valley that lies between two hills. In the foreground is the [illegible] which is partly inclosed by a closed contour line. [illegible]

Index maps of each State and of Alaska and the part showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

STANDARD SYMBOLS

Cities and towns

Roads and buildings

Fords

Dams

Canal locks

U S township and section lines and recovered corners

State lines

County lines

Civil boundaries or district lines

Reservation line

Land grant line

City village or borough line

Small park or cemetery line

Triangulation, point or transit traverse station

U S mineral monument

Boundary monument

Bench mark

Cemeteries

Churches, schools

Coke ovens

Tanks and oil reservoirs

Oil and gas wells

Mine or quarry

Prospect

Shaft

Mine tunnel

Mine tunnel

Lighthouse or beacon

Coast Guard station

RELIEF
(printed in brown)

Elevations above mean sea level

Contours

Depression contours

Levees

Water

Cliffs

Mine dumps

Sand and gravel areas

WATER
(printed in blue)

Rapids

Falls and cascades

Intermittent streams and lakes

Canals, ditches

Aqueducts

Aqueduct tunnels

Lake or pond

Perennial streams and abandoned canals

Reservoirs

Glaciers

Springs

Wells

Marsh

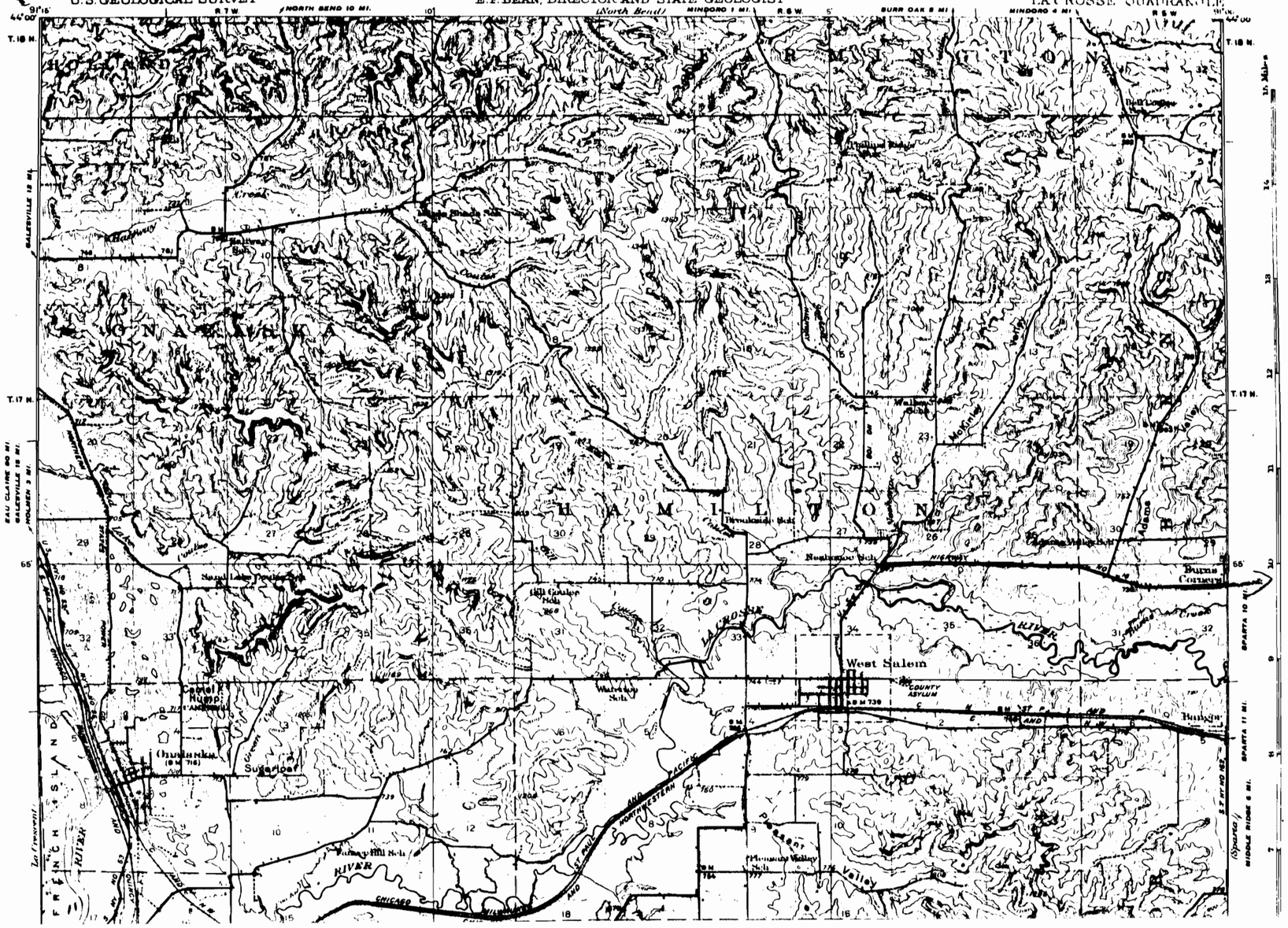
Submerged marsh

Mangrove

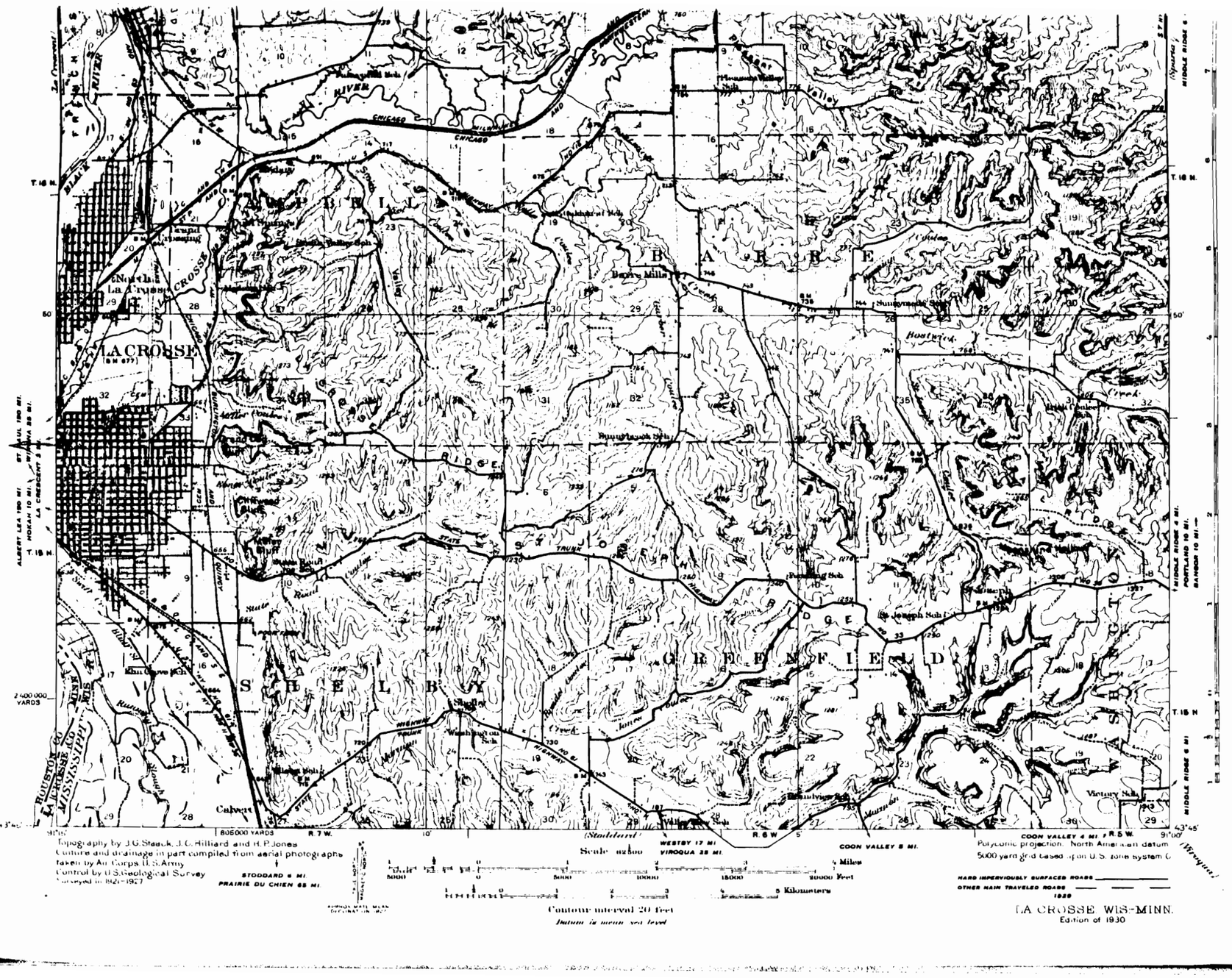
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
E. F. BEAN, DIRECTOR AND STATE GEOLOGIST

WISCONSIN MINNESOTA
LA CROSSE QUADRANGLE



Sparta


LA CROSSE
SHELBY
GREENFIELD
BARRE
Barre Mills
Northside La Crosse
Valley
RIVER
CREEK
Ridge
Topography by J.G.Stauck, J.C.Hilliard and H.P.Jones
Culture and drainage in part compiled from aerial photographs taken by Air Corps U.S.Army
Control by U.S.Geological Survey
Surveyed in 1921-1927
Scale 62500
Contour interval 20 Feet
Datum is mean sea level
Polyconic projection. North American datum
5000 yard grid based upon U.S. zone system
HARD IMPERVIOUSLY SURFACED ROADS
OTHER MAIN TRAVELED ROADS
1929
LA CROSSE WIS-MINN.
Edition of 1930
#20

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and [illegible] published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheet measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales the scale selected for each map being that which is best adapted to show the features of the development of the country and consequently, the [illegible] standard maps are of small, uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale 1/62,500 means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Medium-scale surveys are surveyed and some maps are published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, as determined as follows:

1. Surveys of areas in which there are problems of great public importance relating, for example, to intricate development, [illegible] or reclamation of wet lands are made with [illegible] accuracy to succeed in the publication of maps on a scale of [illegible] half mile, with a contour interval of [illegible]

2. Surveys of areas in which there are problems of less importance [illegible] most of the basin of the Mississippi [illegible] are made with different accuracy to meet [illegible] maps on a scale of 1/125,000, [illegible] contour interval of 10 or 25 feet.

3. Surveys of areas in which the [illegible] are much of the mountain region [illegible] New Mexico, are made with [illegible] the publication [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the seas by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the contour or zero of altitude being mean sea level. The next contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys as well as their altitudes. Successive contour lines that are near apart on the map indicate a [illegible] other indicate a [illegible] cliff.

The [illegible] and grade [illegible]

[illegible]

tic spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the name of adjoining quadrangles of which maps have been published. Over 2,500 quadrangles in the United States have been surveyed and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the basis on which the geology and [illegible] of a quadrangle are represented, and the [illegible] are bound to the [illegible] of the Geological Survey of the United [illegible] have been published [illegible] and of Alaska. Due to heavy [illegible] topographic [illegible] publication [illegible] Geological Survey has [illegible] and topographic maps may be [illegible] [illegible] at the retail price. The geologic [illegible] cents or more each, the price depending [illegible] A circular describing the folio will

[illegible] of areas in which the problems are of unusual [illegible] such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of [illegible] (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 45 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups: (1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture

The sketch represents a river valley that has been [illegible] In the foreground is the sea with a low sandy spit, inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

[illegible] each State and of Alaska and Hawaii showing the area covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

[illegible], 1908.

STANDARD SYMBOLS

CULTURE

City or village; Roads and buildings; Ruins; Cliff dwelling; Good motor road; Poor motor or private road; Railroad; Electric railroad; Tunnel; Power transmission line; Wharves; Breakwater and jetties; Bridge; Drawbridges; Ferry

Trail; Dam; Dam with lock; Canal lock; U S township and Section lines and reservation lines; Reservation line; Land grant line; City village or borough line; Small park or cemetery line; Triangulation point or transit traverse station; U S mineral monument

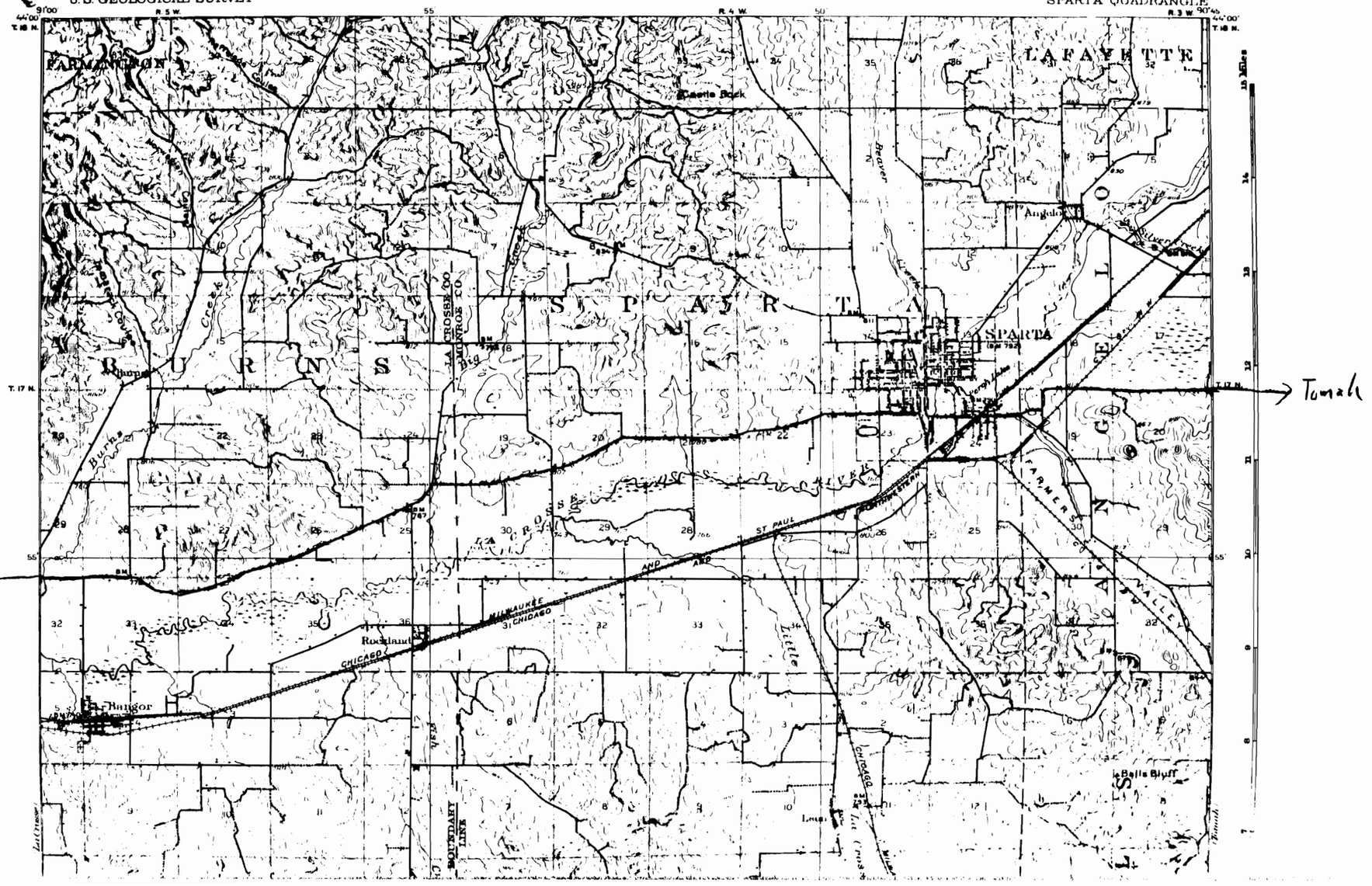
Church; Church (with steeple); Cemetery; Church; Church (with steeple); Cemetery; Coke ovens; Shaft; Mine tunnel; Mine tunnel; Lighthouse or beacon; Checked section

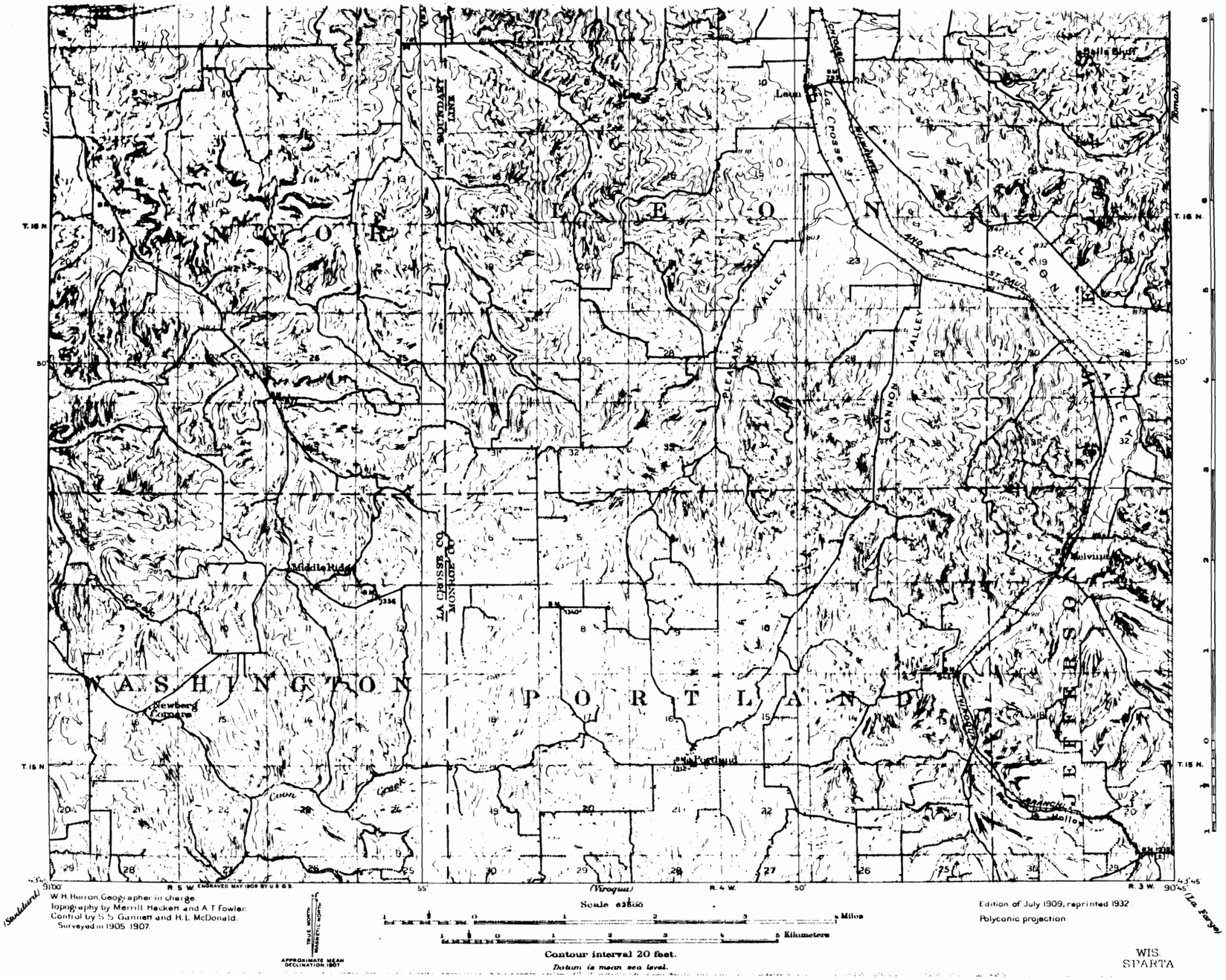
RELIEF

WATER

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
SPARTA QUADRANGLE




WASHINGTON
OREGON
PORTLAND
LA CROSSE CO.
MONROE CO.
Middle Ridge
Newberg
Portland
Vancouver
Melville
Bell's Bluff
Lewis
La Crosse
River
Columbia
Willamette
Pleasant Valley
Cannon Valley
Coon Creek
Boundary Line
T. 16 N.
T. 15 N.
R. 5 W.
R. 4 W.
R. 3 W.
(Vroqua)
(Sparta)
(La Farge)
(Tomah)
Scale 62500
Miles
Kilometers
Contour interval 20 feet.
Datum is mean sea level.
APPROXIMATE MEAN DECLINATION 1907
TRUE NORTH
MAGNETIC NORTH
ENGRAVED MAY 1908 BY U.S.G.S.
W. H. Herron, Geographer in charge.
Topography by Merrill Heckert and A. T. Fowler.
Control by S. S. Garnett and H. L. McDonald.
Surveyed in 1905 1907.
Edition of July 1909, reprinted 1932.
Polyconic projection
WIS.
SPARTA
#14

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a topographic map of the United States and has completed about 40 per cent of the total area. Owing to the large size of such a map it is being published in small units, one of which is shown on the other side of this sheet. Each of these small maps is named from a town or a prominent natural feature, such as a lake, ridge, or mountain, represented on it, and the names of the published maps showing adjoining areas are printed on the margins. As the maps are bounded by lines indicating latitude and longitude they are quadrangular, and the area that each map represents is called a *quadrangle*.

In order to represent a part of the curved surface of the earth on flat maps some distortion is unavoidable, but for small areas, such as those represented by these topographic maps, the errors resulting from the projection used (the polyconic) are so slight that for ordinary purposes the maps are correct as regards direction, distance, and area.

On the lower margin of each sheet are scales, represented by lines, called *bar scales*, on which miles or kilometers and their subdivisions are indicated. The scale is also stated as a fraction that expresses the ratio between a linear distance on the map and a corresponding distance on the ground. For example, the scale of the map on the opposite side of this sheet is $\frac{1}{62500}$; that is, one unit (foot, inch, or any other measure) on the map is equal to 62,500 units of the same sort on the earth's surface represented by the map. The fraction for 1 mile to 1 inch ($\frac{1}{63360}$) would be difficult to use, and therefore the scale $\frac{1}{62500}$ or a multiple thereof has been adopted. However, for short distances the scale here used may be considered essentially 1 mile to the inch.

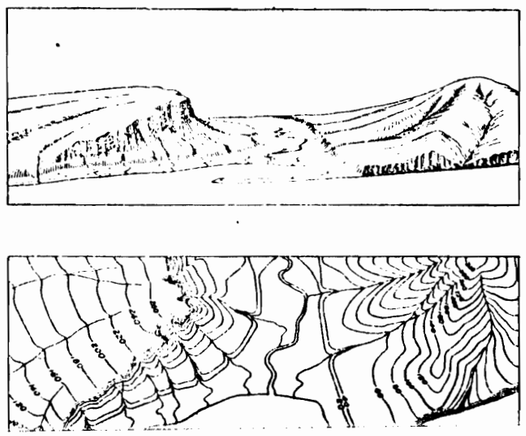
The direction from one point to another may be determined from the map by measuring the angle which a line connecting the two points makes with a line of known direction, such as a parallel or meridian. Directions measured in the area with a compass would not necessarily agree with those shown by the map because in different parts of the country the compass needle does not point to the true north. The difference between true north and magnetic north is called the *magnetic declination*. On Geological Survey maps a small diagram in the lower margin shows graphically the amount of magnetic declination and states it in figures. For ordinary purposes the declination may be considered constant. In order to determine with an ordinary compass the true directions of objects in the field the amount of the declination shown on the map should be applied to each compass reading; therefore, if the declination is west, as it is in New York State, it should be subtracted

such as roads, towns, boundaries. Some more recent maps, by a green overprint, show also wooded areas.

The relief is printed in brown. On practically all Survey maps the surface or *datum* from which elevations are calculated is mean sea level. The exact altitudes of many prominent points are shown on the map by figures, but in order to show the elevation of every part of the area the relief is indicated by *contour lines*, which are so drawn that each one represents a line passing through all points on the ground that have the same elevation above the datum. In other words, if a person followed on the ground the course indicated by a single contour line on the map he would always be at the same elevation above sea level. The contour lines are drawn to show certain specific altitudes, and the vertical distance in nature between the successive contours selected for representation on the map is called the *contour interval*. The contour interval used for the map on the other side of this sheet is 20 feet, but other intervals range from 5 feet in regions of little relief to 250 feet in rugged, mountainous country.

In order that the contour lines may be readily followed with the eye certain of them are drawn especially heavy. On the accompanying map every fifth contour line is thus accented, but on others, in order to make the accented line fall on the even hundred or thousand feet, every fourth line is emphasized.

The manner in which contour lines express altitude, form, and grade is shown in the sketch and map below, in which each feature shown by the sketch is represented by contours on the map.



The drainage, including all the water features, is printed in blue. Most of the common symbols and conventions used are shown below. All streams which are so narrow that their true width can not be shown to scale by double lines with or without intervening water lining are represented by a single moderately heavy line. Many of the very small streams, however, are not indicated, and therefore small supplies of water may be found at other places than those at which drainage lines are shown. The gradient of any stream may be accurately determined from the map by measuring the distance between successive contours represented as crossing the stream.

The culture—the work of man—is shown in black, and its features are represented by symbols or conventional signs, many of which are given below. The principal cultural features are the settlements, roads, and boundaries. The settlements shown include not only the individual houses in sparsely settled districts and the built-up portions of villages, towns, and cities, but also certain special kinds of buildings, such as school houses, churches, mines, and post offices. Among the routes of travel represented are railroads, street-car lines, and ordinary roads. Many kinds of ordinary roads are distinguished, such as metaled roads, wagon roads, poor or private roads, and trails or paths. The relation of the culture to the drainage or relief is also shown, for special symbols indicate whether the roads cross streams by bridges, by fords, or by ferries.

The topographic maps published by the Geological Survey, although prepared primarily as the bases on which to represent the geology of the country, are obviously of value, so far as the scale permits, for military or other uses. They fulfill the prime requirement of a good military map because they show correctly the kind, size, shape, distance, and height of all the larger natural and artificial objects. Some special details must of course be added, and the cultural features must be constantly brought up to date to make them complete military maps, but this information is relatively small in amount and can be obtained rapidly and at slight expense. Even without this complete information the user of the maps will be surprised, as he acquires proficiency in reading them, to note how much that is not actually expressed may be correctly inferred from them by critical and intensive study. To gain this proficiency in interpreting maps the user should avail himself of every opportunity to study the various natural objects in the field and to compare them with their representation on the map.

Over 2,400 quadrangles have been surveyed, and maps of them similar to the one on the front of this sheet have been

between true north and magnetic north is called the *magnetic declination*. On Geological Survey maps a small diagram in the lower margin shows graphically the amount of magnetic declination and states it in figures. For ordinary purposes the declination may be considered constant. In order to determine with an ordinary compass the true directions of objects in the field the amount of the declination shown on the map should be applied to each compass reading; therefore, if the declination is west, as it is in New York State, it should be subtracted from compass readings in the northeast or southwest quadrants and added to readings in the northwest or southeast quadrants; if the declination is east it should be added to northeast or southwest readings and subtracted from northwest or southeast readings.

The features shown on the topographic atlas sheets are of three kinds—(1) *relief*, or the form of the surface, such as plains, mountains, valleys; (2) *drainage*, or the water features, such as oceans, rivers, lakes; (3) *culture*, or the work of man,

The amount of relief along roads, streams, slopes, etc., may be readily visualized from the map by drawing cross sections or profiles on which the vertical element is the height shown by the contours and the horizontal element is the distance between the contours.

complete information the user of the maps will be surprised, as he acquires proficiency in reading them, to note how much that is not actually expressed may be correctly inferred from them by critical and intensive study. To gain this proficiency in interpreting maps the user should avail himself of every opportunity to study the various natural objects in the field and to compare them with their representation on the map.

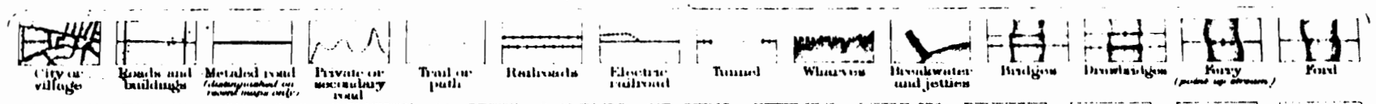
Over 2,400 quadrangles have been surveyed, and maps of them similar to the one on the front of this sheet have been printed. Index maps of each State showing the areas covered by the published topographic maps can be obtained free of charge, and copies of the topographic maps can be bought for 10 cents each or, if ordered in lots of 50 or more, for 6 cents each, by addressing

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

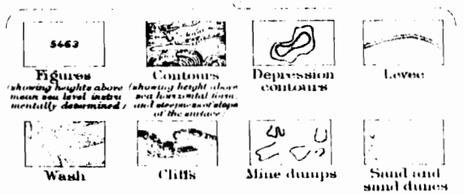
June, 1916.

CONVENTIONAL SIGNS

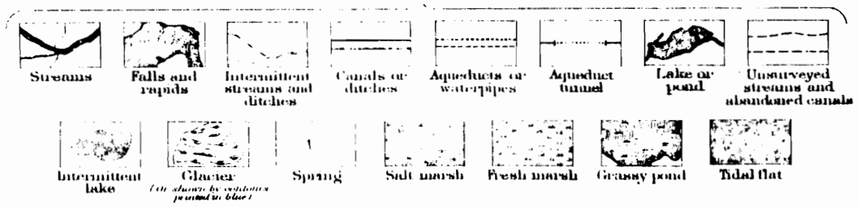
CULTURE
(printed in black)



RELIEF
(printed in brown)



WATER
(printed in blue)

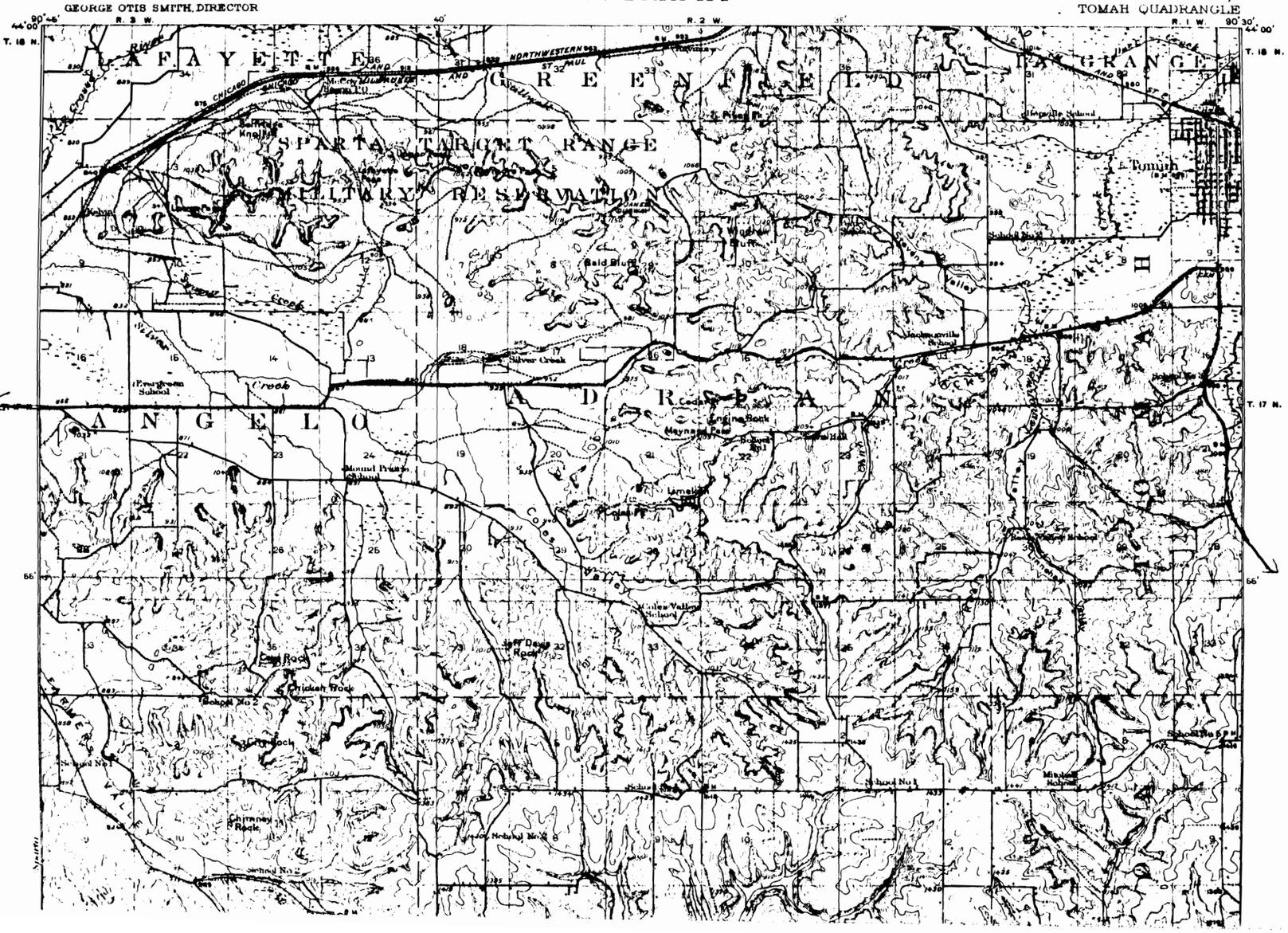


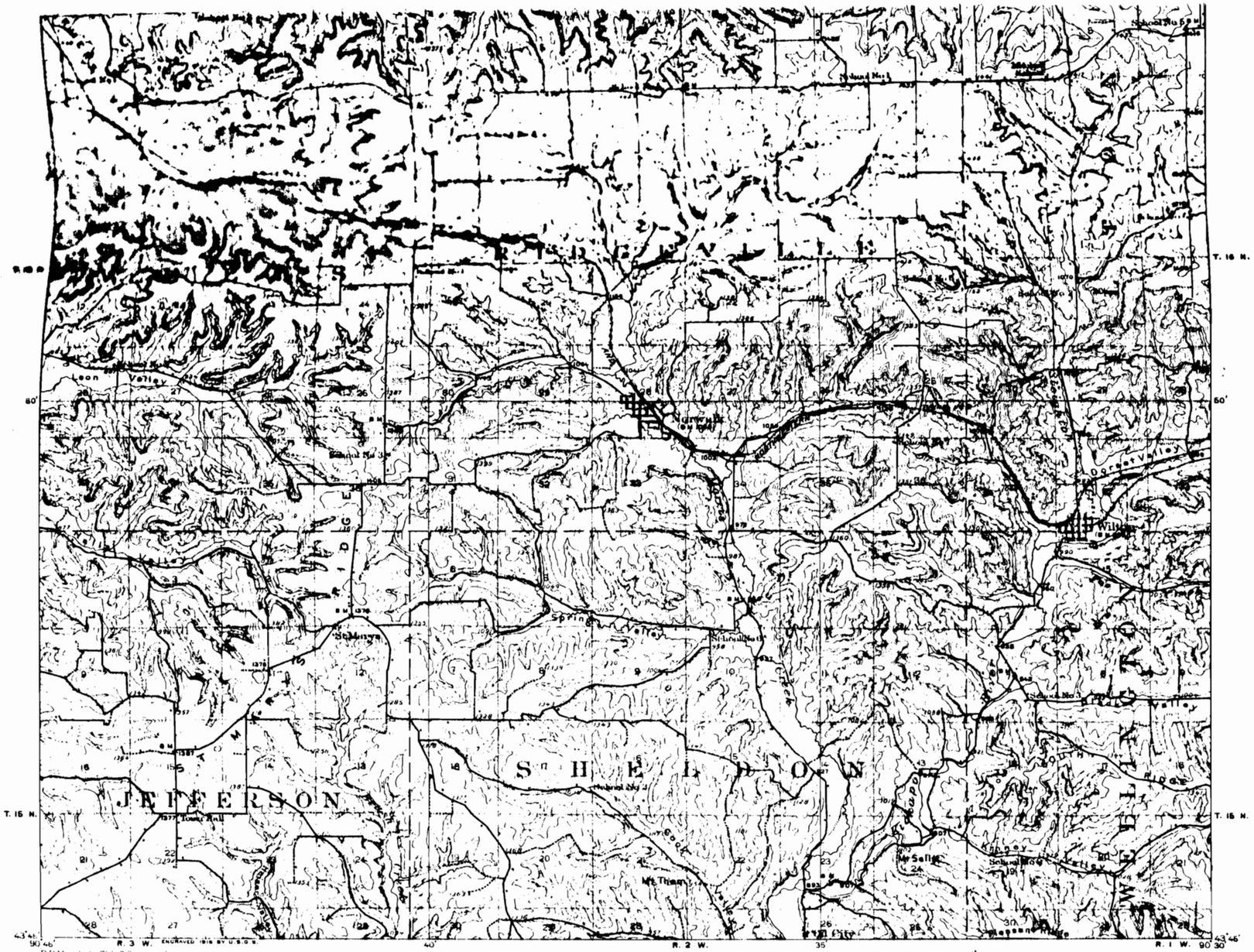
WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, SECRETARY
U. S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

WISCONSIN
(MONROE COUNTY)
TOMAH QUADRANGLE





R.B.Marshall, Chief Geographer.
W.H.Herron, Geographer in charge.
Topography by R.T.Evans, O.H.Nelson, O.H.Watson, and J.M.Perkins.
Control by A.D.Duck, L.F.Biggs, and J.M.Perkins.
Surveyed in 1914.

Scale about

1 0 1 2 3 4 Miles

1 0 1 2 3 4 5 Kilometers

Edition of 1916

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps or atlas sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for any quadrangle depending on its nature and its probable future development, and consequently though the standard atlas sheets are of nearly uniform size they represent areas of different sizes. On the lower margin of each sheet are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

The standard scales used on these maps are multiples of the fraction $\frac{1}{62500}$. Quadrangles in thickly settled or industrially important regions are mapped on a scale of $\frac{1}{31680}$ or about 1 mile to an inch, and cover areas measuring 15′ in latitude and longitude. Quadrangles in [illegible] settled or industrially less important districts are mapped on a scale of $\frac{1}{125000}$ or about 2 miles to an inch, and cover areas measuring 30′ in latitude and longitude. Reconnaissance maps of desert or sparsely inhabited regions have been made on a scale of $\frac{1}{250000}$ or about 4 miles to an inch, covering areas measuring 1° in latitude and longitude. Maps for special purposes are made on scales larger than $\frac{1}{62500}$.

A topographic survey of Alaska has been in progress since 1898, and nearly 35 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250000}$, but about 3,500 square miles has been mapped on a scale of $\frac{1}{62500}$.

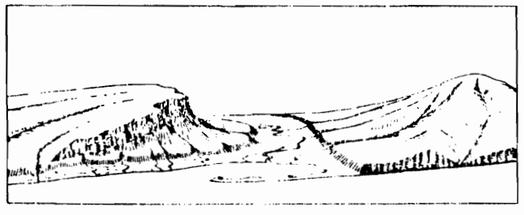
A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62500}$.

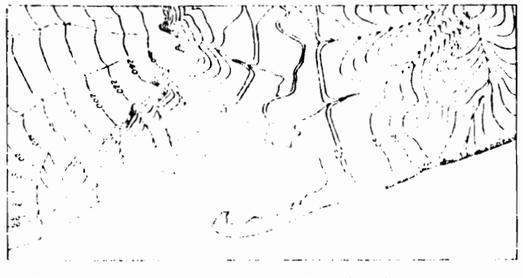
The features shown on these maps may be arranged in three [illegible] including [illegible] rivers, canals, swamps [illegible]

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in mapping only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour, for example, would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.





The sketch represents a river valley that lies between two [illegible] gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins that are issued free by the Geological Survey.

The lettering and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,800 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the [illegible]

made on scales larger than 1:62,500.

A topographic survey of Alaska has been in progress since 1898, and nearly 55 per cent of the area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of 1:250,000 or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of 1:62,500 but about 3,500 square miles has been mapped on a scale of 1:125,000.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of 1:62,500.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes

[illegible] of a quadrangle are represented, and the margin adjoining these features are omitted together with a drawing to be used to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November, 1919.

CONVENTIONAL SIGNS

CULTURE
(printed in black)

City or village
Roads and buildings
Ruins
Cliff dwelling
Metaled road *(distinguished on printed maps only)*
Private or poor road
Trail or path
Railroads and stations
Electric railroad
Tunnel
Wharves
Breakwater and jetties
Bridges
Drawbridges
Ferry *(name upstream)*
Ford
Dam
Dam with lock
Canal lock *(point upstream)*
U.S. township and section lines and located corners
State line
County line
Civil township or district line
Reservation line
Land grant line
City, village or borough line
Small park or cemetery line
Triangulation or primary traverse monument
U.S. mineral monument
Boundary monument
Bench mark *(temporary bench mark shown by brown cross and black figure without lettering)*
Cemeteries
Church, School *(distinguished on some maps)*
Coke ovens
Tanks and oil reservoirs
Oil wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Mine tunnel *showing direction*
Lighthouse or beacon
Lightship
Life-saving station

RELIEF
(printed in brown)

Figures *showing height above mean sea level unless otherwise determined*
Contours *(Exceptional ones showing depth below mean sea level are printed in blue)*
Depression contours
Levee
Woods
Cliffs
Mine dumps
Tailings or mining debris
Sand and sand dunes

WATER
(printed in blue)

Streams
Falls and rapids
Intermittent streams and ditches
Canals or ditches
Aqueducts on waterpipes
Aqueduct tunnels
Lake or pond
Unsurveyed stream and abandoned canal
Intermittent lake
Glacier *(Exceptional ones showing depth are printed in blue)*
Fresh marsh
Grassy pond
Tidal flats

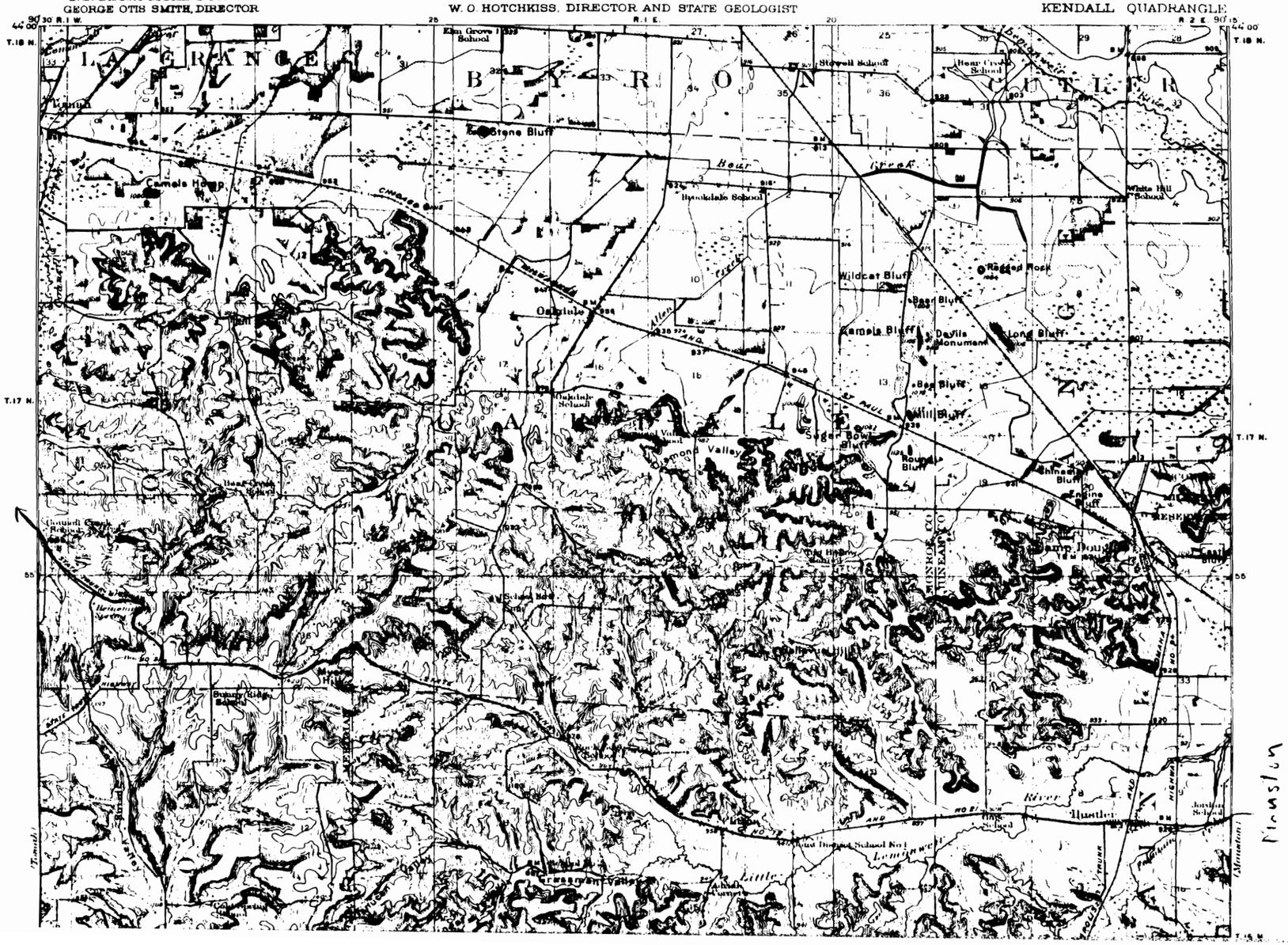
WOODS
(when shown, printed in green)

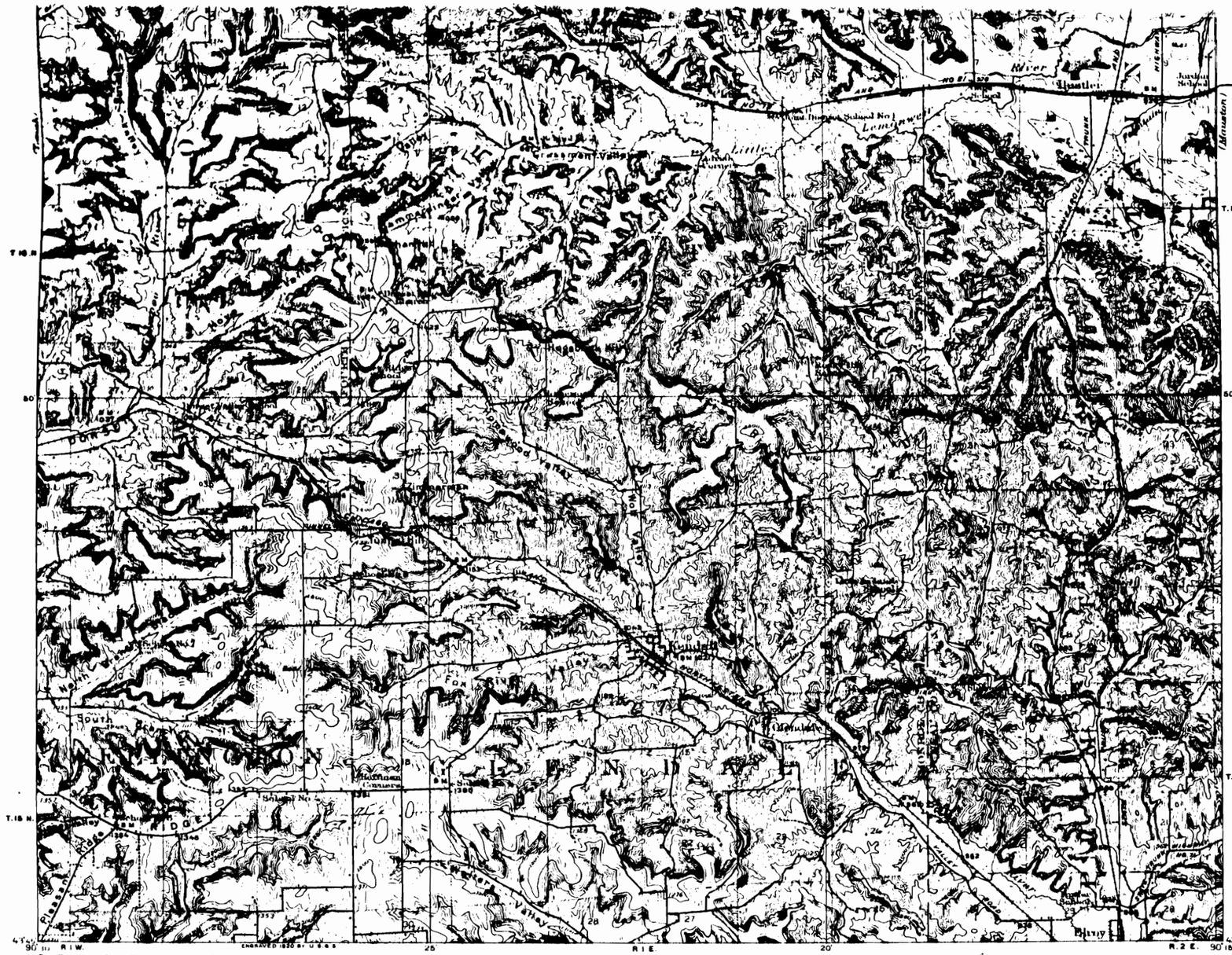
DEPARTMENT OF THE INTERIOR
ALBERT B. FALL, SECRETARY
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST

WISCONSIN
KENDALL QUADRANGLE




T.19 N.
T.18 N.
T.17 N.
90° 10'
90° 15'
43° 45'
50'
R.1 W.
R.1 E.
R.2 E.
25
20
Woods
Brush
Scale 62500
1 0 1 2 3 4 Miles
1 0 1 2 3 4 5 Kilometers
Contour interval 20 feet.
Polyconic projection, North American datum.
C.H.Birdseye, Chief Topographic Engineer
W.H.Herron, Geographer in charge
Topography by C.E.Cooke, O.H.Nelson,
C.W.Rowell, and E.B.Hill.
Control by H.S.Sensenney, D.S.Birkett, Geo.T.Hawkins,
C.H.Archer, and R.G.Clinite.
ENGRAVED 1930 BY U.S.G.S.

Mansion

#17

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps or atlas sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for any quadrangle depending on its nature and its probable future development, and consequently though the standard atlas sheets are of nearly uniform size they represent areas of different sizes. On the lower margin of each sheet are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

The standard scales used on these maps are multiples of the fraction $\frac{1}{62500}$. Quadrangles in thickly settled or industrially important regions are mapped on a scale of $\frac{1}{31680}$, or about 1 mile to an inch, and cover areas measuring 15′ in latitude and longitude. Quadrangles in less thickly settled or industrially important districts are mapped on a scale of $\frac{1}{62500}$, or about 2 miles to an inch, and cover areas measuring 30′ in latitude and longitude. Reconnaissance maps of developing or sparsely inhabited regions have been made on a scale of $\frac{1}{125000}$, or about 2 miles to an inch, covering areas measuring 1° in latitude and longitude. Maps for special purposes are made on scales larger than $\frac{1}{31680}$.

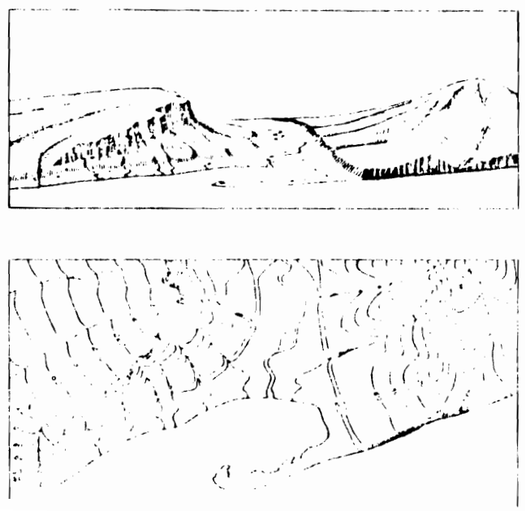
A topographic survey of Alaska has been in progress since 1898, and nearly 25 per cent of its area has now been mapped. About 50 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{62500}$, but about 5,500 square miles has been mapped on a scale of $\frac{1}{125000}$.

A large part of the Hawaiian Islands has been surveyed,

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in mapping only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour, for example, would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins that are issued free by the Geological Survey.

The lettering and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,800 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price

A topographic survey of Alaska has been in progress since 1898, and nearly 36 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{62500}$, but about 3,500 square miles has been mapped on a scale of $\frac{1}{125000}$.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used to represent these features are shown and explained below. Names are printed in the earlier maps, and additional features are represented in the later issues.

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping part separated by terraces. The lines are horizontal at the ocean, river, and terrace levels. The hill at the left has a steep slope on the side toward the observer, a gentle slope on the side away from the observer, and a sharp summit.

The topographic maps and geologic folios that have been published are listed in a circular of the Geological Survey of the United States.

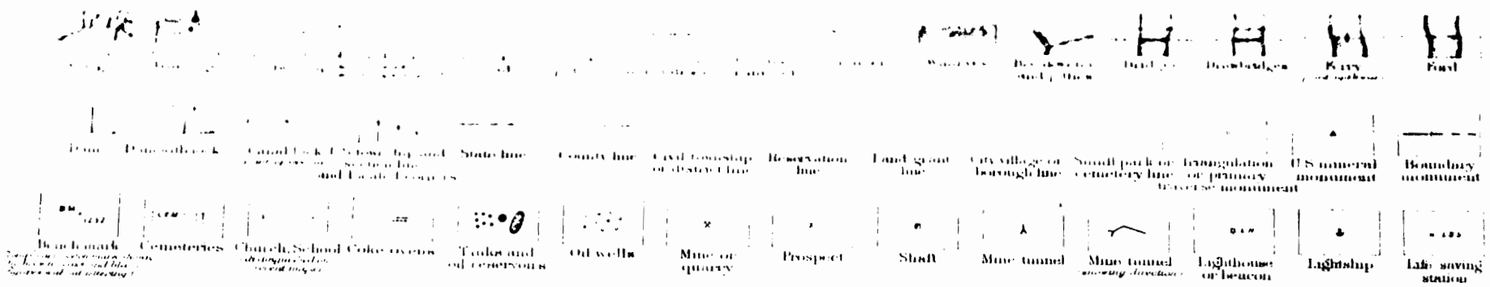
Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

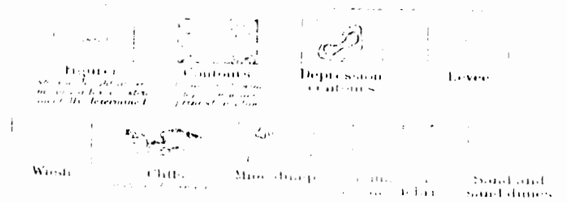
THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November, 1909

CONVENTIONAL SIGNS



RELIEF
(printed in brown)



WATER
(printed in blue)

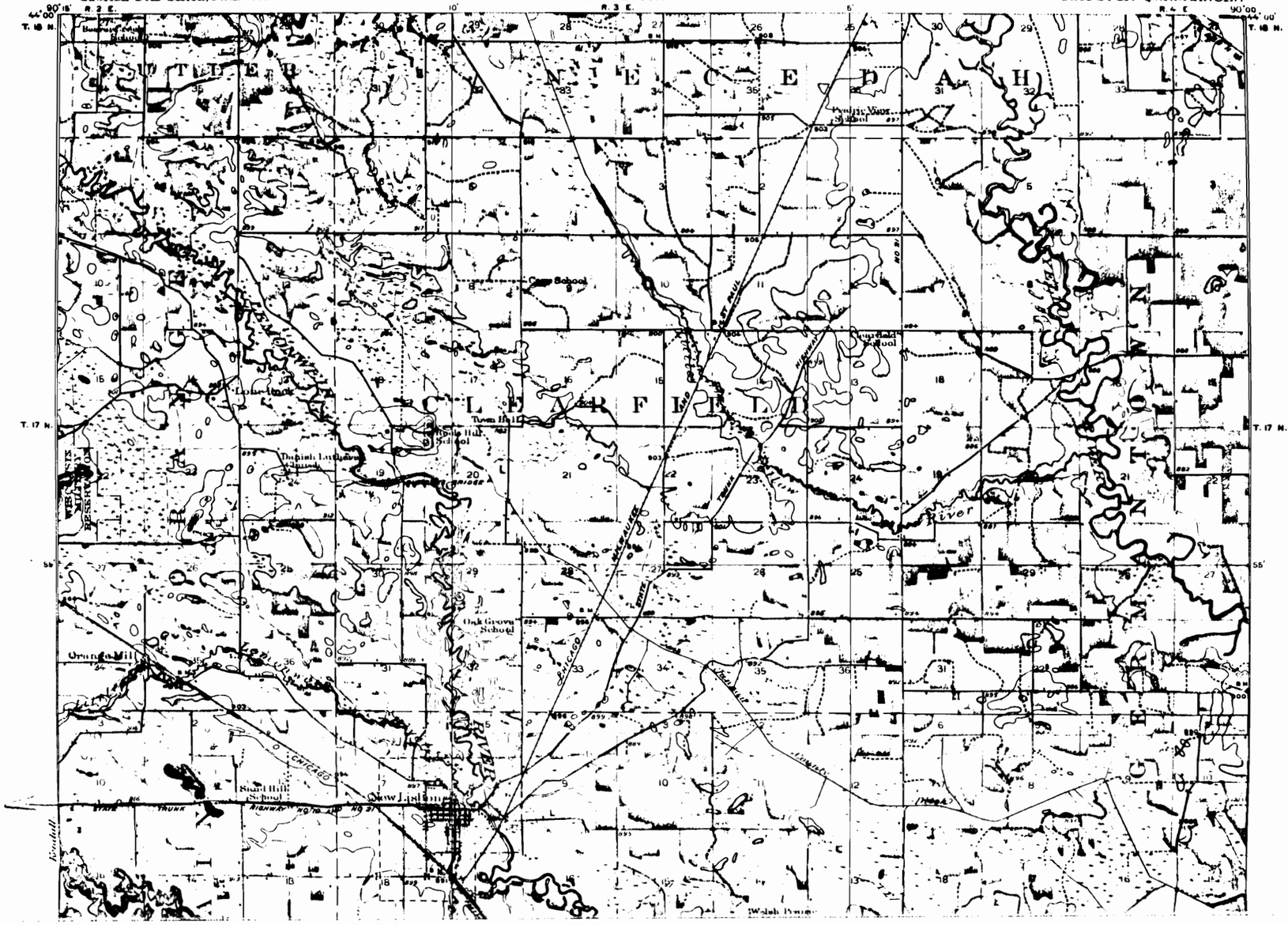
WOODS
(when shown, printed in green)

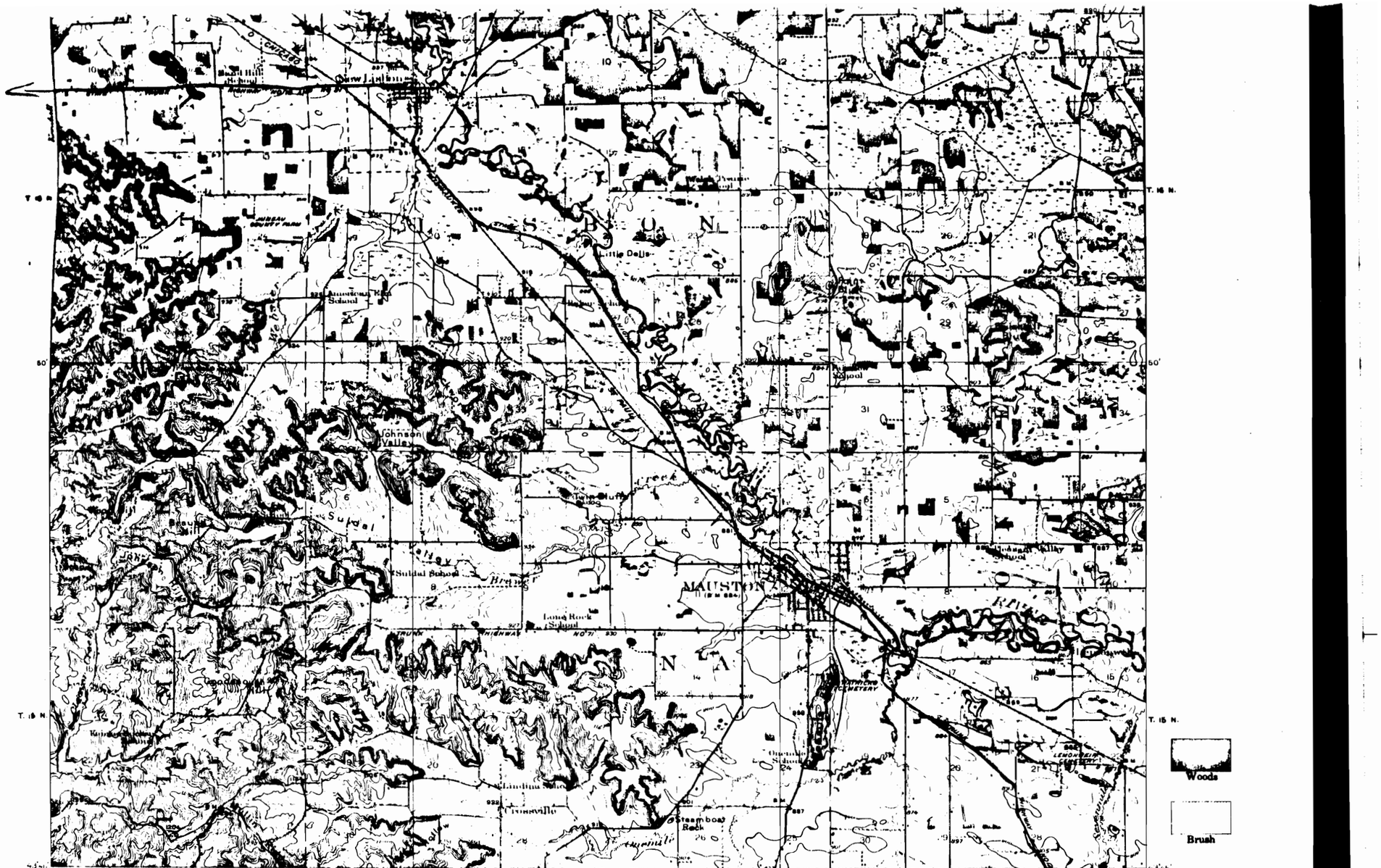
DEPARTMENT OF THE INTERIOR
JOHN BARTON PAYNE, SECRETARY
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST

WISCONSIN
(JUNEAU COUNTY)
MAUSTON QUADRANGLE





C.H.Birdseye, Chief Topographic Engineer.
W.H.Herron, Geographer in charge.
Topography by J.G.Stauck, H.E.Simmons, J.C.Hilliard, C.B.Childs, and E.M.Peeples, Jr.
Control by H.S.Senseney, D.S.Birkett, Geo.T.Hawkins, and R.G.Clinite.
Surveyed in 1919.

Kilbourn

#11

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the [illegible] of nearly uniform size, they represent areas [illegible]. On the lower margin of each map are printed [illegible] showing distances in feet, meters, and miles. In [illegible] of the map is shown by a fraction expressing [illegible] between linear measurements on the map and corresponding distances on the ground. For example, the scale [illegible] on the map (such as 1 inch, 1 foot, or 1 [illegible] 62,500 similar units on the earth's surface.

[illegible] are surveyed and some maps are compiled on special scales for special purposes, the [illegible] surveys for the United States proper and [illegible] have for many years been divided into three [illegible] as follows:

[illegible] in which there are problems of great [illegible] for example, [illegible] development [illegible] are made with [illegible] the publication [illegible] with a contour interval [illegible]

[illegible] problems of average [illegible]

[illegible]

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these [illegible] are shown and explained below. Variations appear on some [illegible] maps, and additional features are represented on some [illegible] maps.

All the water features are represented in blue, the [illegible] streams and canals by single blue lines and the [illegible] the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which [illegible] maps are supplemented by shading showing the effect of [illegible] thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and [illegible] as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope [illegible] a cliff.

The manner [illegible] latitude, form, and grade [illegible]

[illegible] spurs separated by ravines. The spurs are truncated at [illegible] a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes [illegible] and forms an inclined table-land that is traversed [illegible] On the map each of these [illegible] directly beneath its position in the [illegible]

[illegible] vertical distance in feet between [illegible] at the bottom of each map. [illegible] according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountain region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over [illegible] quadrangles in the United States have been surveyed and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and [illegible] quadrangles are represented, and the [illegible] with a description [illegible] of the United [illegible] published.

[illegible] and Hawaii showing [illegible] and geologic folios published [illegible] State Geological Survey may be obtained [illegible] maps may be obtained [illegible] maps are sold at different prices. [illegible] per cent is allowed on an order for maps

1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{125,000}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

lished by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

STANDARD SYMBOLS

CULTURE
(printed in black)

RELIEF
(printed in brown)

WATER
(printed in blue)

WOODS
when shown, printed in green

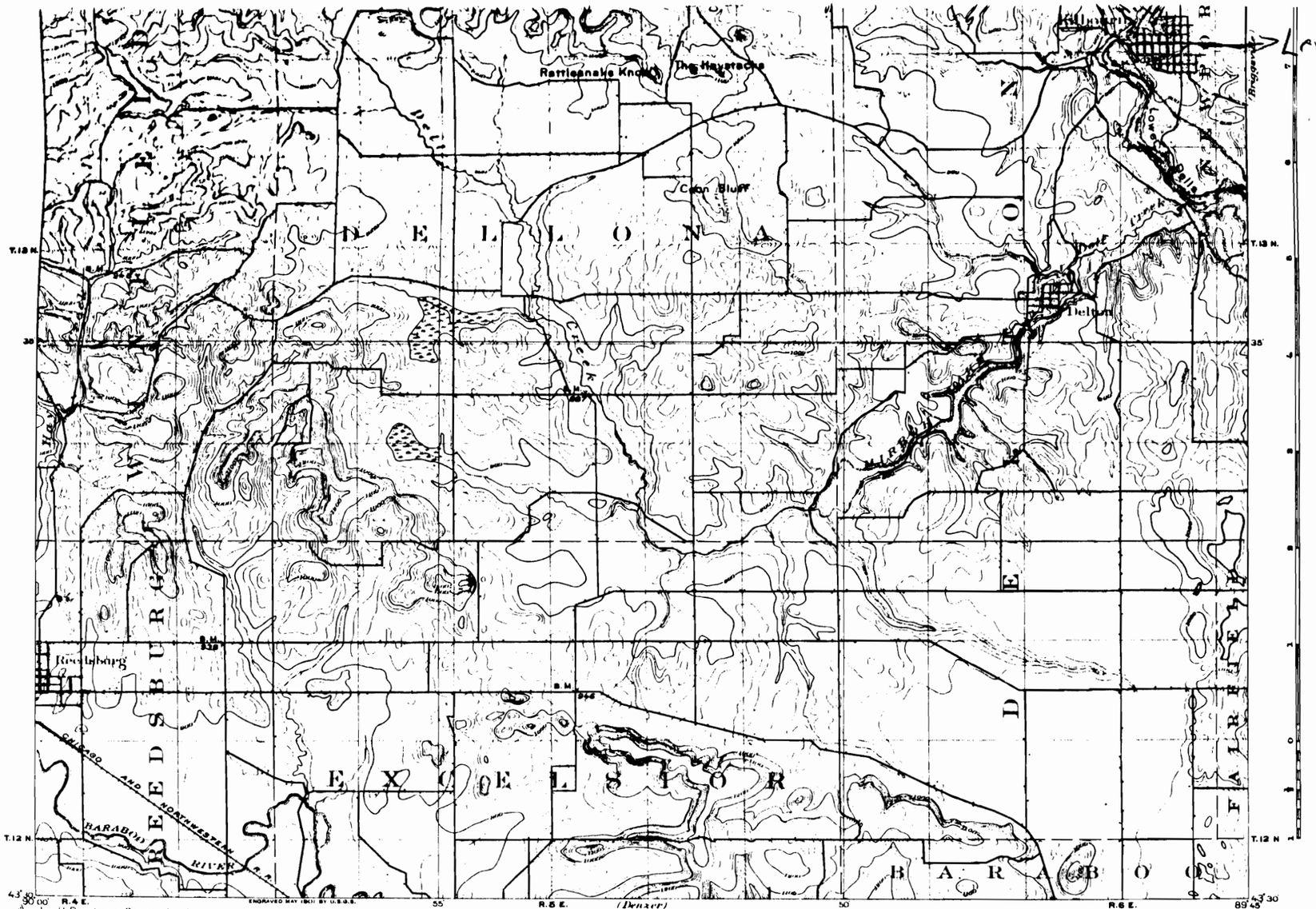
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
THE DELLS QUADRANGLE

Mauston

Lawiston

Lewiston



Jno. H. Renshawe, Geographer in charge.
Control by Geo. T. Hawkins.
Topography by Wm. H. Griffin.
Surveyed in 1899.

Scale 1:62500

Contour interval 20 feet.

Datum is mean sea level.

(Readjustment indicates that elevations on this map should be increased 6 feet.)

Edition of Sept 1901, reprinted 1930

Polyconic projection North American datum

THE DELLS, WIS.

#15

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurement on the map and corresponding distance on the ground. For example, the scale 1/62,500 means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance relating, for example, to agricultural development, irrigation, or reclamation of swamp areas, are made with sufficient accuracy to be used in the publication of maps on a scale of 1/31,680 (1 inch = one-half mile), with a contour interval of 5, 10, or 20 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi River, are made with sufficient accuracy to be used in the publication of maps on a scale of 1/62,500 (1 inch = nearly 1 mile), with a contour interval of 10 to 20 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert regions of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of 1/125,000 (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

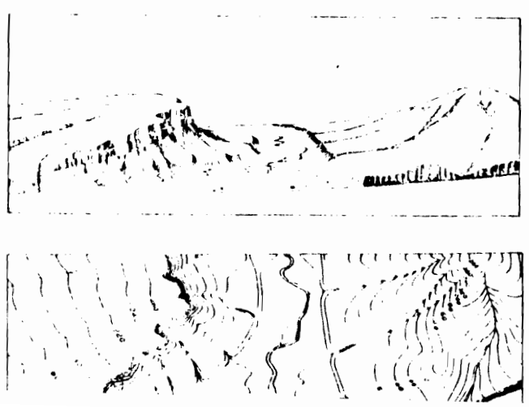
A topographic survey of Alaska has been in progress since 1898, and nearly 15 per cent of its area has now been mapped. About 10 per cent of the Territory has been surveyed by recon-

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,300 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the area covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

[illegible] (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

lished by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

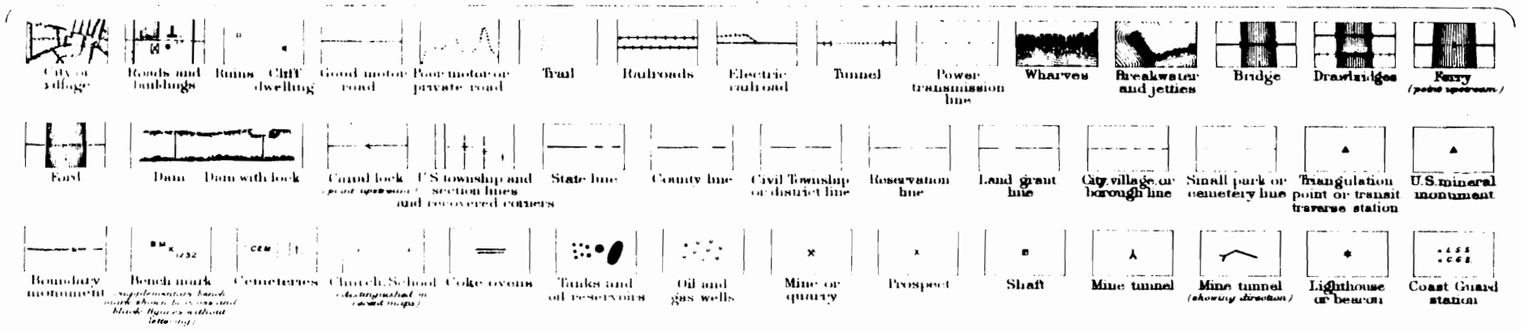
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

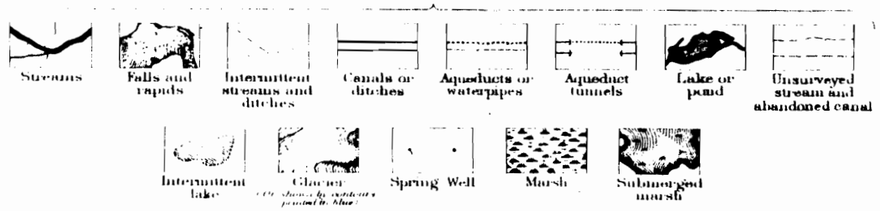
STANDARD SYMBOLS

CULTURE
(printed in black)



RELIEF
(printed in brown)

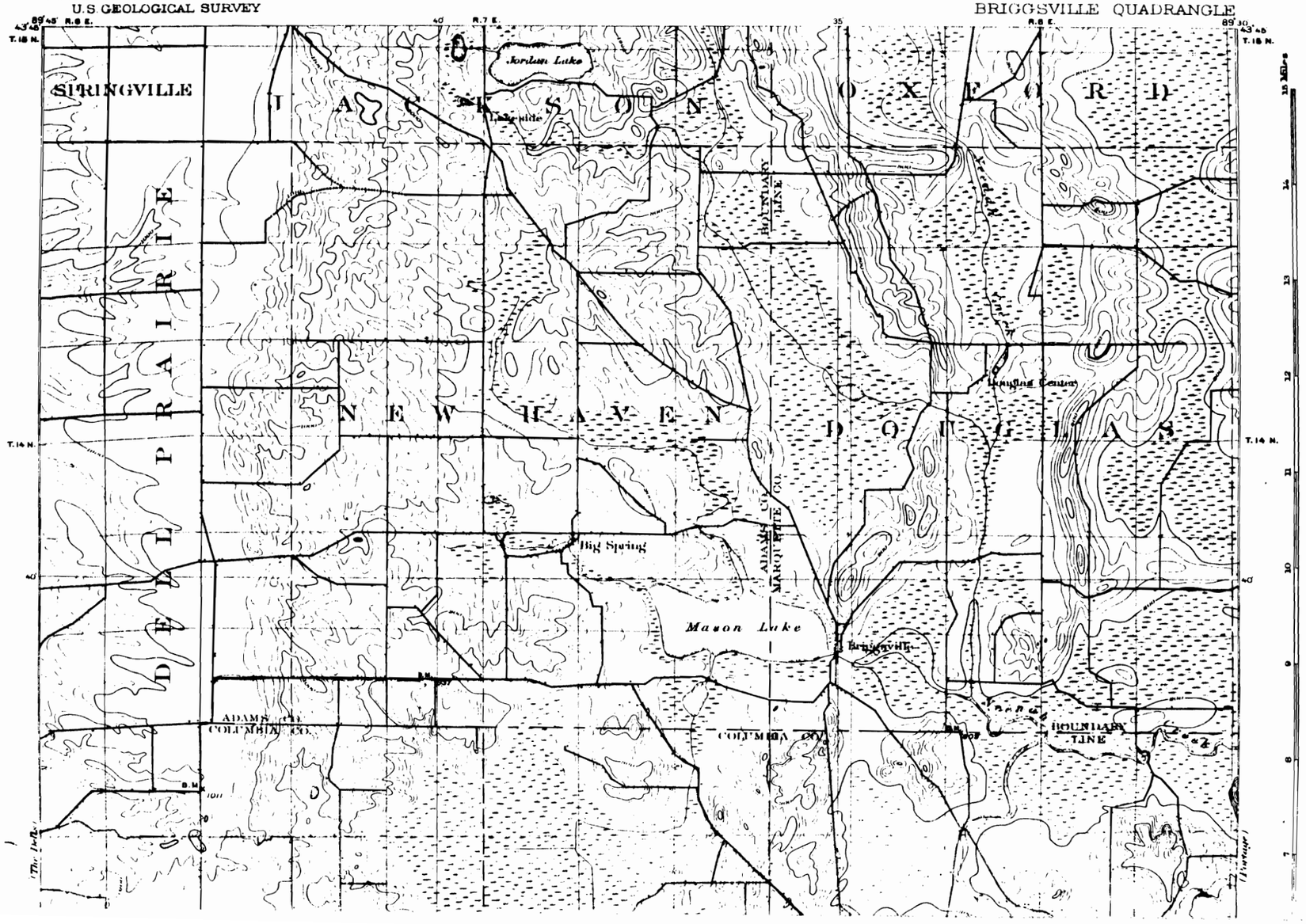
WATER
(printed in blue)

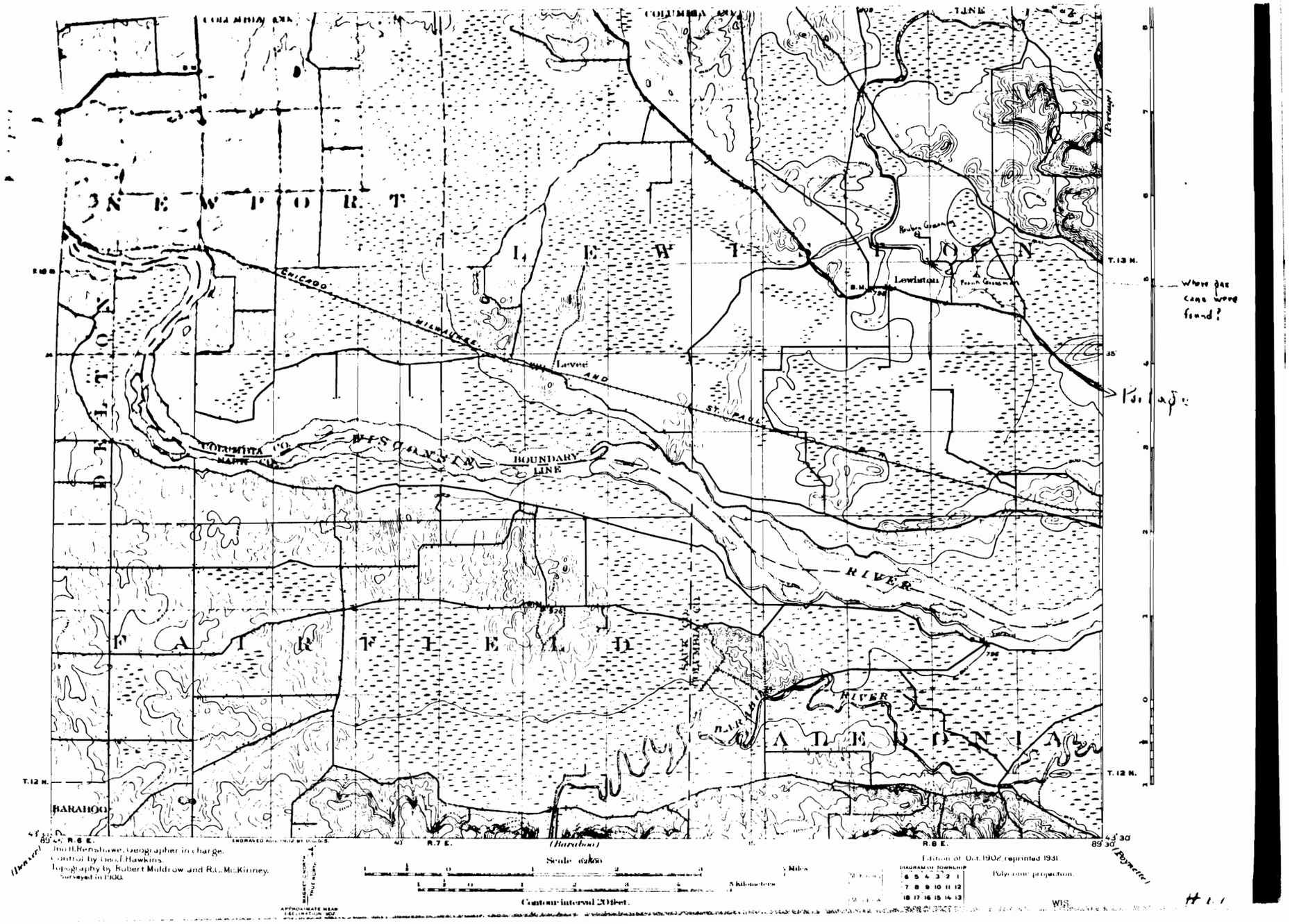


WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
BRIGGSVILLE QUADRANGLE




NEWPORT
LEWIS
FAIRFIELD
GARFIELD
Chicago, Milwaukee & St. Paul R'y
Columbia & Nez Perce Co.
Latah & Nez Perce Co.
BOUNDARY LINE
Lewiston
Levee
Reubens Grave
Fourth Cemetery
B.M. 726
T. 13 N.
T. 12 N.
R. 6 E.
R. 7 E.
(Hurricane)
(Uniontown)
(Peterson)
Where gas cans were found?
Scale 62500
Miles
Kilometers
Contour interval 20 feet.
Edition of Oct. 1902 reprinted 1931
Polyconic projection.
DIAGRAM OF TOWNSHIP
Surveyed in 1900.
Control by Geo. F. Hawkins.
Topography by Robert Muldrow and R.L. McKinney.
Jno. H. Renshawe, Geographer in charge.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a topographic atlas of the United States. This work has been in progress since 1882, and more than 38 per cent of the area of the country, excluding outlying possessions, has now been mapped. The areas mapped are widely distributed, every State being represented, as shown on the progress maps accompanying each annual report of the Director.

This atlas is being published in sheets of convenient size, about 16½ by 20 inches. The four-sided area of land represented on an atlas sheet is bounded by parallels and meridians and is called a *quadrangle*. The quadrangles mapped cover 1° of latitude by 1° of longitude, 30′ of latitude by 30′ of longitude, 15′ of latitude by 15′ of longitude, or smaller areas, the size of the area mapped depending on the scale used. Several scales are employed. The smallest scale, that used for quadrangles covering 1°, is 1:250,000, or very nearly 4 miles to an inch—that is, 4 linear miles on the ground is represented by 1 linear inch on the map. This scale is used for maps of the desert regions and some other parts of the far West. For the greater part of the country, which is mapped by quadrangles covering 30′, a larger scale, 1:125,000, or about 2 miles to an inch, is employed. A still larger scale, 1:62,500, or about a mile to an inch, is used for quadrangles covering 15′, the unit selected for mapping thickly settled or industrially important areas. A fourth scale, 1:31,680, or one-half mile to an inch, is employed for maps that are to be used in connection with irrigation or drainage, and a few maps of mining districts are published on still larger scales.

A topographic survey of Alaska has been in progress since 1898 and nearly 30 per cent of its entire area has now been mapped. One-third of the area mapped, or 10 per cent of the Territory, has been covered only by reconnaissance work, the results of which have been mapped on a scale of about 10 miles to an inch. The maps of nearly all the remaining two-thirds of the surveyed area have been published on a scale of 1:250,000, or about 4 miles to an inch. These maps are large, each representing 2° of latitude by 4° of longitude. A few areas that are of economic importance, aggregating about 5,000 square miles, have been surveyed in greater detail and mapped on a scale of 1:62,500, or about a mile to an inch.

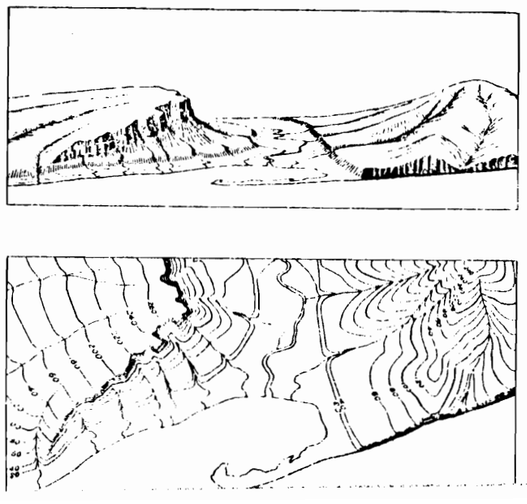
A survey of the Hawaiian Islands was begun in 1910 and the resulting maps are being published on a scale of 1:62,500.

The features shown on these atlas sheets or maps may be

All water features are printed in *blue*, the smaller streams and canals in full blue lines and the larger streams, lakes, and the sea in blue water-lining. Intermittent streams—those whose beds are dry at least three months in the year—are shown by lines of dots and dashes.

Relief is shown by contour lines in *brown*. A contour on the ground passes through points that have the same altitude. One who follows a contour will go neither uphill nor downhill but on a level. The contour lines on the map show not only the shapes of the hills, mountains, and valleys but also their elevations. The line of the sea coast itself is a contour line, the datum or zero of elevation being mean sea level. The contour at, say, 20 feet above sea level would be the shore line if the sea were to rise or the land to sink 20 feet. On a gentle slope this contour is far from the present coast; on a steep slope it is near the coast. Where successive contour lines are far apart on the map they indicate a gentle slope; where they are close together they indicate a steep slope; and where they run together in one line they indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



by a sea cliff. The hill on the left terminates abruptly at the valley in a steep scarp. It slopes gradually back away from the scarp and forms an inclined table-land, which is traversed by a few shallow gullies. On the map each of these features is indicated, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures stating elevation above sea level. The heights of many points, such as road corners, summits, surfaces of lakes, and bench marks, are also given on the map in figures, which express the elevations to the nearest foot only. More exact elevations of bench marks, as well as geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey. A bulletin pertaining to any State may be had on application.

The works of man are shown in *black*, in which color all lettering also is printed. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public and through roads are shown by fine double lines; private and poor roads by dashed double lines; trails by dashed single lines.

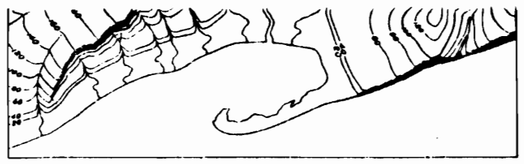
Each quadrangle mapped for the topographic atlas is designated by the name of a principal town or of some prominent natural feature within the quadrangle, and on the margins of the maps are printed the names of adjoining quadrangles for which atlas sheets have been published or are in preparation. The sheets are sold at 10 cents each in lots of less than 50 copies or at 6 cents each in lots of 50 or more copies, whether of the same or of different sheets.

The topographic map is the base on which the geology and the mineral resources of a quadrangle are represented, the maps showing these features being bound together, with a description of the quadrangle, to form a folio of the Geologic Atlas of the United States. Circulars showing by index maps the published topographic atlas sheets and geologic folios covering any State or region will be sent free on application.

areas that are of economic importance, aggregating about 3,000 square miles, have been surveyed in greater detail and mapped on a scale of 1:62,500, or about a mile to an inch.

A survey of the Hawaiian Islands was begun in 1910 and the resulting maps are being published on a scale of 1:62,500.

The features shown on these atlas sheets or maps may be classed in three groups—(1) *water*, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) *relief*, including mountains, hills, valleys, and other elevations and depressions; (3) *culture* (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used for these features are shown below, with explanations. Variations appear on some earlier maps.



The sketch represents a river valley between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends

[illegible] quadrangle are represented, the maps showing these features being bound together, with a description of the quadrangle, to form a folio of the Geologic Atlas of the United States. Circulars showing by index maps the published topographic atlas sheets and geologic folios covering any State or region will be sent free on application.

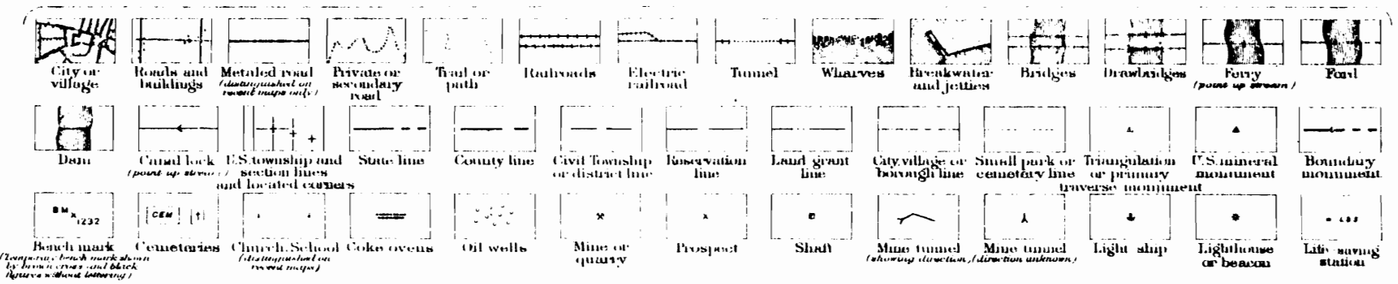
Applications for maps or folios should be accompanied by cash—the exact amount—or by post-office money order and should be addressed to—

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1913.

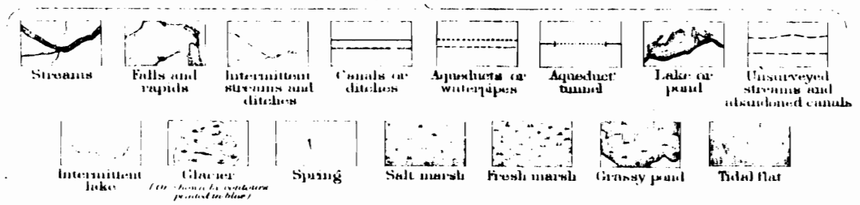
CONVENTIONAL SIGNS

CULTURE
(printed in black)



RELIEF
(printed in brown)

WATER
(printed in blue)

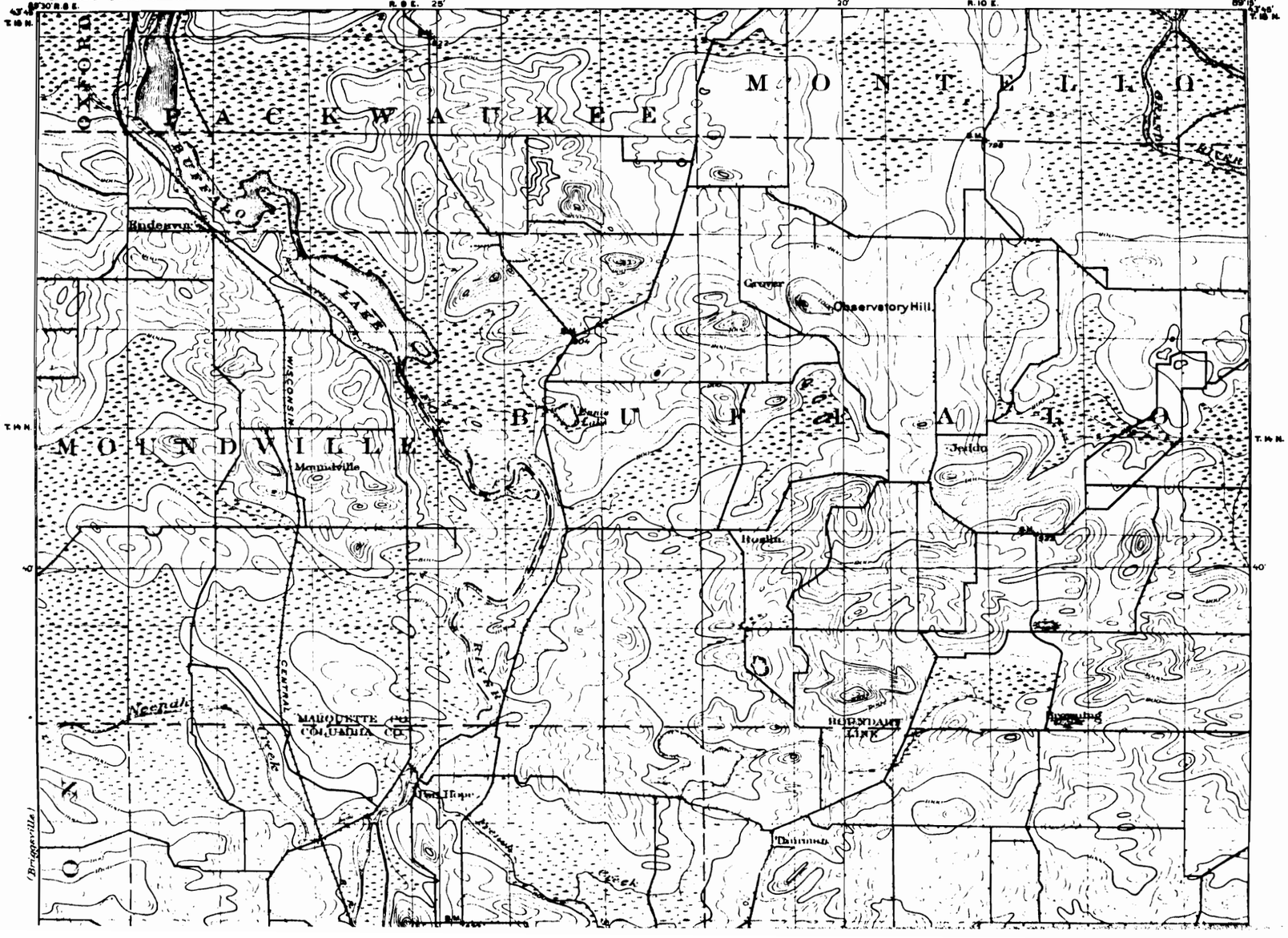


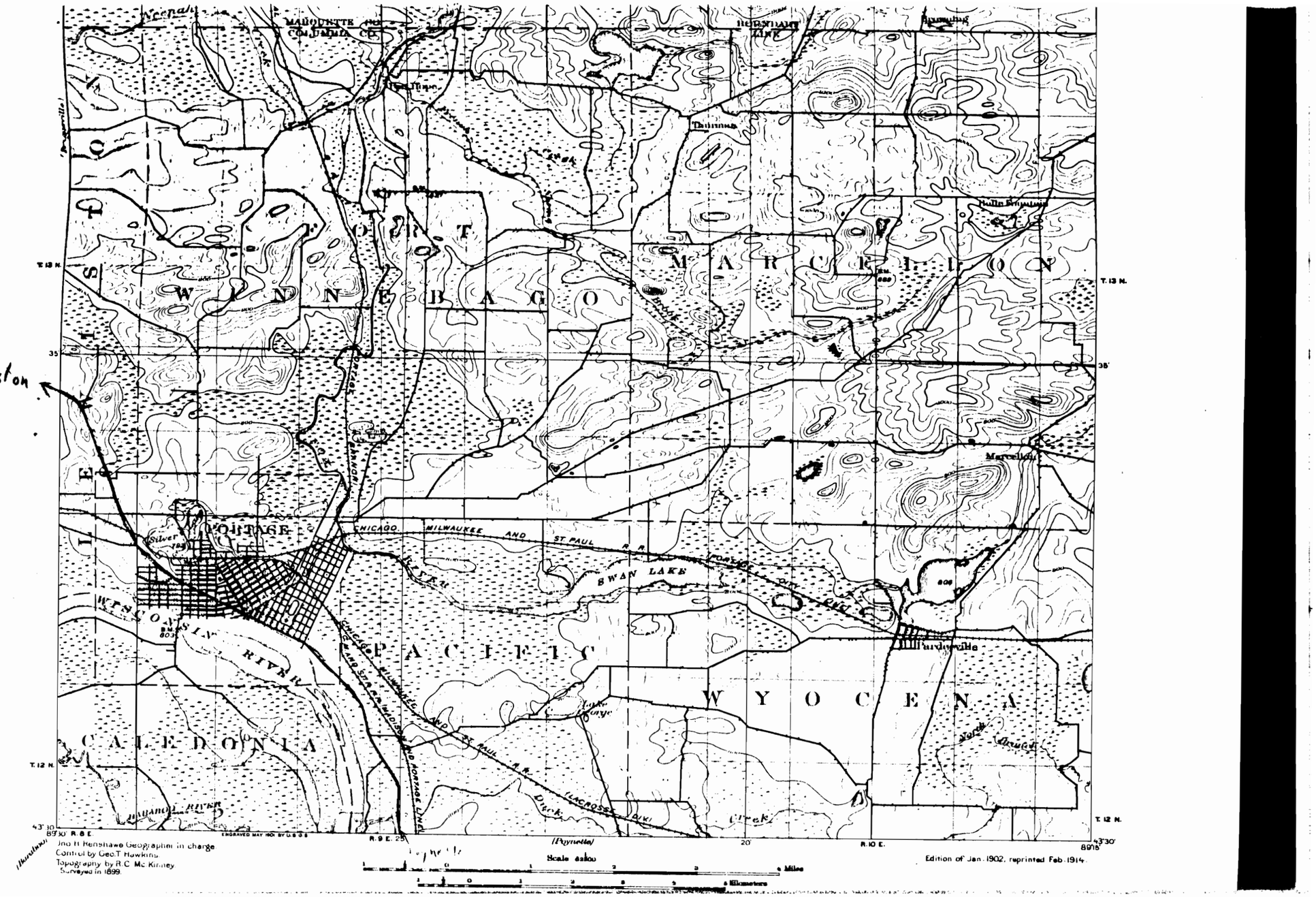
WOODS
(when shown, printed in green)

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

WISCONSIN
PORTAGE QUADRANGLE




Lewiston
PORTAGE
CALEDONIA
WYOCENA
MARQUETTE
COLUMBIA CO.
Dalmanutha
Hollis Reynolds
Marcellon
Lodi
Silver Lake
Fairdale
Duck Creek
Lake Onyx
North Branch
Swan Lake
Wisconsin River
Lemonweir River
Chicago, Milwaukee and St. Paul R.R.
Chicago, Milwaukee and St. Paul R.R.
Portage Canal
Portage Levee
Portage Levee
Chicago and Northwestern R.R.
Chicago and Northwestern R.R.
Portage Canal
Wisconsin River
Lemonweir River
Duck Creek
(Portage)
(Lewiston)
T. 13 N.
T. 12 N.
R. 9 E.
R. 10 E.
20
25
35
43° 30'
89° 30'
89° 15'
Jno. H. Renshawe Geographer in charge
Control by Geo. T. Hawkins
Topography by R. C. McKinney
Surveyed in 1899.
Engraved May 1901 by U.S.G.S.
Scale 1:62500
Edition of Jan. 1902, reprinted Feb. 1914.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a topographic atlas of the United States. This work has been in progress since 1882, and more than 38 per cent of the area of the country, excluding outlying possessions, has now been mapped. The areas mapped are widely distributed, every State being represented, as shown on the progress maps accompanying each annual report of the Director.

This atlas is being published in sheets of convenient size, about 16½ by 20 inches. The four-sided area of land represented on an atlas sheet is bounded by parallels and meridians and is called a *quadrangle*. The quadrangles mapped cover 1° of latitude by 1° of longitude, 30′ of latitude by 30′ of longitude, 15′ of latitude by 15′ of longitude, or smaller areas, the size of the area mapped depending on the scale used. Several scales are employed. The smallest scale, that used for quadrangles covering 1°, is 1:250,000, or very nearly 4 miles to an inch—that is, 4 linear miles on the ground is represented by 1 linear inch on the map. This scale is used for maps of the desert regions and some other parts of the far West. For the greater part of the country, which is mapped by quadrangles covering 30′, a larger scale, 1:125,000, or about 2 miles to an inch, is employed. A still larger scale, 1:62,500, or about a mile to an inch, is used for quadrangles covering 15′, the unit selected for mapping thickly settled or industrially important areas. A fourth scale, 1:31,680, or one-half mile to an inch, is employed for maps that are to be used in connection with irrigation or drainage, and a few maps of mining districts are published on still larger scales.

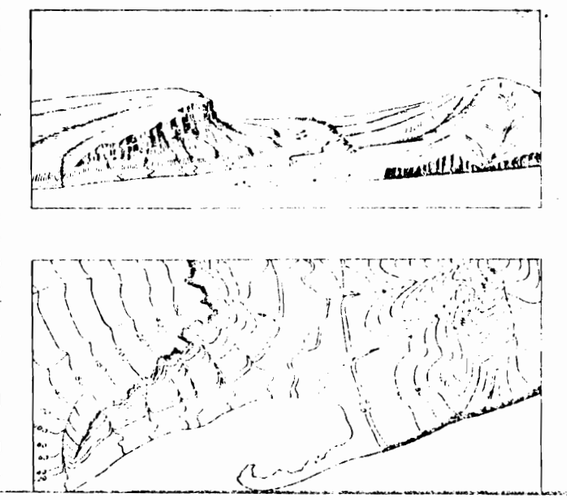
A topographic survey of Alaska has been in progress since 1898 and nearly 30 per cent of its entire area has now been mapped. One-third of the area mapped, or 10 per cent of the Territory, has been covered only by reconnaissance work, the results of which have been mapped on a scale of about 10 miles to an inch. The maps of nearly all the remaining two-thirds of the surveyed area have been published on a scale of 1:250,000, or about 4 miles to an inch. These maps are large, each representing 2° of latitude by 4° of longitude. A few areas that are of economic importance, aggregating about 3,000 square miles, have been surveyed in greater detail and mapped on a scale of 1:62,500, or about a mile to an inch.

A survey of the Hawaiian Islands was begun in 1910 and the resulting maps are being published on a scale of 1:62,500.

All water features are printed in *blue*, the smaller streams and canals in full blue lines and the larger streams, lakes, and the sea in blue water-lining. Intermittent streams—those whose beds are dry at least three months in the year—are shown by lines of dots and dashes.

Relief is shown by contour lines in *brown*. A contour on the ground passes through points that have the same altitude. One who follows a contour will go neither uphill nor downhill but on a level. The contour lines on the map show not only the shapes of the hills, mountains, and valleys but also their elevations. The line of the sea coast itself is a contour line, the datum or zero of elevation being mean sea level. The contour at, say, 20 feet above sea level would be the shore line if the sea were to rise or the land to sink 20 feet. On a gentle slope this contour is far from the present coast; on a steep slope it is near the coast. Where successive contour lines are far apart on the map they indicate a gentle slope; where they are close together they indicate a steep slope; and where they run together in one line they indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures stating elevation above sea level. The heights of many points, such as road corners, summits, surfaces of lakes, and bench marks, are also given on the map in figures, which express the elevations to the nearest foot only. More exact elevations of bench marks, as well as geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey. A bulletin pertaining to any State may be had on application.

The works of man are shown in *black*, in which color all lettering also is printed. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public and through roads are shown by fine double lines; private and poor roads by dashed double lines; trails by dashed single lines.

Each quadrangle mapped for the topographic atlas is designated by the name of a principal town or of some prominent natural feature within the quadrangle, and on the margins of the maps are printed the names of adjoining quadrangles for which atlas sheets have been published or are in preparation. The sheets are sold at 10 cents each in lots of less than 50 copies or at 6 cents each in lots of 50 or more copies, whether of the same or of different sheets.

The topographic map is the base on which the geology and the mineral resources of a quadrangle are represented, the maps showing these features being bound together, with a description of the quadrangle, to form a folio of the Geologic Atlas of the United States. Circulars showing by index maps the published topographic atlas sheets and geologic folios covering any State or region will be sent free on application.

Orders for these maps or folios should be accompanied by

areas that are of economic importance, aggregating about 3,000 square miles, have been surveyed in greater detail and mapped on a scale of 1:62,500, or about a mile to an inch.

A survey of the Hawaiian Islands was begun in 1910 and the resulting maps are being published on a scale of 1:62,500.

The features shown on these atlas sheets or maps may be classed in three groups—(1) *water*, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) *relief*, including mountains, hills, valleys, and other elevations and depressions; (3) *culture* (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used for these features are shown below, with explanations. Variations appear on some earlier maps.

The sketch represents a river valley between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends

showing these features being bound together, with a description of the quadrangle, to form a folio of the Geologic Atlas of the United States. Circulars showing by index maps the published topographic atlas sheets and geologic folios covering any State or region will be sent free on application.

Applications for maps or folios should be accompanied by cash—the exact amount—or by post-office money order (not postage stamps), and should be addressed to—

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1915.

CONVENTIONAL SIGNS

CULTURE
(printed in black)

RELIEF
(printed in brown)

WATER
(printed in blue)

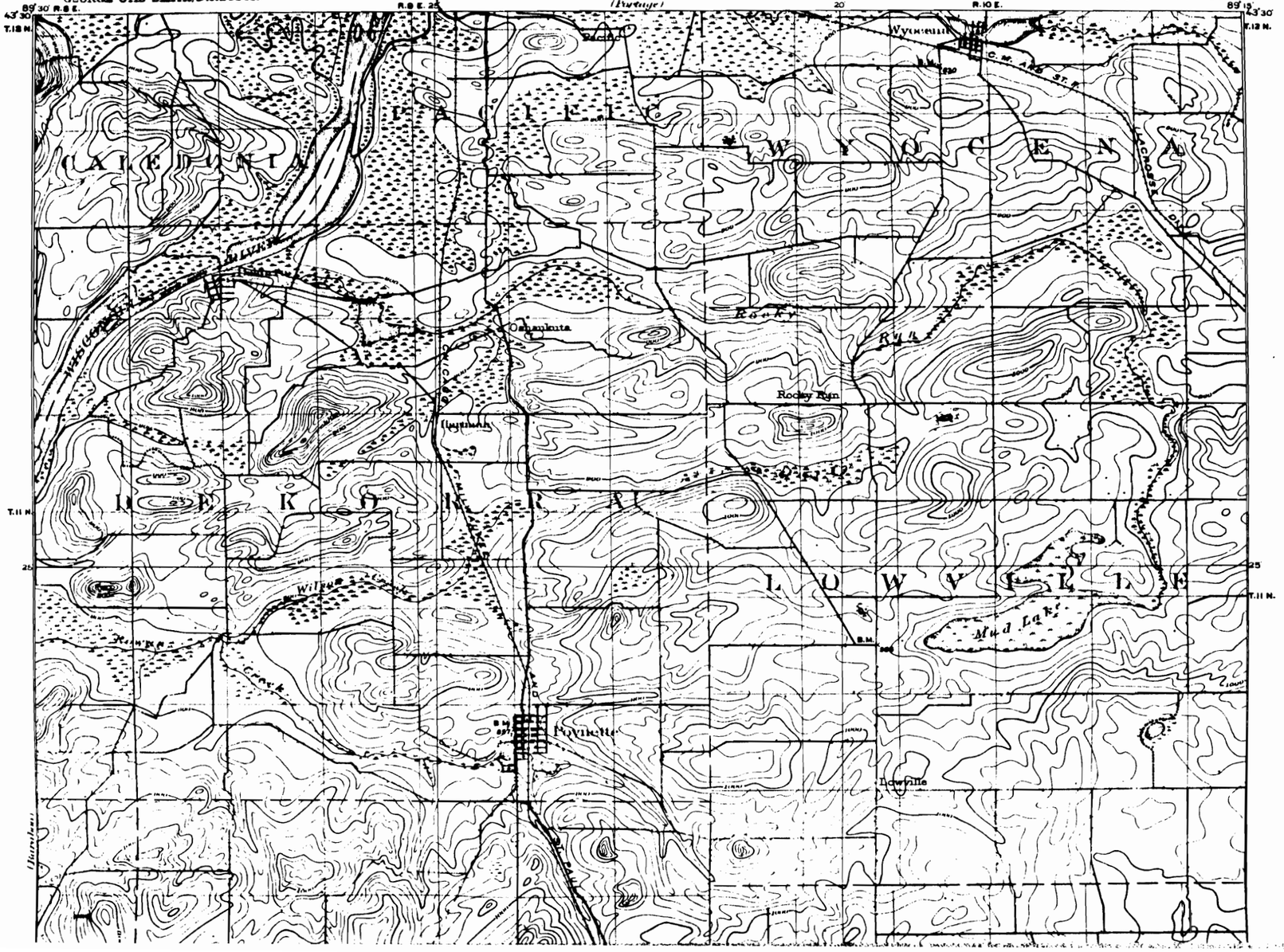
WOODS
(when shown, printed in green)

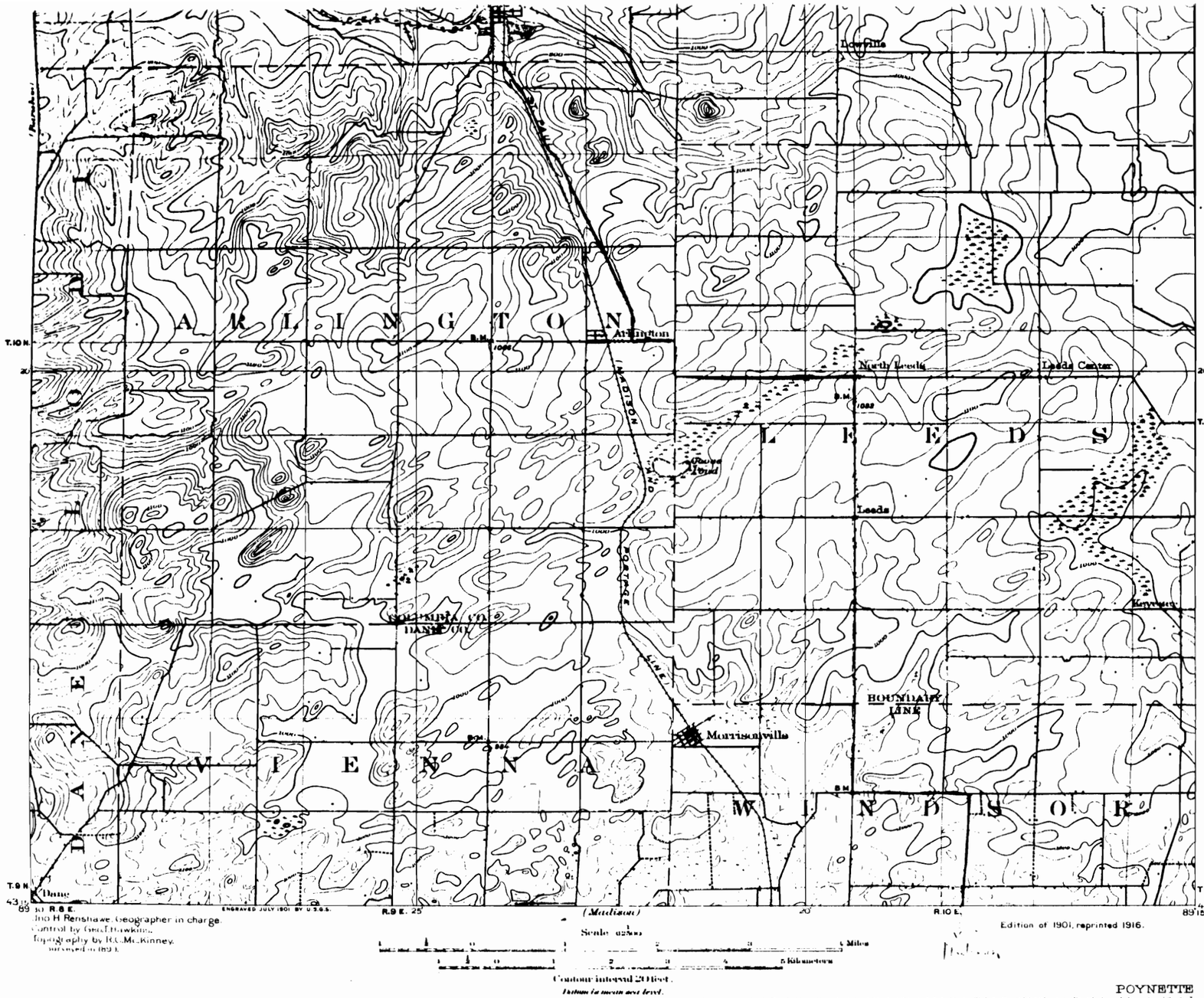
DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, SECRETARY
U. S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

Portage

TOPOGRAPHY
(Drainage)

WISCONSIN
POYNETTE QUADRANGLE




A L L I N G T O N
L E E D S
D E N M A R K
W I N N E B A G O
Dane
Arlington
North Leeds
Leeds Center
Leeds
Kaycreek
Morrisonville
BOUNDARY LINE
COLUMBIA CO.
DANE CO.
MADISON
POYNETTE
T.10 N.
T.9 N.
R.9 E. 25
R.10 E.
20
(Madison)
Scale 62500
1 0 1 2 3 4 Miles
1 0 1 2 3 4 5 Kilometers
Contour interval 20 feet.
Datum is mean sea level.
ENGRAVED JULY 1901 BY U.S.G.S.
Edition of 1901, reprinted 1916.
Ino H. Renshawe, Geographer in charge.
Control by Geo. T. Hawkins.
Topography by R.C. McKinney.
surveyed in 1901.

#12

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

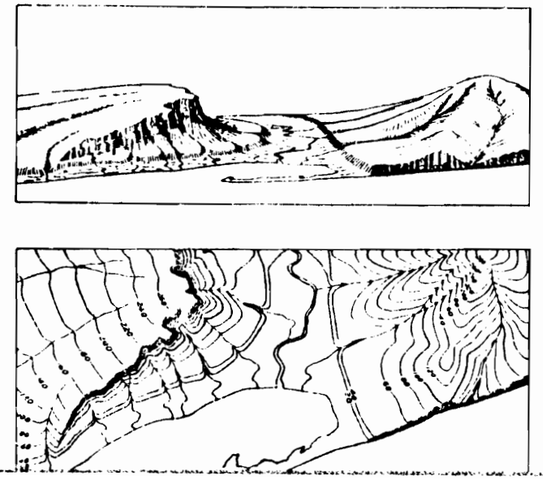
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of [illegible], but about 4,000 square miles

boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be [illegible]

public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

States. More than 300 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

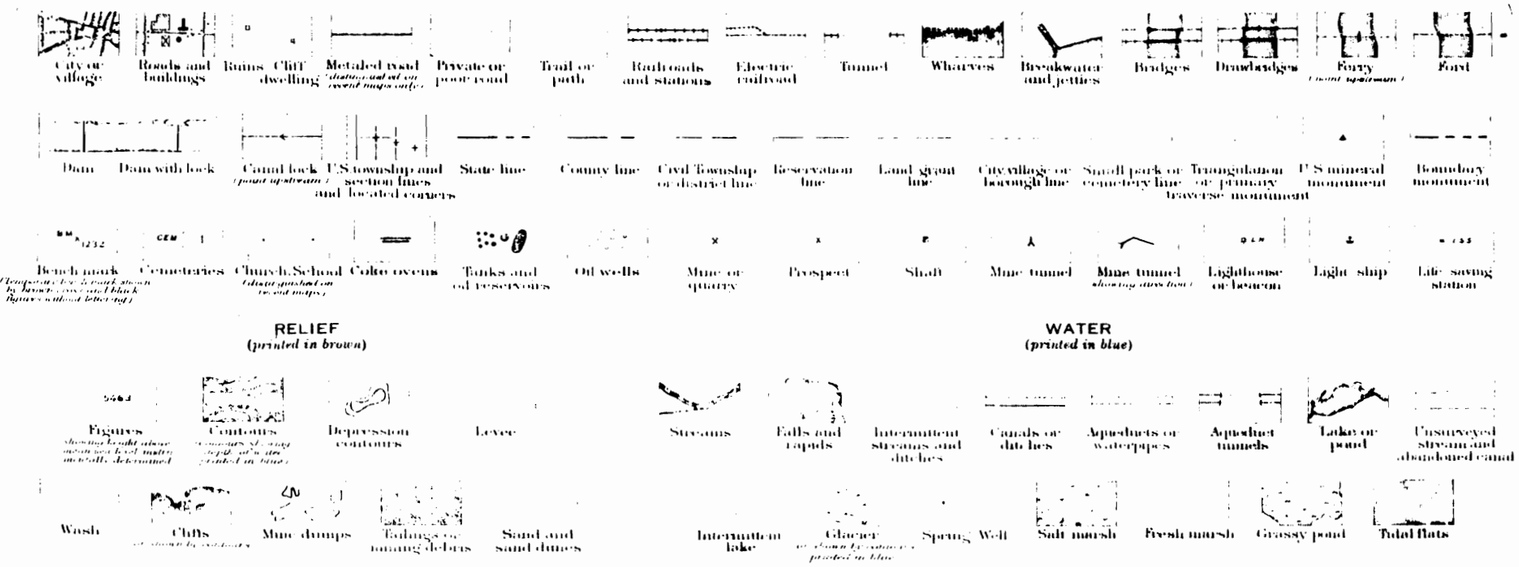
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1924.

CONVENTIONAL SIGNS

CULTURE
(printed in black)



RELIEF
(printed in brown)

WATER
(printed in blue)

WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

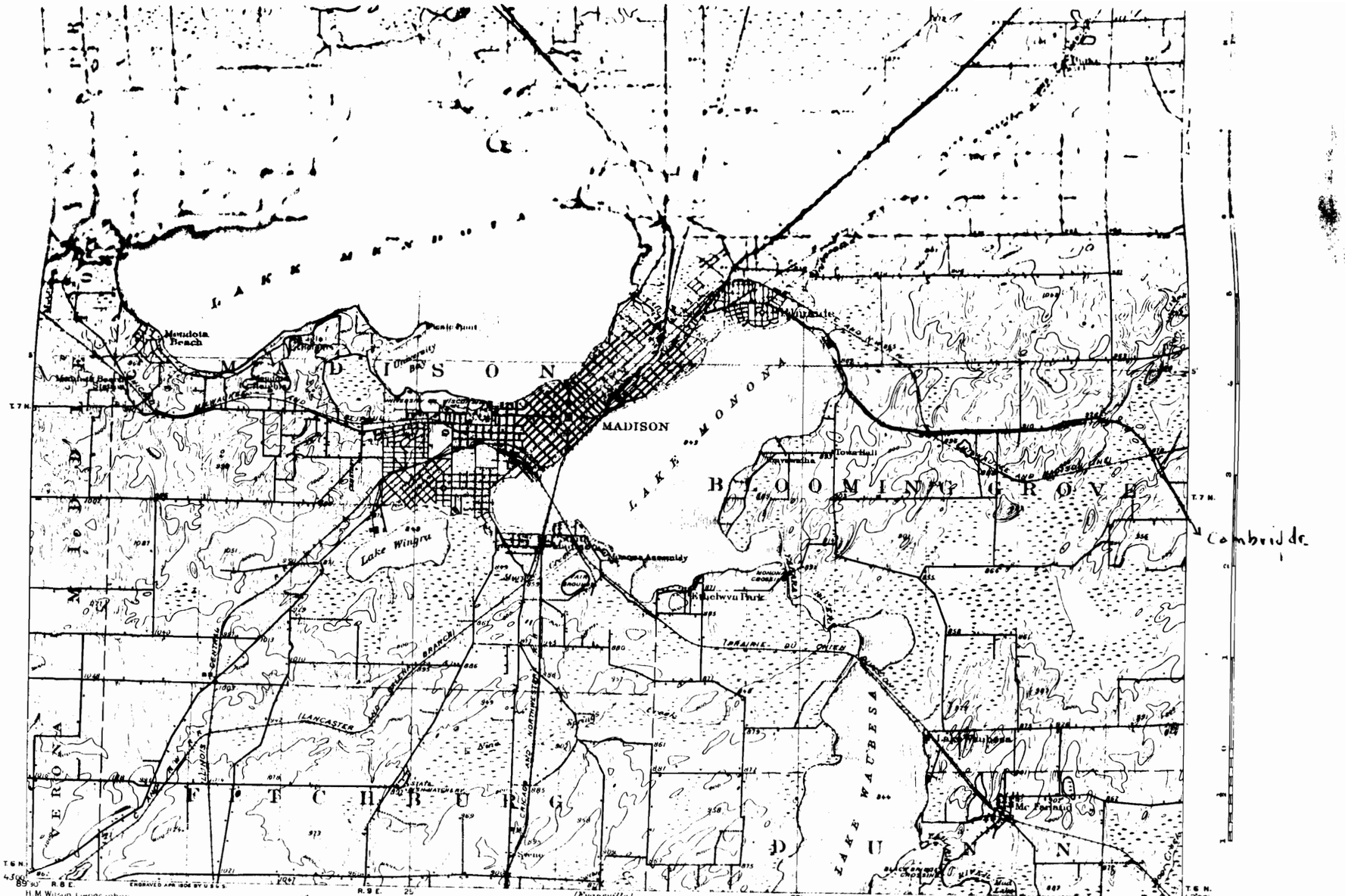
Paynette

WISCONSIN
(DANE COUNTY)
MADISON QUADRANGLE

89°30'
89°15'
43°15'
R.9 E.
R.10 E.
T.9 N.
T.8 N.
25'
20'
15 Mile

VIENNA
WINDSOR
SPRINGFIELD
WESTPORT
BURKE

Dane
Paynette
Liberty Grove
Dr. Burrell
Windsor
Sunnkoe
Seaside
Kilkenny
Thurber
Farwells Point
Governors Island
Maple Bluff
Madison
Lake Mendota
Lake Monona
Yahara River
Catfish Creek
Starkweather Creek
Milwaukee River
Oregon Junction
Cross Plains



H. M. Wilson, Geographer
Robert Muldrow in charge of section
Topography by Robert Muldrow
Control by U. S. Coast and Geodetic Survey,
and Guy T. Hawkins
Surveyed in 1906

#11

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps or atlas sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for any quadrangle depending on its nature and its probable future development, and consequently though the standard atlas sheets are of nearly uniform size they represent areas of different sizes. On the lower margin of each sheet are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

The standard scales used on these maps are multiples of the fraction $\frac{1}{125,000}$. Quadrangles in thickly settled or industrially important regions are mapped on a scale of $\frac{1}{62,500}$ or about 1 mile to an inch, and cover areas measuring 15′ in latitude and longitude. Quadrangles in less thickly settled or industrially less important districts are mapped on a scale of $\frac{1}{125,000}$ or about 2 miles to an inch, and cover areas measuring 30′ in latitude and longitude. Reconnaissance maps of desert or sparsely inhabited regions have been made on a scale of $\frac{1}{250,000}$ or about 4 miles to an inch, covering areas measuring 1° in latitude and longitude. Maps for special purposes are made on scale larger than $\frac{1}{62,500}$.

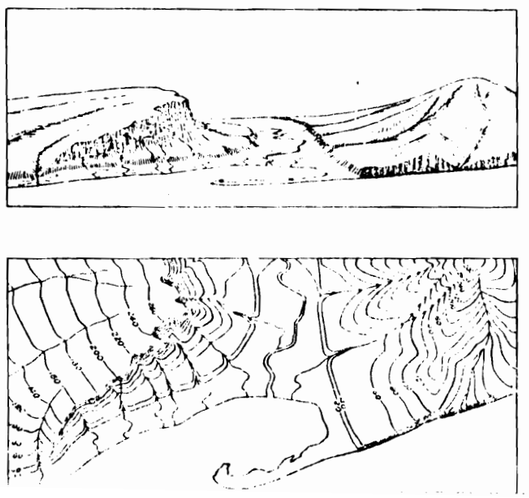
A topographic survey of Alaska has been in progress since 1898, and nearly 35 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$ but about 3,500 square miles has been mapped on a scale of $\frac{1}{62,500}$.

A large part of the Hawaiian Islands has been surveyed,

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in mapping only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour, for example, would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins that are issued free by the Geological Survey.

The lettering and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,800 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price

About 10 per cent of the Territory had been mapped by reconnaissance maps on a scale of $\frac{1}{250,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{62,500}$, but about 8,500 square miles has been mapped on a scale of $\frac{1}{125,000}$.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November, 1919.

CONVENTIONAL SIGNS

CULTURE
(printed in black)

City or village
Roads and buildings
Ruins
Cliff dwelling
Metalled road *(distinguished on recent maps only)*
Private or poor road
Trail or path
Railroads and stations
Electric railroad
Tunnel
Wharves
Breakwater and jetties
Bridges
Drawbridges
Ferry *(route upstream)*
Ford
Dam
Dam with lock
Canal lock *(point upstream)*
U.S. township and section lines and located corners
State line
County line
Civil township or district line
Reservation line
Land grant line
City, village or borough line
Small park or cemetery line
Triangulation or primary traverse monument
U.S. mineral monument
Boundary monument
Beach mark *(Temporary bench mark shown by brass cross and black figures without lettering)*
Cemeteries
Church, School *(distinguished on recent maps)*
Coke ovens
Tanks and oil reservoirs
Oil wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Mine tunnel *(showing direction)*
Lighthouse or beacon
Lightship
Life saving station

RELIEF
(printed in brown)

Figures *(showing height above mean sea level unless otherwise determined)*
Contours *(Contours showing depth of water printed in blue)*
Depression contours
Levee
Wash
Cliffs
Mine dumps
Tailings or mining debris
Sand and sand dunes

WATER
(printed in blue)

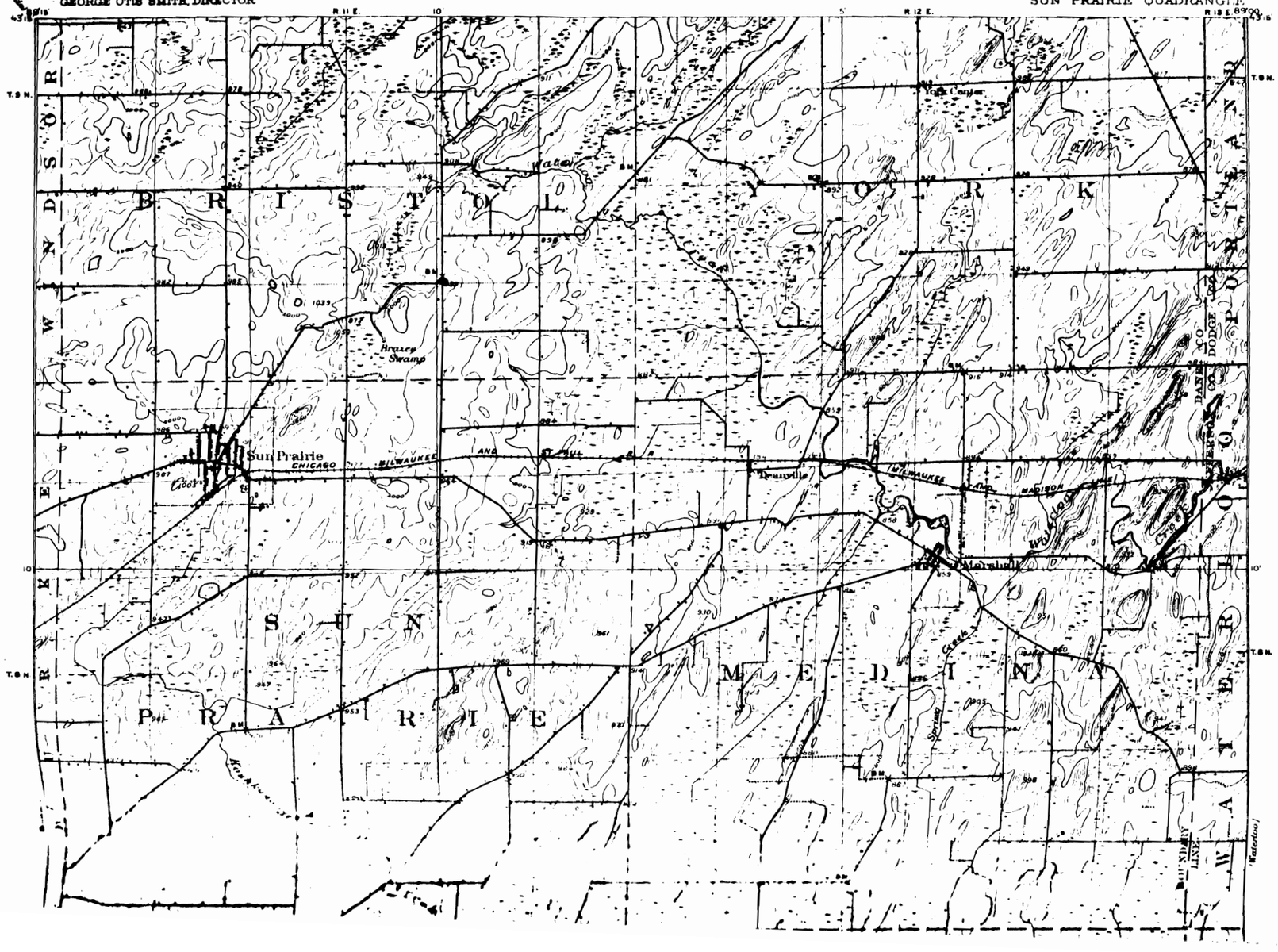
Streams
Falls and rapids
Intermittent streams and ditches
Canals or ditches
Aqueducts or waterpipes
Aqueduct tunnels
Lake or pond
Unsurveyed stream and abandoned canal
Intermittent Lake
Glacier *(ice shown by contours printed in blue)*
Spring
Well
Salt marsh
Fresh marsh
Grassy pond
Tidal flats

WOODS
(when shown, printed in green)

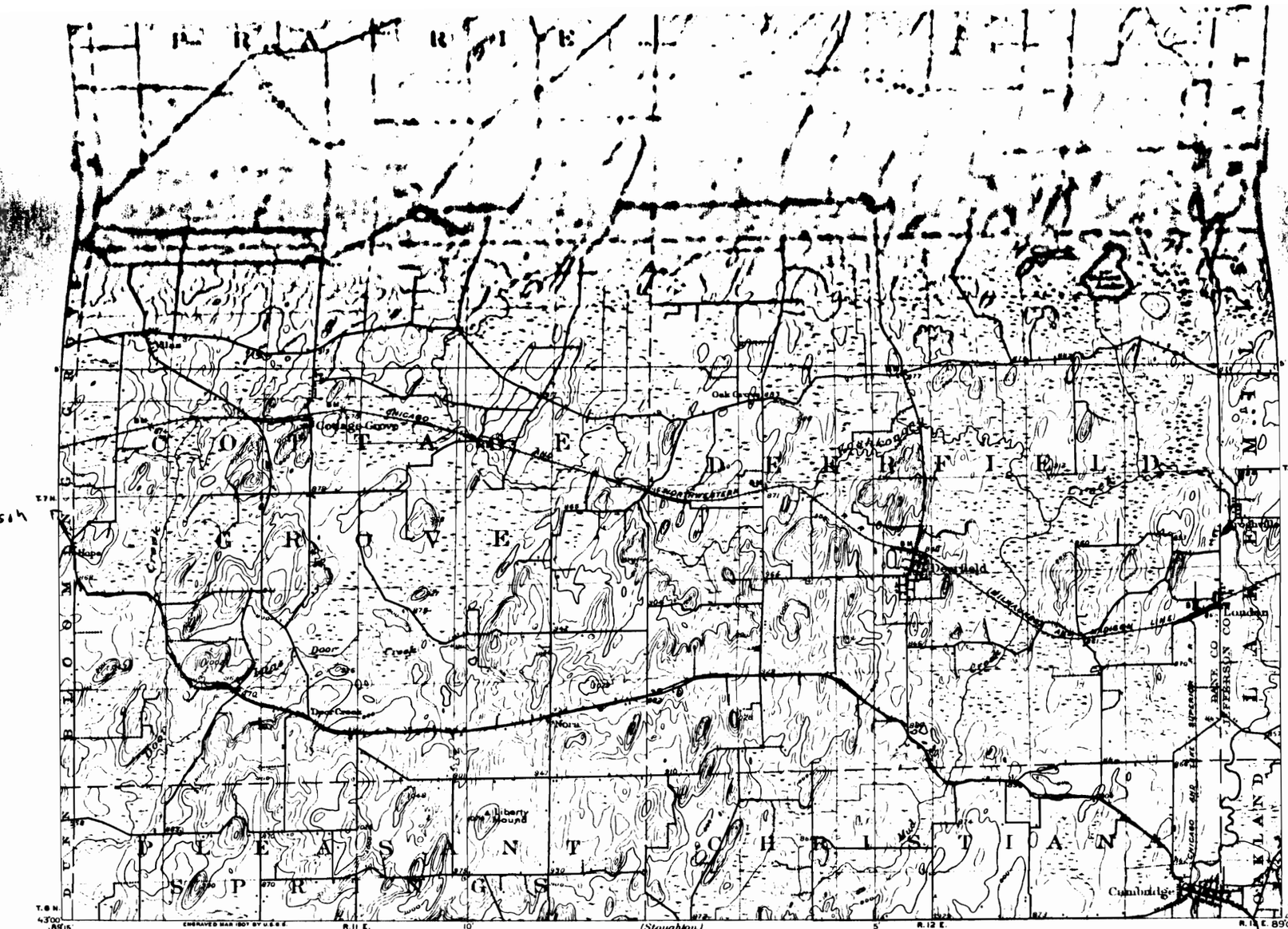
DEPARTMENT OF THE INTERIOR
ALBERT B. FALL, SECRETARY
U. S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

WISCONSIN
SUN PRAIRIE QUADRANGLE



Madison



SUN PRAIRIE

#10

THE TOPOGRAPHIC MAPS OF THE U

The United States Geological Survey [illegible] topographic atlas of the United States. The [illegible] published, [illegible] now [illegible] publication.

1898 and nearly 43 per cent of its area has now been mapped. About 15 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{62,500}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{125,000}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed and the resulting maps are published on a scale of [illegible]

The features shown on these maps include [illegible] and other bodies of water; [illegible] hills and mountains, and other features of the land surface [illegible]

[illegible]

A discount of 40 per cent is allowed on an order for [illegible] amounting to [illegible] at the retail price. [illegible] are sent [illegible] or most cases the purchaser pays [illegible] the [illegible] but [illegible] cent is required.

Applications for maps or folios should be accompanied by [illegible] money order must be made payable to [illegible]

THE DIRECTOR.

STANDARD SYMBOLS

[illegible]

Civil Valleys | Roads and Buildings | Bridges, Cliff dwelling | Trails | Railroads | Telegraph lines | Mines | Drainage | Swamp and marsh | Intermittent lake | Intermittent stream | Glacier | Contours

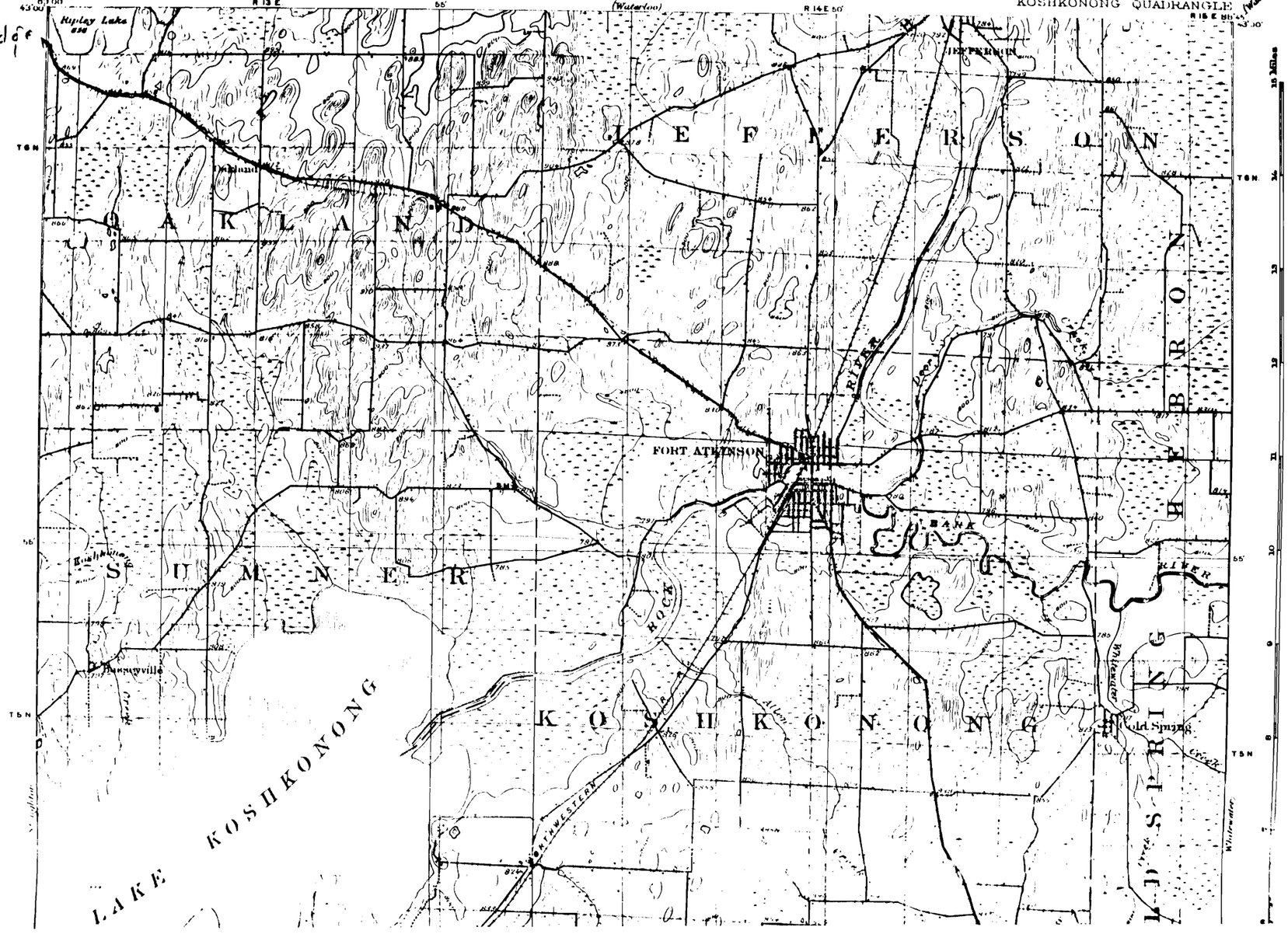
Land | Dam | Dam with locks | Canal | Wagon road | Township and range lines | State line | County line | Open pasture | Timber | Brushwood | Orchard | Vineyard | Cultivated land | Meadow | Irrigation ditch | Fence | Levee

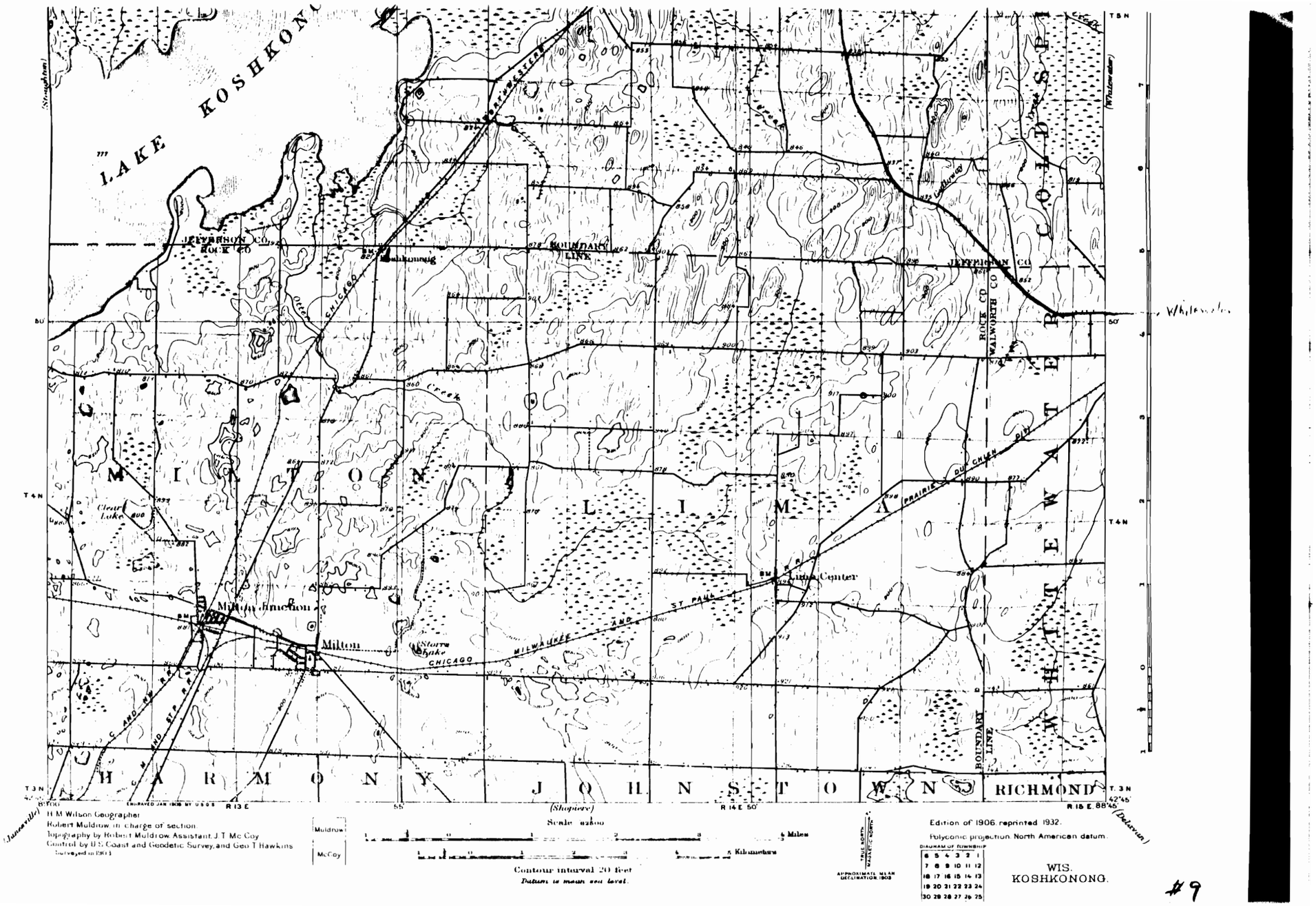
[illegible]

DEPARTMENT OF THE INTERIOR
U S GEOLOGICAL SURVEY

WISCONSIN
KOSHKONONG QUADRANGLE

Cambridge




LAKE KOSHKONONG
JEFFERSON CO.
ROCK CO.
BOUNDARY LINE
Koshkonong
CHICAGO
Creek
Clear Lake
Milton Junction
Milton
Stars Lake
MILWAUKEE AND ST PAUL
CHICAGO AND NW RR
CHICAGO AND NW RR
Cuba Center
DUC CHIEN PRAIRIE
Duc Chien Creek
(Whitewater)
ROCK CO
WALWORTH CO
JEFFERSON CO
BOUNDARY LINE
MILTON
HARMONY
JOHNSTOWN
RICHMOND
LIMA
WHITEWATER
T 4 N
T 3 N
R 13 E
R 14 E
R 15 E
88°45'
42°45'
(Janesville)
(Shopiere)
(Delavan)
ENGRAVED JAN 1908 BY U S G S
H M Wilson Geographer
Robert Muldrow in charge of section
Topography by Robert Muldrow Assistant, J T Mc Coy
Control by U S Coast and Geodetic Survey, and Geo T Hawkins
Surveyed in 1903
Muldrow
McCoy
Scale 62500
Miles
Kilometers
Contour interval 20 feet
Datum is mean sea level.
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION 1903
Edition of 1906 reprinted 1932.
Polyconic projection. North American datum.
DIAGRAM OF TOWNSHIP
6 5 4 3 2 1
7 8 9 10 11 12
18 17 16 15 14 13
19 20 21 22 23 24
30 29 28 27 26 25
WIS.
KOSHKONONG.

#9

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country and consequently, though the standard maps are of nearly uniform size, they represent areas of different extent. On the lower margin of each map are printed graphic scales showing distances in feet, metric, and miles. In addition the scale of the map is shown by a fraction expressing a given distance between two points on the map and corresponding distances on the ground. For example, the scale of a map on which 1 inch, 1 foot, or 1 [illegible] represents 62,500 inches on the earth's surface.

[illegible] surveyed and some maps are compiled [illegible] special scales for special purposes, the standard [illegible] for the United States proper and the [illegible] have for many years been divided into three [illegible]

1. [illegible] in which there are problems of great [illegible] For example, to [illegible] development [illegible] location of swamp areas are made with [illegible] in the publication of maps on a [illegible] one hundred miles, with a contour interval of [illegible] 10 feet.

2. [illegible] in which there are problems of average [illegible] such as most of the basin of the Mississippi [illegible] are made with sufficient accuracy to be used in the publication of maps on a scale of 1/125,000 (1 inch = nearly 2 miles), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor importance, such as much of the mountain or desert [illegible] of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of 1/250,000 (1 inch = nearly 4 miles), with a contour interval of 25 to 100 feet.

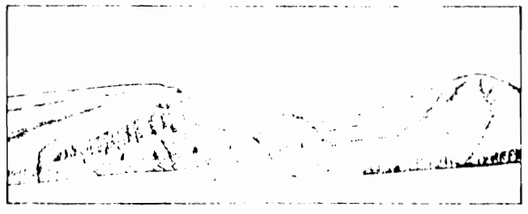
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnoissance surveys.

The conventional signs used to represent the various features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

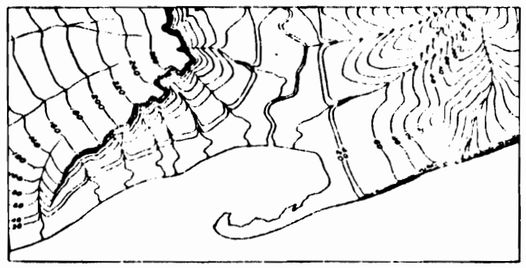
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps

purpose importance, [illegible] region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

Index maps of each State and of Alaska and Hawaii, showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

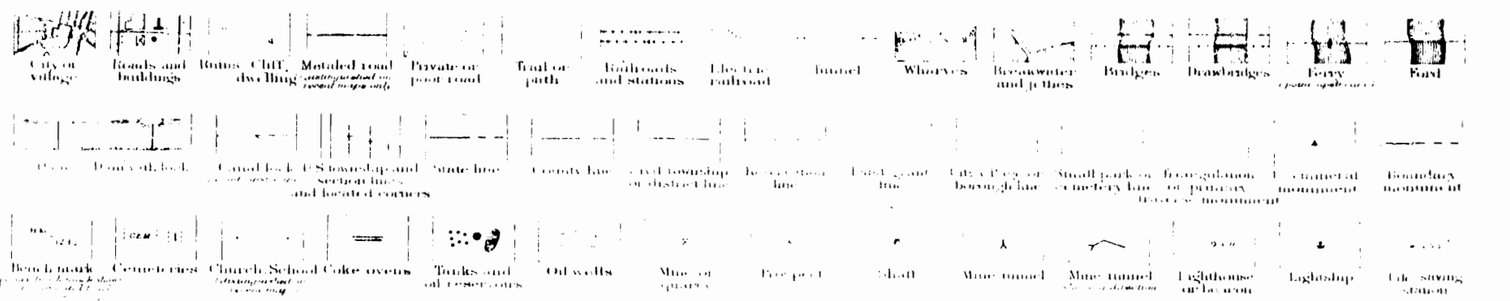
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

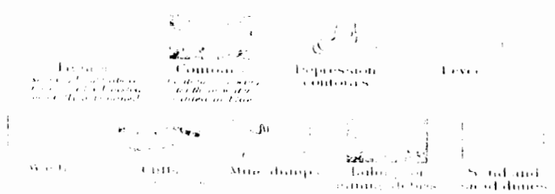
January, 1924.

CONVENTIONAL SIGNS

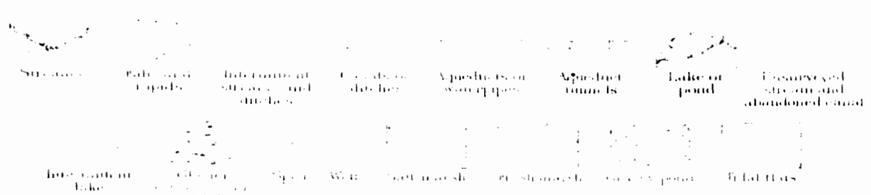
CULTURE
(printed in black)



RELIEF
(printed in brown)



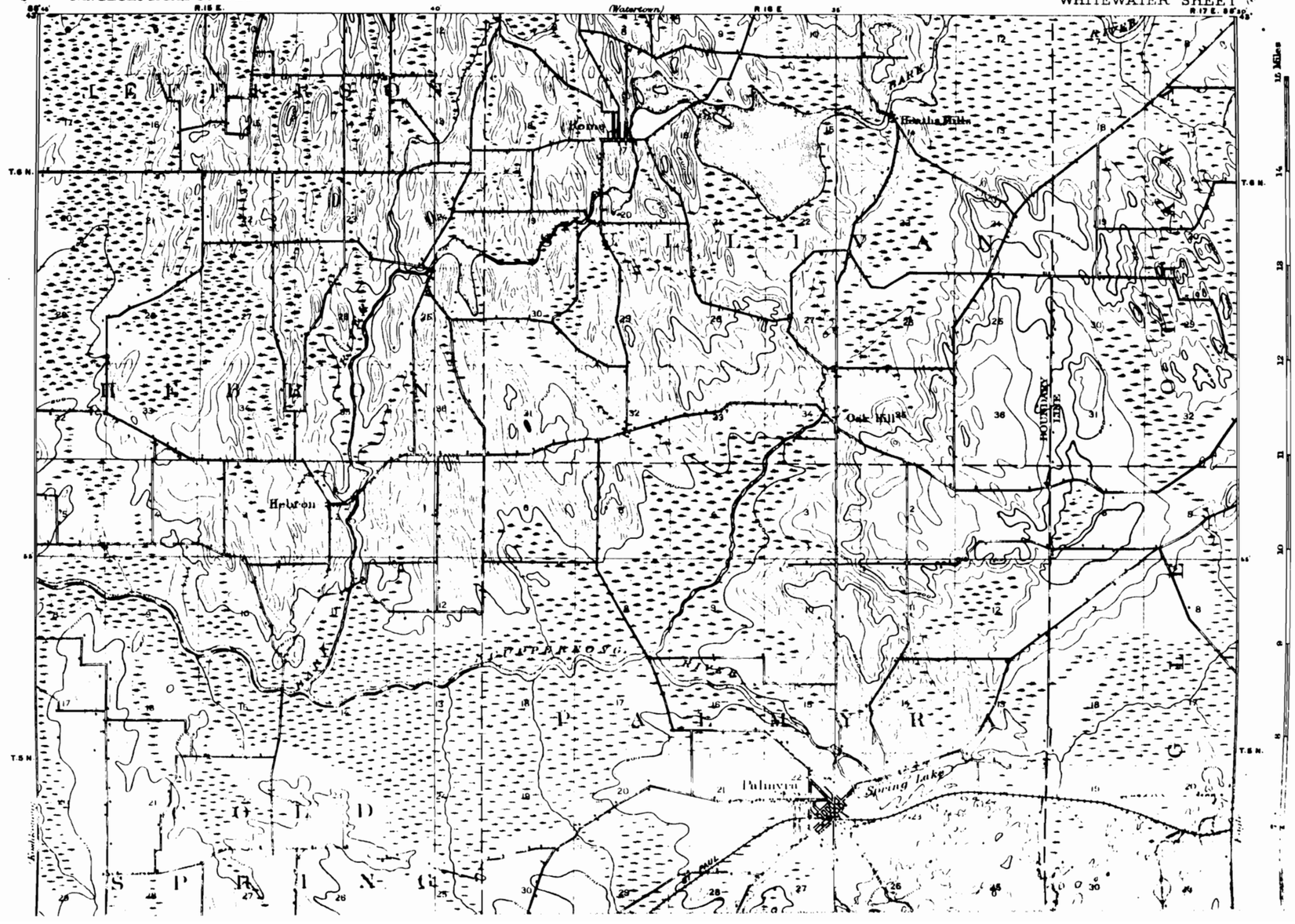
WATER
(printed in blue)

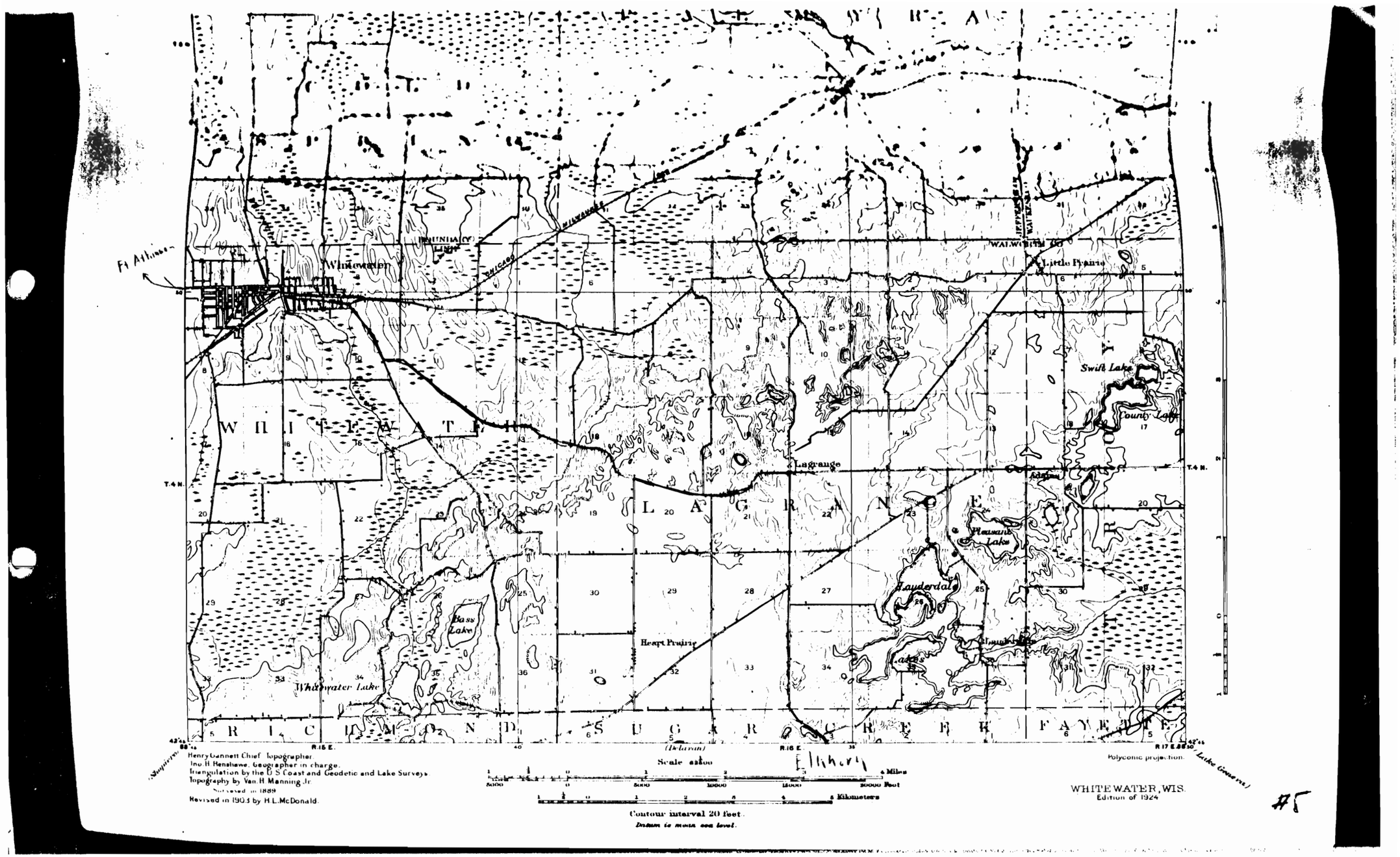


WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
WHITEWATER SHEET





Henry Gannett Chief Topographer.
Inc. H. Henshawe, Geographer in charge.
Triangulation by the U.S. Coast and Geodetic and Lake Survey.
Topography by Van H. Manning Jr.
Surveyed in 1889
Revised in 1903 by H.L. McDonald.

Scale 1:31680

1 0 1 2 3 4 Miles
5000 0 5000 10000 15000 20000 Feet
1 0 1 2 3 4 Kilometers

Contour interval 20 feet.
Datum is mean sea level.

Polyconic projection.

WHITEWATER, WIS.
Edition of 1924

#5

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of [illegible] with a contour interval of [illegible]

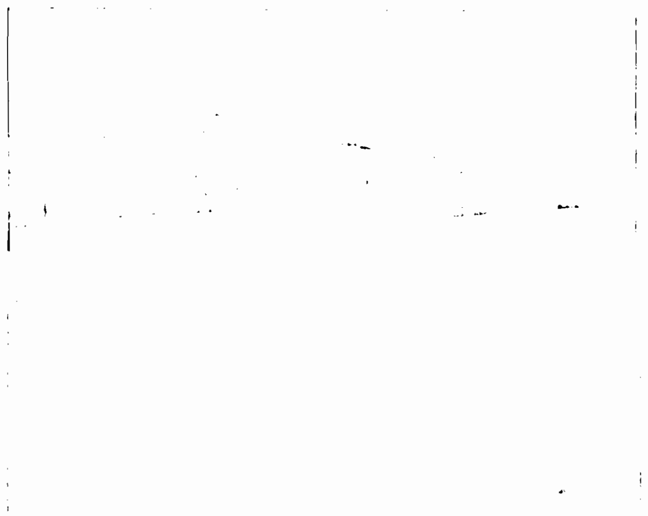
[illegible]

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

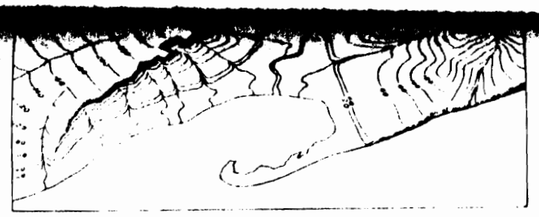
Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margin of the map are printed the names of adjoining quadrangles of which maps have been published. Over 5,300 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps [illegible] are bound together with [illegible] the Geologic Atlas of the United [illegible] published. [illegible]

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{125,000}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

STANDARD SYMBOLS

CULTURE
(printed in black)

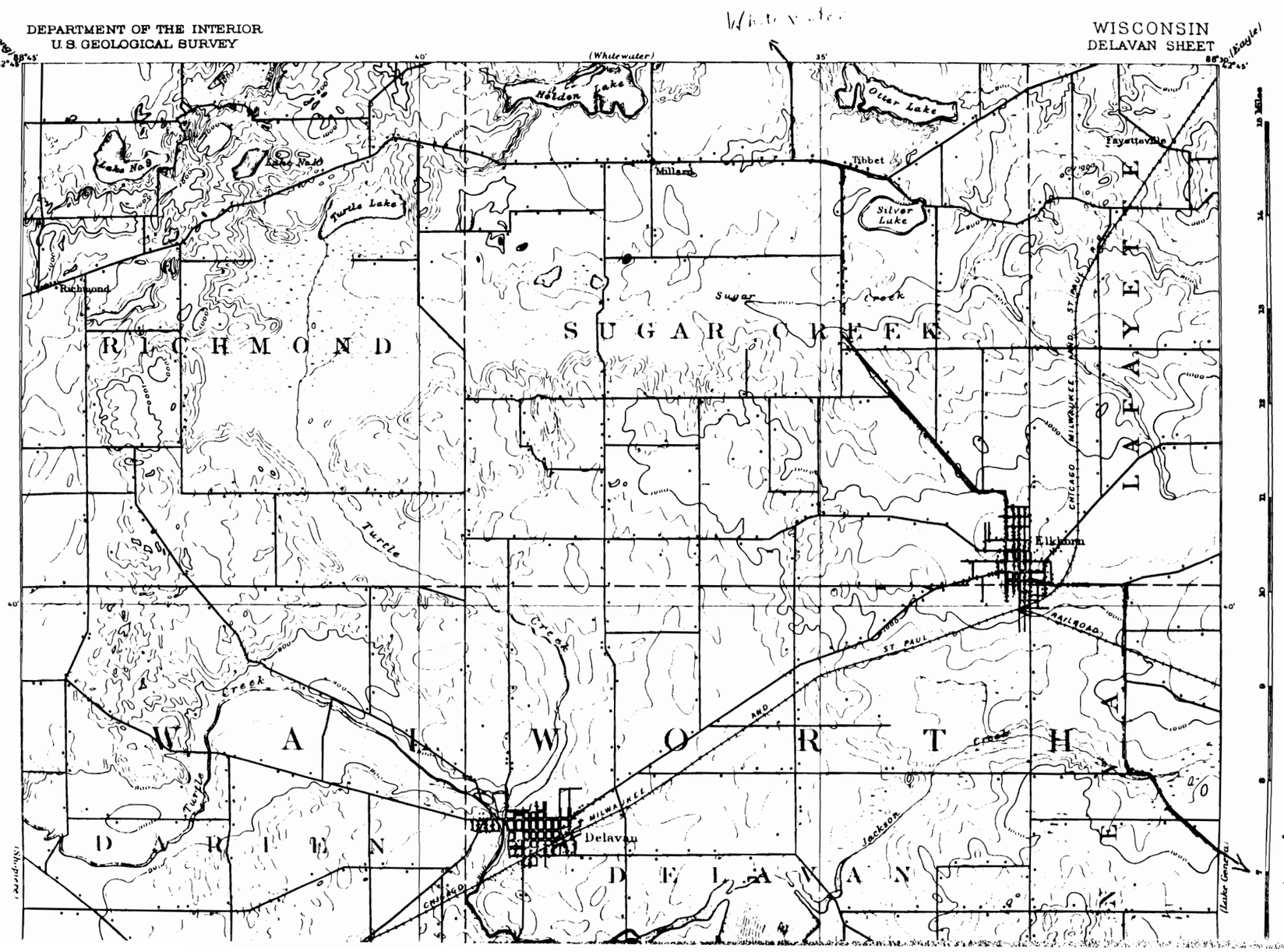
City or village
Roads and buildings
Ruins
Cliff dwelling
Good motor road
Poor motor or private road
Trail
Railroads
Electric railroad
Tramway
Power transmission line
Wharves
Breakwater and jetties
Bridge
Drawbridges
Ferry
Ford
Dam
Dam with lock
Canal, lock
Township and section lines and township corners
State line
County line
Civil township line
Reservation line
Land grant line
City, village, or borough line
Small park or cemetery
Triangulation point or transit traverse station
U.S. mineral monument
Boundary monument
Land office
Custom house
Church
School
Coke oven
Mine tunnel
Mine tunnel or quarry
Lighthouse or beacon
Coast Guard Station

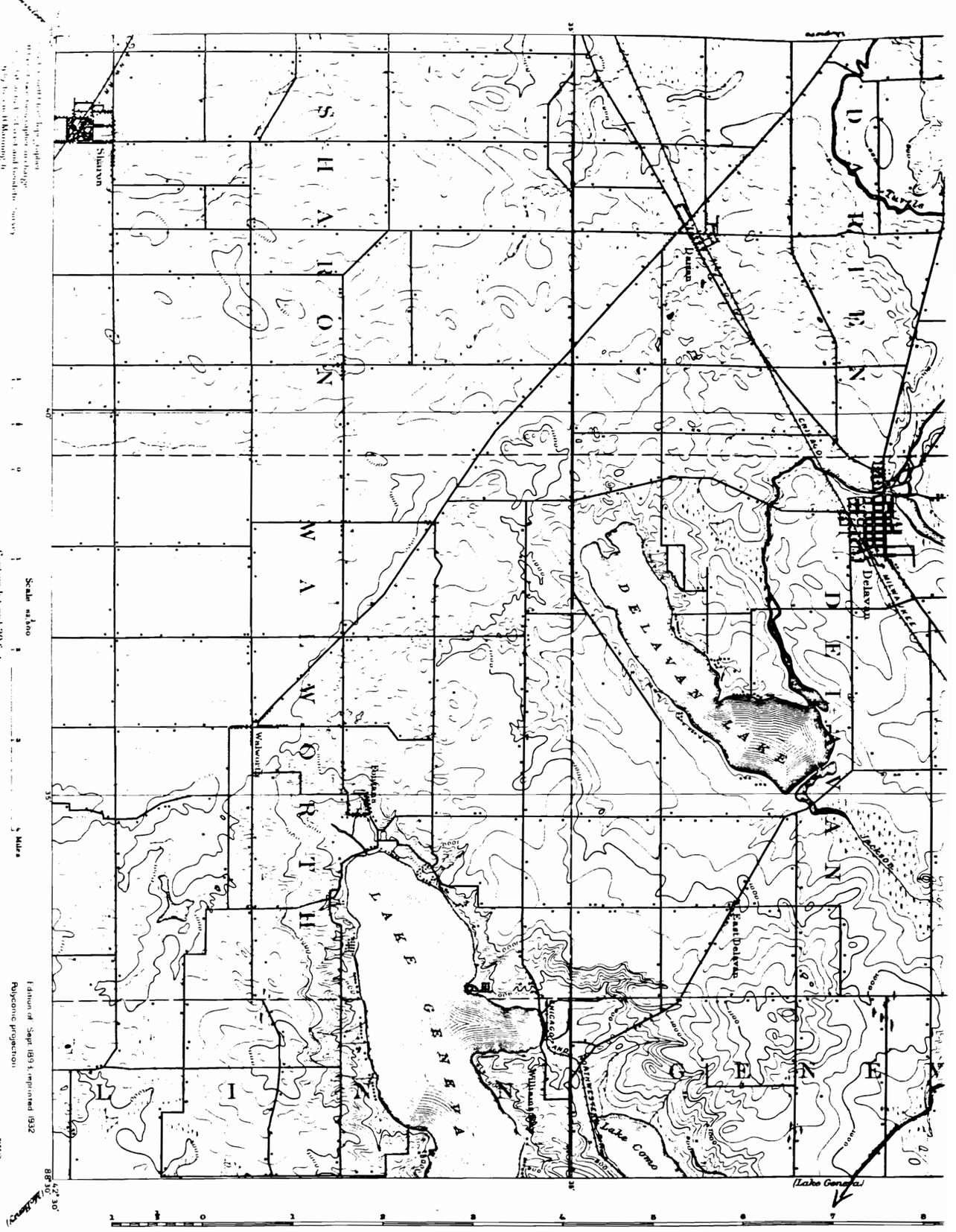
RELIEF
(printed in brown)

WATER
(printed in blue)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
DELAVAN SHEET





Lake Geneva

#7

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance surveys on a scale of 8 miles to the inch.

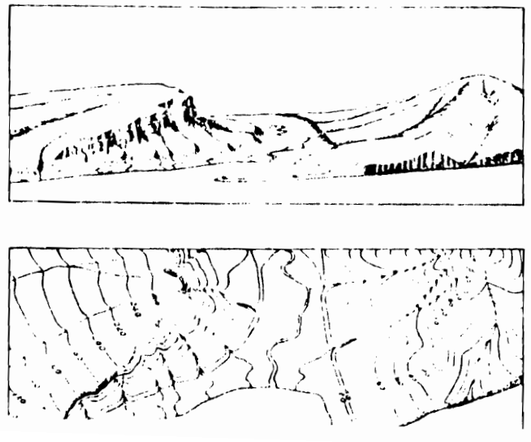
Besides the standard maps mentioned above, which are published as rapidly as possible, a number of maps are published on special scales to meet the needs of particular localities. Some of these are on a scale of 1 inch = 1 mile, and others on a scale of 1 inch = 2 miles. Maps are also published on a scale of 1 inch = 4 miles, 1 inch = 8 miles, 1 inch = 10 miles, 1 inch = 16 miles, 1 inch = 32 miles, and 1 inch = 64 miles.

The standard maps show in detail the topographic features of the region mapped—that is, the elevation, form, and position of the hills and valleys, the watercourses, lakes, and swamps, the cultivated areas, the roads, railroads, and trails, the villages, towns, and cities, and the boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

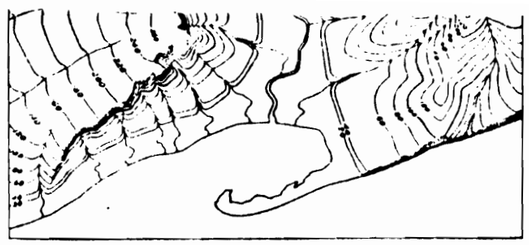
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

accuracy to be used in the publication of maps on a scale of $\frac{1}{62500}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

[illegible] published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

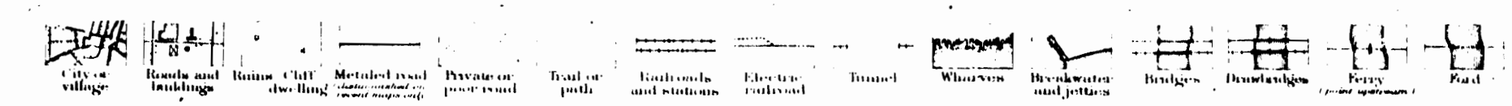
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

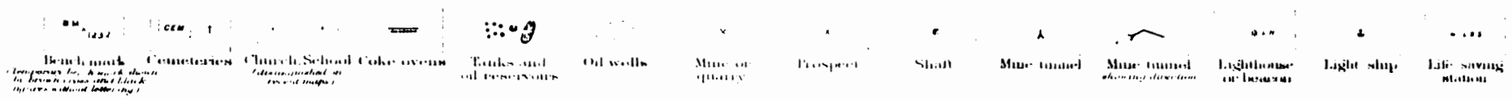
THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1924.

CONVENTIONAL SIGNS

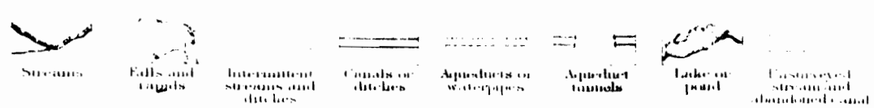
CULTURE
(printed in black)





RELIEF
(printed in brown)

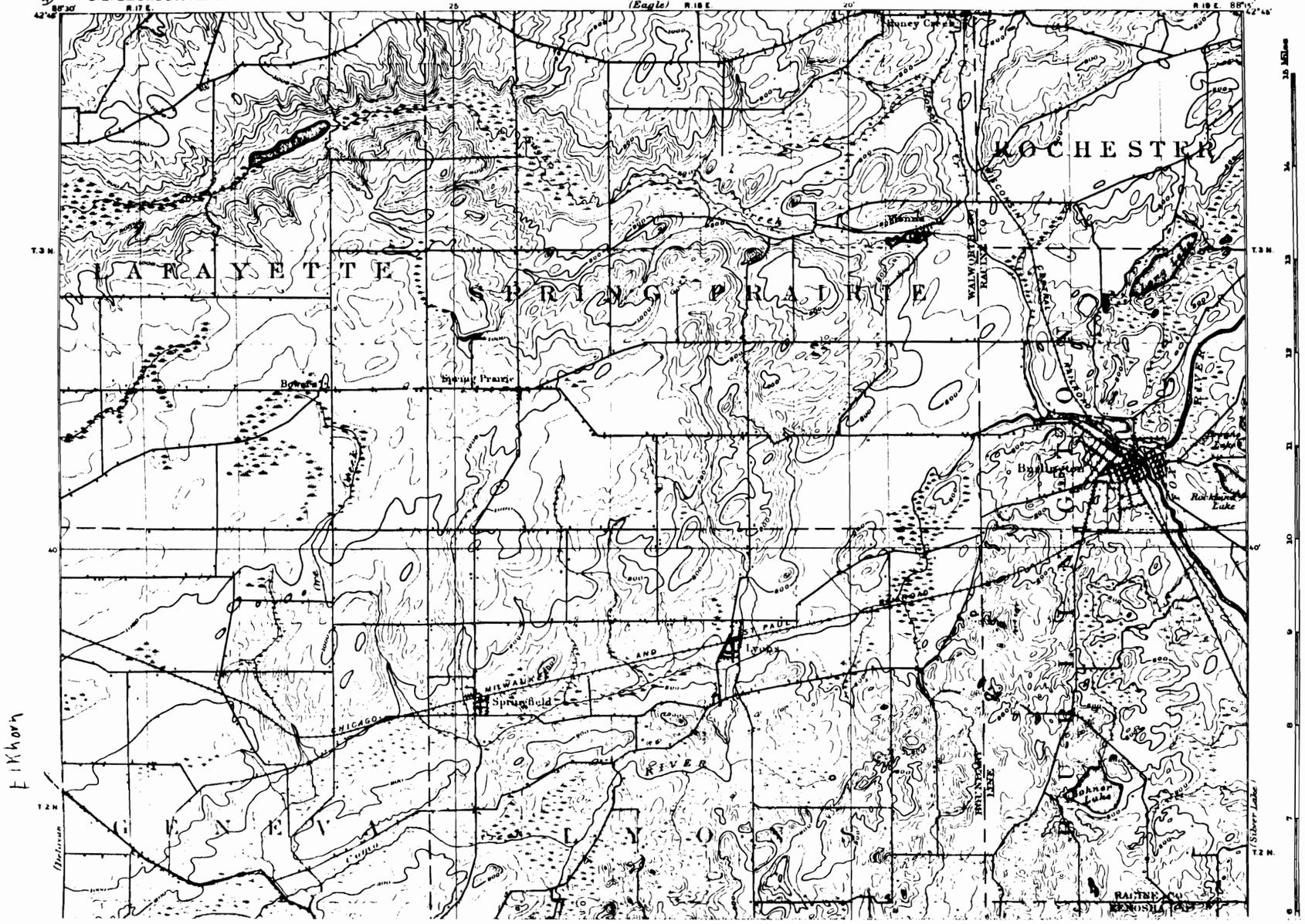
WATER
(printed in blue)

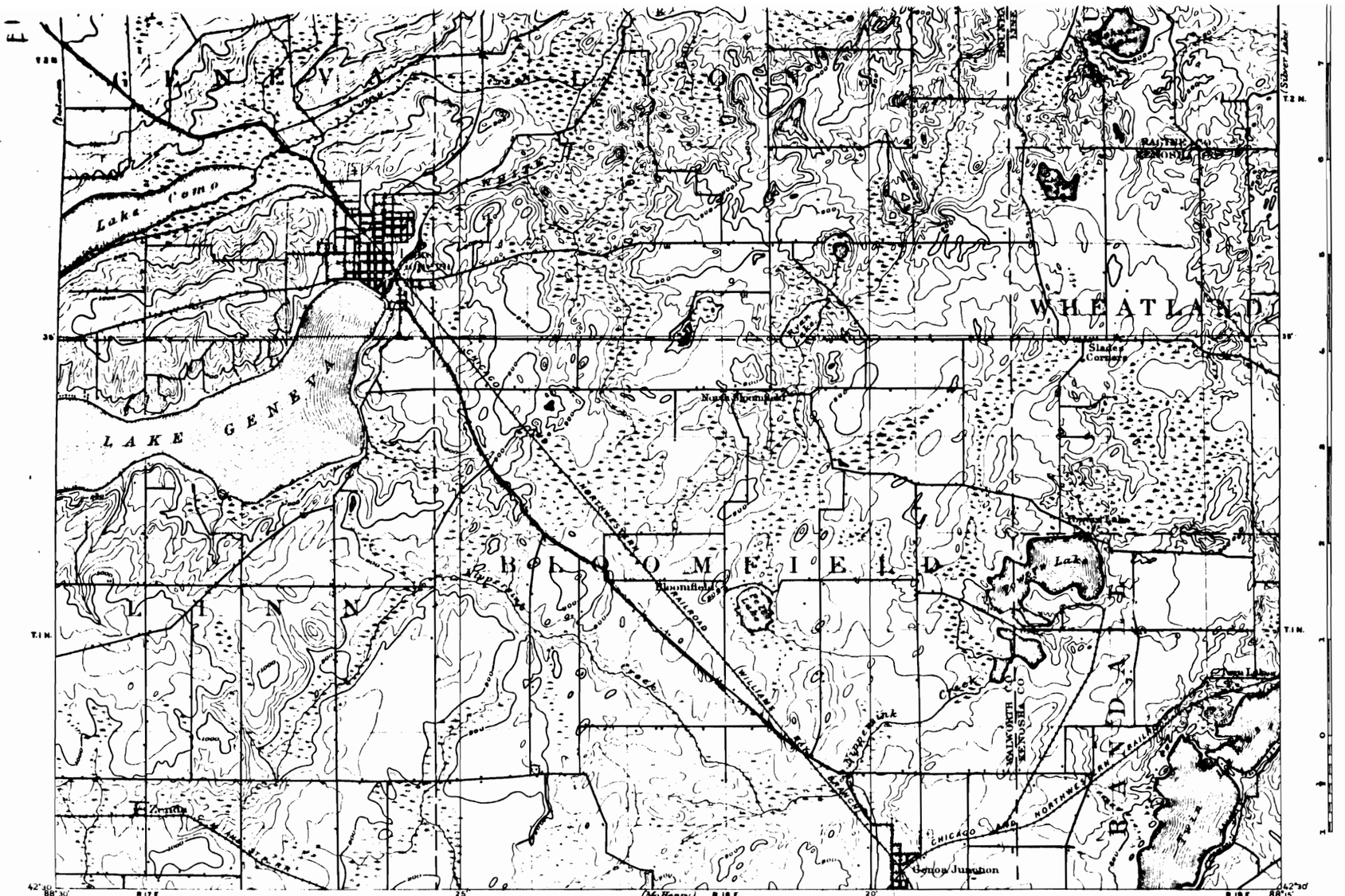


WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
LAKE GENEVA QUADRANGLE





Henry Gannett, Chief Topographer.
J H Renshawe, Geographer in charge
Triangulation by U S Coast and Geodetic Survey
Topography by Van H Manning, Jr
Surveyed in 1891
Revised in 1904 under direction of H M Wilson, Geographer.
Robert Muldrow, in charge of section, by Basil Duke.

Edition of 1906, reprinted 1927
Polyconic projection.

McHenry

LAKE GENEVA, WIS.

#6

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

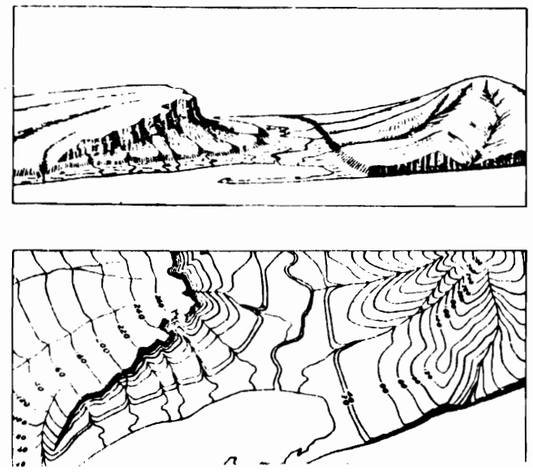
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of [illegible] about 1000 [illegible]

boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will

accuracy to be used in the publication of maps on a scale of [illegible] (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 87 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

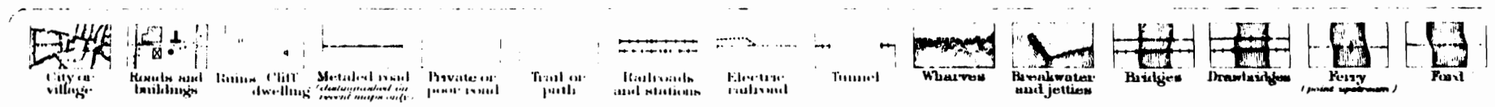
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

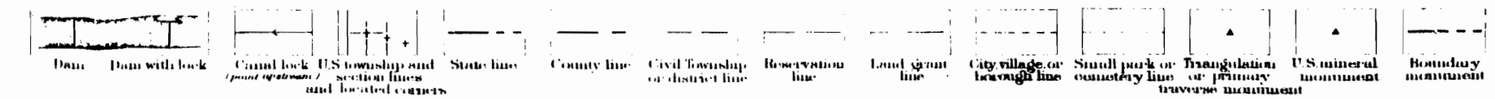
THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

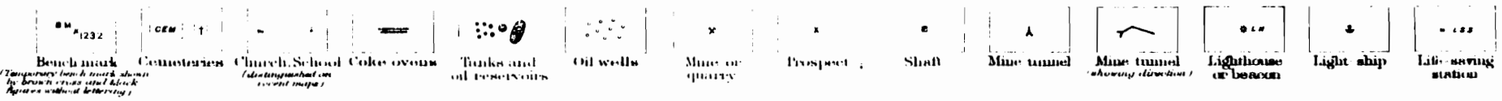
January, 1924.

CONVENTIONAL SIGNS

CULTURE
(printed in black)

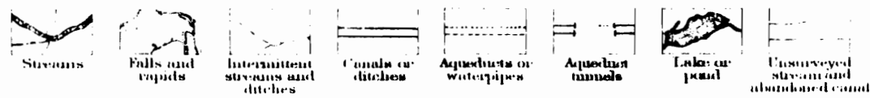






RELIEF
(printed in brown)

WATER
(printed in blue)



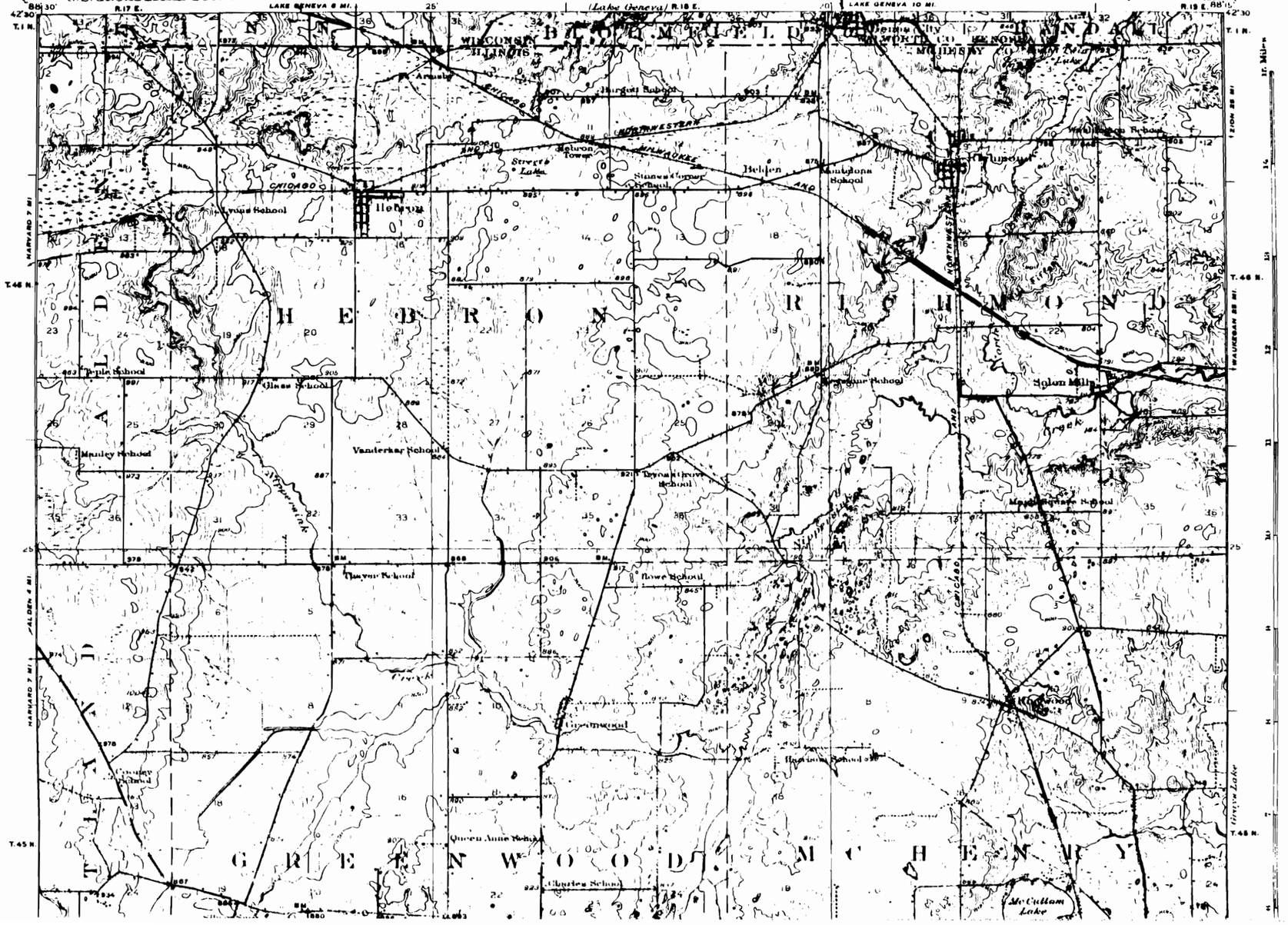
WOODS
(when shown, printed in green)

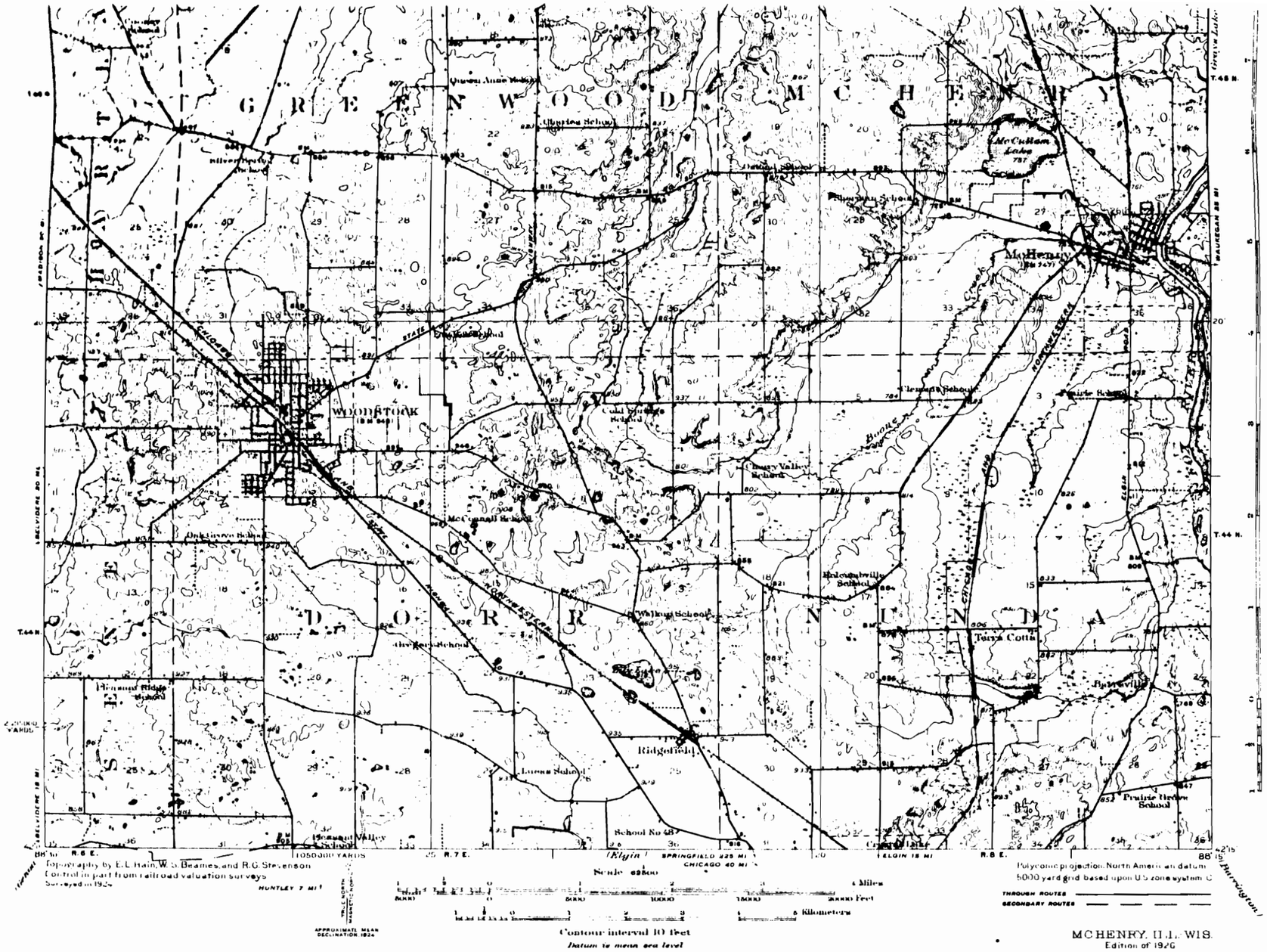
STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION
A. M. SHELTON, DIRECTOR
GEOLOGICAL SURVEY DIVISION, M. M. LEIGHTON, CHIEF

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

ILLINOIS - WISCONSIN
MC HENRY QUADRANGLE

Lake Geneva




T. 45 N.
T. 44 N.
R. 6 E.
R. 7 E.
R. 8 E.
WOODSTOCK
McHENRY
Ridgefield
Terra Cotta
Prairie Grove School
Walkup School
Lucas School
School No 48
Seaward Valley
Hickory Ridge School
Oakwood School
Liberties School
Silverthorn School
Thompson School
McConnell School
Valley View School
Helenawilla School
Pleasant View School
Prairie School
McCollum Lake
Boone Creek
Kishwaukee River
Nippersink Creek
Brook Creek
Chicago
State
Elgin
Scale 63360
1 Miles
1 Kilometers
Contour interval 10 feet
Datum is mean sea level
Topography by E.L. Hain, W.S. Beames, and R.G. Stevenson
Control in part from railroad valuation surveys
Surveyed in 1924
Polyconic projection. North American datum
5000 yard grid based upon U.S. zone system
THROUGH ROUTES
SECONDARY ROUTES
MCHENRY, ILL.-WIS.
Edition of 1926

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31680}$ (1 inch = one-half mile), with a contour interval of 5, 10, or 20 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert areas of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

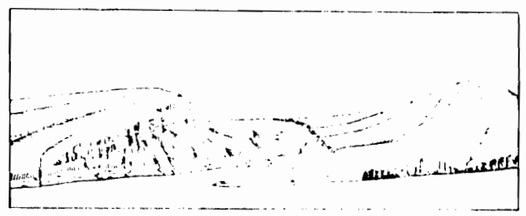
A topographic survey of Alaska has been in progress since 1898, and nearly 15 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250000}$ but about 4,000 square miles has been mapped on a scale of $\frac{1}{62500}$ or finer.

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margin of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,300 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; scarce special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

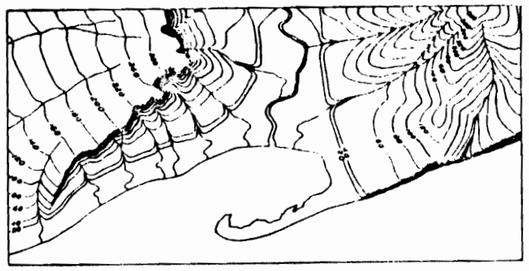
Applications for maps or folios should be addressed to

region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

STANDARD SYMBOLS

CULTURE
(printed in black)

City or village
Roads and buildings
Ruins
Cliff dwelling
Good motor road
Poor motor or private road
Trail
Railroads
Electric railroad
Tunnel
Power transmission line
Wharves
Breakwater and jetties
Bridge
Drawbridges
Ferry *(point upstream)*

Road
Dam
Dam with lock
Canal lock *(point upstream)*
U.S. township and section lines and recovered corners
State line
County line
Civil Township or district line
Reservation line
Land grant line
City, village or borough line
Small park or cemetery line
Triangulation point or transit traverse station
U.S. mineral monument

Boundary monument
Bench mark *(magnetic bearing to mark and check from azimuth mark)*
Cemeteries
Church, School *(labeled symbols reserved for use)*
Coke ovens
Tanks and oil reservoirs
Oil and gas wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Mine tunnel *(showing direction)*
Lighthouse or beacon
Coast Guard station

RELIEF
(printed in brown)

Elevation above sea level
Contours *(printed in brown)*
Depression contours
Levee
Sand
Cliffs
Mine dumps
Tailings or mine debris
Sand and sand dunes

WATER
(printed in blue)

Rapids
Falls and rapids
Intermittent streams and drains
Canals or ditches
Aqueducts or water pipe
Aqueduct tunnels
Lake or pond
Dry or seasonal stream bed *(channel form retained)*
Intermittent lake
Submerged marsh

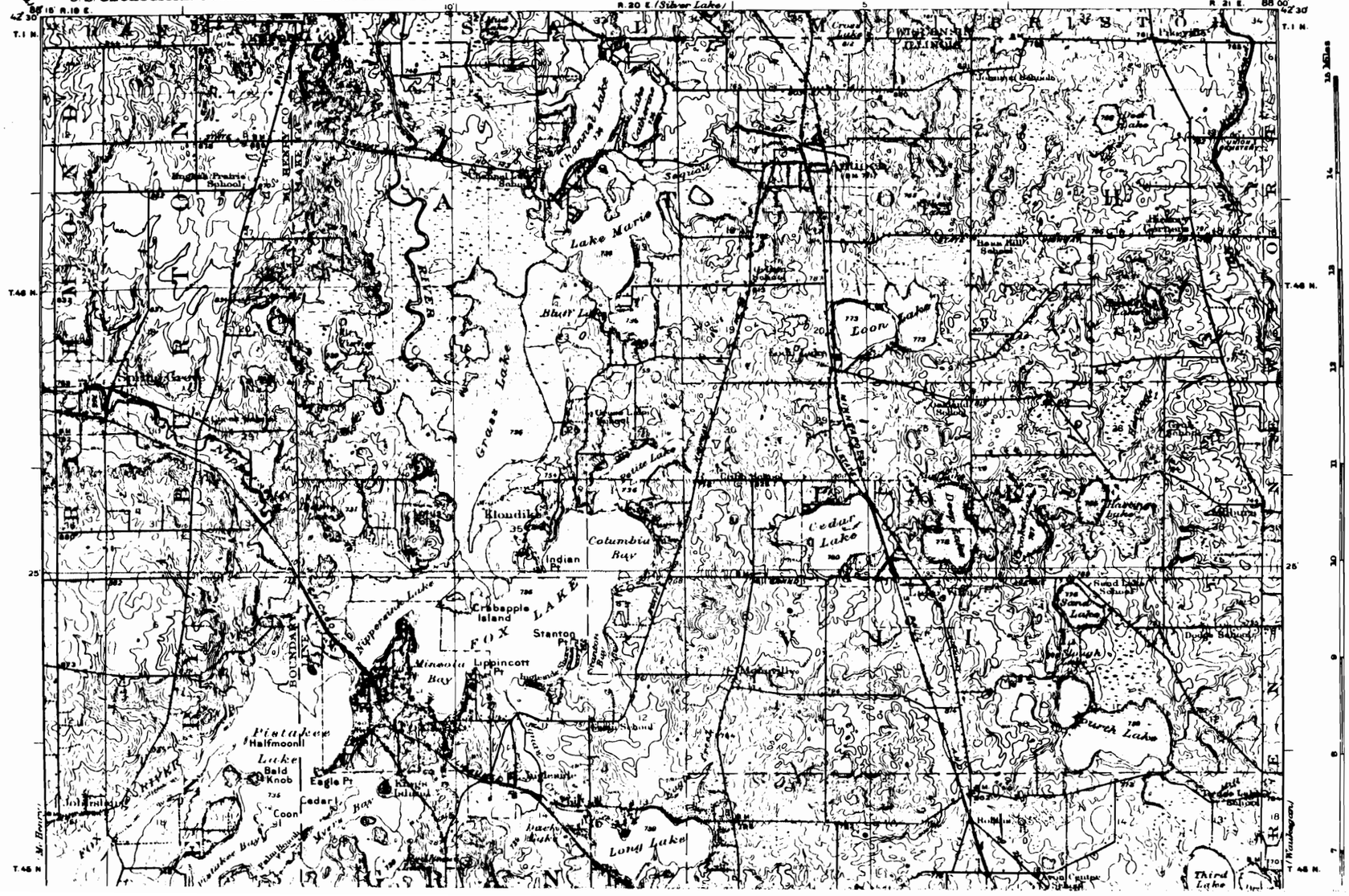
WOODS
(where shown, printed in green)

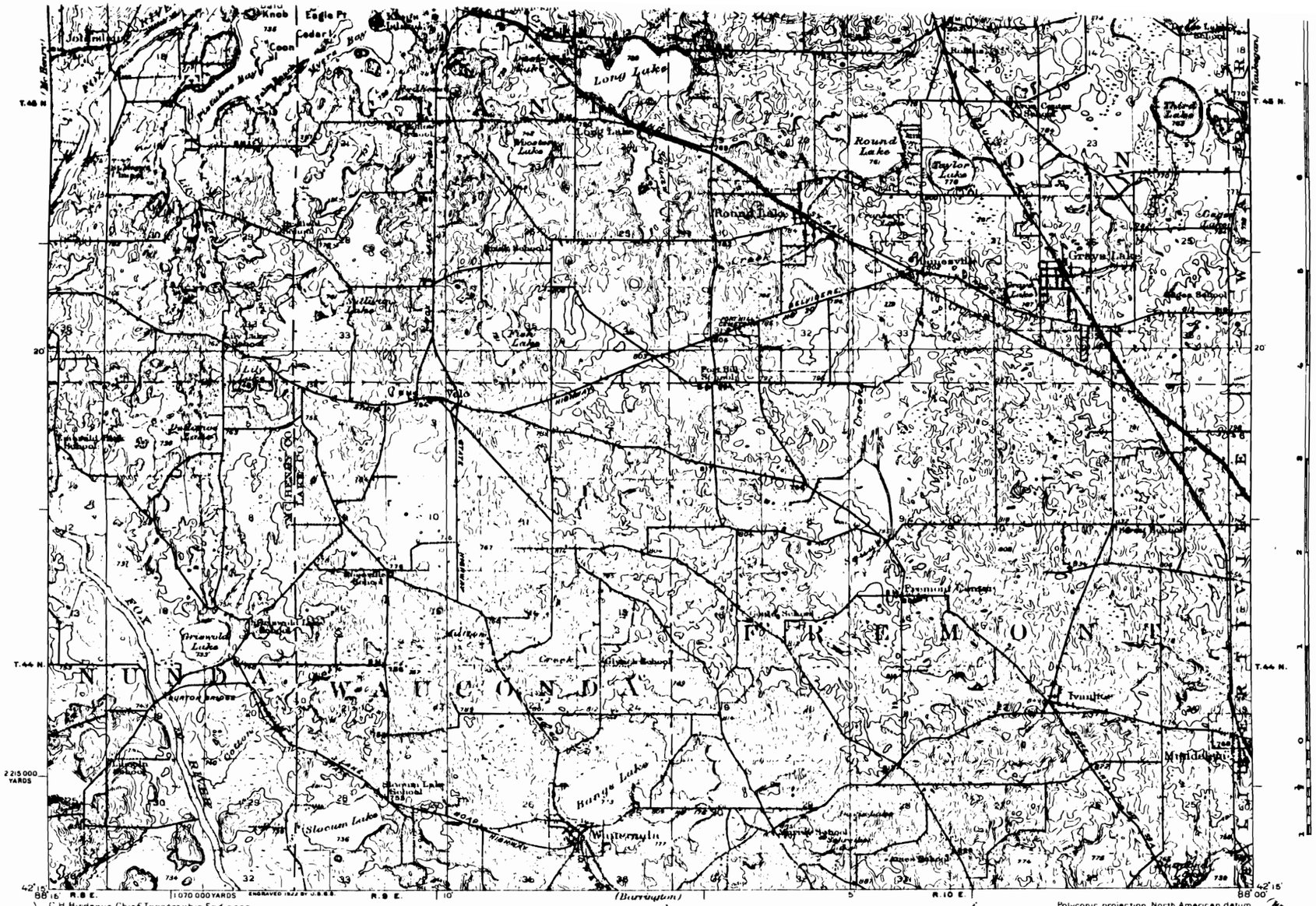
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION
M.F. WALSH, DIRECTOR
GEOLOGICAL SURVEY DIVISION, M.M. LEIGHTON, CHIEF, URBANA ILLINOIS

STATE OF WISCONSIN
REPRESENTED BY THE
STATE GEOLOGIST

ILLINOIS-WISCONSIN
GRAYS LAKE QUADRANGLE





C. H. Birdseye, Chief Topographic Engineer
W. H. Herron, Division Topographic Engineer
Topography by E. L. Hain, K. K. Kimball, A. L. Opdycke, C. W. Stump, Jr., and W. S. Gehres.
Control by U. S. Lake Survey, F. J. McMaugh, L. C. Tucker, and S. L. Parker
Surveyed in 1919-1920.

SURVEYED IN COOPERATION WITH THE STATES OF ILLINOIS AND WISCONSIN

1070 000 YARDS

ENGRAVED 1923 BY U.S.G.S.

Scale 62500

1 0 1 2 3 4 Miles

1 0 1 2 3 4 5 Kilometers

Contour interval 10 feet.

Datum is mean sea level

Polyconic projection. North American datum.
5000 yard grid based upon zone C for P. M. M.

APPROXIMATE MEAN DECLINATION, 1930

GRAYS LAKE, ILL.-WIS.
Edition of 1923,
reprinted 1932

#4

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one-half mile, with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = nearly 1 mile, with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = nearly 2 miles, with a contour interval of 25 to 100 feet.

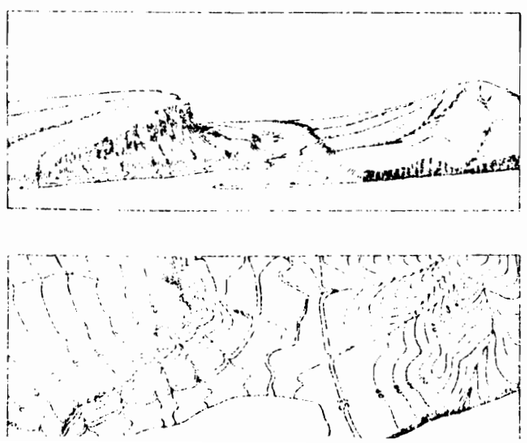
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of 1 inch = about 10 miles to an inch.

boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

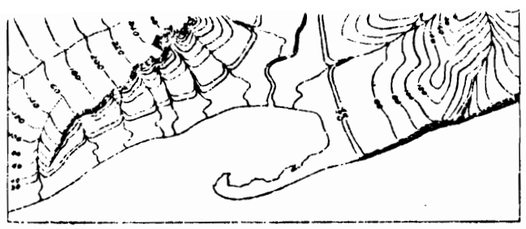
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

(1 inch = nearly 2 miles), with a contour interval of 20 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

lished by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

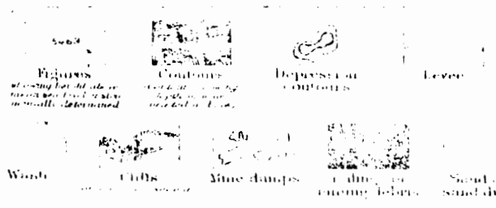
THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1924.

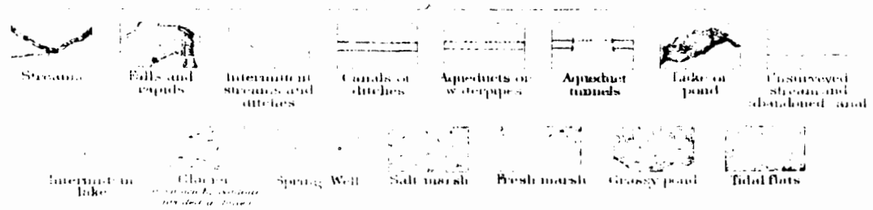
CONVENTIONAL SIGNS

CULTURE
(printed in black)

RELIEF
(printed in brown)



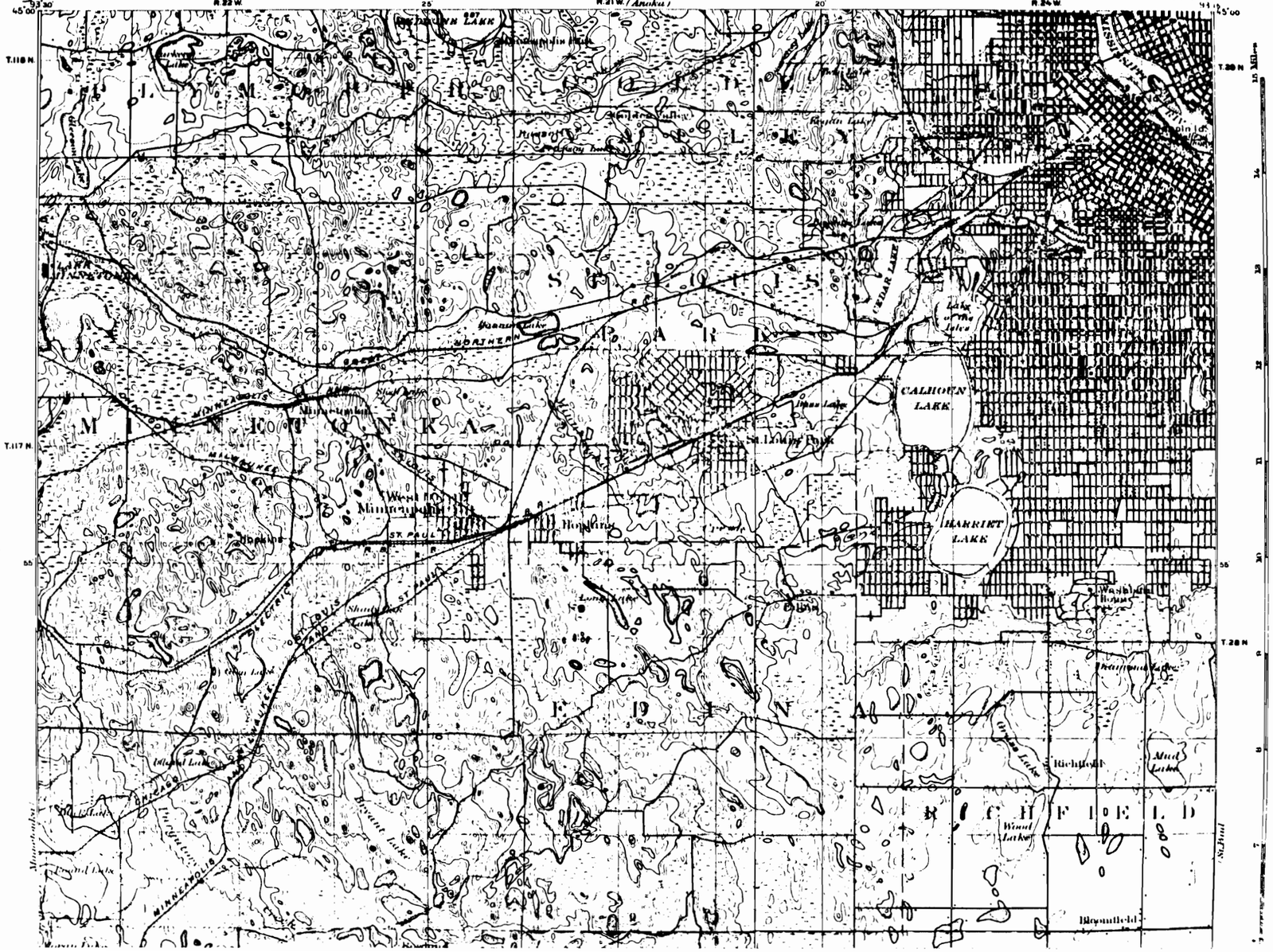
WATER
(printed in blue)

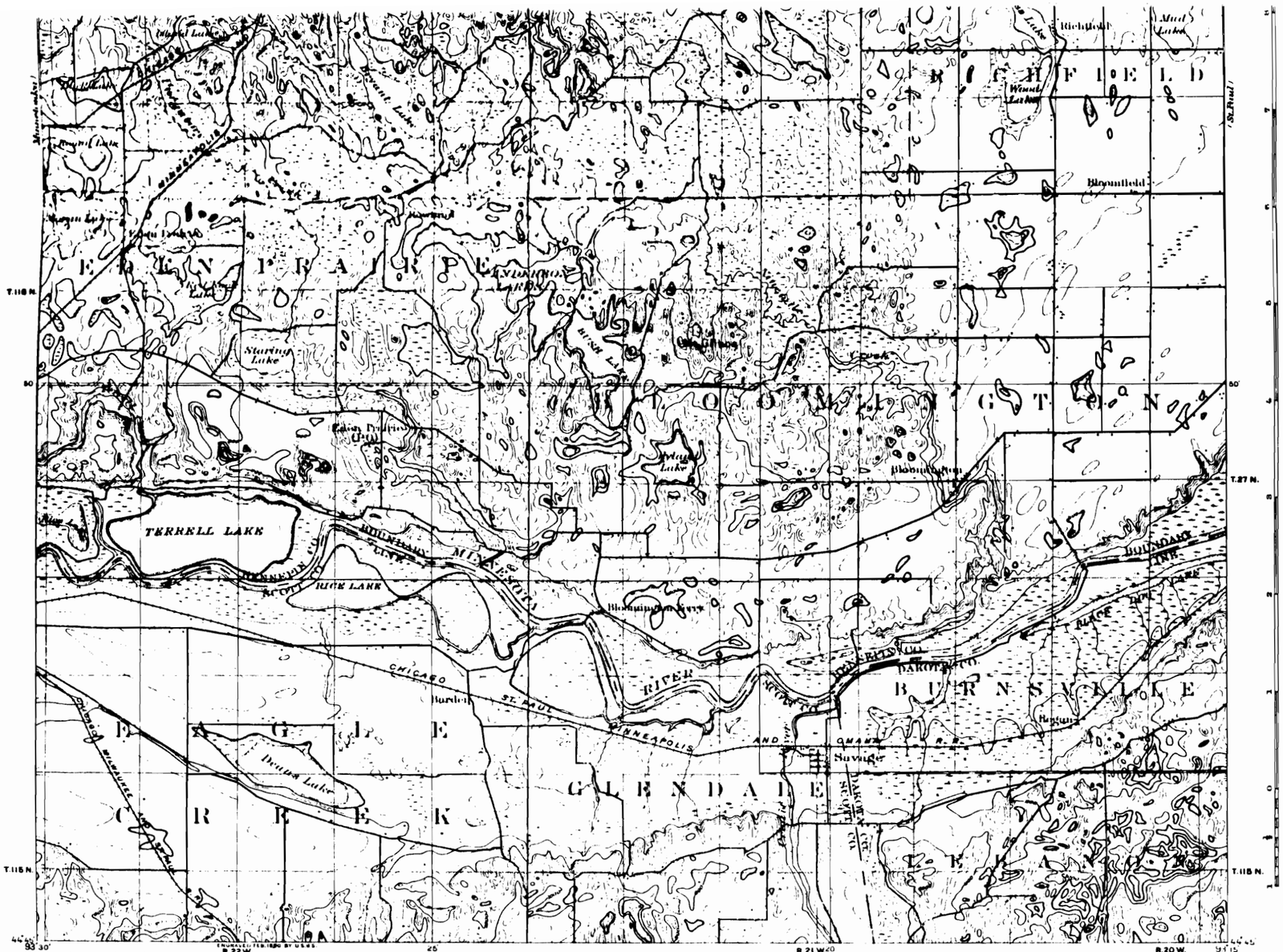


WOODS
(tubes shown, overlaid in green)

DEPARTMENT OF THE INTERIOR
U.S GEOLOGICAL SURVEY

MINNESOTA
MINNEAPOLIS SHEET





Henry Gannett, Chief Topographer.
Jno H. Renshawe, Topographer in charge.
Triangulation by U.S. Coast and Geodetic Survey
Topography by H.L. Baldwin Jr.
Surveyed in 1894.

Scale 62500

1 0 1 2 3 4 Miles

1 0 1 2 3 4 5 Kilometers

Contour interval 20 feet.
Datum is mean sea level.

Edition of Oct 1901, reprinted 1928

Polyconic projection. To place on North American datum move projection lines 106 feet south and 650 feet east.

MINNEAPOLIS, MINN

617

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a topographic atlas of the United States. This work has been in progress since 1882, and more than 38 per cent of the area of the country, excluding outlying possessions, has now been mapped. The areas mapped are widely distributed, every State being represented, as shown on the progress maps accompanying each annual report of the Director.

This atlas is being published in sheets of convenient size, about 16½ by 20 inches. The four-sided area of land represented on an atlas sheet is bounded by parallels and meridians and is called a *quadrangle*. The quadrangles mapped cover 1° of latitude by 1° of longitude, 30′ of latitude by 30′ of longitude, 15′ of latitude by 15′ of longitude, or smaller areas, the size of the area mapped depending on the scale used. Several scales are employed. The smallest scale, that used for quadrangles covering 1°, is 1:250,000, or very nearly 4 miles to an inch—that is, 4 linear miles on the ground is represented by 1 linear inch on the map. This scale is used for maps of the desert regions and some other parts of the far West. For the greater part of the country, which is mapped in quadrangles covering 30′, a larger scale, 1:125,000, or about 2 miles to an inch, is employed. A still larger scale, 1:62,500, or about a mile to an inch, is used for quadrangles covering 15′, the unit selected for mapping thickly settled or industrially important areas. A fourth scale, 1:31,680, or one-half mile to an inch, is employed for maps that are to be used in connection with irrigation or drainage, and a few maps of mining districts are published on still larger scales.

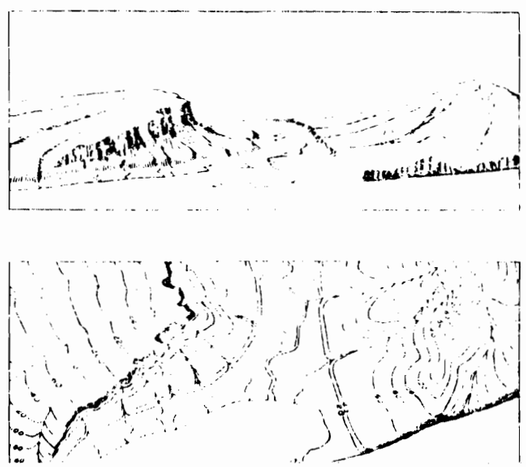
A topographic survey of Alaska has been in progress since 1898, and nearly 30 per cent of its entire area has now been mapped. One-third of the area mapped, or 10 per cent of the Territory, has been covered only by reconnaissance work, the results of which have been mapped on a scale of about 10 miles to an inch. The maps of nearly all the remaining two-thirds of the areas surveyed have been published on a scale of 1:250,000, or about 4 miles to an inch. These maps are large, each representing 2° of latitude by 4° of longitude. A few areas that are of economic importance, aggregating about 5000 square miles, have been surveyed in greater detail and mapped on a scale of 1:62,500, or about a mile to an inch.

A survey of the Hawaiian Islands was begun in 1910 and

All water features are printed in *blue*, the smaller streams and canals in full blue lines and the larger streams, lakes, and the sea in blue water-lining. Intermittent streams—those whose beds are dry at least three months in the year—are shown by lines of dots and dashes.

Relief is shown by contour lines in *brown*. A contour on the ground passes through points that have the same altitude. One who follows a contour will go neither uphill nor downhill but on a level. The contour lines on the map show not only the shapes of the hills, mountains, and valleys but also their elevations. The line of the sea coast itself is a contour line, the datum or zero of elevation being mean sea level. The contour at, say, 20 feet above sea level would be the shore line if the sea were to rise or the land to sink 20 feet. On a gentle slope this contour is far from the present coast; on a steep slope it is near the coast. Where successive contour lines are far apart on the map they indicate a gentle slope; where they are close together they indicate a steep slope; and where they run together in one line they indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



by a sea cliff. The hill on the left terminates abruptly at the valley in a steep scarp. It slopes gradually back away from the scarp and forms an inclined table-land, which is traversed by a few shallow gullies. On the map each of these features is indicated, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures stating elevation above sea level. The heights of many points, such as road corners, summits, surfaces of lakes, and bench marks, are also given on the map in figures, which express the elevations to the nearest foot only. More exact elevations of bench marks, as well as geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey. A bulletin pertaining to any State may be had on application.

The works of man are shown in *black*, in which color all lettering also is printed. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public and through roads are shown by fine double lines, private and poor roads by dashed double lines; trails by dashed single lines.

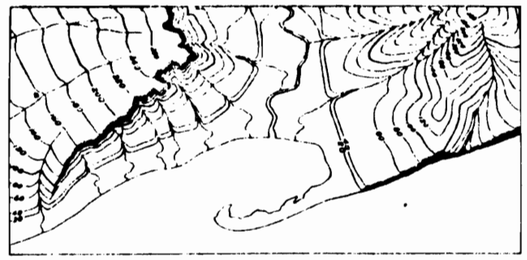
Each quadrangle mapped for the topographic atlas is designated by the name of a principal town or of some prominent natural feature within the quadrangle, and on the margins of the maps are printed the names of adjoining quadrangles for which atlas sheets have been published or are in preparation. The sheets are sold at 10 cents each in lots of less than 50 copies or at 6 cents each in lots of 50 or more copies, whether of the same or of different sheets.

The topographic map is the base on which the geology and the mineral resources of a quadrangle are represented, the maps showing these features being bound together, with a description of the quadrangle, to form a folio of the Geologic Atlas of the United States. Circulars showing by index maps the published topographic atlas sheets and geologic folios covering

results of which have been mapped on a scale of about 10 miles to an inch. The maps of nearly all the remaining two-thirds of the surveyed area have been published on a scale of 1:250,000, or about 4 miles to an inch. These maps are large, each representing 2° of latitude by 4° of longitude. A few areas that are of economic importance, aggregating about 5,000 square miles, have been surveyed in greater detail and mapped on a scale of 1:62,500, or about a mile to an inch.

A survey of the Hawaiian Islands was begun in 1910 and the resulting maps are being published on a scale of 1:62,500.

The features shown on these atlas sheets or maps may be classed in three groups—(1) *water*, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) *relief*, including mountains, hills, valleys, and other elevations and depressions; (3) *culture* (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used for these features are shown below, with explanations. Variations appear on some earlier maps.



The sketch represents a river valley between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends

The sheets are sold at 10 cents each in lots of less than 50 copies or at 6 cents each in lots of 50 or more copies, whether of the same or of different sheets.

The topographic map is the base on which the geology and the mineral resources of a quadrangle are represented, the maps showing these features being bound together, with a description of the quadrangle, to form a folio of the Geologic Atlas of the United States. Circulars showing by index maps the published topographic atlas sheets and geologic folios covering any State or region will be sent free on application.

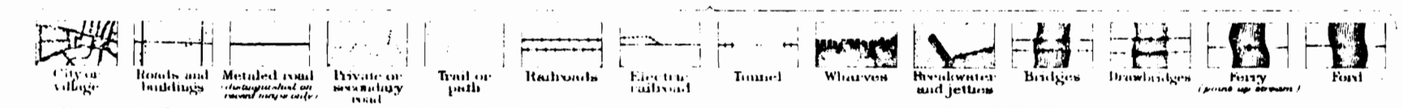
Applications for maps or folios should be accompanied by cash—the exact amount—or by post-office money order (not postage stamps), and should be addressed to—

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1915.

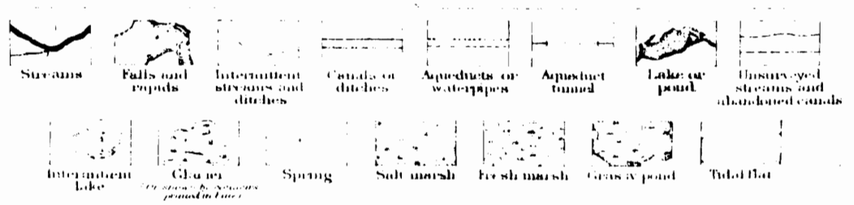
CONVENTIONAL SIGNS

CULTURE
(printed in black)



RELIEF
(printed in brown)

WATER
(printed in blue)

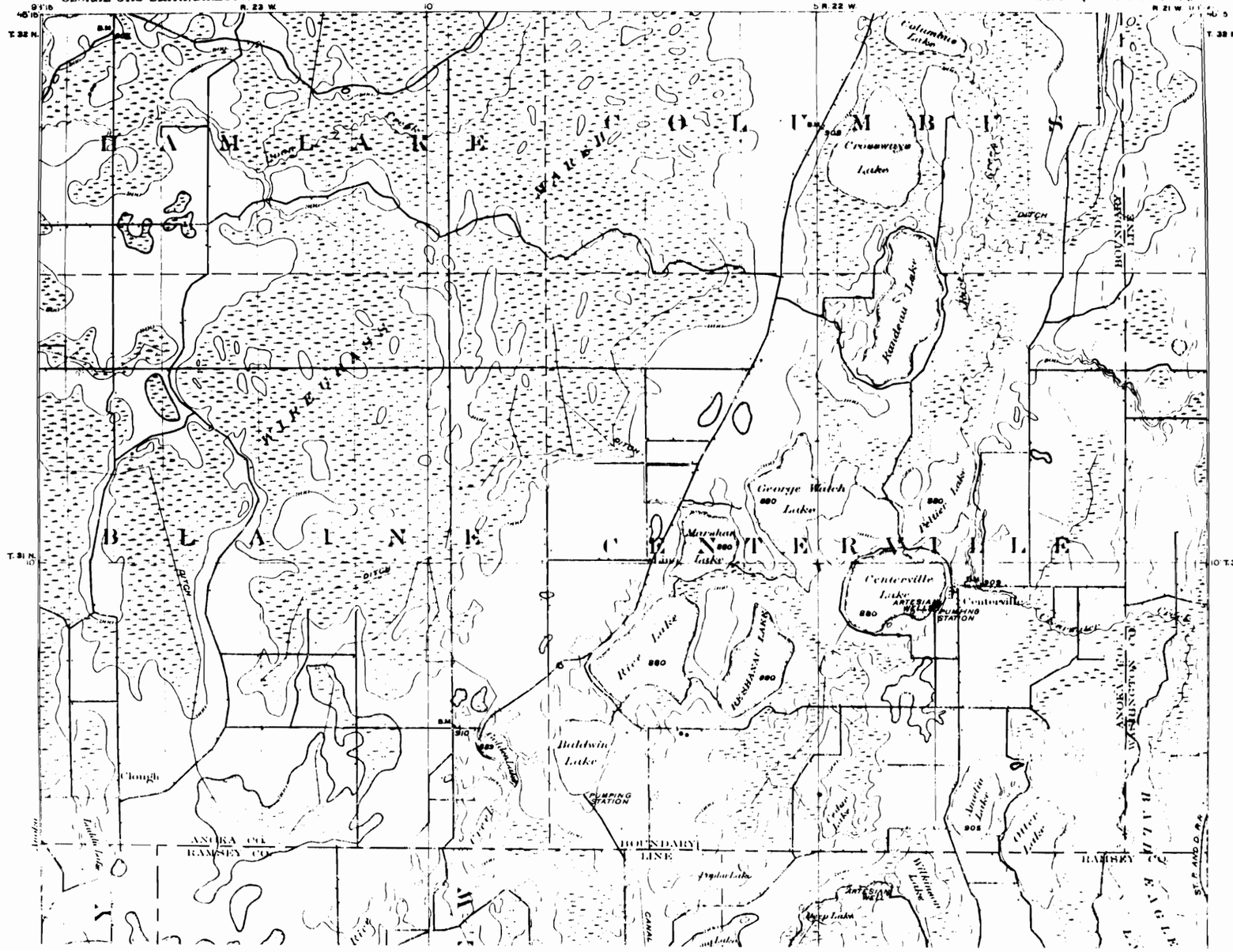


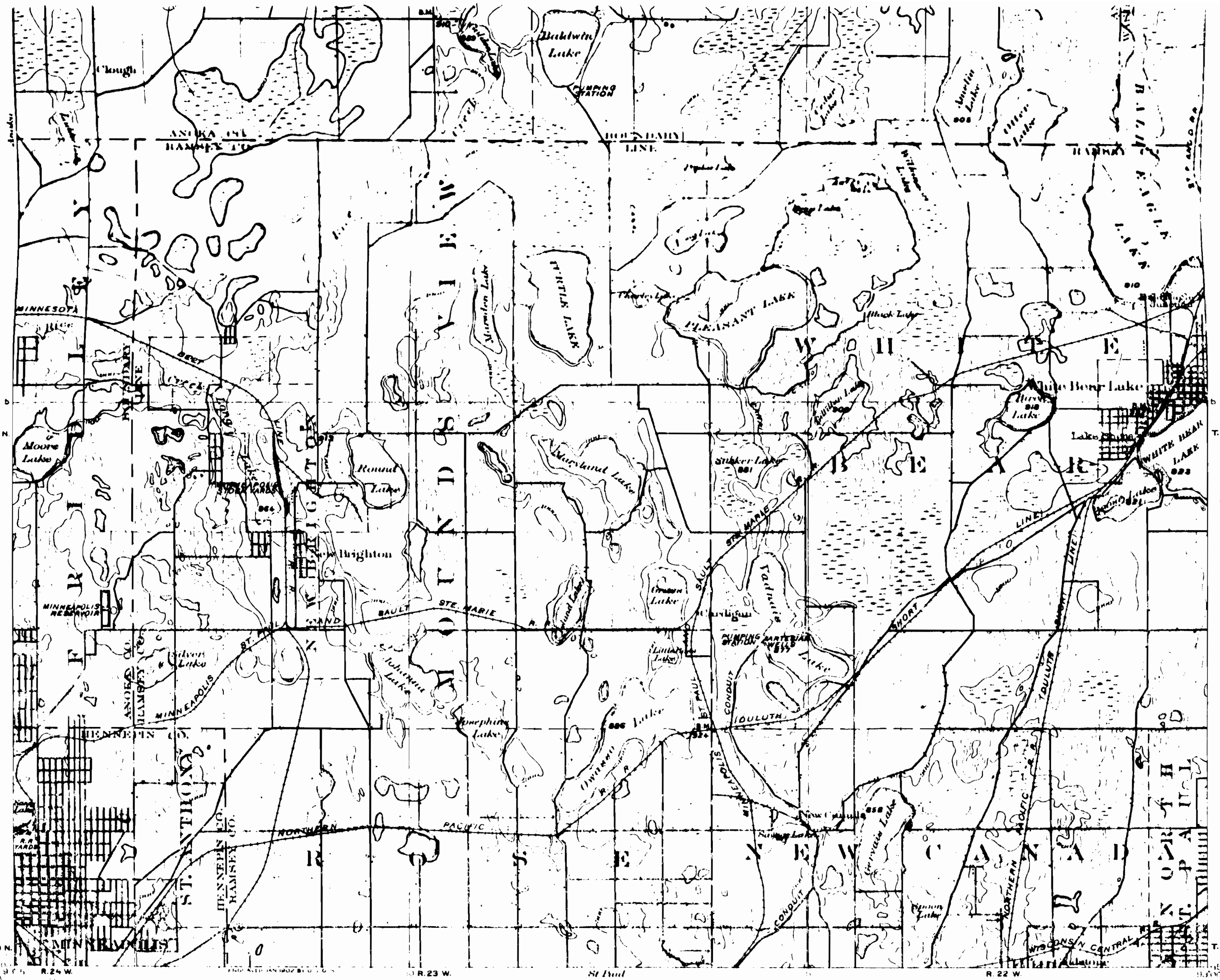
WOODS
(where shown, printed in green)

DEPARTMENT OF THE INTERIOR
FRANKLIN K LANE, SECRETARY
U S GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

MINNESOTA
WHITE BEAR QUADRANGLE





Edition of Mar. 1902 reprinted 1918

Scale 1/62500

Miles

Kilometers

Contour interval 20 feet.

DESCRIPTION OF THE TOPOGRAPHIC MAP OF THE UNITED STATES

The United States Geological Survey is making a topographic map of the United States. This work has been in progress since 1882, and more than one-third of the area of the country, excluding outlying possessions, has been mapped. The mapped areas are widely scattered, nearly every State being represented, as shown on the progress maps accompanying each annual report of the Director.

This great map is being published in atlas sheets of convenient size, which are bounded by parallels and meridians. The four-cornered division of land corresponding to an atlas sheet is called a *quadrangle*. The sheets are of approximately the same size: the paper dimensions are 20 by 16½ inches; the map occupies about 17½ inches of height and 11½ to 16 inches of width, the latter varying with latitude. Three scales, however, are employed. The largest scale is 1:62,500, or very nearly one mile to one inch: i. e., one linear mile on the ground is represented by one linear inch on the map. This scale is used for the thickly settled or industrially important parts of the country. For the greater part of the country an intermediate scale of 1:125000, or about two miles to one inch, is employed. A third and still smaller scale of 1:250,000, or about four miles to one inch, has been used in the desert regions of the far West. A few special maps on larger scales are made of limited areas in mining districts. The sheets on the largest scale cover 15′ of latitude by 15′ of longitude; those on the intermediate scale, 30′ of latitude by 30′ of longitude, and those on the smallest scale, 1° of latitude by 1° of longitude.

The features shown on the map may, for convenience, be classed in three groups: (1) *water*, including seas, lakes, ponds, rivers and other streams, canals, swamps, etc.; (2) *relief*, including mountains, hills, valleys, cliffs, etc.; (3) *culture*, i. e., works of man, such as towns, cities, roads, railroads, boundaries, etc. The conventional signs used for these features are grouped below. Various times, are shown, not by full lines, but by lines of dots and dashes. Ponds which are dry during a part of the year are shown by oblique parallel lines. Salt-water marshes are shown by horizontal ruling interspersed with tufts of blue, and fresh-water marshes and swamps by blue tufts with broken horizontal lines.

Relief is shown by contour lines in *brown*. Each contour passes through points which have the same altitude. One who follows a contour on the ground will go neither uphill nor downhill, but on a level. By the use of contours not only are the shapes of the plains, hills, and mountains shown, but also the elevations. The line of the seacoast itself is a contour line, the datum or zero of elevation being mean sea level. The contour line at, say, 20 feet above sea level is the line that would be the seacoast if the sea were to rise or the land to sink 20 feet. Such a line runs back into the valleys and forward around the points of hills and spurs. On a gentle slope this contour line is far from the present coast line, while on a steep slope it is near it. Thus a succession of these contour lines far apart on the map indicates a gentle slope; if close together, a steep slope; and if the contours run together in one line, as if each were vertically under the one above it, they indicate a cliff. In many parts of the country are depressions or hollows with no outlets. These appear on maps as contours that surround them, just as they surround hills. These small hollows known as sinks are usually indicated by hachures, or short dashes on the inside of the curve. The contour interval, or the vertical distance between one contour and the next, is stated at the bottom of each map. This interval varies according to the character of the area mapped; on a flat country it may be 5 feet or less; on a mountainous region it may be 200 feet. Certain contours, usually every fifth one, are accompanied by figures stating elevation above sea level. The height of the culture and other

their descriptions, as well as the descriptions and geodetic coordinates of triangulation stations, are published in the annual reports and bulletins of the Survey. The publications pertaining to specified localities may be had on application.

The works of man are shown in *black*, in which color all lettering also is printed. Boundaries, such as State, county, city, land-grant, reservation, etc., are shown by broken lines of different kinds and weights. Houses are shown by small black squares which in the densely built portions of cities and towns merge into blocks. Roads are shown by fine double lines (full for the better roads, dotted for the inferior ones), trails by single dotted lines, and railroads by full black lines with cross lines. Other cultural features are represented by conventions which are easily understood.

The sheets composing the topographic atlas are designated by the name of a principal town or of some prominent natural feature within the quadrangle and the names of adjoining published sheets are printed on the margins. They are sold at five cents each when fewer than 100 copies are purchased, but when ordered in lots of 100 or more copies, whether of the same or of different sheets, the price is three cents each.

The topographic map is the base on which the facts of geology and the mineral resources of a quadrangle are represented. The topographic and geologic maps of a quadrangle are finally bound together, accompanied by a description of the district, to form a folio of the Geologic Atlas of the United States. These folios are sold at twenty-five cents each, except that such as are unusually comprehensive are priced accordingly.

Applications for the separate topographic maps or for folios of the Geologic Atlas should be accompanied by [illegible] the exact amount—or by [illegible] money order—and should be addressed to—

[illegible]

...for convenience, be classed in three groups: (1) *water*, including seas, lakes, ponds, rivers and other streams, canals, swamps, etc; (2) *relief*, including mountains, hills, valleys, cliffs, etc.; (3) *culture*, i. e., works of man, such as towns, cities, roads, railroads, boundaries, etc. The conventional signs used for these features are grouped below. Variations appear in some maps of earlier dates.

All water features are shown in *blue*, the smaller streams and canals in full blue lines, and the larger streams, lakes, and the sea by blue water-lining. Certain streams, however, which flow during only a part of the year, their beds being dry at other ...ance in feet between one contour and the next is stated at the bottom of each map. This interval varies according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 200 feet. Certain contours, usually every fifth one, are accompanied by figures stating elevation above sea level. The heights of many definite points, such as road corners, railroad crossings, railroad stations, summits, water surfaces, tria...ulation ...tions, and bench marks, are also given. The figures in each case are placed close to the point to which they apply, and express the elevation to the nearest foot only. The *exact* elevations of bench marks and ...ccurately ...each, except ... are ... quality ...comprehensive ... are given accordingly.

Applications for the separate topographic maps or for folios of the Geologic Atlas should be accompanied by cash—the exact amount—or by post-office money order, and should be addressed to—

THE DIRECTOR,

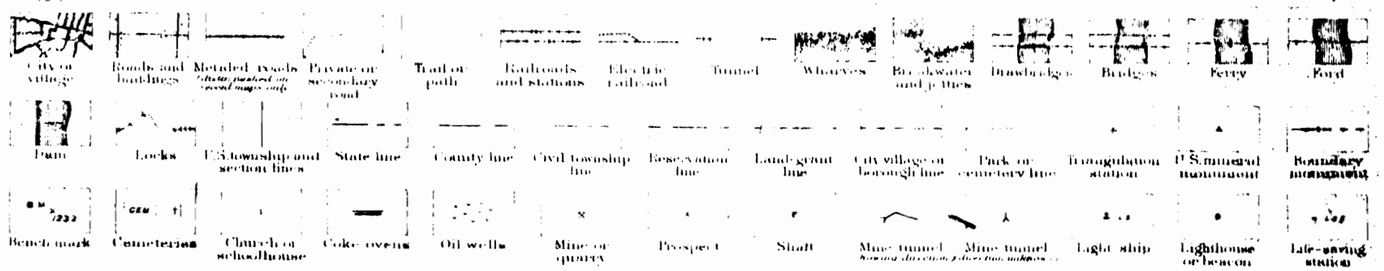
United States Geological Survey,

Washington, D. C.

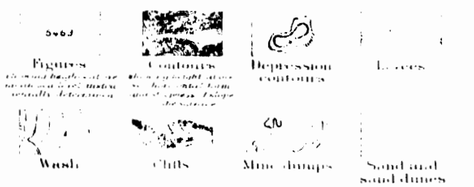
May, 1900.

CONVENTIONAL SIGNS

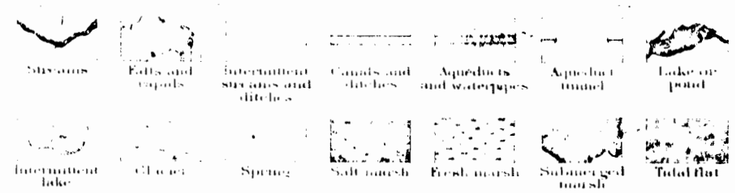
CULTURE
(printed in black)



RELIEF
(printed in brown)



WATER
(printed in blue)

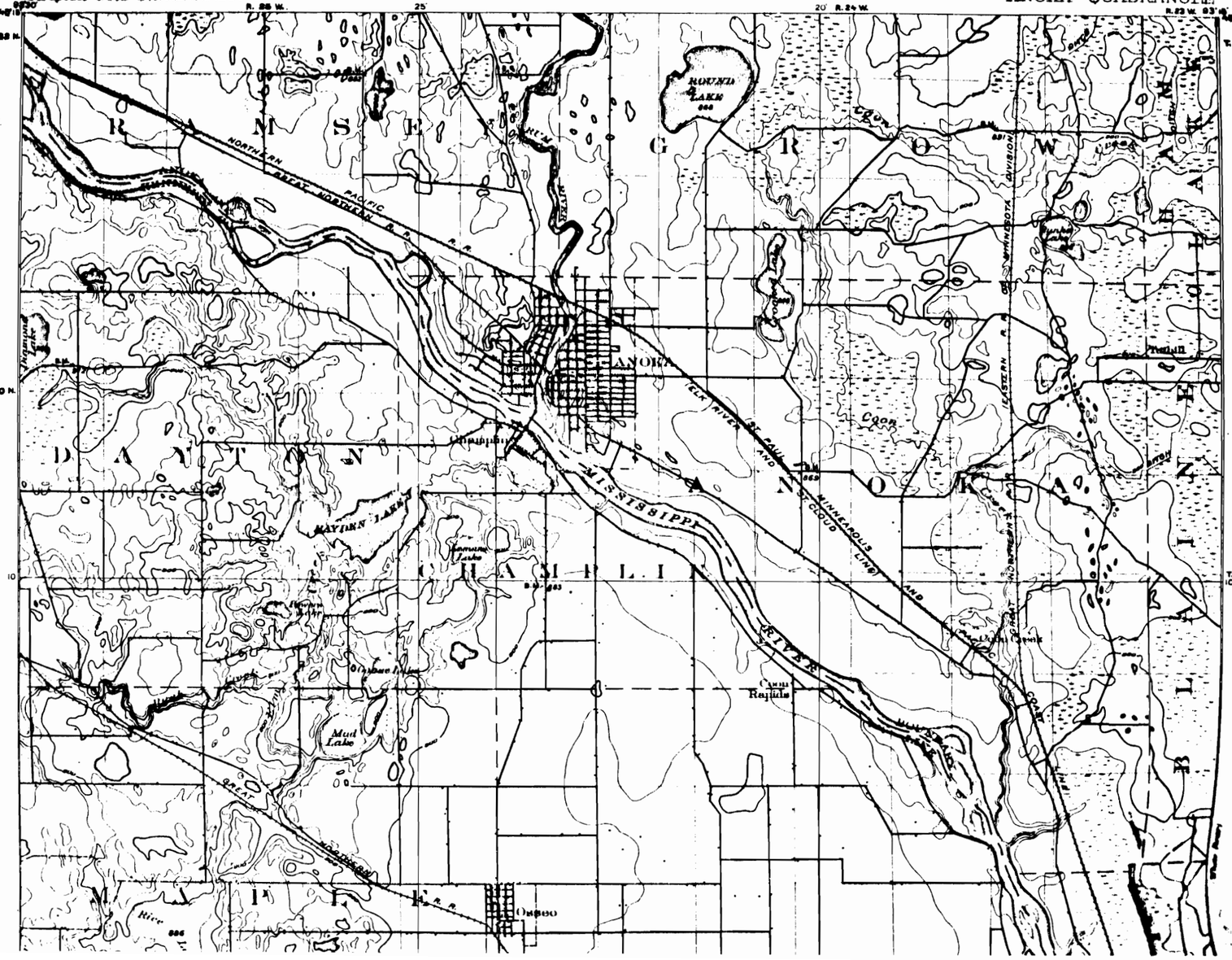


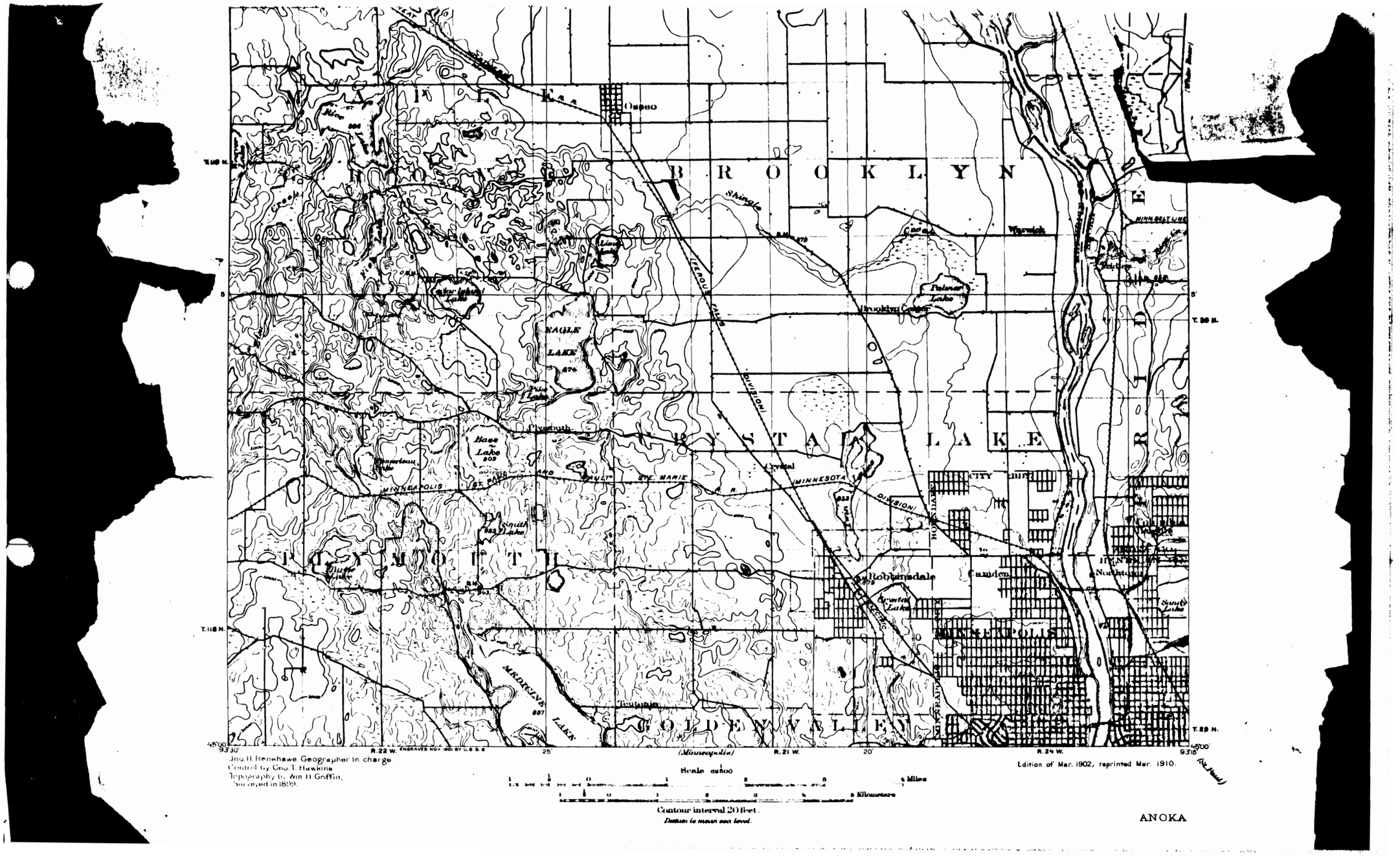
WOODS
(when shown, printed in green)

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

MINNESOTA
ANOKA QUADRANGLE





Jno. H. Renshawe, Geographer in charge.
Control by Geo. T. Hawkins.
Topography by Wm. H. Griffin,
Surveyed in 1899.

Edition of Mar. 1902, reprinted Mar. 1910.

Scale 1:62500

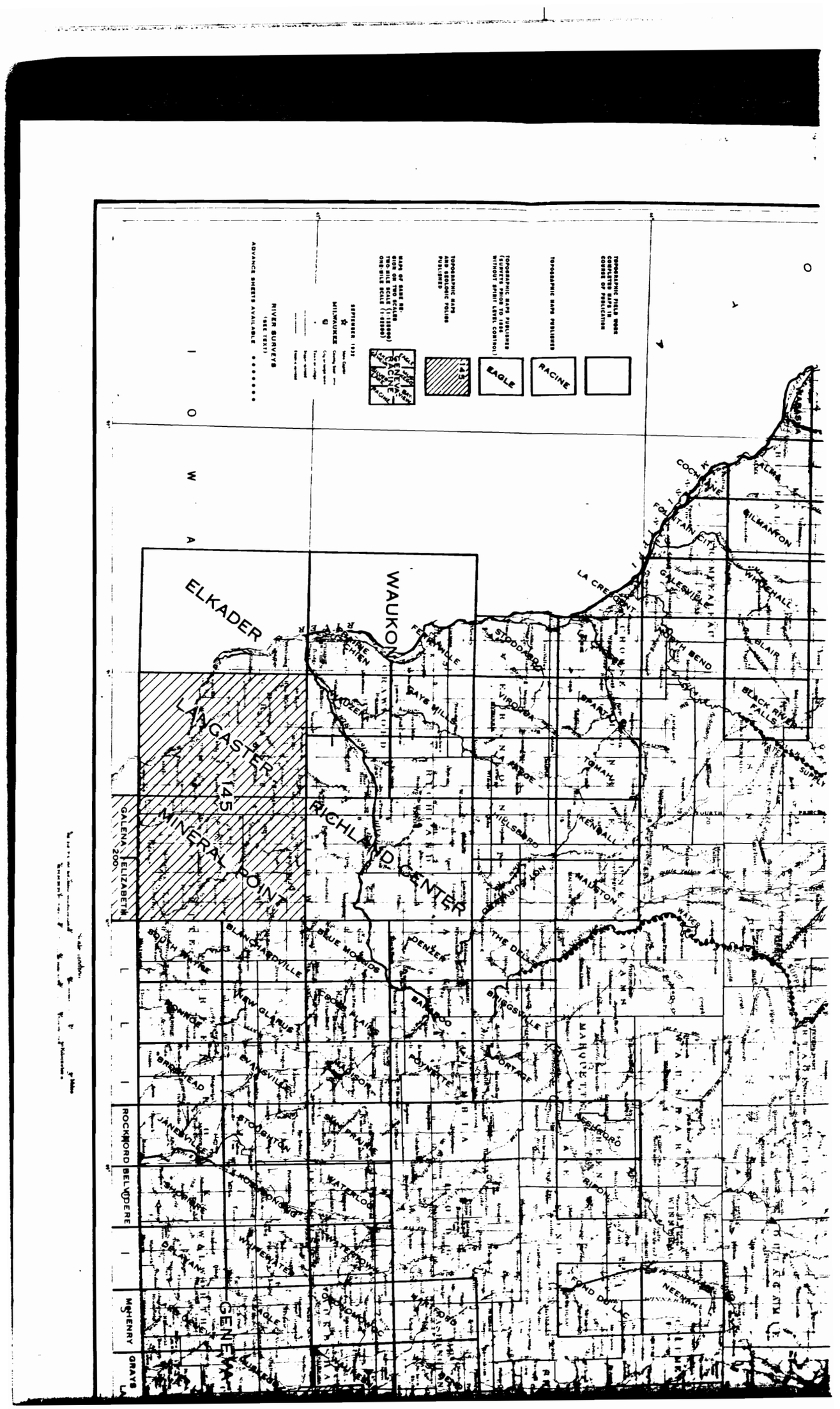
1 0 1 2 3 4 Miles

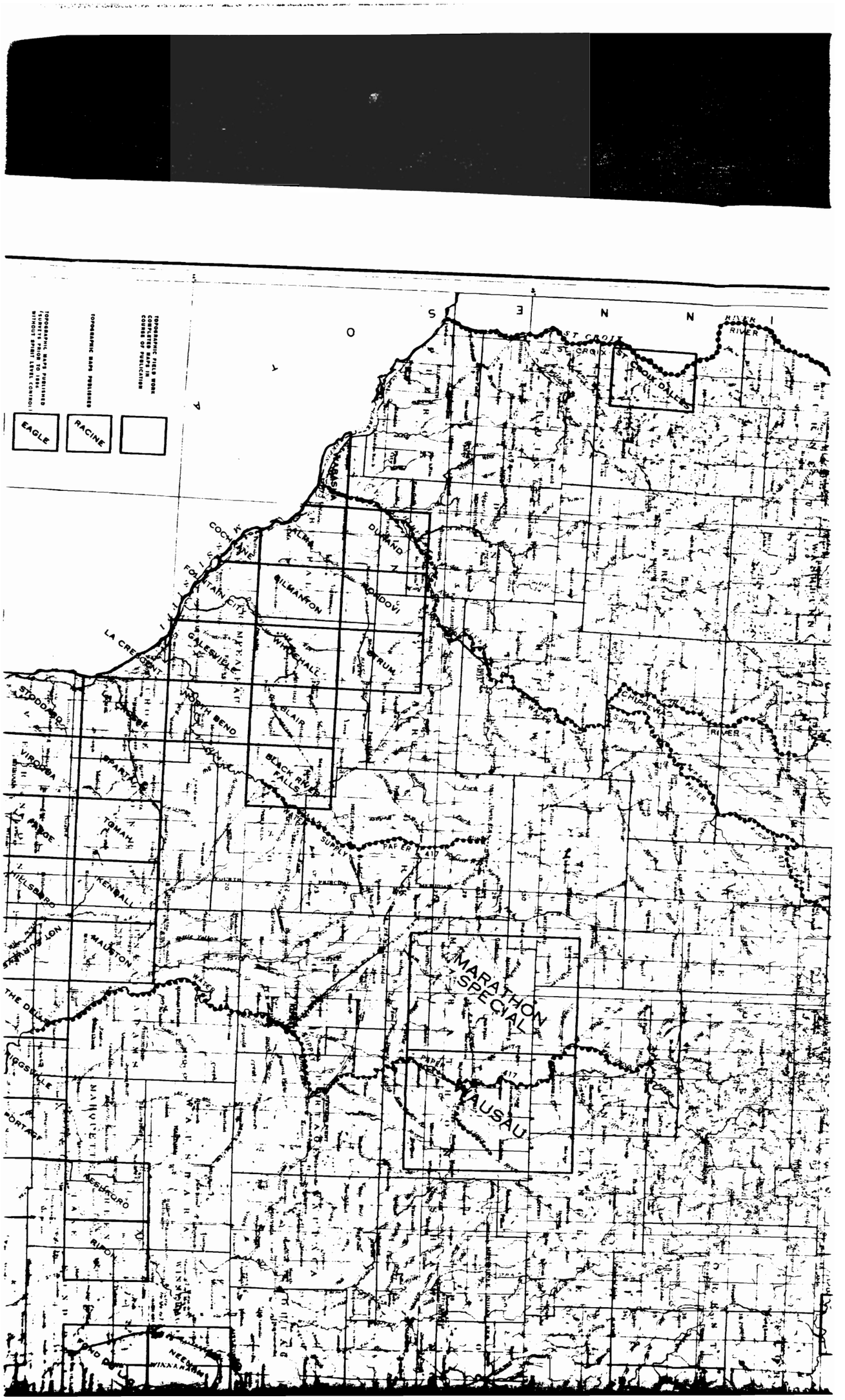
1 0 1 2 3 4 5 Kilometers

Contour interval 20 feet.

Datum is mean sea level.

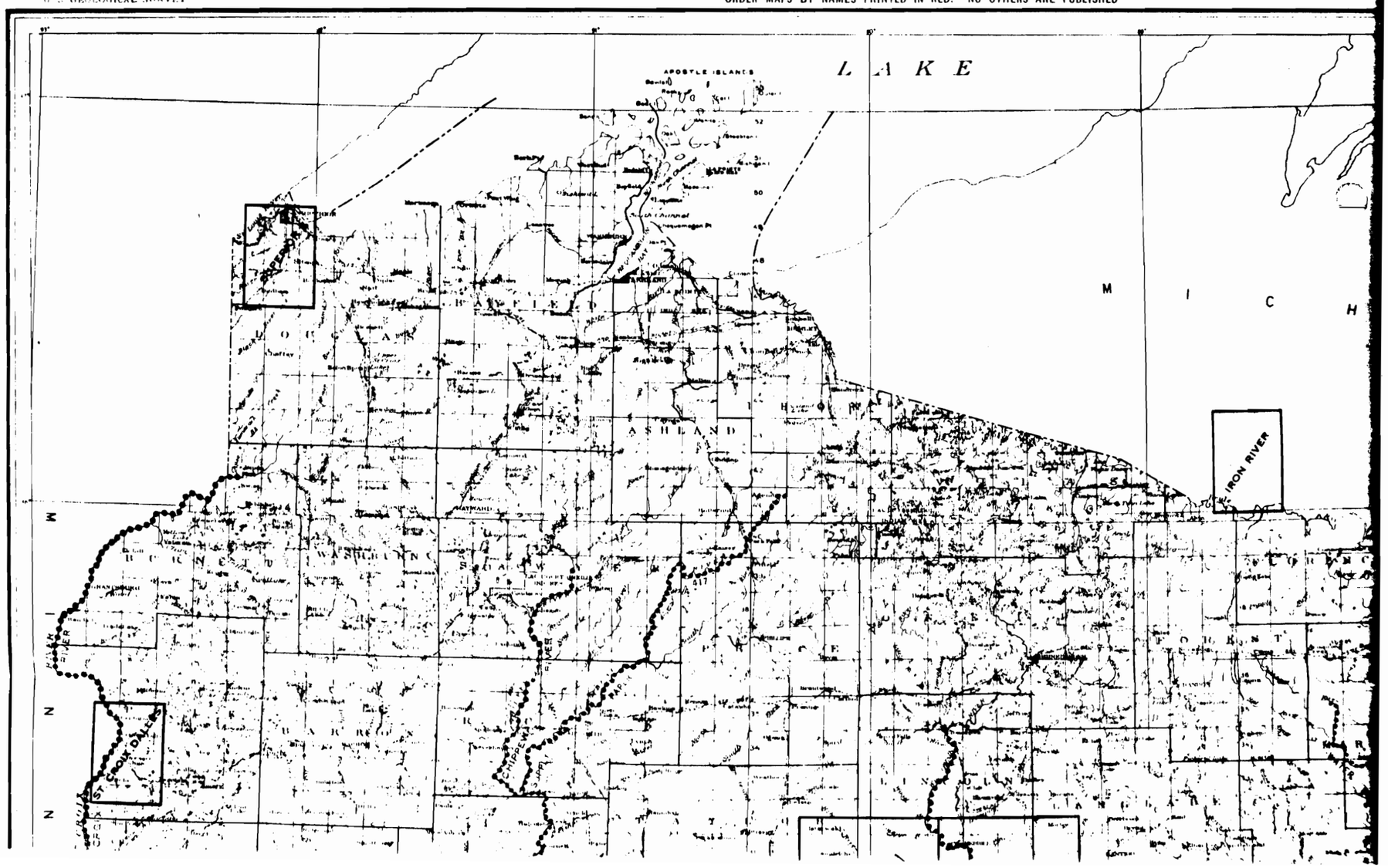
ANOKA


TOPOGRAPHIC FIELD WORK COMPLETED MAPS IN COURSE OF PUBLICATION
TOPOGRAPHIC MAPS PUBLISHED
TOPOGRAPHIC MAPS PUBLISHED (CONTOUR INTERVAL 10 FEET WITHOUT SPIRIT LEVEL CONTROL)
EAGLE
TOPOGRAPHIC MAPS PHOTOGRAPHIC FOLIOS PUBLISHED
145
MAPS OF SHORE OR RIVER OR TWO SCALES TWO MILE SCALE (1:126720) ONE-MILE SCALE (1:62500)
GENEVA
RACINE
WALWORTH
SEPTEMBER 1933
MILWAUKEE
RIVER SURVEYS (SEE TEXT)
ADVANCE SHEETS AVAILABLE
IOWA
ELKADER
WAUKON
LANCASTER
145
MINERAL POINT
RICHLAND CENTER
GALENA
ELIZABETH
ROCKFORD
BELVIDERE
McHENRY
GRAYS
GENEVA
LA CRESCENT
GALESVILLE
ONALASKA
COCHRANE
ALMA
FOUNTAIN CITY
WILMINGTON
WITTENBERG
NORTH BEND
BLAIR
BLACK RIVER FALLS
STODDARD
VIROQUA
VIOLA
GAYS MILLS
SEARLE
FERRYVILLE
PRAIRIE DU CHIEN
SEUKENDORF
TOMAH
KENDALL
WILTON
MAUSTON
NECEDAH
CAMP DOUGLAS
NEKOOSA
WISCONSIN RAPIDS
MARSHFIELD
WATERLOO
STOUGHTON
JANESVILLE
EVANSVILLE
BROOKLYN
NEW GLARUS
BLANCHARDVILLE
SOUTH WAYNE
BLUE MOUNDS
DODGEVILLE
BARNEVELD
ARENA
SPRING GREEN
PORTAGE
BARABOO
DELLONA
THE DELLS
BARABOO
MAUSTON
WATER


TOPOGRAPHIC FIELD WORK COMPLETED BUT MAPS IN COURSE OF PUBLICATION
TOPOGRAPHIC MAPS PUBLISHED
TOPOGRAPHIC MAPS PUBLISHED WITHOUT CONTOURS PRIOR TO 1894 WITHOUT SPIRIT LEVEL CONTOURS
EAGLE
RACINE
ST CROIX
ST CROIX FALLS
RIVER
DUNN
COCHRANE
DURAND
PEPIN
ILLMANTON
WITTENHALL
MONDOVI
LA CRESCENT
CALEDONIA
GALESVILLE
STODDARD
NORTH BEND
BLAIR
TRUMP
CHIPPEWA
CHIPPEWA RIVER
BLACK RIVER FALLS
VIROQUA
GENOA
LA FARGE
TOMAH
SUPPLY
KENDALL
WILLSBORO
MAUSTON
THE DELLS
MARATHON
SPECIAL
WAUSAU
MARINETTE
RIPON
NEENAH
WINNEBAGO

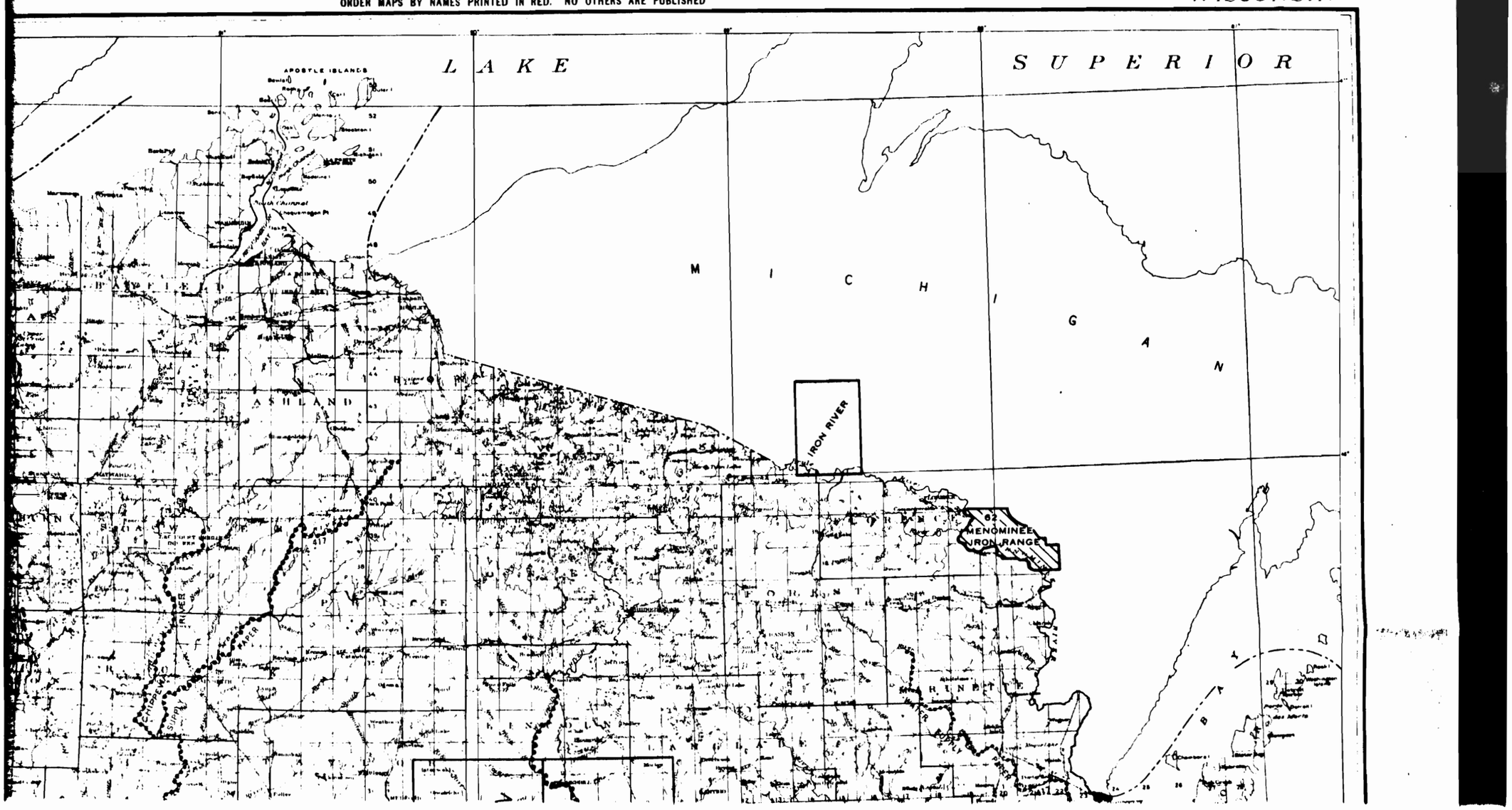
DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

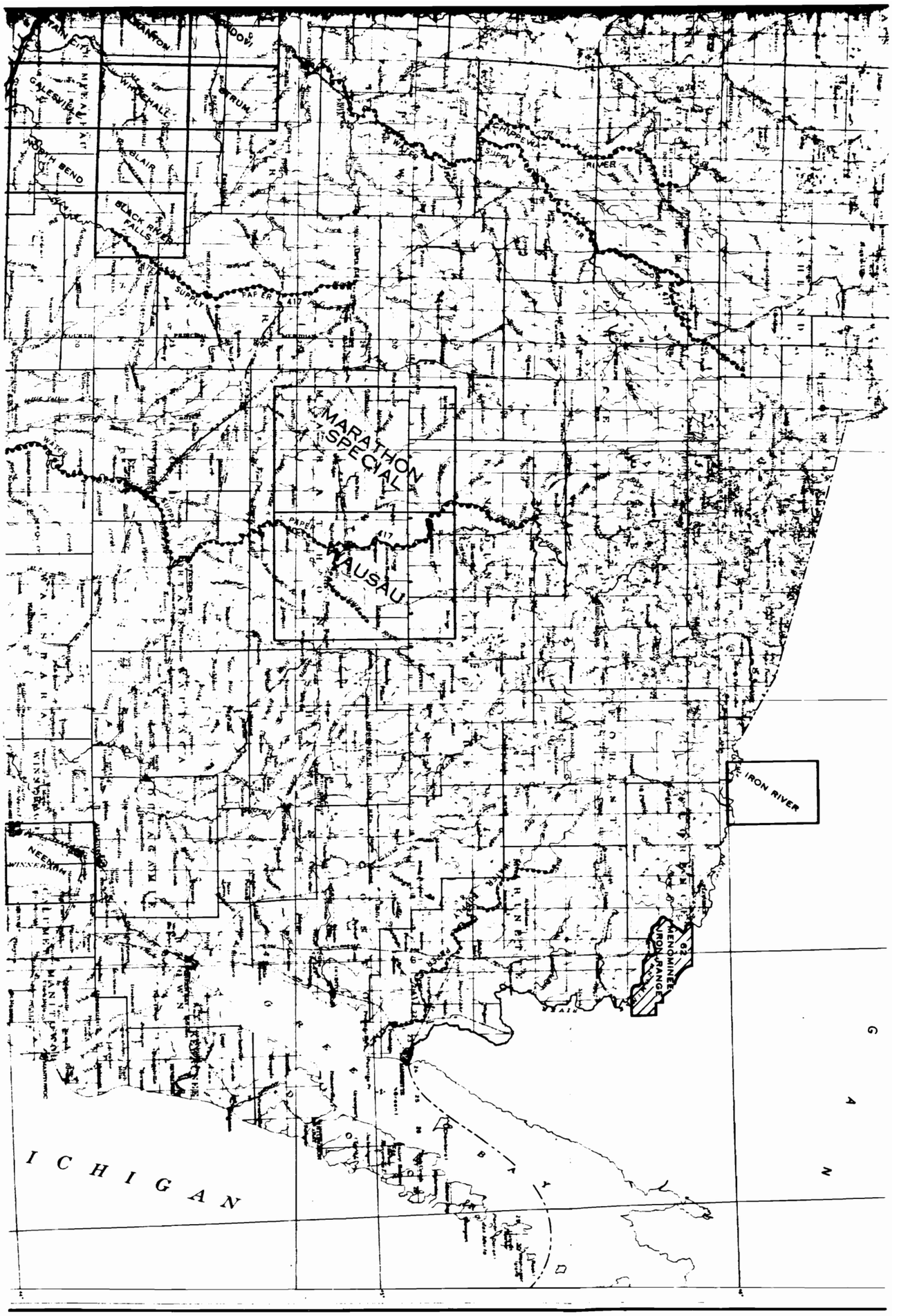
INDEX TO TOPOGRAPHIC MAPS AND GEOLOGIC FOLIOS
ORDER MAPS BY NAMES PRINTED IN RED. NO OTHERS ARE PUBLISHED

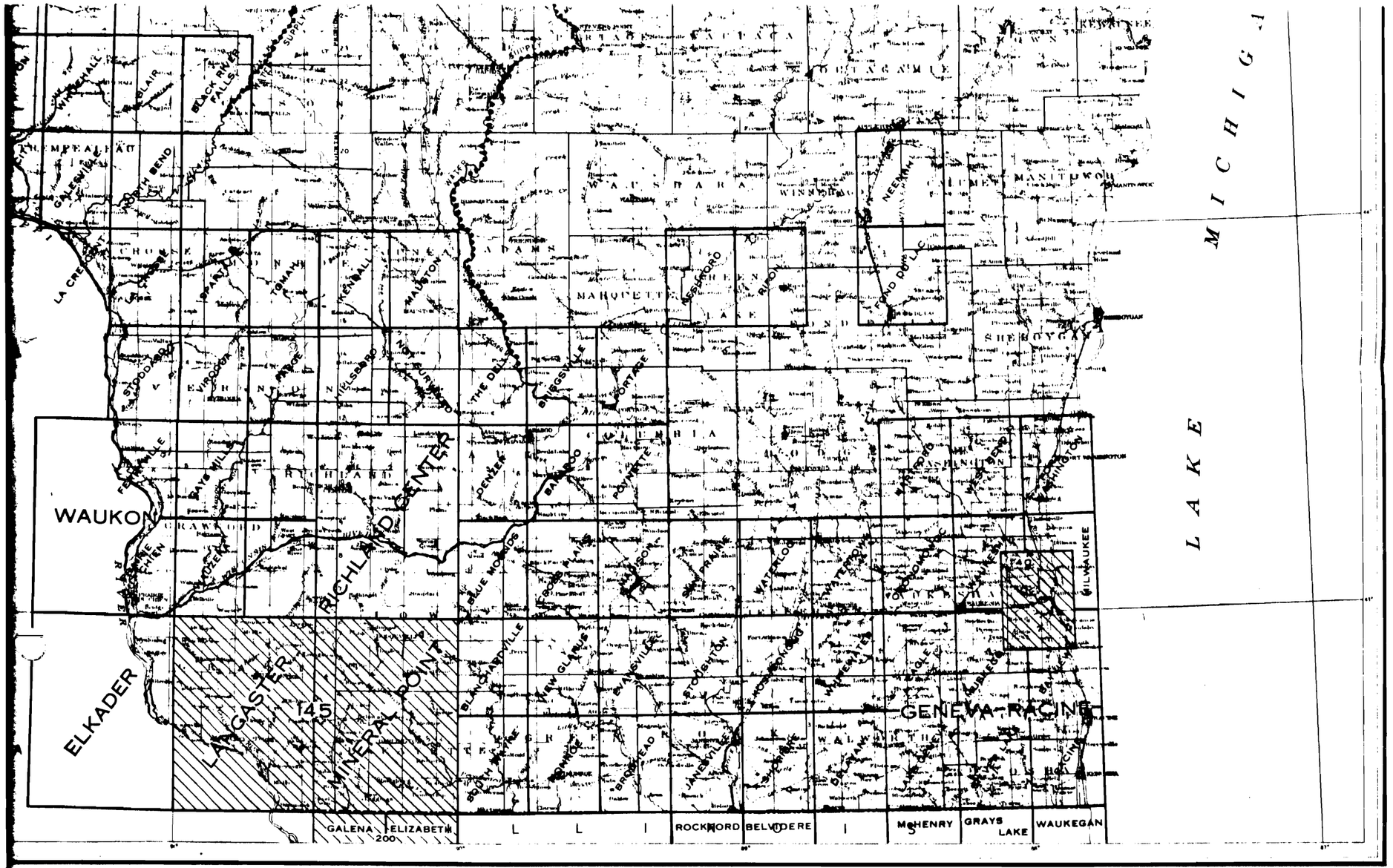


INDEX TO TOPOGRAPHIC MAPS AND GEOLOGIC FOLIOS
ORDER MAPS BY NAMES PRINTED IN RED. NO OTHERS ARE PUBLISHED

WISCONSIN




MARATHON
MARATHON
WAUSAU
IRON RIVER
MENOMINEE
IRON RANGE
MICHIGAN


MICHIGAN LAKE
WAUKON
RICHLAND CENTER
ELKADER
LANCASTER
MINERAL POINT
145
GENEVA-RACINE
GALENA
ELIZABETH
200
ROCKFORD
BELVIDERE
McHENRY
GRAYS LAKE
WAUKEGAN
MARQUETTE
SHEBOYGAN
MILWAUKEE
RACINE
DODGEVILLE
PLATTEVILLE
BARABOO
PORTAGE
BRIGGSVILLE
RIPON
FOND DU LAC
WATERTOWN
JANESVILLE
BELOIT
WAUKESHA
OCONOMOWOC
WEST BEND
NEENAH
MANITOWOC
WINNEBAGO
CALUMET
KEWAUNEE
DOOR
MARINETTE
OCONTO
MENOMINEE
SHAWANO
WAUPACA
PORTAGE
WOOD
JUNEAU
ADAMS
WAUSHARA
WINNEBAGO
FOND DU LAC
GREEN LAKE
COLUMBIA
DANE
DODGE
JEFFERSON
WALWORTH
RACINE
KENOSHA
GRANT
IOWA
LAFAYETTE
GREEN
ROCK
CRAWFORD
VERNON
RICHLAND
SAUK
JUNEAU
MONROE
LA CROSSE
TREMPEALEAU
JACKSON
BUFFALO
PEPIN
PIERCE
PALMYRA
EAGLE
OCONOMOWOC
WAUKESHA
MUKWONAGO
WHITEWATER
DELAVAN
LAKE GENEVA
ELKHORN
SHARON
DARIEN
BURLINGTON
WILMOT
SALEM
PADDOCK LAKE
KENOSHA
SILVER LAKE
ANTIOCH
WILDWOOD
WAUKEGAN
GURNEE
ZION
BENTON
SCALE 1:500,000
A MAP OF THE STATE OF WISCONSIN FOUR TIMES THE SIZE OF THIS INDEX AND WITHOUT THE RED OVERPRINT IS PUBLISHED AND FOR SALE BY THE UNITED STATES GEOLOGICAL SURVEY. PRICE 25 CENTS. ALSO THIS MAP WITHOUT OVERPRINT. PRICE 5 CENTS

DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

Topographic maps.—The United States Geological Survey is making a standard topographic atlas of the United States. The unit of survey is a quadrangle bounded by parallels of latitude and meridians of longitude, but different quadrangles are mapped on different scales, and consequently the standard maps, though of nearly uniform size (about 16½ by 20 inches), represent areas of different sizes. The standard scales are 1:31,680 (1 inch=one-half mile), 1:62,500 (1 inch=nearly 1 mile), and 1:125,000 (1 inch=nearly 2 miles). Some maps are published on special scales. Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. The maps are printed in three colors. The cultural features, such as roads, railroads, cities, and towns, as well as the lettering, are in black; the water features are in blue; and the features of relief—hills, mountains, etc.—are shown by brown contour lines. The contour interval differs according to the scale of the map and the relief of the country. On some maps woodland areas are shown in green and special features in other colors.

The progress of this work in Wisconsin is shown on the index map within. The surveys since 1915 have been made in cooperation with the State. Each of the rectangles outlined in red indicates a quadrangle of which a topographic survey has been made. The name of the resulting topographic map, if published, is also shown, and its scale is indicated by the size of the rectangle. Each of the maps represented by the smaller rectangles shows a quadrangle measuring 15′ each way, or from 205 to 220 square miles, the area differing according to the latitude. The scale is 1:62,500, and the contour interval is either 10 or 20 feet. Each of the maps represented by the larger rectangles shows a quadrangle measuring 30′ each way, or from 846 to 878 square miles. The scale is 1:125,000, and the contour interval is 20 feet. The whole number of published topographic maps covering quadrangles in Wisconsin is 79. A list of special maps and sheets is given on page 6.

The price of the standard maps is 10 cents each, but a discount of 40 per cent is allowed on an order amounting to $5 at the retail price—that is, the wholesale rate for standard topographic maps is $3 for 50. The discount is allowed on an order for maps alone, either of one kind or in any assortment, or for maps together with geologic folios. (See below.) Prices for maps other than the standard are given on page 4 of this circular. No discount will be allowed on an order amounting to less than $3. Prepayment is required and may be made by money order, payable to the Director of the United States Geological Survey, or in cash—the exact amount—at sender's risk; postage stamps should not be sent.

If maps ordered are not in stock the right is reserved to substitute others rather than return very small sums of money by mail, unless directions to the contrary are given in the order. *Name of county should be included in post-office address.*

The Survey can not supply mounted maps.

Geologic folios.—Geologic maps of some of the areas shown on the topographic maps are being published in the form of folios. Each folio includes maps showing the topography, geology, underground structure, and mineral deposits of the area mapped and several pages of descriptive text. The text explains the maps and describes the topographic and geologic features of the country and its mineral products. The folios are of special interest to students of geography and geology and are valuable as guides in the development and utilization of mineral resources.

For Wisconsin two folios have been issued, as shown on the index map by the rectangles shaded red and numbered. Both are now out of print. A general circular on geologic folios may be had on application.

World Atlas of Commercial Geology.—The World Atlas of Commercial Geology has been compiled by the United States Geological Survey to help in directing both the industry and the commerce of the United States. Two parts have been published. Part I, Distribution of mineral production, gives the results of a study of the world's supply of essential minerals. Part I is out of print. Part II, Water power of the world, shows the world's potential water power and the extent to which it has been utilized at home and abroad. Price, $1; in lots of 10 or more, 60 cents.

All correspondence should be addressed to

THE DIRECTOR,
UNITED STATES GEOLOGICAL SURVEY,
WASHINGTON, D. C.

September, 1932.
8—3,000

SPECIAL MAPS AND SHEETS

[Measurements are approximate]

Geneva-Racine, Wis. This map is composed of the Bayview, Eagle, Lake Geneva, Muskego, Racine, and Silver Lake maps combined and printed as a single map on a smaller scale. Limiting parallels, 42° 30′ and 43°. Limiting meridians, 87° 30′ and 88° 30′. Size, 20 by 29 inches. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 20 feet. Price, 20 cents; if included in wholesale orders, 12 cents.

River-survey maps (advance sheets). The following advance sheets are now available for distribution but are useful chiefly to engineers. Price, 50 cents a sheet; no wholesale rate.

CHIPPEWA RIVER, WIS. Six sheets (4 plans, 2 profiles) of the Chippewa River from mouth to Chippewa Falls and five sheets (4 plans, 1 profile) from Flambeau River to Chippewa Reservoir. Scale, 1:24,000. Contour intervals, 5 and 10 feet. (See also Water Supply Paper 417.)

ST. CROIX RIVER, MINN.-WIS. Six plan sheets of the St. Croix River from mouth to a point 11 miles above Danbury, Wis. Scale, 1:24,000. Contour interval, 5 feet.

Wisconsin (State). This map is in black and white and does not show contours. Size, 43 by 45 inches, in two sheets. Scale, 1:500,000, or about 8 miles to 1 inch. Price, 25 cents; if included in wholesale orders, 15 cents. Also published *on* a scale of 1:1,000,000, or about 16 miles to 1 inch; size, 21 by 24 inches; price, 5 cents; if included in wholesale orders, 3 cents.

North America. This map does not show contours. Size, 29 by 38 inches. Scale, 1:10,000,000, or about 158 miles to 1 inch. Price, 40 cents; if included in wholesale orders, 24 cents.

Sheet of standard symbols. Shows symbols and abbreviations adopted by the Board of Surveys and Maps, United States of America, for use on Government maps; printed in five colors. Size, 22 by 33 inches. Price, 40 cents; if included in wholesale orders, 24 cents.

MAPS OF THE UNITED STATES

A wall map, 55 by 85 inches, in two sheets, on a scale of 37 miles to 1 inch, approximately, without contours, showing coal fields. Price, $1; if included in wholesale orders, 60 cents.

A wall map, 49 by 78 inches, in two sheets, on a scale of 40 miles to 1 inch, approximately, without contours. Insets show Alaska, Hawaii, the Philippine Islands, Canal Zone, Porto Rico, and the Virgin Islands. Water features and their names are printed in blue; boundary lines and names of States, counties, cities, and towns are printed in black; and railroads are indicated by fine brown lines. Price, $1; if included in wholesale orders, 60 cents.

A wall map, same size and scale as next above, without contours, showing producing oil and gas districts. Price, $1; if included in wholesale orders, 60 cents.

A wall map, 49 by 76 inches, in two sheets, on a scale of 40 miles to 1 inch, approximately, with contours. Price, 60 cents; if included in wholesale orders, 36 cents.

A wall map, same size and scale as next above, without contours, showing producing coal districts. Price, 75 cents; if included in wholesale orders, 45 cents.

A wall map, 40 by 62 inches, on a scale of 50 miles to 1 inch, on which is indicated by depth of brown and blue colors the relative height of the land and the depth of the sea. The position of the principal cities and the boundaries of the States are shown. Price, 75 cents; in lots of 10 or more, 50 cents.

A map, 18 by 28 inches, on a scale of 110 miles to 1 inch, either with or without contours. Price, 15 cents; if included in wholesale orders, 9 cents.

A relief or hypsometric map, same size, scale, and price as next above; altitudes indicated by colors.

A base map, 11 by 16 inches, on a scale of 190 miles to 1 inch. Price, 5 cents; if included in wholesale orders, 3 cents.

A base map, 8½ by 12 inches, on a scale of 260 miles to 1 inch. Price, 1 cent; if included in wholesale orders, five for 3 cents.

A map, 28 by 31 inches, on a scale of 110 miles to 1 inch, without contours, showing the physical divisions. Price, 10 cents; if included in wholesale orders, 6 cents.

LOCAL AGENTS FOR TOPOGRAPHIC MAPS

Purchasers may save delay incident to ordering through the mails by buying of the following agents, who carry in stock maps of areas in their vicinity and sell them at prices slightly in advance of rates mentioned in this circular.

WISCONSIN

MADISON:
University Cooperative Co., 506 State Street.

MILWAUKEE:
Caspar, Krueger, Dory Co., 722 North Water Street.

ILLINOIS

CHICAGO:
Fred Wild Co., 314 South Franklin Street.

NEW YORK

NEW YORK CITY:
Hagstrom Map Co., 120 Vesey Street.

NEW YORK CITY—Continued:
C. S. Hammond & Co., 30 Church Street.

GEOLOGIC AND OTHER REPORTS

The following reports relate to Wisconsin but are not parts of the topographic or geologic atlas. An asterisk (*) indicates that the report is out of print, but many such reports are available for consultation in certain libraries. (See list on p. 4.) The publications for which the price is stated are sold by the Superintendent of Documents, Government Printing Office, Washington, D. C. Remittance to that official should be made by postal money order, express order, or check; postage stamps will not be accepted.

ANNUAL REPORTS:

Third, 1881–82. 564 pp. $2.35. Contains: The copper-bearing rocks of Lake Superior, by R. D. Irving, pp. 89–188; Production of the precious metals in the United States, by Clarence King, pp. 331–401.
Fifth, 1883–84. 469 pp. $2.25. Contains: Preliminary paper on an investigation of Archean formations of the Northwestern States, by R. D. Irving, pp. 175–242.
Sixth, 1884–85. 570 pp. $2. Contains: Preliminary paper on the Driftless Area of the upper Mississippi Valley, by T. C. Chamberlin and R. D. Salisbury, pp. 199–322.
Seventh, 1885–86. 656 pp. $2. Contains: The rock scorings of the great ice invasions, by T. C. Chamberlin, pp. 147–248; On the classification of early Cambrian and pre-Cambrian formations, by R. D. Irving, pp. 365–454.
Eighth, 1886–87. *Part II. pp. 483–1063. Contains: The geographical distribution of fossil plants, by L. F. Ward, pp. 663–690.
Tenth, 1888–89. Part I. 774 pp. $2.35. Contains: The Penokee iron-bearing series of Michigan and Wisconsin, by R. D. Irving and C. R. Van Hise, pp. 341–507.
Twelfth, 1890–91. Part I. 675 pp. $2. Contains: The North American continent during Cambrian time, by C. D. Walcott, pp. 523–568.
Thirteenth, 1891–92. *Part II. 372 pp. Contains: The geological history of harbors, by N. S. Shaler, pp. 93–209; The average elevation of the United States, by Henry Gannett, pp. 283–289.
Fourteenth, 1892–93. *Part II. 597 pp. Contains: Natural mineral waters of the United States, by A. C. Peale, pp. 49–88.
Sixteenth, 1894–95. *Part I. 910 pp. Contains: Principles of North American pre-Cambrian geology, by C. R. Van Hise, with an appendix on flow and fracture of rocks as related to structure, by L. M. Hoskins, pp. 571–874.
Seventeenth, 1895–96. *Part I. 1076 pp. Contains: Magnetic declination in the United States, by Henry Gannett, pp. 203–440.
Eighteenth, 1896–97. Part I. 440 pp. $1. Contains: Triangulation and spirit leveling, pp. 131–422. *Part II. 653 pp. Contains: Recent earth movement in the Great Lakes region, by G. K. Gilbert, pp. 595–647.
Nineteenth, 1897–98. Part I. 422 pp. $1. Contains: Triangulation and spirit leveling, pp. 145–408.
Twentieth, 1898–99. Part I. 551 pp. $1. Contains: Triangulation and spirit leveling, pp. 211–530.
Twenty-first, 1899–1900 Part I. 608 pp. $1.25. Contains: Triangulation, primary traverse, and spirit leveling, pp. 205–582. *Part III. 644 pp. Contains: The iron-ore deposits of the Lake Superior region, by C. R. Van Hise, pp. 305–434.

MONOGRAPHS:

*5. The copper-bearing rocks of Lake Superior, by R. D. Irving. 1883. 464 pp.
*16. The Paleozoic fishes of North America, by J. S. Newberry. 1889. 340 pp.
*19. The Penokee iron-bearing series of Michigan and Wisconsin, by R. D. Irving and C. R. Van Hise. 1892. 534 pp.
51. Cambrian Brachiopoda, by C. D. Walcott. 1912. In two parts. Part I, 872 pp.; Part II, 363 pp. $4.
52. The geology of the Lake Superior region, by C. R. Van Hise and C. K. Leith. 1911. 641 pp. $2.50.
53. The Pleistocene of Indiana and Michigan and the history of the Great Lakes, by Frank Leverett and F. B. Taylor. 1915. 529 pp. $1.50.

PROFESSIONAL PAPERS:

*11. The clays of the United States east of the Mississippi River, by Heinrich Ries. 1903. 298 pp.
34. The Delavan lobe of the Lake Michigan glacier of the Wisconsin stage of glaciation and associated phenomena, by W. C. Alden. 1904. 106 pp. 55c.
106. The Quaternary geology of southeastern Wisconsin, by W. C. Alden. 1918. 356 pp. $1.
*135. The composition of the river and lake waters of the United States, by F. W. Clarke. 1924. 199 pp.
154. Shorter contributions to general geology, 1928. 299 pp. $1.50. (*a*) Moraines and shore lines of the Lake Superior Basin, by Frank Leverett, pp. 1–72, 50c.
161. Quaternary geology of Minnesota and parts of adjacent States, by Frank Leverett, with contributions by F. W. Sardeson. 1932. 149 pp. $1.25.

BULLETINS:

*5. A dictionary of altitudes in the United States, compiled by Henry Gannett, chief geographer. 1884. 325 pp.
*13. Boundaries of the United States and of the several States and Territories, with a historical sketch of the territorial changes, by Henry Gannett, chief geographer. 1885. 135 pp.
*27. Report of work done in the division of chemistry and physics, mainly during the fiscal year 1884–85. 80 pp. Contains: Miscellaneous analyses, pp. 62–76.
*32. Lists and analyses of the mineral springs of the United States (a preliminary study), by A. C. Peale. 1886. 235 pp.
*42. Report of work done in the division of chemistry and physics, mainly during the fiscal year 1885–86. 152 pp. Contains: Miscellaneous analyses, pp. 136–149.
*55. Report of work done in the division of chemistry and physics, mainly during the fiscal year 1886–87. 96 pp. Contains: Miscellaneous analyses, pp. 77–93.
*60. Report of work done in the division of chemistry and physics, mainly during the fiscal year 1887–88. 174 pp. Contains: Miscellaneous analyses, pp. 149–174.
*64. A report of work done in the division of chemistry and physics, mainly during the fiscal year 1888–89. 60 pp. Contains: Miscellaneous analyses, pp. 40–60.
*72. Altitudes between Lake Superior and the Rocky Mountains, by Warren Upham. 1891. 229 pp.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

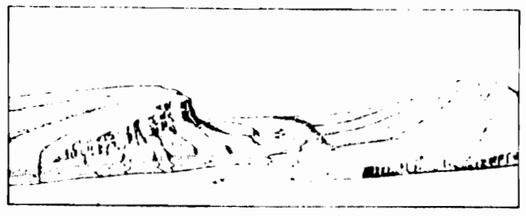
A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,300 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic

mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

tive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

STANDARD SYMBOLS

CULTURE
(printed in black)

City or village
Roads and buildings
Ruins
Cliff dwelling
Good motor road
Poor motor or private road
Trail
Railroads
Electric railroad
Tunnel
Power transmission line
Wharves
Breakwater and jetties
Bridge
Drawbridges
Ferry *(boat symbol)*
Ford
Dam
Dam with lock
Canal lock *(point symbol)*
U.S. township and section lines and recovered corners
State line
County line
Civil Township or district line
Reservation line
Land grant line
City, village or borough line
Small park or cemetery line
Triangulation point or transit traverse station
U.S. mineral monument
Boundary monument
Bench mark *(triangulation bench mark shown by crosses and black figures without lettering)*
Cemeteries
Church & School *(class symbol)*
Coke ovens
Tanks and oil reservoirs
Oil and gas wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Mine tunnel *(showing direction)*
Lighthouse or beacon
Coast Guard station

RELIEF
(printed in brown)

Elevation above mean sea level *(in black on sheets without water)*
Contours *(on sheets containing data in water printed in blue)*
Depression contours
Levee
Wash
Cliffs
Mine dumps
Talus or moraine debris
Sand and sand dunes

WATER
(printed in blue)

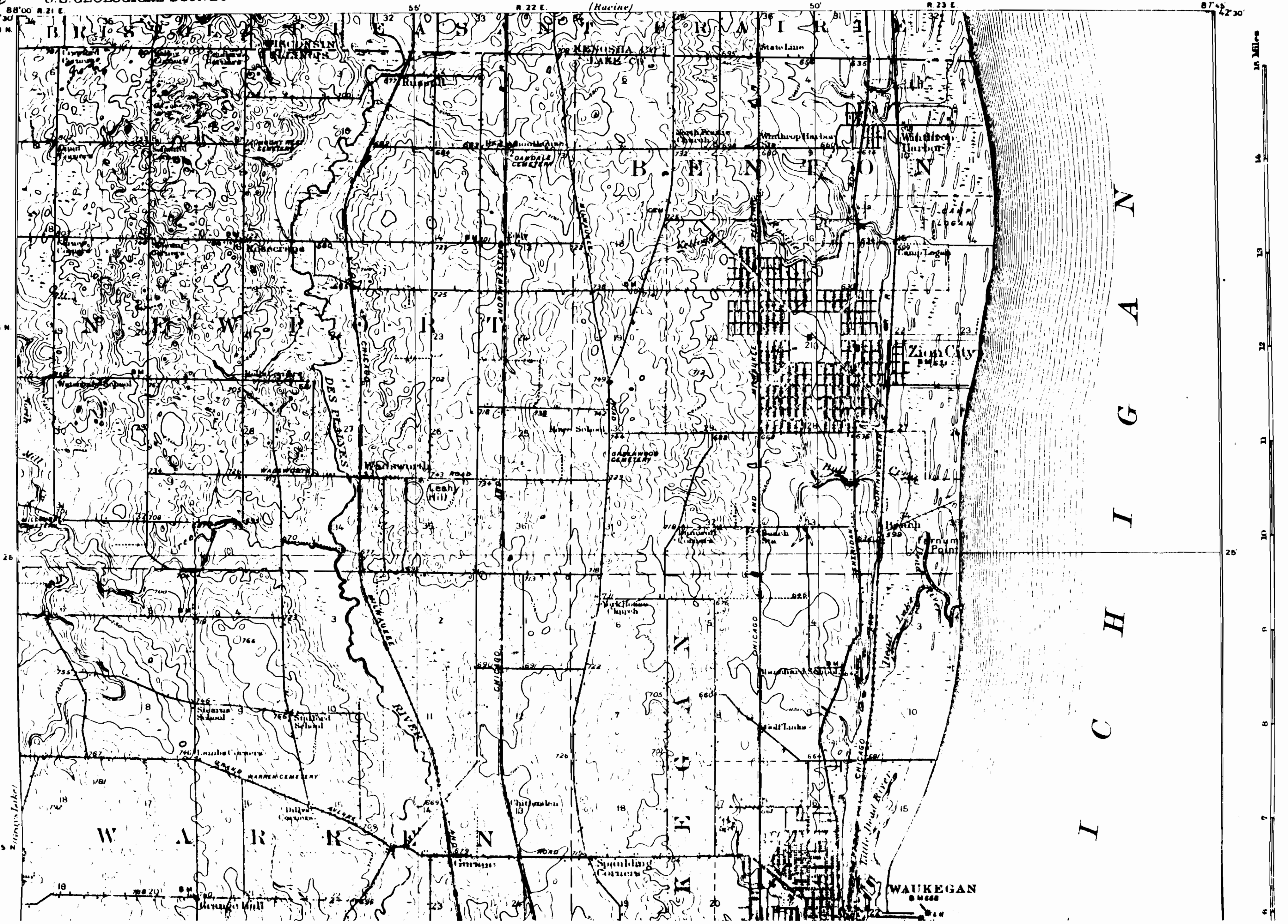
Streams
Falls and rapids
Intermittent streams and ditches
Canals or ditches
Aqueducts on waterpiers
Aqueduct tunnels
Lake or pond
Unsurveyed stream and abandoned canal
Intermittent lake
Glacier
Spring
Well
Marsh
Submerged marsh

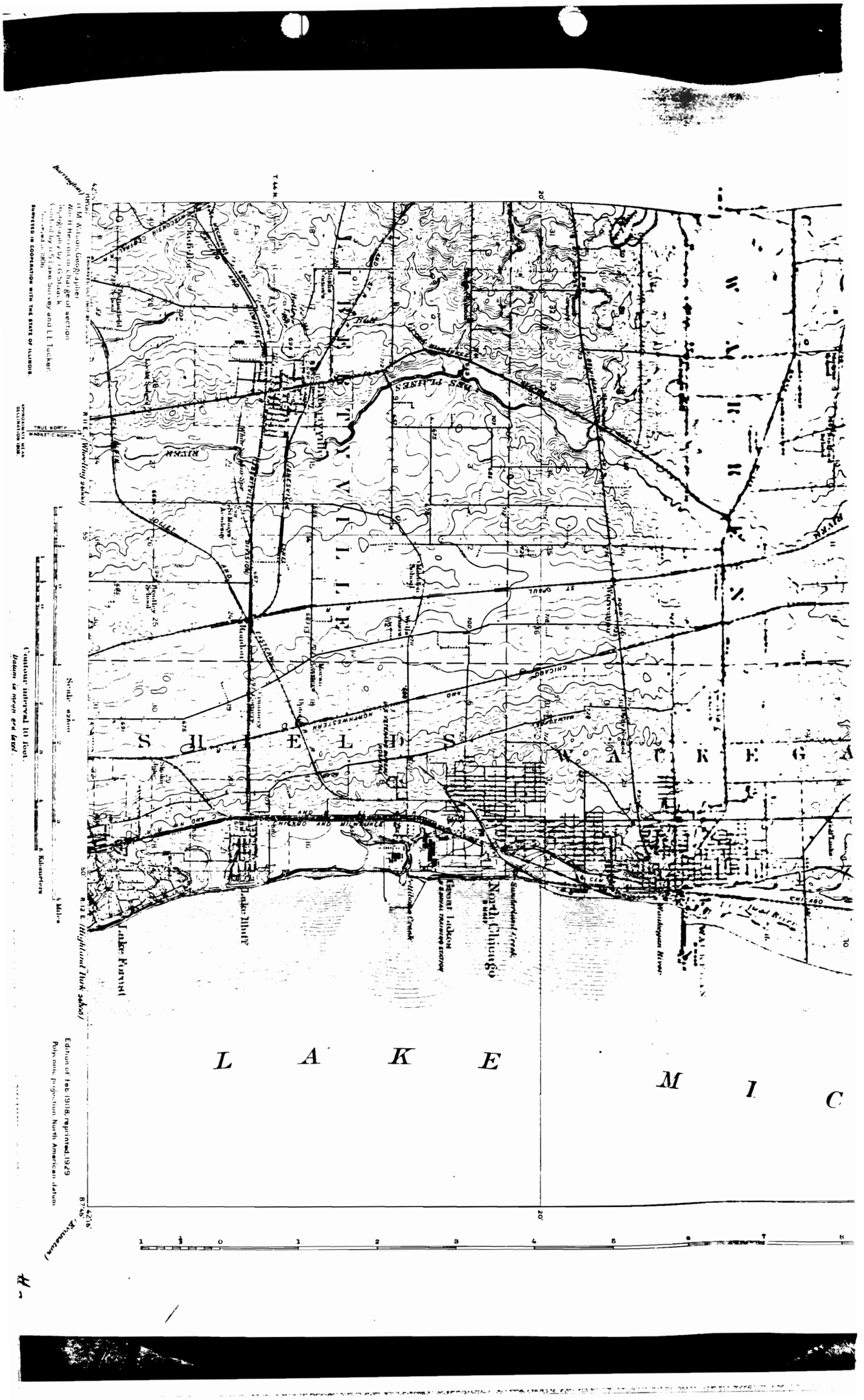
WOODS
(after sheets are printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF ILLINOIS
REPRESENTED BY THE
DEPARTMENT OF REGISTRATION AND EDUCATION
GEOLOGICAL SURVEY DIVISION.

ILLINOIS-WISCONSIN
WAUKEGAN QUADRANGLE




WAUKEGAN
NORTH CHICAGO
LAKE FOREST
LAKE BLUFF
LAKE MICHIGAN
Contour interval 10 feet.
Datum is mean sea level.
Edition of Feb 1918, reprinted 1929
Polyconic projection North American datum
SURVEYED IN COOPERATION WITH THE STATE OF ILLINOIS

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance relating, for example, to mineral development, irrigation, or reclamation of swamp areas are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = ½ mile (one-half mile), with a contour interval of 5, 10, or 20 feet.

2. Surveys of areas in which there are problems of average public importance, which are most of the farm of the Mississippi and of Illinois, are made with sufficient accuracy to be used in the publication of maps on a scale of 2½ inch = 1 mile, nearly 1 inch, with a contour interval of 10 to 20 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = 2 miles, nearly 1 inch = 3 miles, with a contour interval of 50 to 100 feet.

A topographic survey of Alaska has been in progress since 1898 and [illegible] of it has been completed. About 10 per cent of the Territory has been [illegible]

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground in contact every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run to other indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.

ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined tableland that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margin of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,500 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic maps are the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are issued together with a description [illegible] folios of the Geologic Atlas of the United States. [illegible] 220 folios have been published.

[illegible] surveyed in Alaska and Hawaii, showing [illegible] topographic maps and geologic folios published [illegible] Survey may be obtained [illegible] maps may be obtained [illegible] sold at different prices [illegible] received, an order for maps

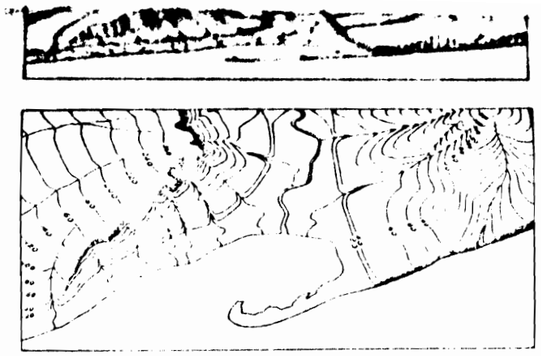
to the publication of maps on a scale of $\frac{1}{62500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. *Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of* $\frac{1}{125000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{125000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lie between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

maps showing these features are published, with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

STANDARD SYMBOLS

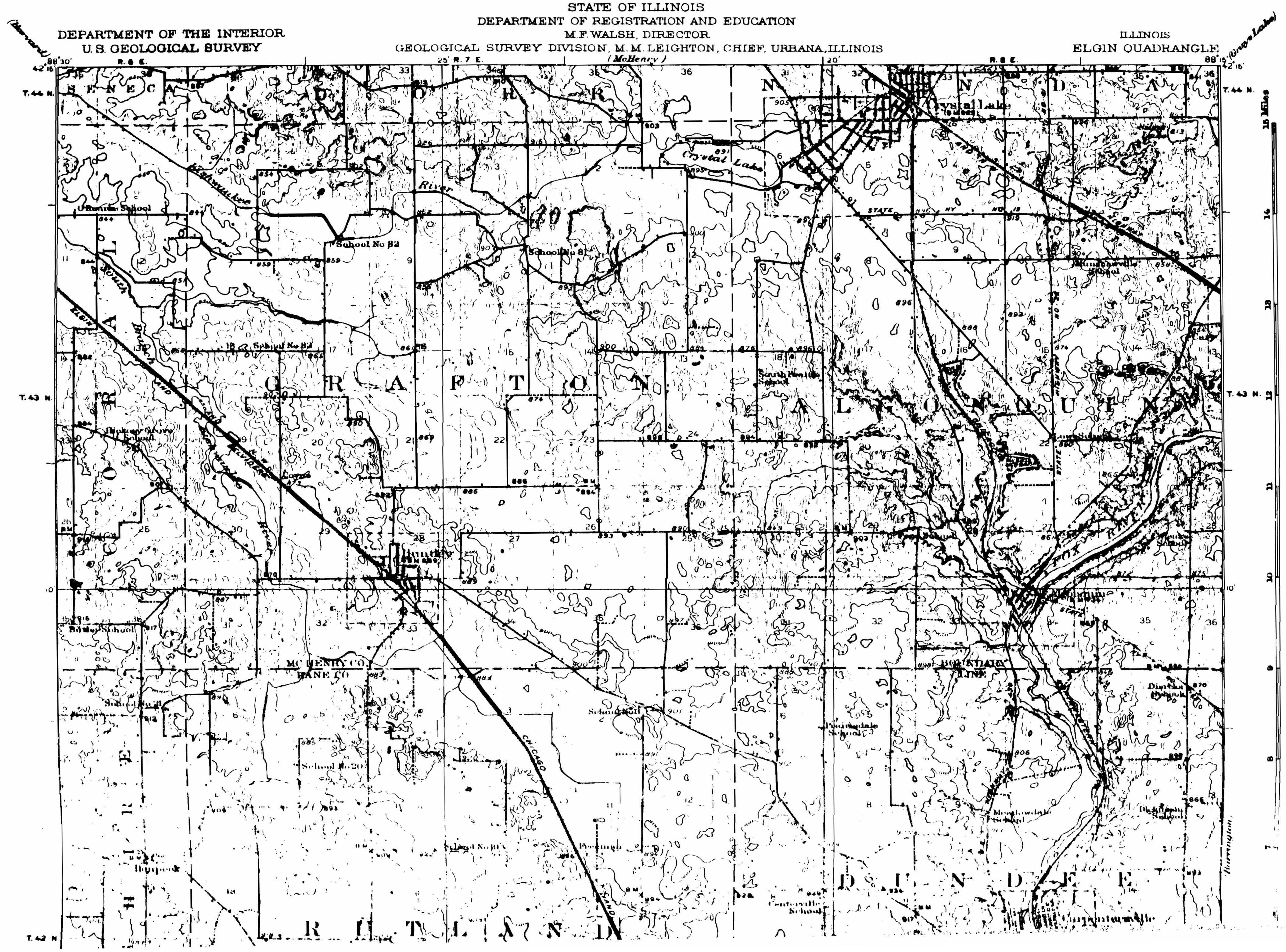
CULTURE
printed in black

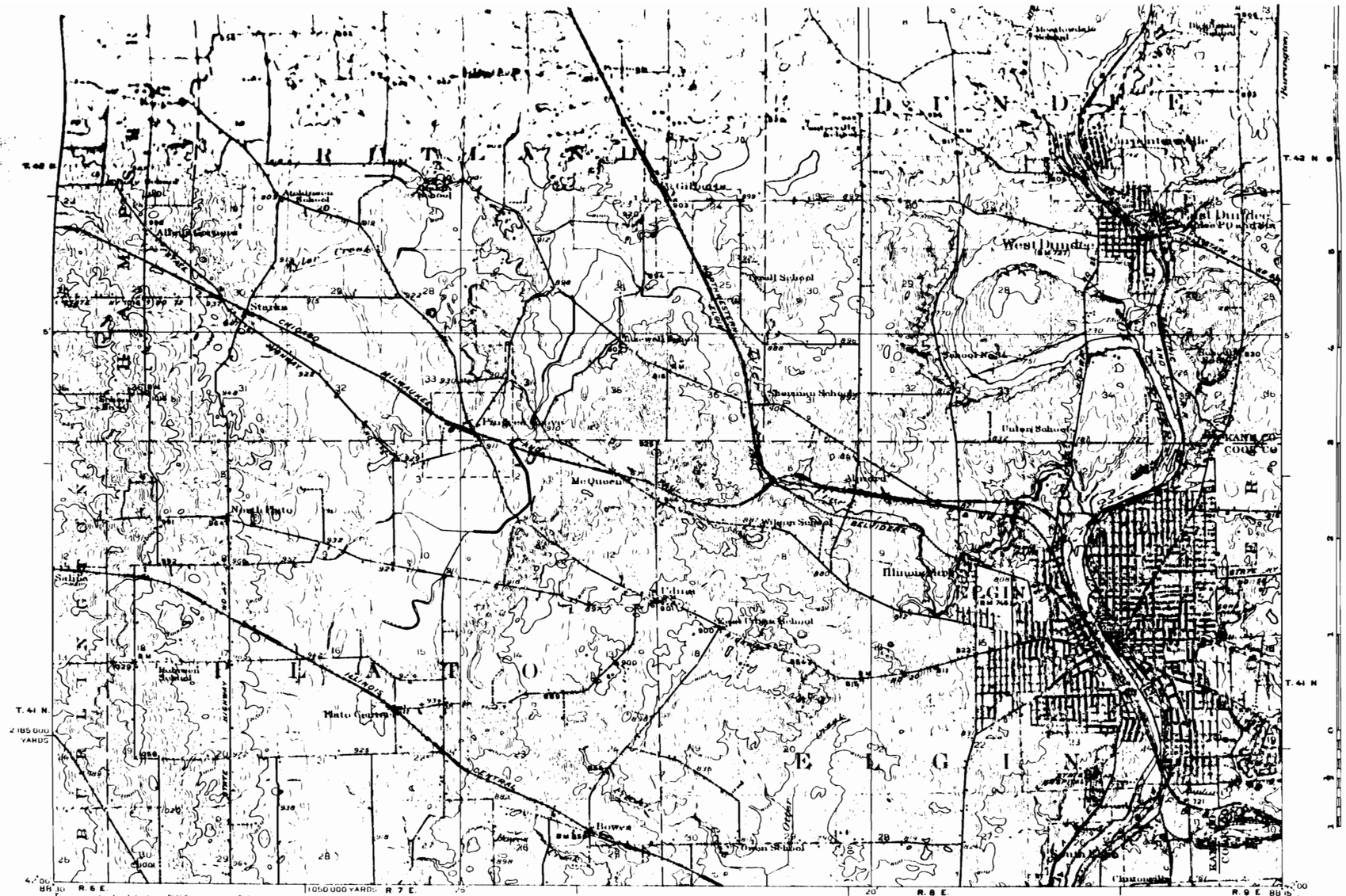
WATER
printed in blue

STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION
M. F. WALSH, DIRECTOR
GEOLOGICAL SURVEY DIVISION, M. M. LEIGHTON, CHIEF, URBANA, ILLINOIS

DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

ILLINOIS
ELGIN QUADRANGLE





Topography by E.T. Ham, R.G. Stevenson, O.C. Pope, and H.Q. Lord.
Control in part from railroad valuation surveys and Illinois Rivers and Lakes Commission.
Surveyed in 1913

#2

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 15 per cent of it area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250,000}$ or about 4 miles to an

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.

ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined tableland that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 500 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,300 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold [illegible]

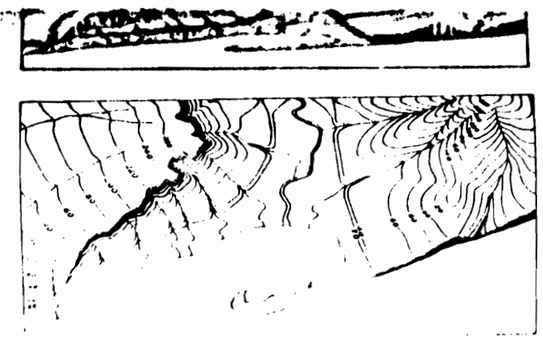
to the publication of maps on a scale of 1:62,500 (1 inch nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of 1:125,000 (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of 1:250,000, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of 1:62,500, but about 1,000 square miles has been mapped on a scale of 1:31,680 or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of 1:31,680.

The features shown on these maps may be arranged in three groups: (1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 230 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

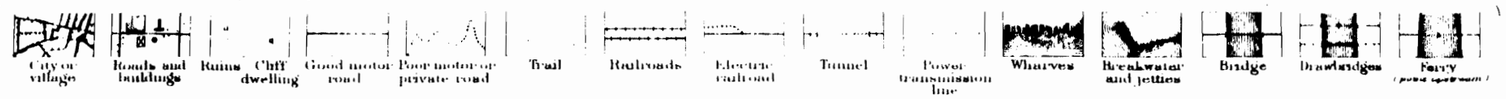
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

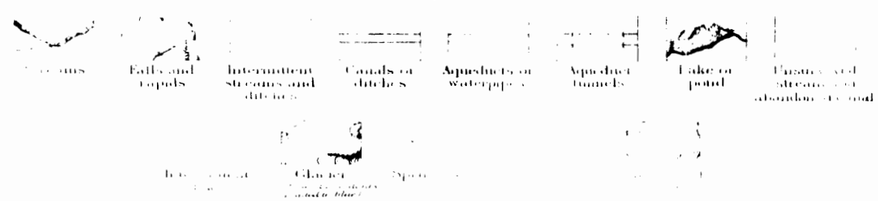
STANDARD SYMBOLS

CULTURE
(printed in black)



RELIEF
(printed in brown)

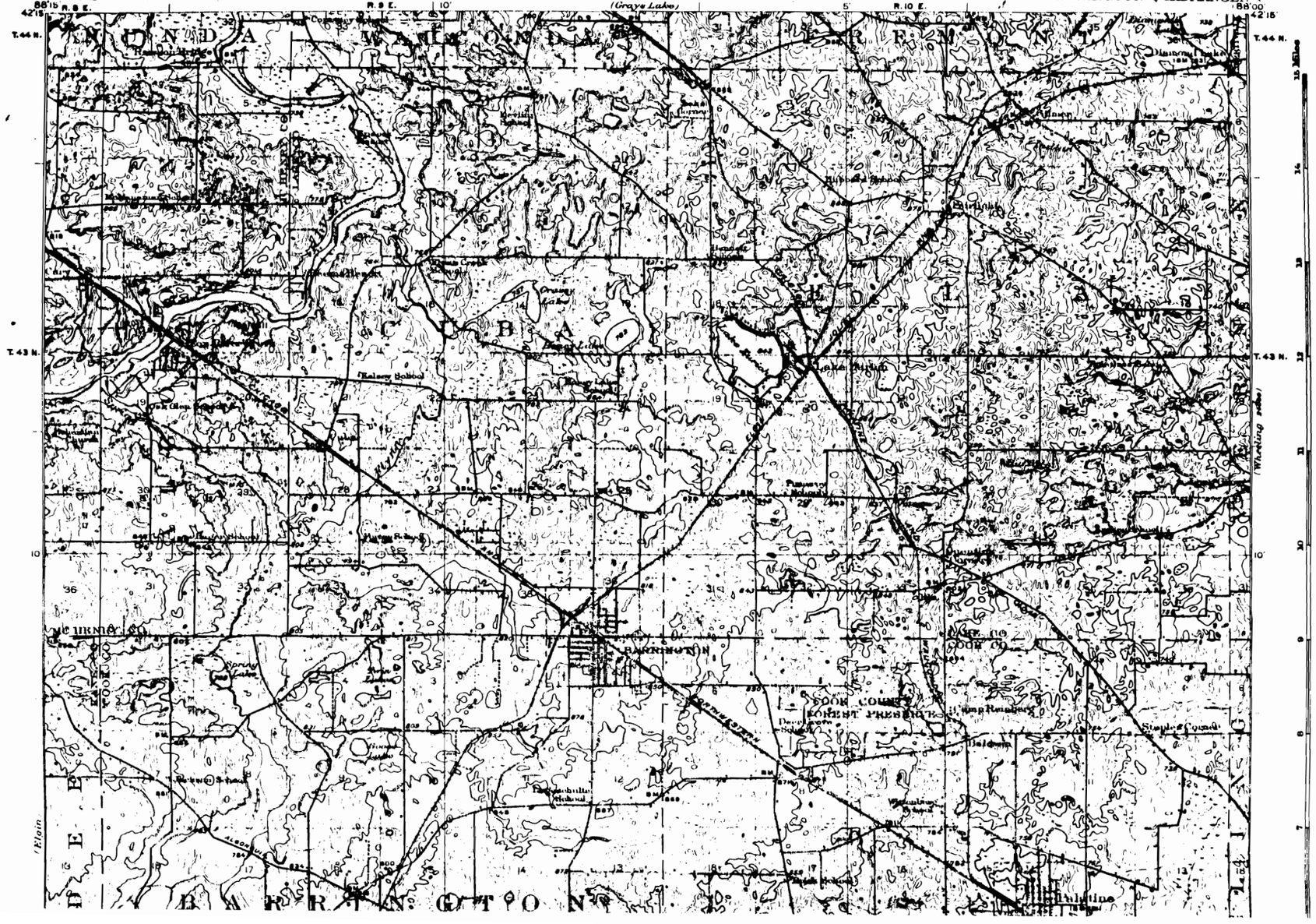
WATER
(printed in blue)

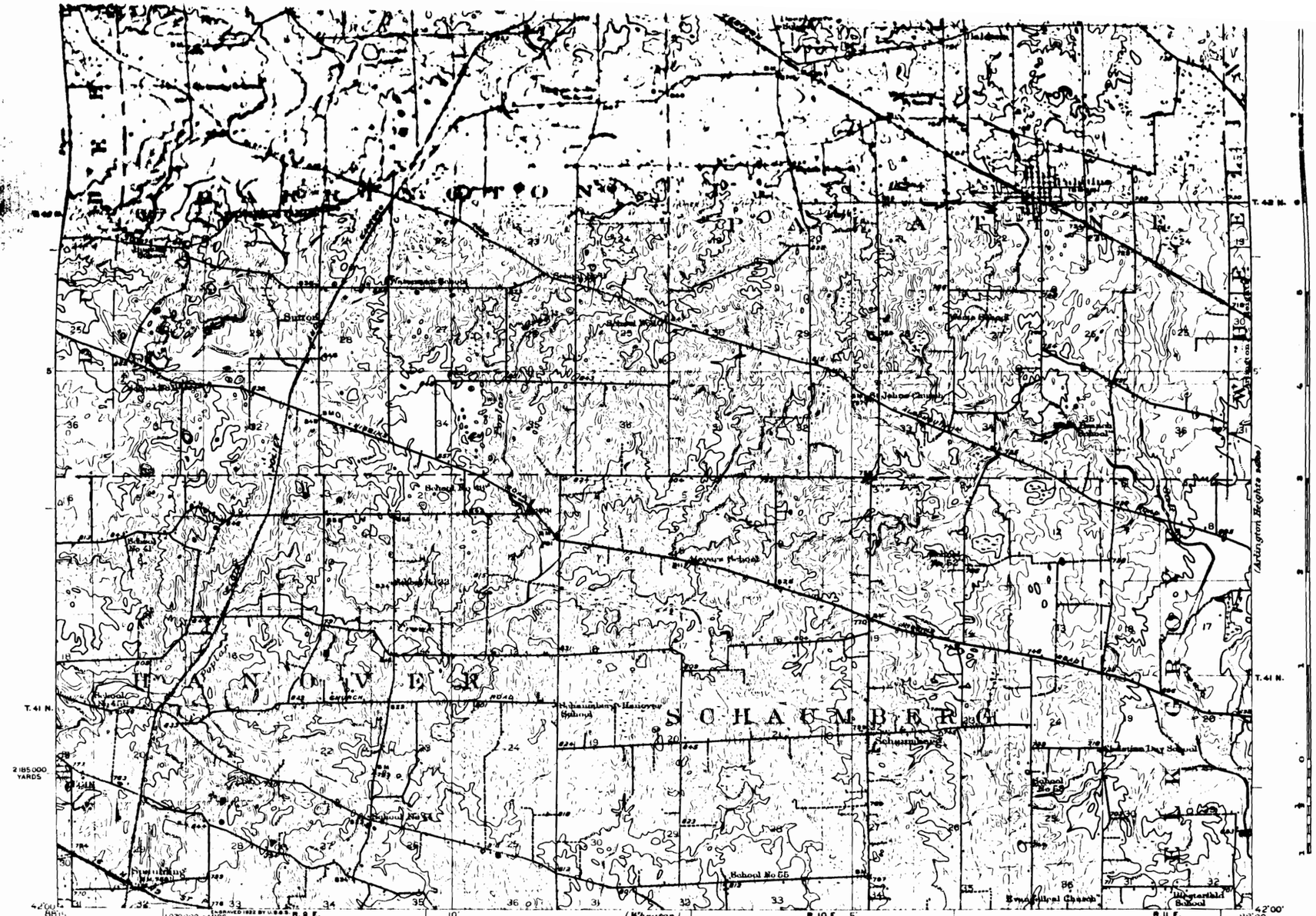


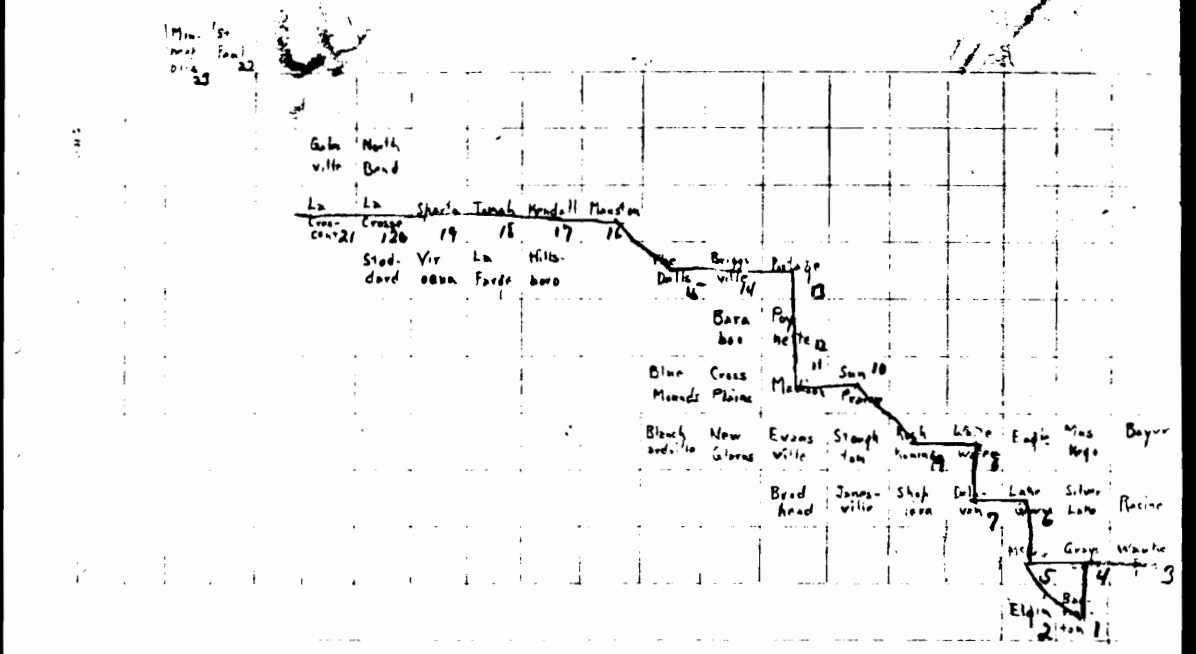
DEPARTMENT OF THE INTERIOR
U.S.GEOLOGICAL SURVEY

STATE OF ILLINOIS
REPRESENTED BY THE
DEPARTMENT OF REGISTRATION AND EDUCATION
GEOLOGICAL SURVEY DIVISION

ILLINOIS
BARRINGTON QUADRANGLE




SCHAUMBURG
PALATINE
HANOVER
T. 41 N.
R. 9 E.
R. 10 E.
R. 11 E.
42°00'
88°15'
88°00'
2 185 000 YARDS
1 000 000 YARDS
Surveyed in 1919-1920.
Surveyed in cooperation with the State of Illinois.
Scale 1:62500
Contour interval 10 feet.
Datum is mean sea level.
Polyconic projection. North American datum.
5000 yard grid based upon zone C for P.M.M.
BARRINGTON, ILL.
Edition of 1923


Gate
villa
North
Bend
La
Cross
21
La
Crosse
20
Sparta
19
Tomah
18
Mendell
17
Meadow
16
Stod-
dard
Vir
ogua
La
Farge
Hills-
boro
Bara
boo
Blue
Mounds
Cross
Plains
Black
earth
New
Glarus
Evans
ville
Stough
ton
Brad
ford
Janes-
ville
Elgin
2
Bar
ton
1

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

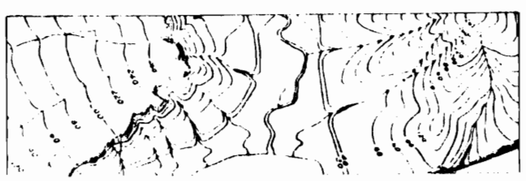
A topographic survey of Alaska has been in progress since 1898, and nearly 13 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,300 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

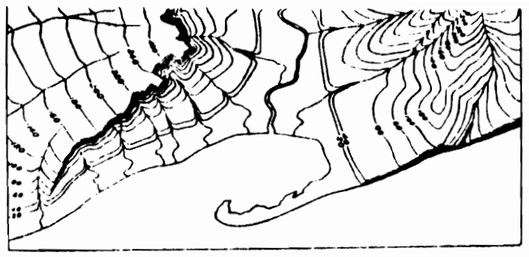
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{125,000}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

lished by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

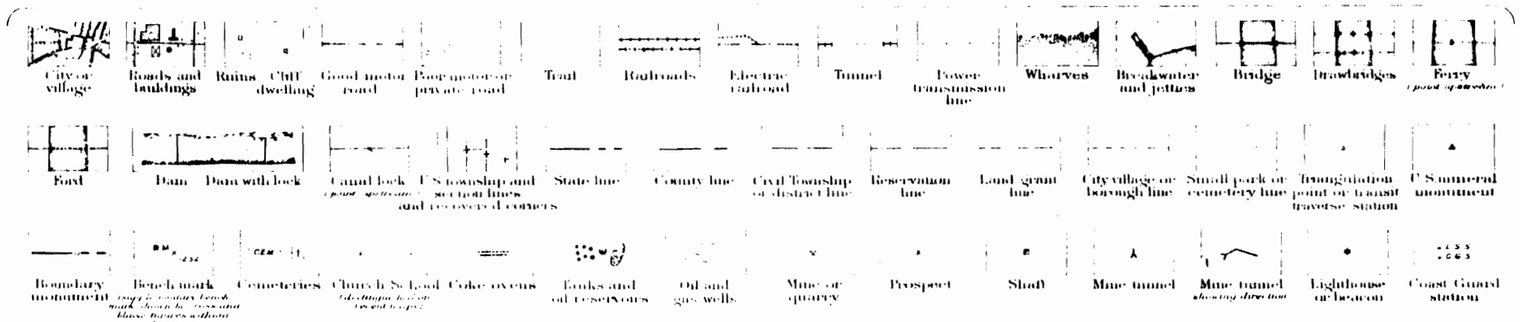
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

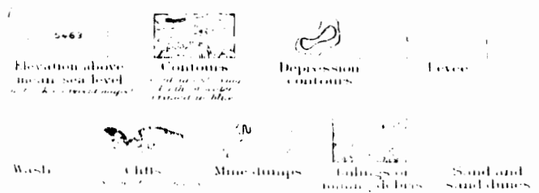
September, 1928.

STANDARD SYMBOLS

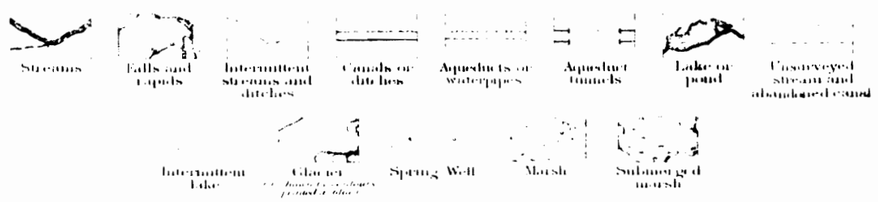
CULTURE
(printed in black)



RELIEF
(printed in brown)



WATER
(printed in blue)

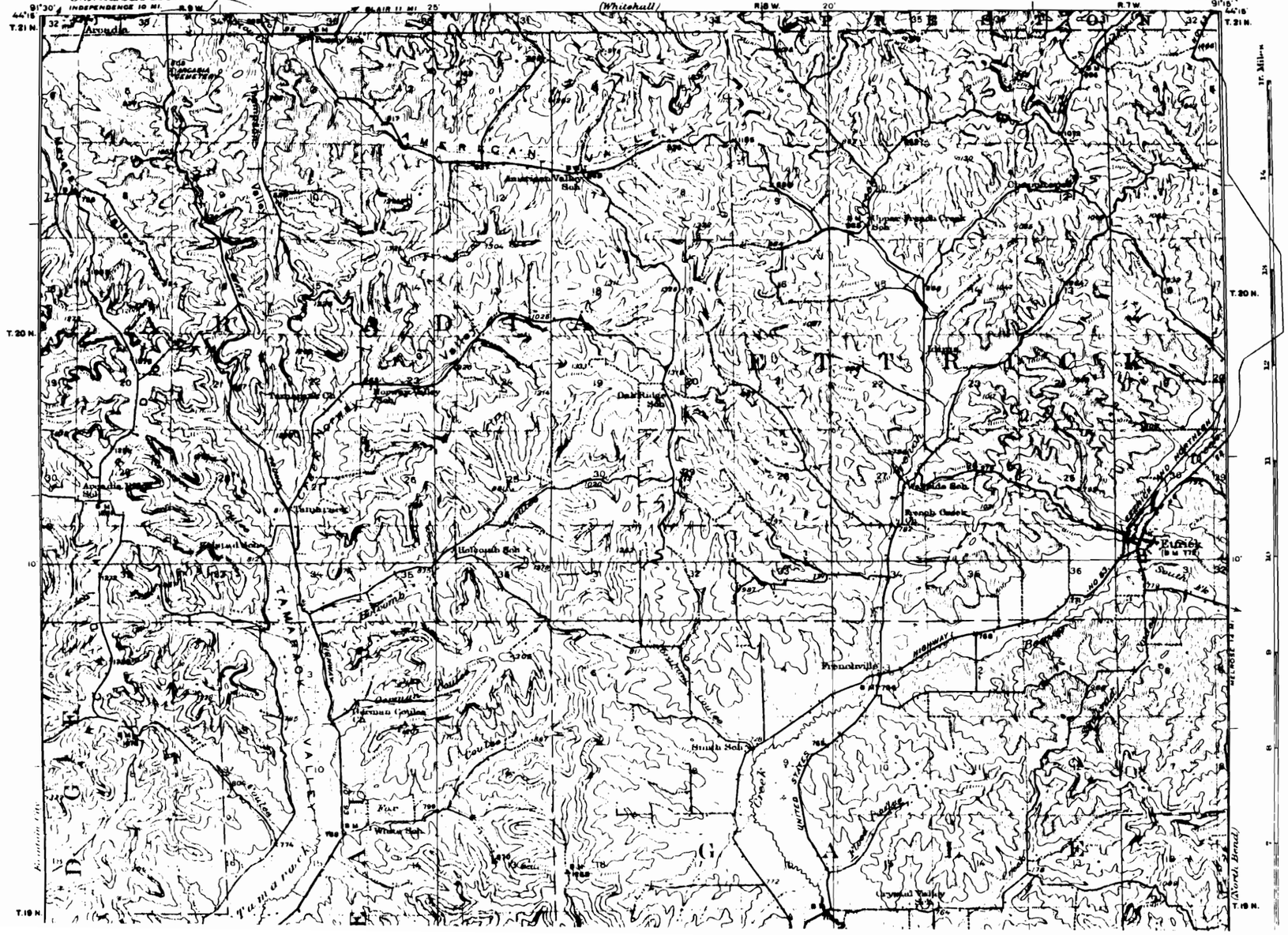


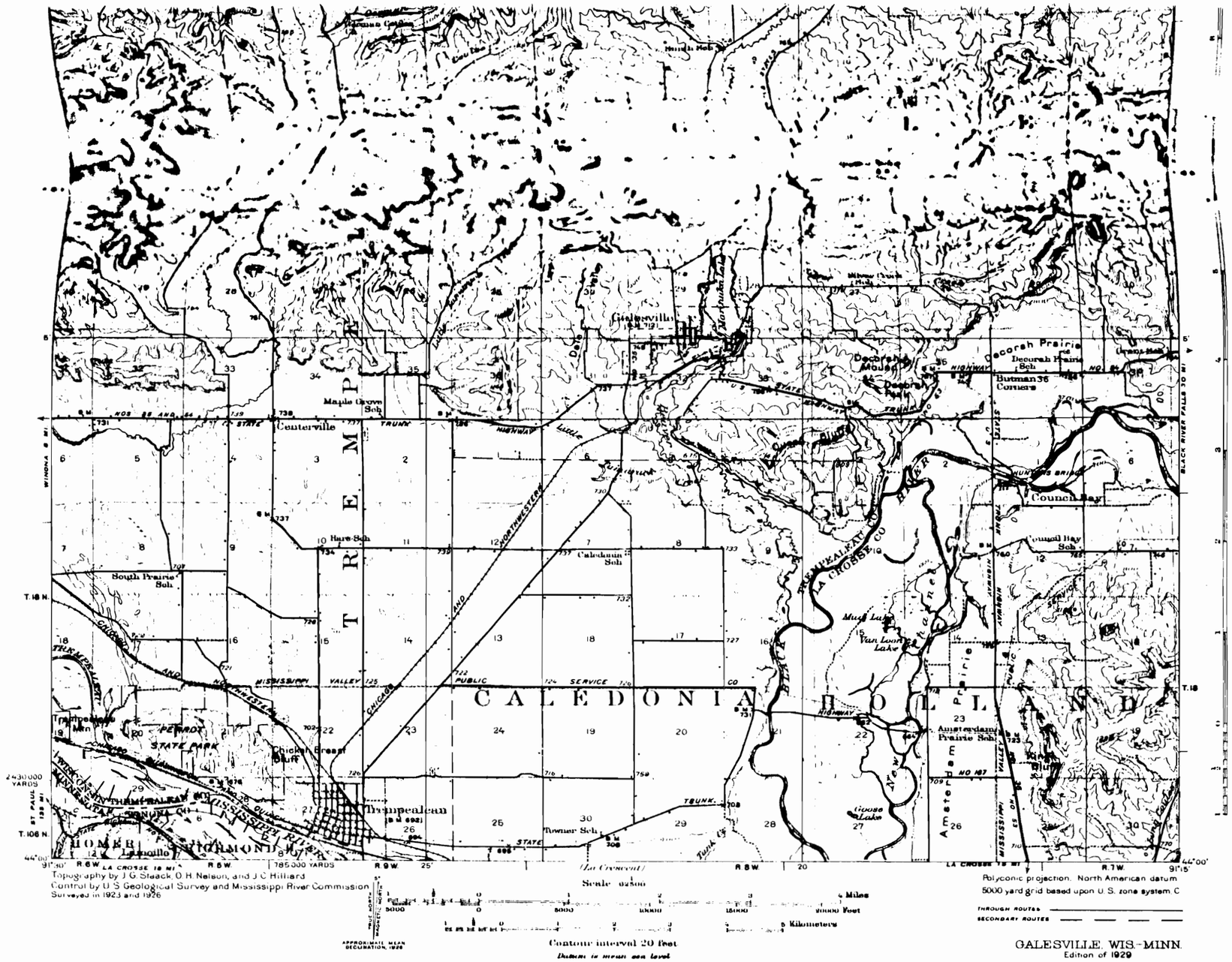
WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
E. F. BEAN, DIRECTOR AND STATE GEOLOGIST

WISCONSIN-MINNESOTA
GALESVILLE QUADRANGLE




Centerville
Maple Grove Sch
Caledonia Sch
South Prairie Sch
Hare Sch
Trempealeau
Towner Sch
Chicken Breast Bluff
PETROS STATE PARK
Decorah Prairie Sch
Butman Corners
Council Bay
Council Bay Sch
Van Loon Lake
Goose Lake
Amsterdam Prairie Sch
Amsterdam Bluff
CALEDONIA
HOLLAND
HOMER
LAMOILLE
T.18 N.
T.106 N.
R.6W.
R.5W.
R.9W.
R.8W.
R.7W.
LA CROSSE 15 MI.
BLACK RIVER FALLS 30 MI.
91°30'
91°15'
44°00'
24300000 YARDS
785000 YARDS
Topography by J.G. Staack, O.H. Nelson, and J.C. Hilliard
Control by U.S. Geological Survey and Mississippi River Commission
Surveyed in 1923 and 1926
Scale 1:62500
Miles
Kilometers
Contour interval 20 feet
Datum is mean sea level
Polyconic projection. North American datum
5000 yard grid based upon U.S. zone system C
THROUGH ROUTES
SECONDARY ROUTES
GALESVILLE, WIS.-MINN.
Edition of 1929

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

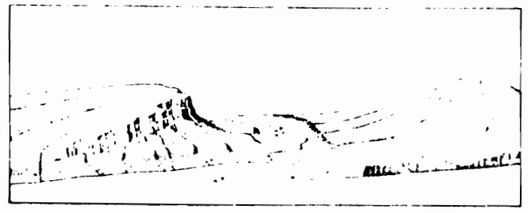
A topographic survey of Alaska has been in progress since 1898, and nearly 13 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska [illegible]

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,500 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

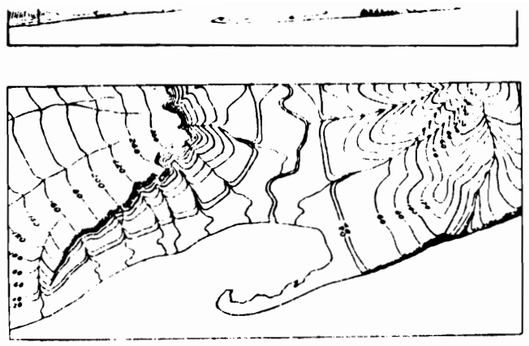
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic [illegible] ed for 10 cents each; some [illegible] s. A discount [illegible]

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

tive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

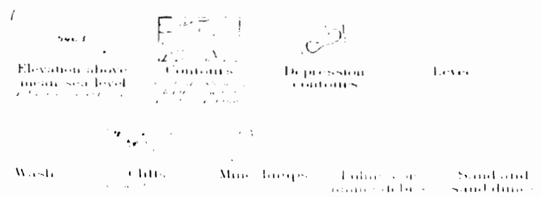
THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

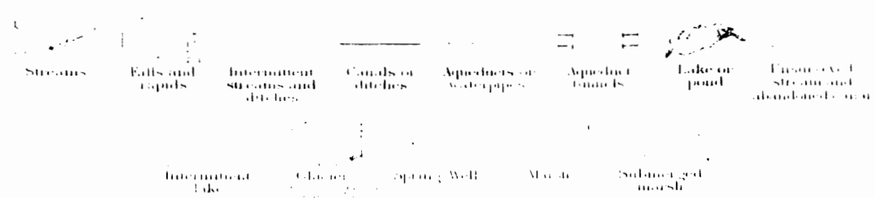
STANDARD SYMBOLS

CULTURE
(printed in black)

RELIEF
(printed in brown)



WATER
(printed in blue)

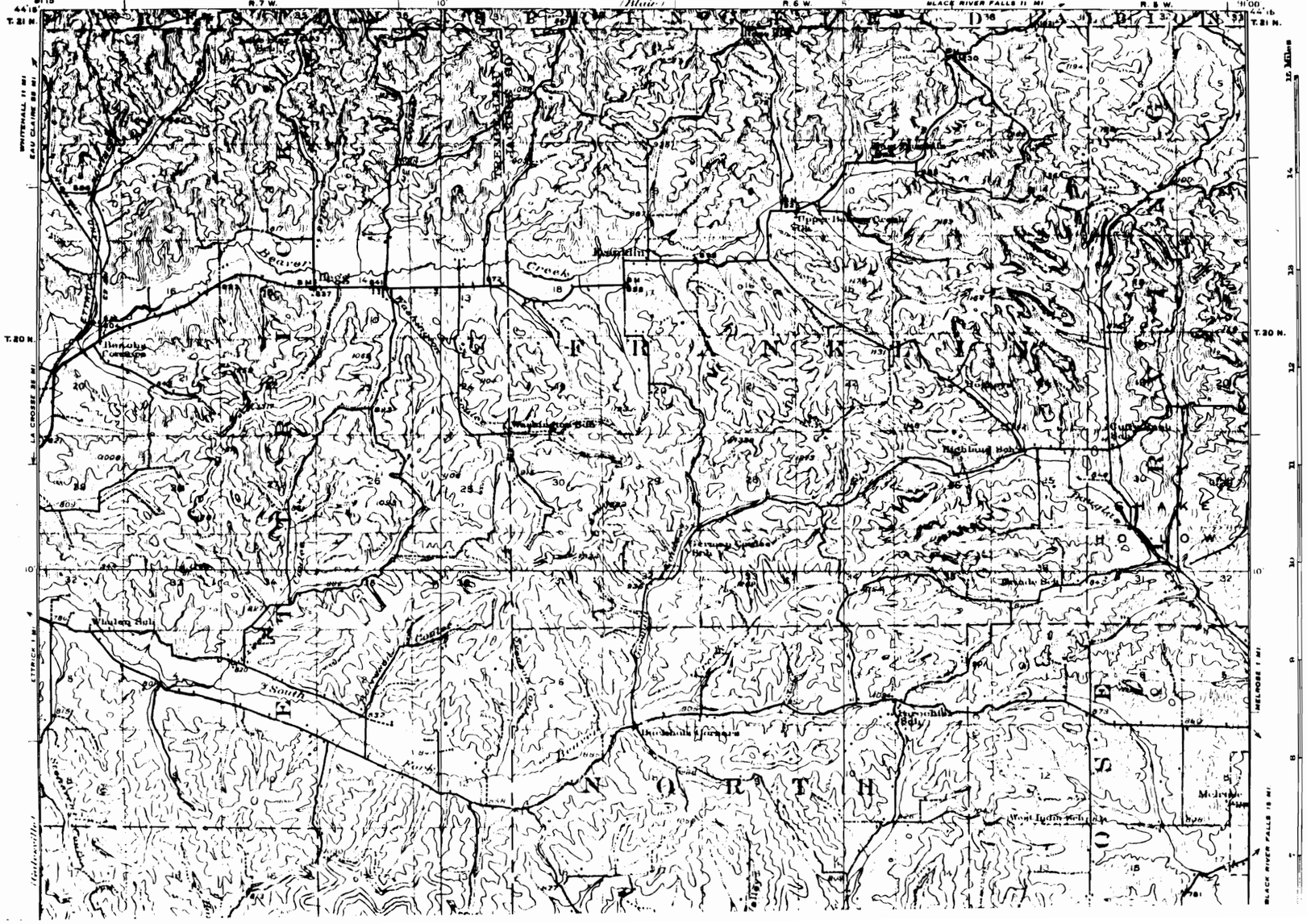


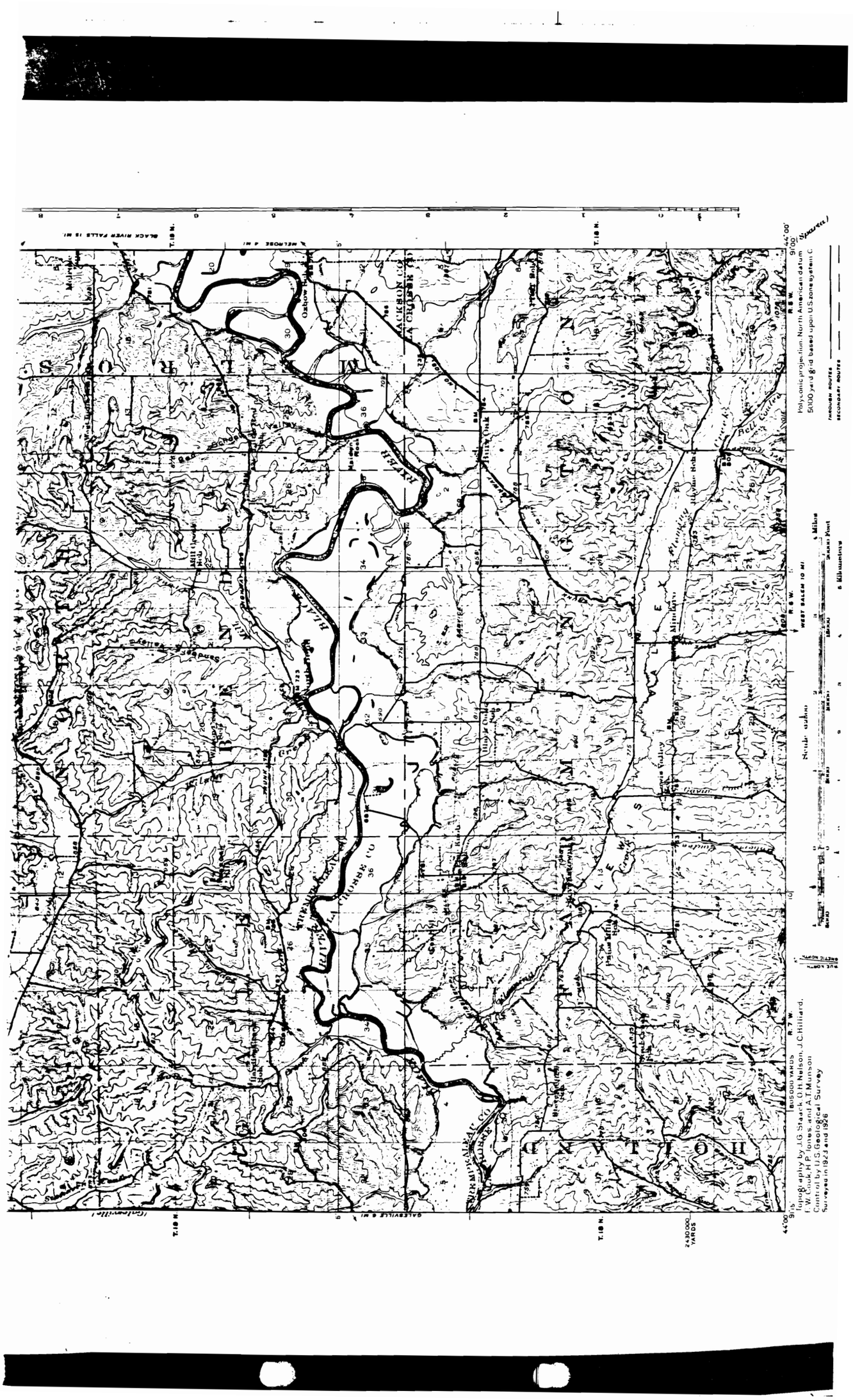
WOODS
when shown, printed in green

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST

WISCONSIN
NORTH BEND QUADRANGLE




T.18 N.
R.7 W.
R.6 W.
Polyconic projection. North American datum
5000 yard grid based upon U.S. zone system
Topography by J.G. Staack, O.H. Nelson, J.C. Hilliard, F.W. Cook, H.P. Jones, and A.T. Munson
Control by U.S. Geological Survey
Surveyed in 1924 and 1926
Scale 1:62500
1 Mile
1 Kilometer
WEST SALEM 10 MI
MELROSE 4 MI
GALESVILLE 6 MI
BLACK RIVER FALLS 18 MI
JACKSON CO
LA CROSSE CO
TREMPEALEAU CO
MONROE CO
Oxbow Prairie
Hilly Oak
Bell Coulee
Hilltop Hills
Willow Valley
Pleasant Valley
Mt. Pleasant
Maiden Rock
Pigeon Falls
Trempealeau River
Black River
Mississippi River
Buffalo Slough
Lake Onalaska
Lake Neshonoc
Lake Onalaska Dam
Lake Onalaska Spillway
Lake Onalaska Outlet
Lake Onalaska Inlet
Lake Onalaska Boat Landing
Lake Onalaska Boat Launch
Lake Onalaska Boat Rental
Lake Onalaska Boat Repair
Lake Onalaska Boat Storage
Lake Onalaska Boat Dock
Lake Onalaska Boat Ramp
Lake Onalaska Boat Slip
Lake Onalaska Boat Tie-Up
Lake Onalaska Boat Mooring
Lake Onalaska Boat Anchorage
Lake Onalaska Boat Harbor
Lake Onalaska Boat Marina
Lake Onalaska Boat Club
Lake Onalaska Boat Association
Lake Onalaska Boat Regatta
Lake Onalaska Boat Race
Lake Onalaska Boat Parade
Lake Onalaska Boat Show
Lake Onalaska Boat Exhibition
Lake Onalaska Boat Display
Lake Onalaska Boat Demonstration
Lake Onalaska Boat Test
Lake Onalaska Boat Trial
Lake Onalaska Boat Evaluation
Lake Onalaska Boat Inspection
Lake Onalaska Boat Survey
Lake Onalaska Boat Study
Lake Onalaska Boat Research
Lake Onalaska Boat Development
Lake Onalaska Boat Design
Lake Onalaska Boat Engineering
Lake Onalaska Boat Construction
Lake Onalaska Boat Manufacturing
Lake Onalaska Boat Production
Lake Onalaska Boat Assembly
Lake Onalaska Boat Fabrication
Lake Onalaska Boat Repair
Lake Onalaska Boat Maintenance
Lake Onalaska Boat Overhaul
Lake Onalaska Boat Refit
Lake Onalaska Boat Refurbishment
Lake Onalaska Boat Restoration
Lake Onalaska Boat Preservation
Lake Onalaska Boat Conservation
Lake Onalaska Boat Protection
Lake Onalaska Boat Safety
Lake Onalaska Boat Security
Lake Onalaska Boat Insurance
Lake Onalaska Boat Registration
Lake Onalaska Boat License
Lake Onalaska Boat Permit
Lake Onalaska Boat Fee
Lake Onalaska Boat Tax
Lake Onalaska Boat Duty
Lake Onalaska Boat Tariff
Lake Onalaska Boat Customs
Lake Onalaska Boat Import
Lake Onalaska Boat Export
Lake Onalaska Boat Trade
Lake Onalaska Boat Commerce
Lake Onalaska Boat Industry
Lake Onalaska Boat Economy
Lake Onalaska Boat Business
Lake Onalaska Boat Enterprise
Lake Onalaska Boat Venture
Lake Onalaska Boat Project
Lake Onalaska Boat Program
Lake Onalaska Boat Plan
Lake Onalaska Boat Policy
Lake Onalaska Boat Regulation
Lake Onalaska Boat Law
Lake Onalaska Boat Ordinance
Lake Onalaska Boat Code
Lake Onalaska Boat Statute
Lake Onalaska Boat Act
Lake Onalaska Boat Bill
Lake Onalaska Boat Resolution
Lake Onalaska Boat Motion
Lake Onalaska Boat Proposal
Lake Onalaska Boat Suggestion
Lake Onalaska Boat Recommendation
Lake Onalaska Boat Advice
Lake Onalaska Boat Counsel
Lake Onalaska Boat Guidance
Lake Onalaska Boat Direction
Lake Onalaska Boat Instruction
Lake Onalaska Boat Order
Lake Onalaska Boat Command
Lake Onalaska Boat Mandate
Lake Onalaska Boat Decree
Lake Onalaska Boat Edict
Lake Onalaska Boat Fiat
Lake Onalaska Boat Ukase
Lake Onalaska Boat Writ
Lake Onalaska Boat Warrant
Lake Onalaska Boat Summons
Lake Onalaska Boat Subpoena
Lake Onalaska Boat Citation
Lake Onalaska Boat Notice
Lake Onalaska Boat Advisement
Lake Onalaska Boat Information
Lake Onalaska Boat Intelligence
Lake Onalaska Boat Knowledge
Lake Onalaska Boat Wisdom
Lake Onalaska Boat Understanding
Lake Onalaska Boat Comprehension
Lake Onalaska Boat Perception
Lake Onalaska Boat Insight
Lake Onalaska Boat Discernment
Lake Onalaska Boat Judgment
Lake Onalaska Boat Opinion
Lake Onalaska Boat View
Lake Onalaska Boat Belief
Lake Onalaska Boat Conviction
Lake Onalaska Boat Faith
Lake Onalaska Boat Trust
Lake Onalaska Boat Confidence
Lake Onalaska Boat Assurance
Lake Onalaska Boat Certainty
Lake Onalaska Boat Surety
Lake Onalaska Boat Guarantee
Lake Onalaska Boat Warranty
Lake Onalaska Boat Pledge
Lake Onalaska Boat Promise
Lake Onalaska Boat Vow
Lake Onalaska Boat Oath
Lake Onalaska Boat Affirmation
Lake Onalaska Boat Declaration
Lake Onalaska Boat Statement
Lake Onalaska Boat Assertion
Lake Onalaska Boat Claim
Lake Onalaska Boat Contention
Lake Onalaska Boat Argument
Lake Onalaska Boat Reasoning
Lake Onalaska Boat Logic
Lake Onalaska Boat Rationale
Lake Onalaska Boat Basis
Lake Onalaska Boat Foundation
Lake Onalaska Boat Ground
Lake Onalaska Boat Reason
Lake Onalaska Boat Cause
Lake Onalaska Boat Motive
Lake Onalaska Boat Purpose
Lake Onalaska Boat Intent
Lake Onalaska Boat Aim
Lake Onalaska Boat Goal
Lake Onalaska Boat Objective
Lake Onalaska Boat Target
Lake Onalaska Boat Mark
Lake Onalaska Boat Bull's-eye
Lake Onalaska Boat Center
Lake Onalaska Boat Middle
Lake Onalaska Boat Heart
Lake Onalaska Boat Core
Lake Onalaska Boat Nucleus
Lake Onalaska Boat Kernel
Lake Onalaska Boat Seed
Lake Onalaska Boat Germ
Lake Onalaska Boat Embryo
Lake Onalaska Boat Fetus
Lake Onalaska Boat Baby
Lake Onalaska Boat Infant
Lake Onalaska Boat Child
Lake Onalaska Boat Youth
Lake Onalaska Boat Adolescent
Lake Onalaska Boat Teenager
Lake Onalaska Boat Young Adult
Lake Onalaska Boat Adult
Lake Onalaska Boat Grown-up
Lake Onalaska Boat Mature Person
Lake Onalaska Boat Elder
Lake Onalaska Boat Senior
Lake Onalaska Boat Old Person
Lake Onalaska Boat Aged Person
Lake Onalaska Boat Geriatric
Lake Onalaska Boat Ancient
Lake Onalaska Boat Antique
Lake Onalaska Boat Relic
Lake Onalaska Boat Fossil
Lake Onalaska Boat Mummy
Lake Onalaska Boat Corpse
Lake Onalaska Boat Body
Lake Onalaska Boat Remains
Lake Onalaska Boat Skeleton
Lake Onalaska Boat Bones
Lake Onalaska Boat Dust
Lake Onalaska Boat Ashes
Lake Onalaska Boat Nothingness
Lake Onalaska Boat Void
Lake Onalaska Boat Vacuum
Lake Onalaska Boat Emptiness
Lake Onalaska Boat Blankness
Lake Onalaska Boat Whiteness
Lake Onalaska Boat Purity
Lake Onalaska Boat Innocence
Lake Onalaska Boat Virginity
Lake Onalaska Boat Chastity
Lake Onalaska Boat Celibacy
Lake Onalaska Boat Abstinence
Lake Onalaska Boat Asceticism
Lake Onalaska Boat Self-Denial
Lake Onalaska Boat Self-Discipline
Lake Onalaska Boat Self-Control
Lake Onalaska Boat Self-Mastery
Lake Onalaska Boat Self-Possession
Lake Onalaska Boat Self-Confidence
Lake Onalaska Boat Self-Assurance
Lake Onalaska Boat Self-Reliance
Lake Onalaska Boat Self-Sufficiency
Lake Onalaska Boat Self-Dependence
Lake Onalaska Boat Self-Determination
Lake Onalaska Boat Self-Direction
Lake Onalaska Boat Self-Guidance
Lake Onalaska Boat Self-Instruction
Lake Onalaska Boat Self-Education
Lake Onalaska Boat Self-Improvement
Lake Onalaska Boat Self-Development
Lake Onalaska Boat Self-Realization
Lake Onalaska Boat Self-Fulfillment
Lake Onalaska Boat Self-Actualization
Lake Onalaska Boat Self-Expression
Lake Onalaska Boat Self-Revelation
Lake Onalaska Boat Self-Disclosure
Lake Onalaska Boat Self-Exposure
Lake Onalaska Boat Self-Display
Lake Onalaska Boat Self-Exhibition
Lake Onalaska Boat Self-Demonstration
Lake Onalaska Boat Self-Proof
Lake Onalaska Boat Self-Evidence
Lake Onalaska Boat Self-Testimony
Lake Onalaska Boat Self-Witness
Lake Onalaska Boat Self-Confession
Lake Onalaska Boat Self-Admission
Lake Onalaska Boat Self-Acknowledgment
Lake Onalaska Boat Self-Recognition
Lake Onalaska Boat Self-Awareness
Lake Onalaska Boat Self-Consciousness
Lake Onalaska Boat Self-Knowledge
Lake Onalaska Boat Self-Understanding
Lake Onalaska Boat Self-Comprehension
Lake Onalaska Boat Self-Perception
Lake Onalaska Boat Self-Insight
Lake Onalaska Boat Self-Discernment
Lake Onalaska Boat Self-Judgment
Lake Onalaska Boat Self-Opinion
Lake Onalaska Boat Self-View
Lake Onalaska Boat Self-Belief
Lake Onalaska Boat Self-Conviction
Lake Onalaska Boat Self-Faith
Lake Onalaska Boat Self-Trust
Lake Onalaska Boat Self-Confidence
Lake Onalaska Boat Self-Assurance
Lake Onalaska Boat Self-Certainty
Lake Onalaska Boat Self-Surety
Lake Onalaska Boat Self-Guarantee
Lake Onalaska Boat Self-Warranty
Lake Onalaska Boat Self-Pledge
Lake Onalaska Boat Self-Promise
Lake Onalaska Boat Self-Vow
Lake Onalaska Boat Self-Oath
Lake Onalaska Boat Self-Affirmation
Lake Onalaska Boat Self-Declaration
Lake Onalaska Boat Self-Statement
Lake Onalaska Boat Self-Assertion
Lake Onalaska Boat Self-Claim
Lake Onalaska Boat Self-Contention
Lake Onalaska Boat Self-Argument
Lake Onalaska Boat Self-Reasoning
Lake Onalaska Boat Self-Logic
Lake Onalaska Boat Self-Rationale
Lake Onalaska Boat Self-Basis
Lake Onalaska Boat Self-Foundation
Lake Onalaska Boat Self-Ground
Lake Onalaska Boat Self-Reason
Lake Onalaska Boat Self-Cause
Lake Onalaska Boat Self-Motive
Lake Onalaska Boat Self-Purpose
Lake Onalaska Boat Self-Intent
Lake Onalaska Boat Self-Aim
Lake Onalaska Boat Self-Goal
Lake Onalaska Boat Self-Objective
Lake Onalaska Boat Self-Target
Lake Onalaska Boat Self-Mark
Lake Onalaska Boat Self-Bull's-eye
Lake Onalaska Boat Self-Center
Lake Onalaska Boat Self-Middle
Lake Onalaska Boat Self-Heart
Lake Onalaska Boat Self-Core
Lake Onalaska Boat Self-Nucleus
Lake Onalaska Boat Self-Kernel
Lake Onalaska Boat Self-Seed
Lake Onalaska Boat Self-Germ
Lake Onalaska Boat Self-Embryo
Lake Onalaska Boat Self-Fetus
Lake Onalaska Boat Self-Baby
Lake Onalaska Boat Self-Infant
Lake Onalaska Boat Self-Child
Lake Onalaska Boat Self-Youth
Lake Onalaska Boat Self-Adolescent
Lake Onalaska Boat Self-Teenager
Lake Onalaska Boat Self-Young Adult
Lake Onalaska Boat Self-Adult
Lake Onalaska Boat Self-Grown-up
Lake Onalaska Boat Self-Mature Person
Lake Onalaska Boat Self-Elder
Lake Onalaska Boat Self-Senior
Lake Onalaska Boat Self-Old Person
Lake Onalaska Boat Self-Aged Person
Lake Onalaska Boat Self-Geriatric
Lake Onalaska Boat Self-Ancient
Lake Onalaska Boat Self-Antique
Lake Onalaska Boat Self-Relic
Lake Onalaska Boat Self-Fossil
Lake Onalaska Boat Self-Mummy
Lake Onalaska Boat Self-Corpse
Lake Onalaska Boat Self-Body
Lake Onalaska Boat Self-Remains
Lake Onalaska Boat Self-Skeleton
Lake Onalaska Boat Self-Bones
Lake Onalaska Boat Self-Dust
Lake Onalaska Boat Self-Ashes
Lake Onalaska Boat Self-Nothingness
Lake Onalaska Boat Self-Void
Lake Onalaska Boat Self-Vacuum
Lake Onalaska Boat Self-Emptiness
Lake Onalaska Boat Self-Blankness
Lake Onalaska Boat Self-Whiteness
Lake Onalaska Boat Self-Purity
Lake Onalaska Boat Self-Innocence
Lake Onalaska Boat Self-Virginity
Lake Onalaska Boat Self-Chastity
Lake Onalaska Boat Self-Celibacy
Lake Onalaska Boat Self-Abstinence
Lake Onalaska Boat Self-Asceticism
Lake Onalaska Boat Self-Self-Denial
Lake Onalaska Boat Self-Self-Discipline
Lake Onalaska Boat Self-Self-Control
Lake Onalaska Boat Self-Self-Mastery
Lake Onalaska Boat Self-Self-Possession
Lake Onalaska Boat Self-Self-Confidence
Lake Onalaska Boat Self-Self-Assurance
Lake Onalaska Boat Self-Self-Reliance
Lake Onalaska Boat Self-Self-Sufficiency
Lake Onalaska Boat Self-Self-Dependence
Lake Onalaska Boat Self-Self-Determination
Lake Onalaska Boat Self-Self-Direction
Lake Onalaska Boat Self-Self-Guidance
Lake Onalaska Boat Self-Self-Instruction
Lake Onalaska Boat Self-Self-Education
Lake Onalaska Boat Self-Self-Improvement
Lake Onalaska Boat Self-Self-Development
Lake Onalaska Boat Self-Self-Realization
Lake Onalaska Boat Self-Self-Fulfillment
Lake Onalaska Boat Self-Self-Actualization
Lake Onalaska Boat Self-Self-Expression
Lake Onalaska Boat Self-Self-Revelation
Lake Onalaska Boat Self-Self-Disclosure
Lake Onalaska Boat Self-Self-Exposure
Lake Onalaska Boat Self-Self-Display
Lake Onalaska Boat Self-Self-Exhibition
Lake Onalaska Boat Self-Self-Demonstration
Lake Onalaska Boat Self-Self-Proof
Lake Onalaska Boat Self-Self-Evidence
Lake Onalaska Boat Self-Self-Testimony
Lake Onalaska Boat Self-Self-Witness
Lake Onalaska Boat Self-Self-Confession
Lake Onalaska Boat Self-Self-Admission
Lake Onalaska Boat Self-Self-Acknowledgment
Lake Onalaska Boat Self-Self-Recognition
Lake Onalaska Boat Self-Self-Awareness
Lake Onalaska Boat Self-Self-Consciousness
Lake Onalaska Boat Self-Self-Knowledge
Lake Onalaska Boat Self-Self-Understanding
Lake Onalaska Boat Self-Self-Comprehension
Lake Onalaska Boat Self-Self-Perception
Lake Onalaska Boat Self-Self-Insight
Lake Onalaska Boat Self-Self-Discernment
Lake Onalaska Boat Self-Self-Judgment
Lake Onalaska Boat Self-Self-Opinion
Lake Onalaska Boat Self-Self-View
Lake Onalaska Boat Self-Self-Belief
Lake Onalaska Boat Self-Self-Conviction
Lake Onalaska Boat Self-Self-Faith
Lake Onalaska Boat Self-Self-Trust
Lake Onalaska Boat Self-Self-Confidence
Lake Onalaska Boat Self-Self-Assurance
Lake Onalaska Boat Self-Self-Certainty
Lake Onalaska Boat Self-Self-Surety
Lake Onalaska Boat Self-Self-Guarantee
Lake Onalaska Boat Self-Self-Warranty
Lake Onalaska Boat Self-Self-Pledge
Lake Onalaska Boat Self-Self-Promise
Lake Onalaska Boat Self-Self-Vow
Lake Onalaska Boat Self-Self-Oath
Lake Onalaska Boat Self-Self-Affirmation
Lake Onalaska Boat Self-Self-Declaration
Lake Onalaska Boat Self-Self-Statement
Lake Onalaska Boat Self-Self-Assertion
Lake Onalaska Boat Self-Self-Claim
Lake Onalaska Boat Self-Self-Contention
Lake Onalaska Boat Self-Self-Argument
Lake Onalaska Boat Self-Self-Reasoning
Lake Onalaska Boat Self-Self-Logic
Lake Onalaska Boat Self-Self-Rationale
Lake Onalaska Boat Self-Self-Basis
Lake Onalaska Boat Self-Self-Foundation
Lake Onalaska Boat Self-Self-Ground
Lake Onalaska Boat Self-Self-Reason
Lake Onalaska Boat Self-Self-Cause
Lake Onalaska Boat Self-Self-Motive
Lake Onalaska Boat Self-Self-Purpose
Lake Onalaska Boat Self-Self-Intent
Lake Onalaska Boat Self-Self-Aim
Lake Onalaska Boat Self-Self-Goal
Lake Onalaska Boat Self-Self-Objective
Lake Onalaska Boat Self-Self-Target
Lake Onalaska Boat Self-Self-Mark
Lake Onalaska Boat Self-Self-Bull's-eye
Lake Onalaska Boat Self-Self-Center
Lake Onalaska Boat Self-Self-Middle
Lake Onalaska Boat Self-Self-Heart
Lake Onalaska Boat Self-Self-Core
Lake Onalaska Boat Self-Self-Nucleus
Lake Onalaska Boat Self-Self-Kernel
Lake Onalaska Boat Self-Self-Seed
Lake Onalaska Boat Self-Self-Germ
Lake Onalaska Boat Self-Self-Embryo
Lake Onalaska Boat Self-Self-Fetus
Lake Onalaska Boat Self-Self-Baby
Lake Onalaska Boat Self-Self-Infant
Lake Onalaska Boat Self-Self-Child
Lake Onalaska Boat Self-Self-Youth
Lake Onalaska Boat Self-Self-Adolescent
Lake Onalaska Boat Self-Self-Teenager
Lake Onalaska Boat Self-Self-Young Adult
Lake Onalaska Boat Self-Self-Adult
Lake Onalaska Boat Self-Self-Grown-up
Lake Onalaska Boat Self-Self-Mature Person
Lake Onalaska Boat Self-Self-Elder
Lake Onalaska Boat Self-Self-Senior
Lake Onalaska Boat Self-Self-Old Person
Lake Onalaska Boat Self-Self-Aged Person
Lake Onalaska Boat Self-Self-Geriatric
Lake Onalaska Boat Self-Self-Ancient
Lake Onalaska Boat Self-Self-Antique
Lake Onalaska Boat Self-Self-Relic
Lake Onalaska Boat Self-Self-Fossil
Lake Onalaska Boat Self-Self-Mummy
Lake Onalaska Boat Self-Self-Corpse
Lake Onalaska Boat Self-Self-Body
Lake Onalaska Boat Self-Self-Remains
Lake Onalaska Boat Self-Self-Skeleton
Lake Onalaska Boat Self-Self-Bones
Lake Onalaska Boat Self-Self-Dust
Lake Onalaska Boat Self-Self-Ashes
Lake Onalaska Boat Self-Self-Nothingness
Lake Onalaska Boat Self-Self-Void
Lake Onalaska Boat Self-Self-Vacuum
Lake Onalaska Boat Self-Self-Emptiness
Lake Onalaska Boat Self-Self-Blankness
Lake Onalaska Boat Self-Self-Whiteness
Lake Onalaska Boat Self-Self-Purity
Lake Onalaska Boat Self-Self-Innocence
Lake Onalaska Boat Self-Self-Virginity
Lake Onalaska Boat Self-Self-Chastity
Lake Onalaska Boat Self-Self-Celibacy
Lake Onalaska Boat Self-Self-Abstinence
Lake Onalaska Boat Self-Self-Asceticism

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

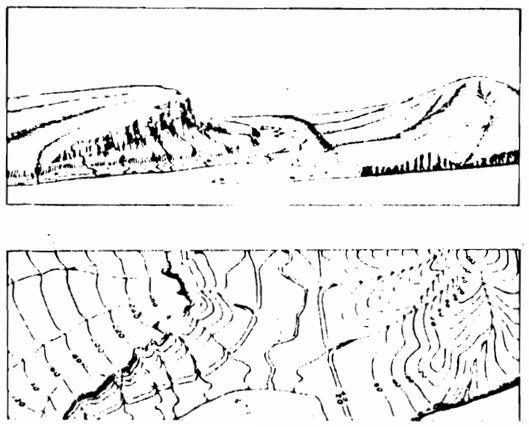
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnoissance surveys, which are published on the scale of 1 inch = 4 miles, with a contour interval of 500 feet.

The standard topographic maps show the boundaries of the United States, States, counties, cities, towns, villages, and reservations, and the names of cities, towns, villages, railroads, rivers, lakes, mountains, valleys, and other features. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

tive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1924.

CONVENTIONAL SIGNS

CULTURE
(printed in black)

City or village
Roads and buildings
Ruins
Cliff dwelling
Metaled road
Private or poor road
Trail or path
Railroads and stations
Electric railroad
Tunnel
Wharves
Breakwater and jetties
Bridges
Drawbridges
Ferry
Ford
Dam
Dam with lock
Canal lock
U.S. township and section lines and located corners
State line
County line
Civil Township or district line
Reservation line
Land grant line
City village or borough line
Small park or cemetery line
Triangulation or primary traverse monument
U.S. mineral monument
Boundary monument
Bench mark
Cemeteries
Church, School
Coke ovens
Tanks and oil reservoirs
Oil wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Mine tunnel
Lighthouse or beacon
Light ship
Life saving station

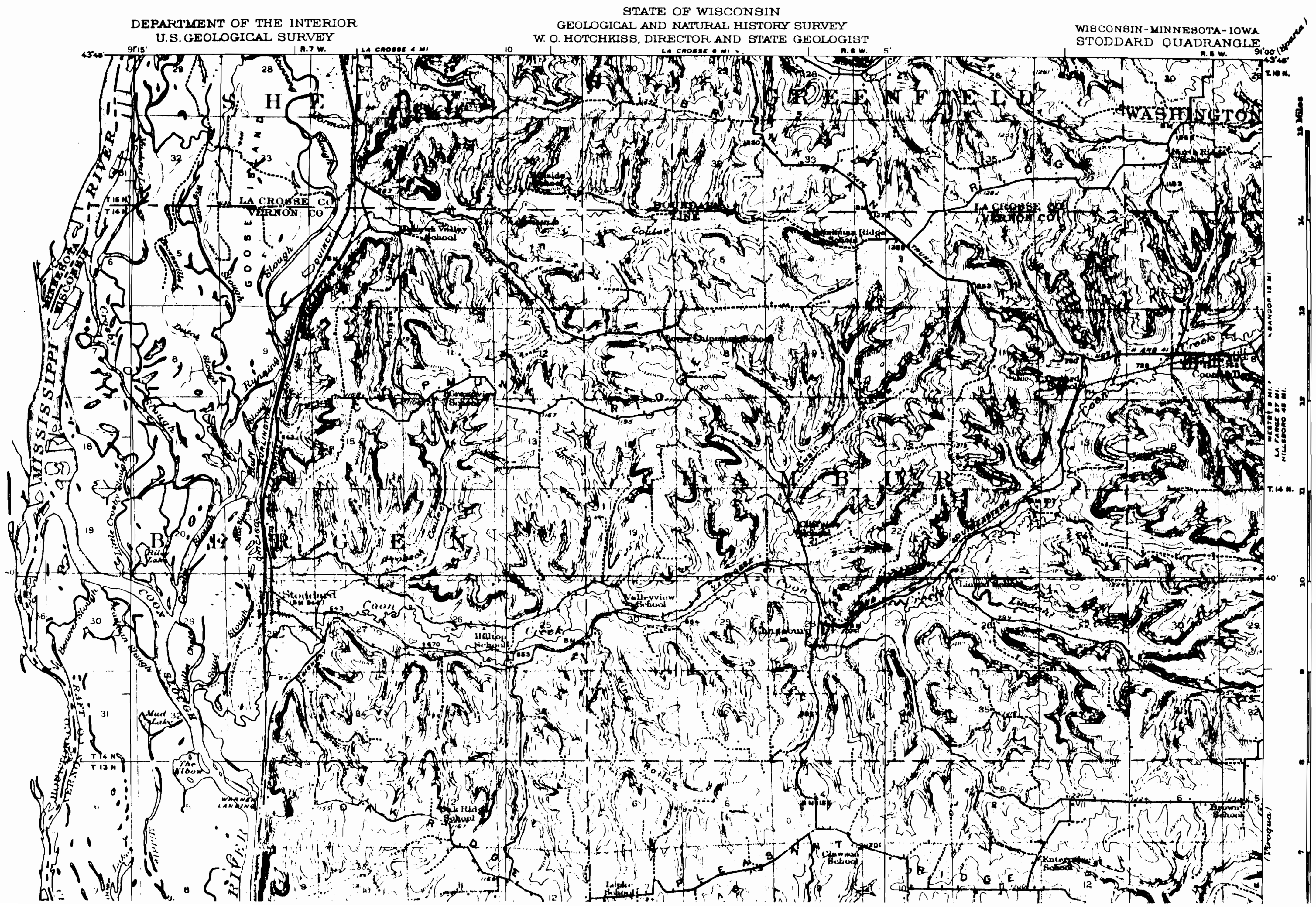
RELIEF
(printed in brown)

Figures
Contours
Depression contours
Levee
Wash
Cliffs
Mine dumps
Tailings or mining debris
Sand and sand dunes

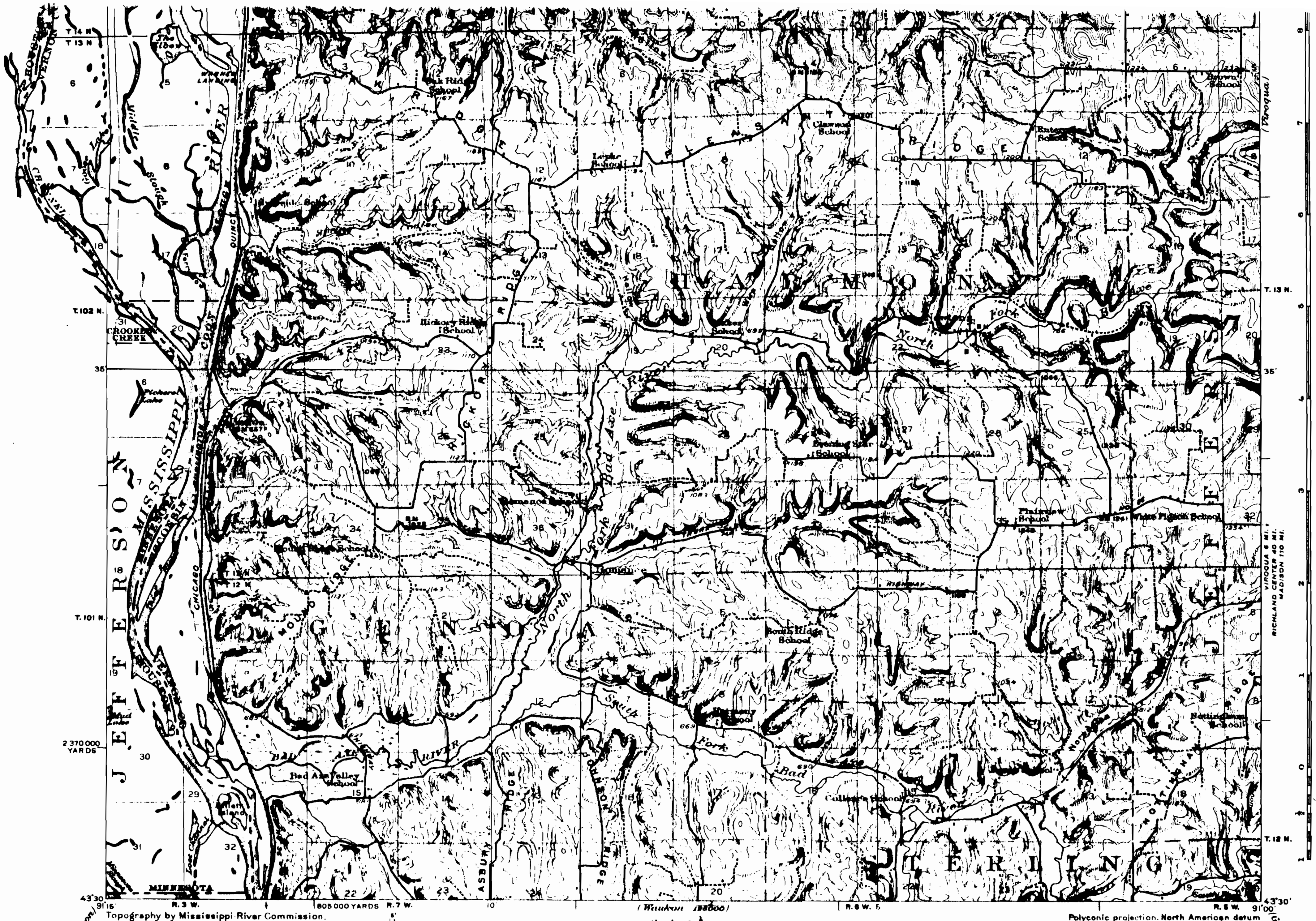
WATER
(printed in blue)

Streams
Falls and rapids
Intermittent streams and ditches
Canals or ditches
Aqueducts or waterpipes
Aqueduct tunnels
Lake or pond
Unsurveyed stream and abandoned canal
Intermittent lake
Well
Salt marsh
Fresh marsh
Grassy pond
Tidal flats

WOODS
(when shown, printed in green)



DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST
WISCONSIN-MINNESOTA-IOWA
STODDARD QUADRANGLE
SHELBY
GREENFIELD
WASHINGTON
LA CROSSE CO
VERNON CO
BOUNDARY LINE
MISSISSIPPI RIVER
GOOSE ISLAND
BERGEN
HAMBURG
Stoddard
Coon Creek
Valleyview School
Hilltop School
OAK RIDGE
PLEASANT RIDGE
Brown School
Liberty School
Mud Lake
The Elbow



Topography by Mississippi River Commission, J.G. Staack and A.P. Meade
Control in part by Mississippi River Commission
Surveyed in 1922-1924

DE SOTO 5 MI.
PRAIRIE DU CHIEN 40 MI.

Scale $\frac{1}{62500}$

Contour interval 20 feet

Polyconic projection. North American datum
5000 yard grid based upon U.S. zone system, C

THROUGH ROUTES
SECONDARY ROUTES

STODDARD, WIS.-MINN.-IOWA.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

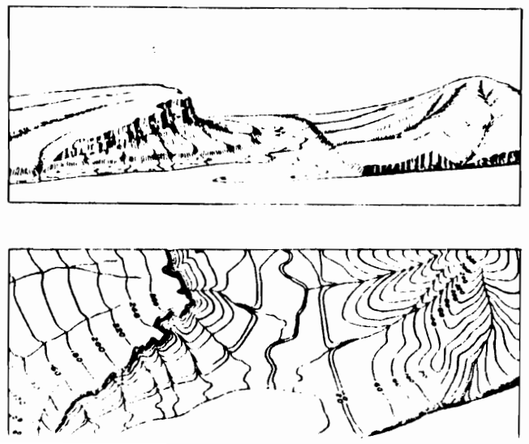
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an

boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

1. The publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

2. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut both in youth. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

The topographic map is the basis for which the geologic and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1914

CONVENTIONAL SIGNS

CULTURE
(printed in black)

City or village
Roads and buildings
Ruins
Cliff dwelling
Metaled road *(distinguished on recent maps only)*
Private or poor road
Trail or path
Railroads and stations
Electric railroad
Tunnel
Wharves
Breakwater and jetties
Bridges
Drawbridges
Ferry *(great upstream)*
Ford
Dam
Dam with lock
Canal lock *(great upstream)*
U.S. township and section lines and located corners
State line
County line
Civil Township or district line
Reservation line
Land grant line
City, village or borough line
Small park or cemetery line
Triangulation or primary traverse
U.S. mineral monument
Boundary monument
Bench mark *(Temporary bench mark shown by brown cross and black figures without lettering)*
Cemeteries
Church, School *(distinguished on recent maps)*
Coke ovens
Tanks and oil reservoirs
Oil wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Mine tunnel *(showing direction)*
Lighthouse or beacon
Light ship
Life saving station

RELIEF
(printed in brown)

Figures *(showing height above mean sea level unless otherwise determined)*
Contours *(printed in brown; in swamps and on glaciers printed in blue)*
Depression contours
Levee
Wash
Cliffs *(shown by hachures)*
Mine dumps
Talus or mining debris
Sand and sand dunes

WATER
(printed in blue)

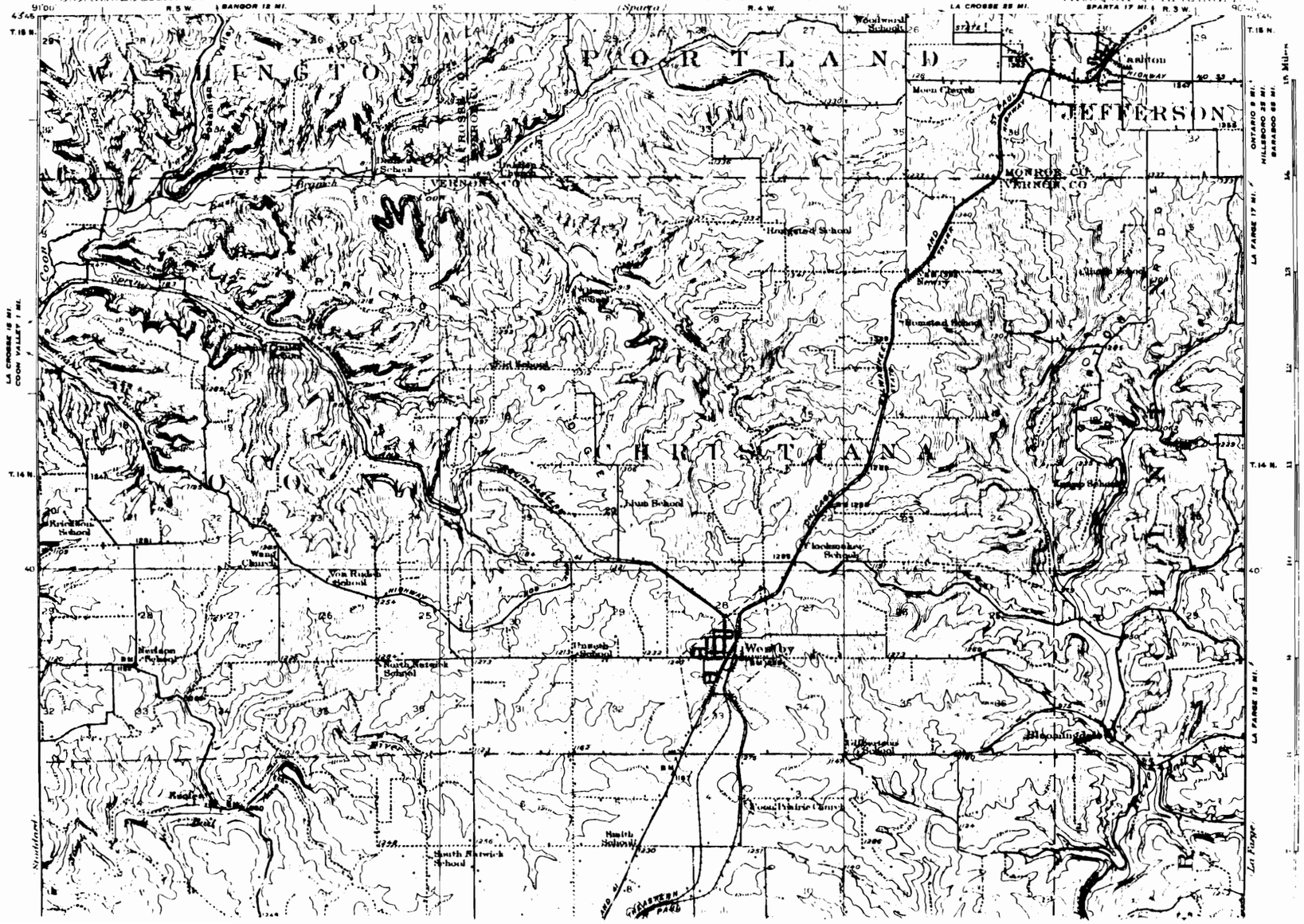
Streams
Falls and rapids
Intermittent streams and ditches
Canals or ditches
Aqueducts on waterpipes
Aqueduct tunnels
Lake or pond
Unsurveyed stream and abandoned canal
Intermittent lake
Glacier *(in mountainous areas printed in blue)*
Spring
Well
Salt marsh
Fresh marsh
Grassy pond
Tidal flats

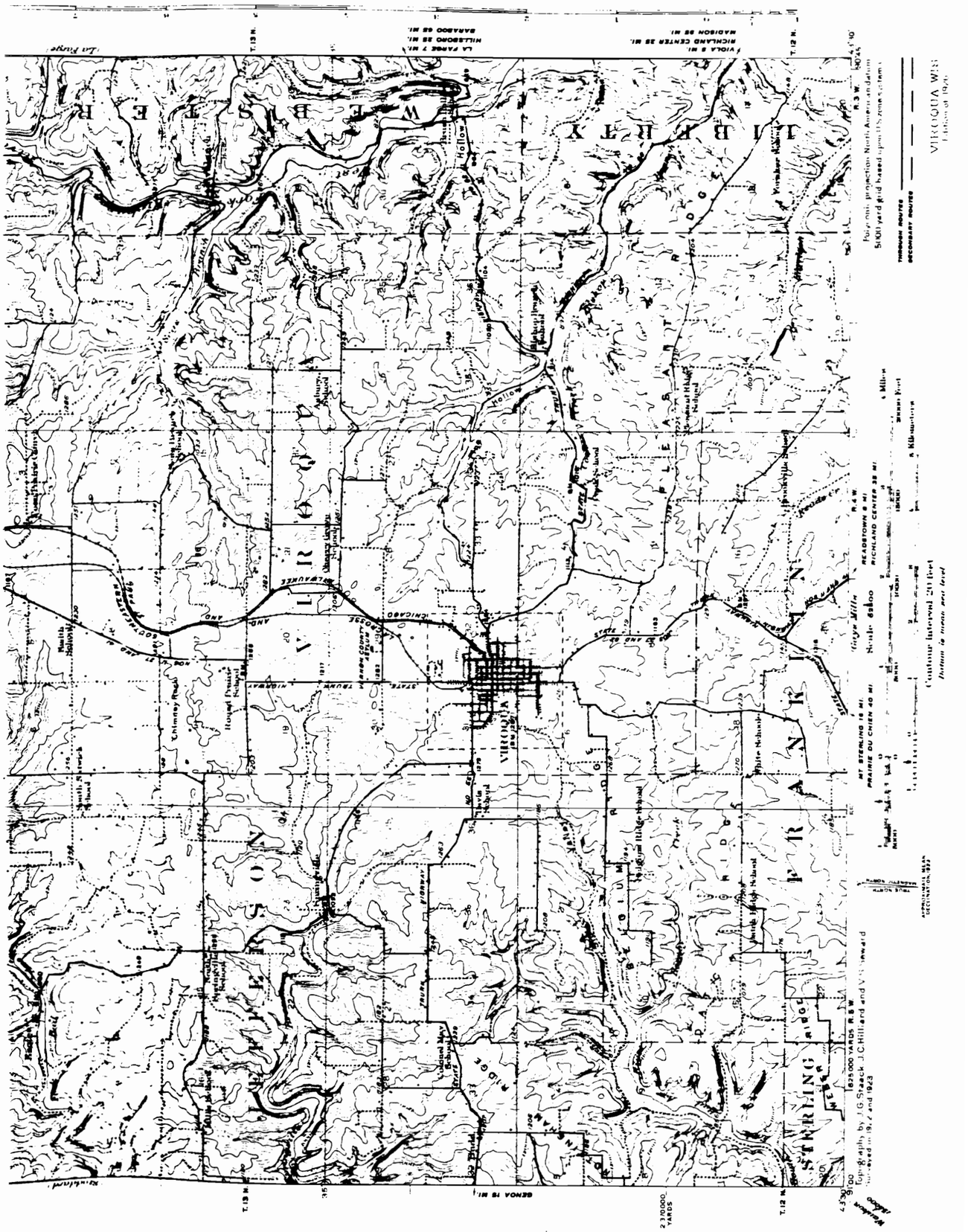
WOODS
(when shown printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
WYMAN CHESS, DIRECTOR AND STATE GEOLOGIST

WISCONSIN
VIROQUA QUADRANGLE




VIRGINIA
STERLING
PLEASANT RIDGE
WATERSHED
LIBERTY
Virginia
Sterling
Pleasant Ridge
Liberty
Watershed
Virginia Hollow
Sterling Ridge
Pleasant Ridge
Liberty Ridge
Watershed Ridge
Polyconic projection North American datum
5000 yard grid based upon Illinois system
THROUGH ROUTES
SECONDARY ROUTES
VICINITY MAP
Contour Interval 20 Feet
Datum is mean sea level
Topography by J.G. Slaack, J.C. Hilliard and V.S. Seward
Surveyed in 1961 and 1962
T.13 N.
T.12 N.
R.3 W.
R.4 W.
R.5 W.
R.6 W.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

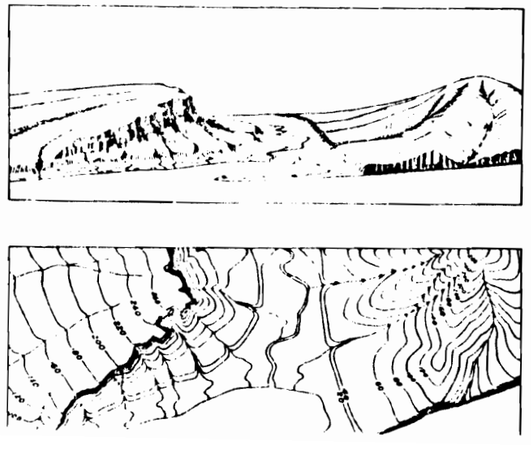
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch, with a contour interval of 100 to 500 feet.

The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

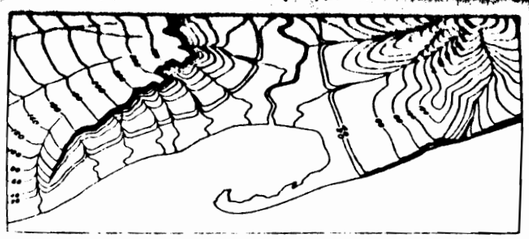
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

public importance, such as much of the mountain or desert regions of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups. [illegible] water, including lakes, rivers, canals, swamps, and other bodies of water; relief, including mountains, hills, valleys, and other features of the earth's surface; and works of man, such as [illegible]



The sketch represents a river valley that lies between two hills. In the foreground is the [illegible] that is partly [illegible]

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR
United States Geological Survey
Washington, D. C.

City or village
Roads and buildings
Ruins
Cliff dwelling
Mechanical road
Trails
Railroads
Dam
Dam with lock
Canal lock (pound upstream)
U.S. township and section lines and located corners
State line
County line
Civil township or district line
Reservation line
Land grant line
City, village, or borough line
Small park or cemetery
Triangulation or [illegible] station
Unmarked monument
Bench mark ("Temporary bench mark shown by brown cross and black figures without lettering")
Cemeteries
Church, School (distinguished on revised maps)
Coke ovens
Tanks and oil reservoirs
Oil wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Lighthouse or beacon
Light ship
Life-saving station

RELIEF
(printed in brown)

Figures showing height above mean sea level instrumentally determined
Contours (Contours showing depth of water printed in blue)
Depression contours
Levee
Wash
Cliffs (as shown by contours)
Mine dumps
Tailings or mining debris
Sand and sand dunes

WATER
(printed in blue)

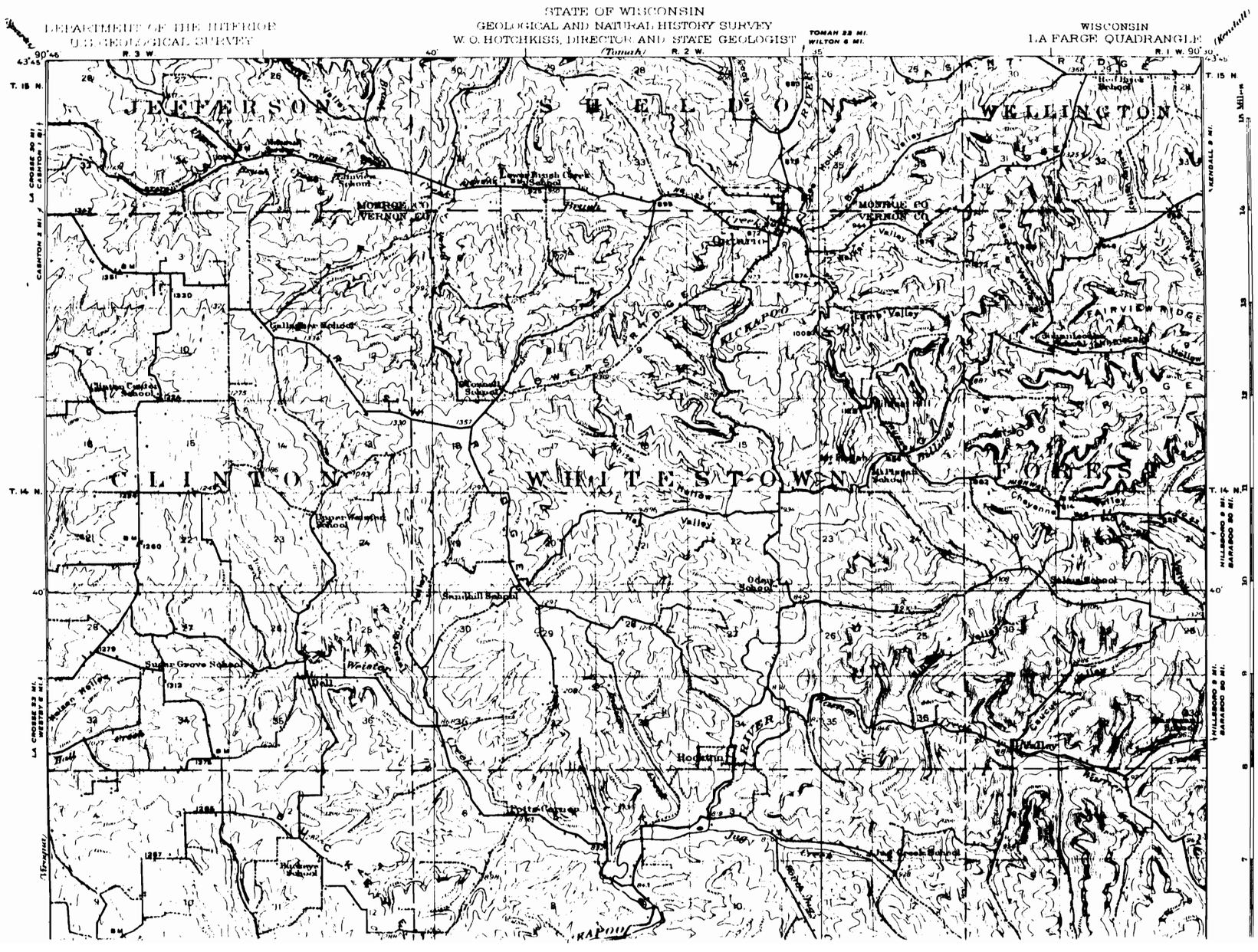
Streams
Falls and rapids
Intermittent streams and ditches
Canals or ditches
Aqueducts or waterpipes
Aqueduct tunnels
Lake or pond
Unsurveyed stream and abandoned canal
Intermittent Lake
Glacier
Spring, Well
Salt marsh
Fresh marsh
Grassy pond
Tidal flats

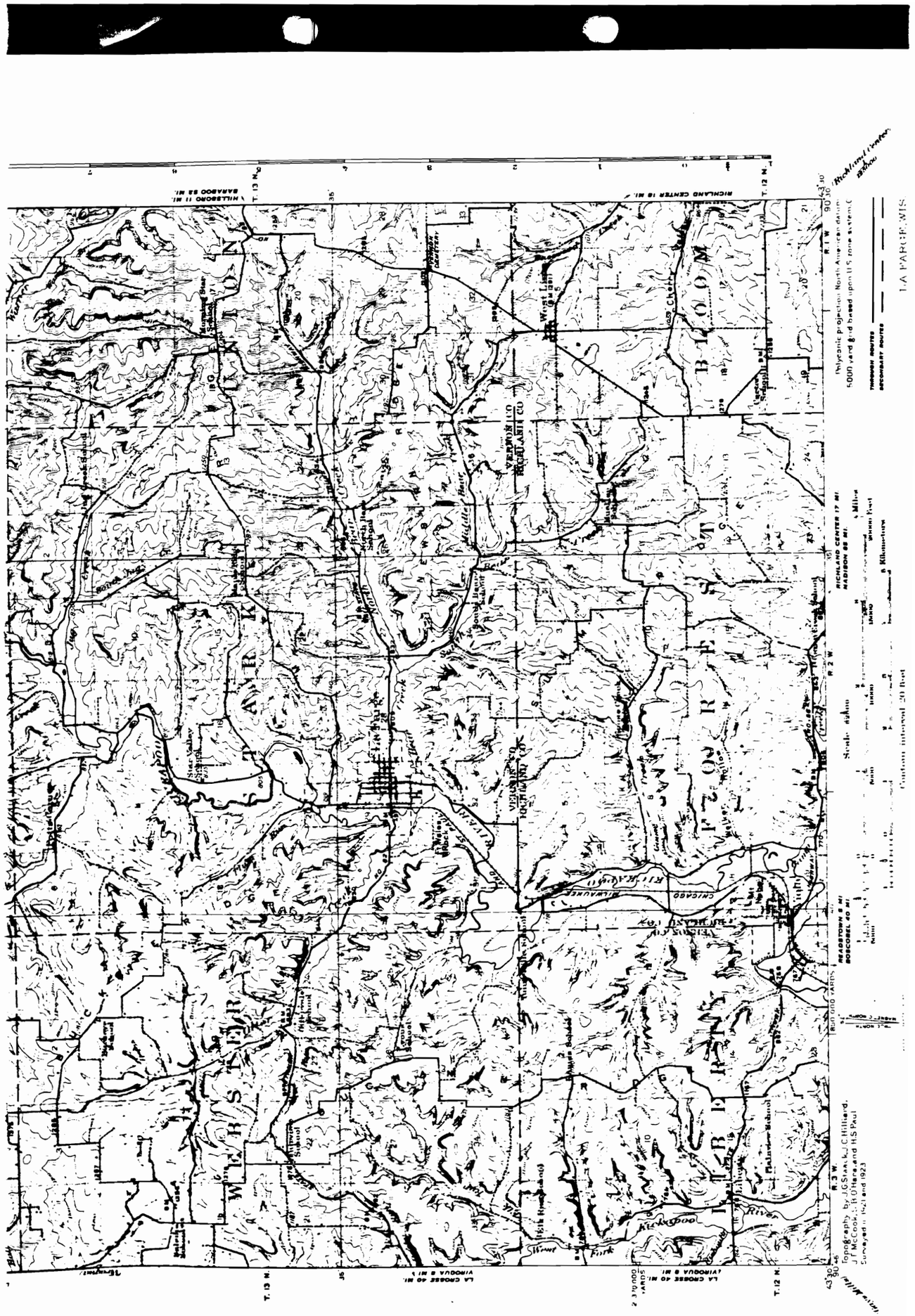
WOODS
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST

WISCONSIN
LA FARGE QUADRANGLE




LA PARK, WIS.
Topography by J.G.Stanley, J.C.Hilliard, J.F.McCook, J.H.O'Hara and H.S.Paul
Surveyed in 1921 and 1923
Polyconic projection. North American datum
5,000 yard grid based upon U.S. zone system
Contour interval 20 Feet
THROUGH ROUTES
SECONDARY ROUTES
BLOOM
WESTER
RIVER
RICHLAND CENTER 17 MI
MADISON 65 MI.
READSTOWN 8 MI
BOSCOBEL 40 MI
R 1 W
R 2 W
R 3 W
T. 13 N.
T. 12 N.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

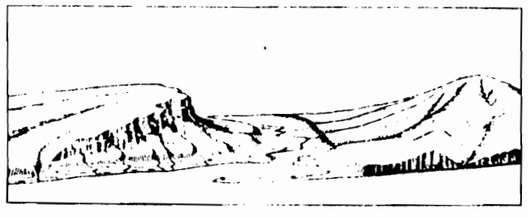
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance work on a scale of [illegible] or about 10 miles to an

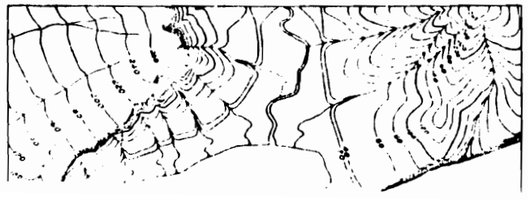
boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.





their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

[illegible] ordering the folios will

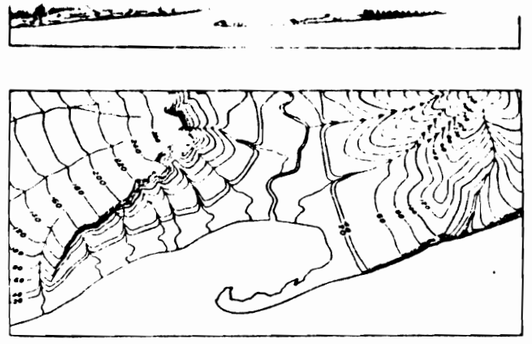
in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{31,680}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to $5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

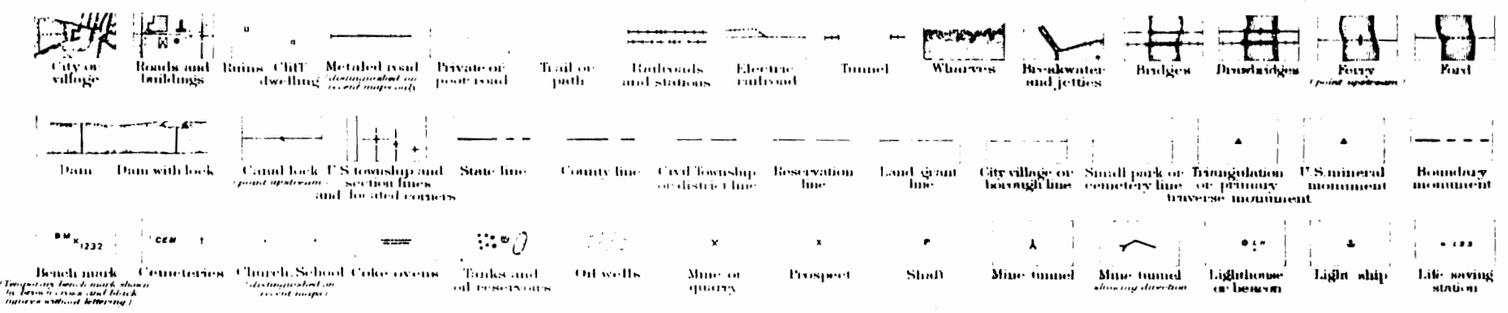
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1924.

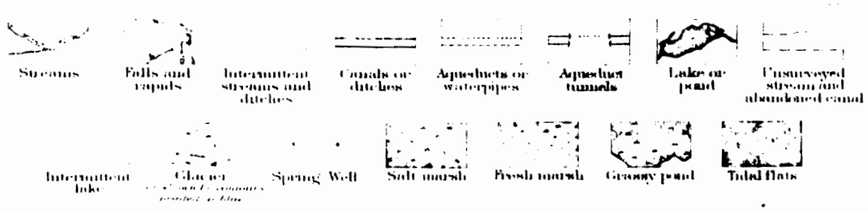
CONVENTIONAL SIGNS

CULTURE
(printed in black)



RELIEF
(printed in brown)

WATER
(printed in blue)

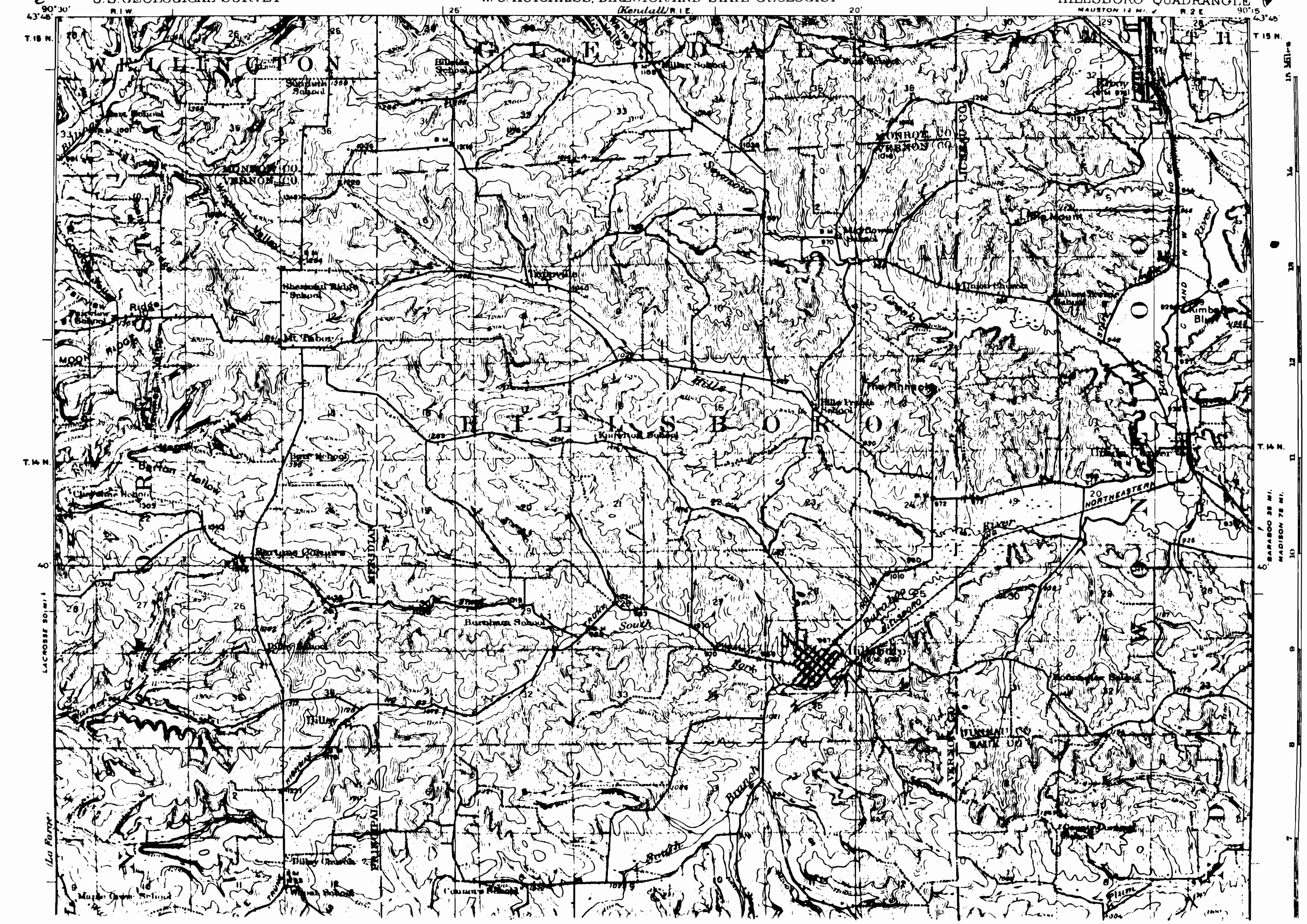


WOODS
(when shown printed in green)

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
HILLSBORO QUADRANGLE



THE TOPOGRAPHIC M[illegible]

The United States Geological Survey is making a [illegible] topographic atlas of the United States. [illegible] progress since 188[illegible], and its results consist of [illegible] more than 42 per cent of the country, [illegible] possessions.

This topographic atlas is published in the form of [illegible] sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles [illegible] by parallels of latitude and meridians of longitude. The quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different size. On the lower margin of each map is printed graphic scales showing [illegible] in feet [illegible] and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on [illegible] scales not [illegible] standard topographic survey of the United States [illegible] the results of maps have for many years [illegible] types, differing [illegible] follows:

1. Surveys of areas [illegible] public [illegible] [illegible]

[illegible]

[illegible] 100 feet.

A topographic survey of Alaska [illegible] about 40 [illegible]

[illegible]

[illegible] the vertical [illegible] the bottom of each map. [illegible] the topography of the area [illegible]

[illegible] to the [illegible] published [illegible]

[illegible] shown in [illegible] land [illegible] by continuous or broken lines [illegible] Good motor or public roads [illegible] motor or private roads by [illegible]

[illegible] denoted by the name of a city, town [illegible] within it, and on the [illegible] are printed the names of adjoining quadrangles [illegible] have been published [illegible] 3,300 quadrangles [illegible] and many of them [illegible] of this [illegible] have been [illegible]

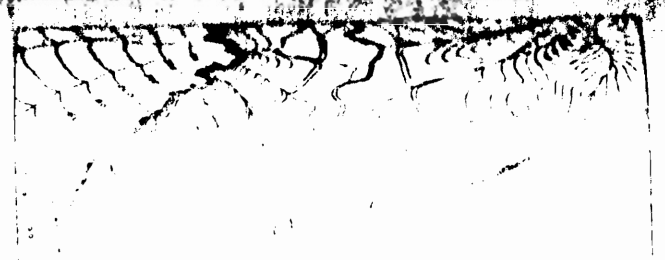
[illegible] maps the [illegible] which the [illegible]

100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of [illegible], or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of [illegible] but about 1,000 square miles has been mapped on a scale of [illegible] or larger.

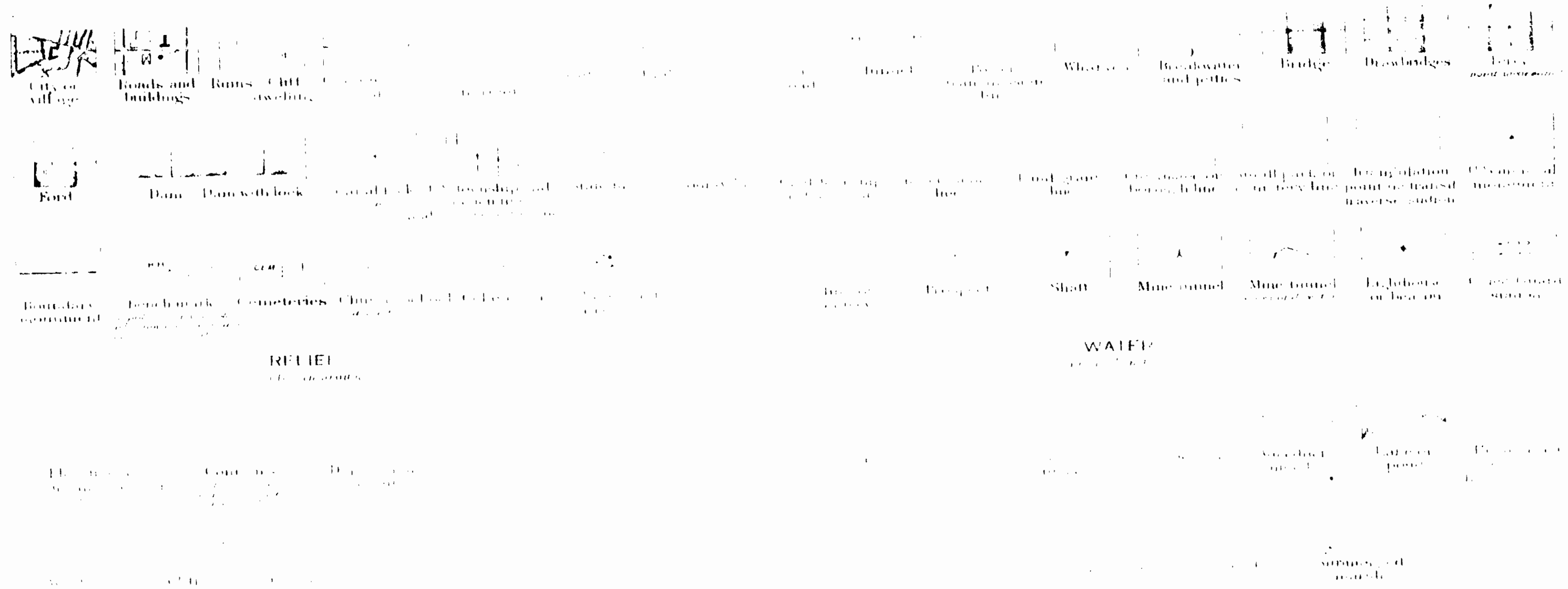
[illegible] at the western end of the group, have been [illegible] and the resulting maps are published on a scale of [illegible]

The features shown on these maps may be arranged in three [illegible] waters, [illegible] falls, valleys, and other [illegible]



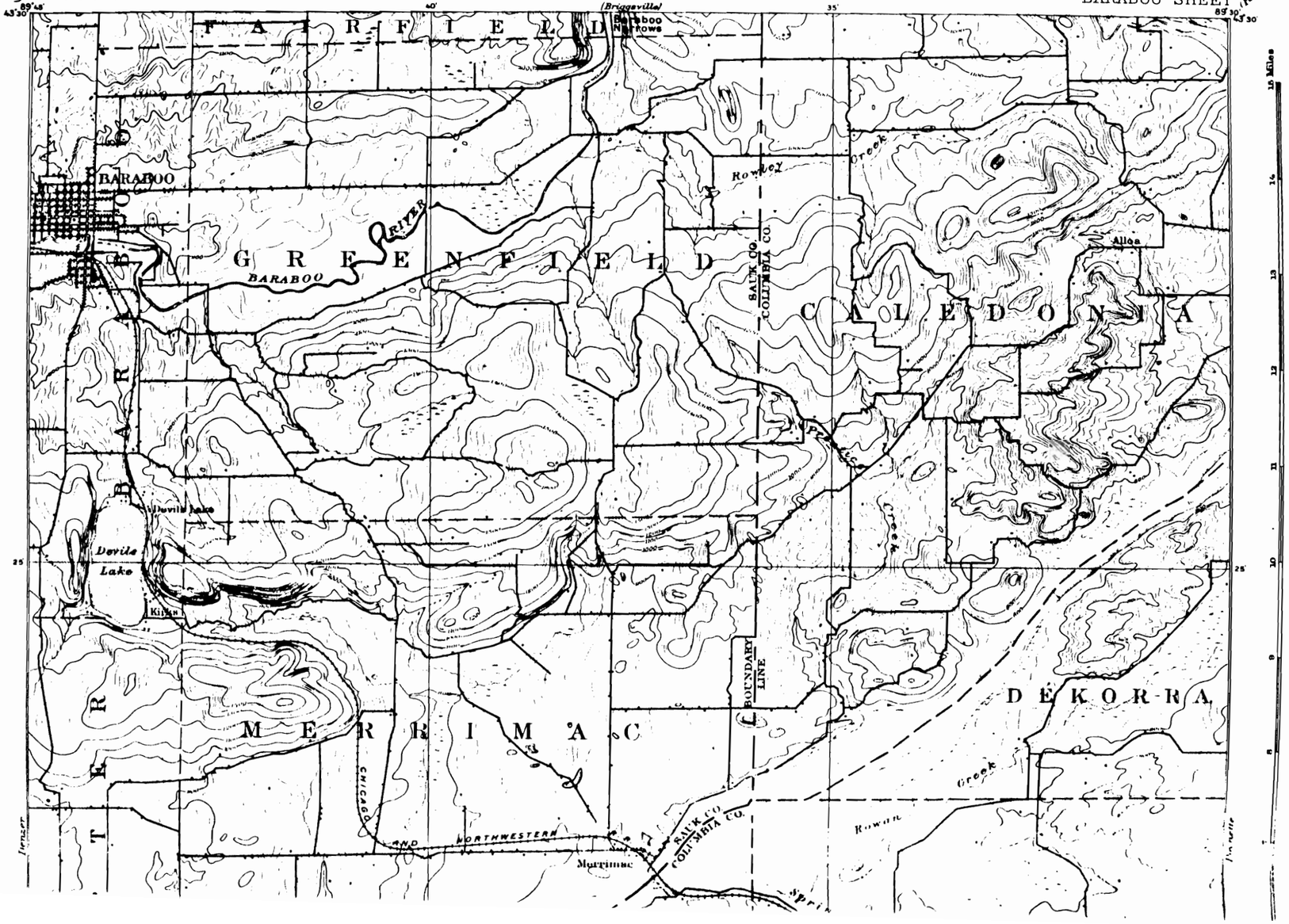
[illegible] Copies of the standard topographic maps may be obtained [illegible] for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps [illegible] at the retail price. The [illegible] the follow[illegible]

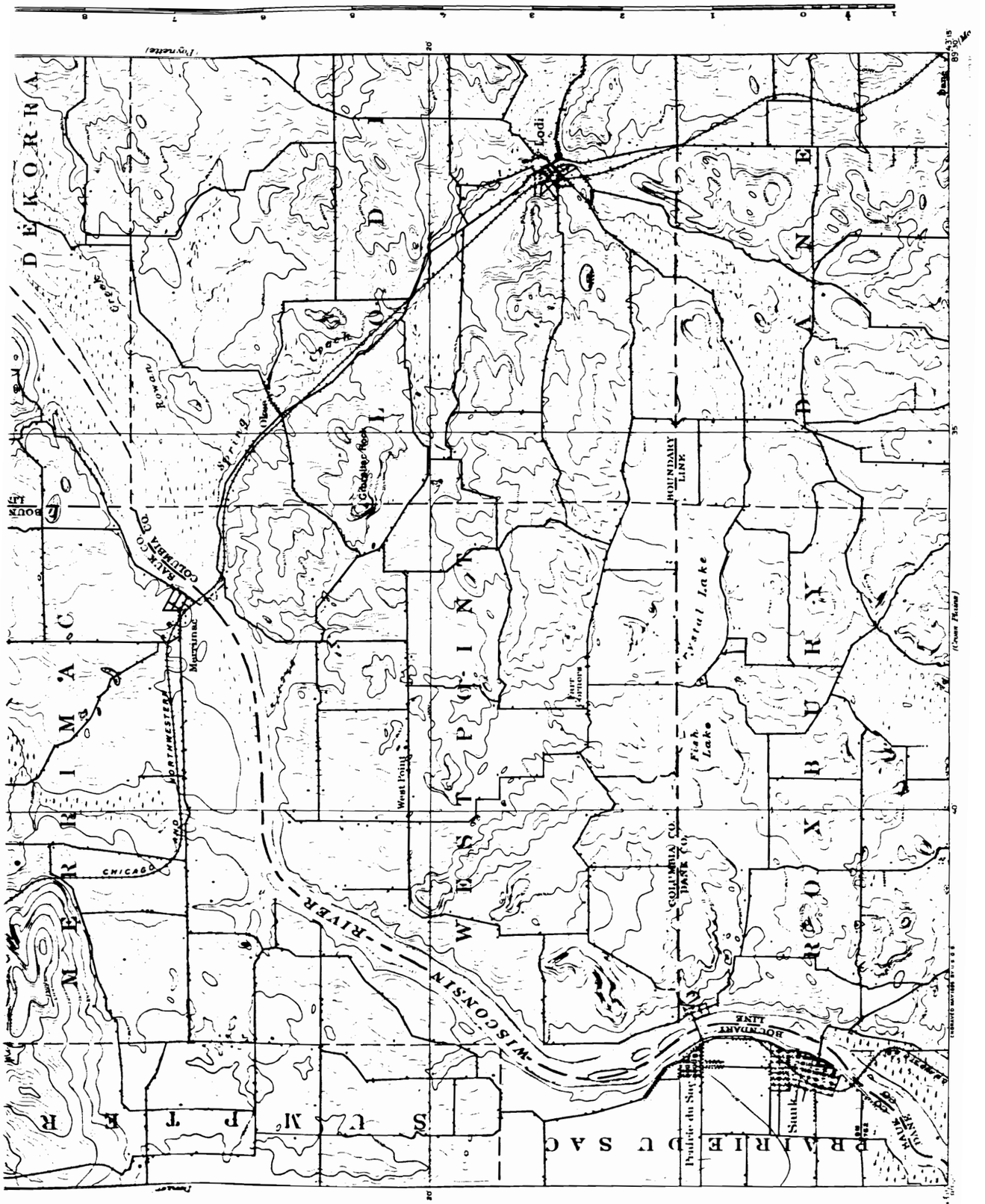
THE DIRECTOR



DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
BARABOO SHEET




DEKORRA
COLUMBIA CO
Rowan Creek
Spring Creek
Lodi
Merrimac
Northwestern
West Point
Fish Lake
Devil Lake
HOLIDAY LINK
CHICAGO
WISCONSIN RIVER
ROCKMART LINE
Prairie du Sac
Sauk
PRAIRIE DU SAC

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps or atlas sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for any quadrangle depending on its nature and its probable future development, and consequently though the standard atlas sheets are of nearly uniform size they represent areas of different sizes. On the lower margin of each sheet are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 such units on the earth's surface.

The standard scales used on these maps are multiples of the fraction $\frac{1}{1,000,000}$. Quadrangles in thickly settled or industrially important regions are mapped on a scale of $\frac{1}{62,500}$, or about 1 mile to an inch, and cover areas measuring 15′ in latitude and longitude. Quadrangles in less thickly settled or otherwise less important districts are mapped on a scale of $\frac{1}{125,000}$, or about 2 miles to an inch, and cover areas measuring 30′ in latitude and longitude. Reconnaissance maps of desert or sparsely inhabited regions have been made on a scale of $\frac{1}{250,000}$, or about 4 miles to an inch, covering areas measuring 1° in latitude and longitude. Maps for special purposes are made on scales larger than $\frac{1}{62,500}$.

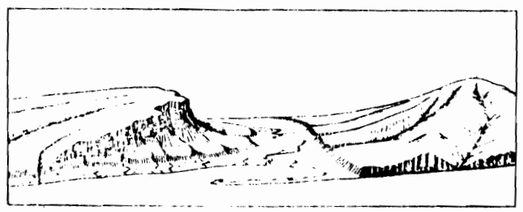
A topographic survey of Alaska has been in progress since 1898, and nearly 35 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 3,500 square miles has been mapped on a scale of $\frac{1}{62,500}$.

A large part of the Hawaiian Islands has been surveyed,

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in mapping only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour, for example, would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins that are issued free by the Geological Survey.

The lettering and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,800 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price

A topographic survey of Alaska has been in progress since 1898, and nearly 25 per cent of its area has been mapped. Almost 10 per cent of the Territory has been covered by reconnaissance maps on a scale of 1/250,000 or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of 1/62,500 but about 8,500 square miles has been mapped on a scale of 1/125,000.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of 1/62,500.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November, 1919.

CONVENTIONAL SIGNS

CULTURE
(printed in black)

City or village
Roads and buildings
Ruins
Cliff dwelling *(distinguished on recent maps only)*
Metaled road *(distinguished on recent maps only)*
Private or poor road
Trail or path
Railroads and stations
Electric railroad
Tunnel
Wharves
Breakwater and jetties
Bridges
Drawbridges
Ferry *(route specified)*
Fort
Dam
Dam with lock
Canal lock *(point upstream)*
U.S. township and section lines and located corners
State line
County line
Civil township or district line
Reservation line
Land grant line
City, village, or borough line
Small park or cemetery line
Triangulation or primary traverse monument
U.S. mineral monument
Boundary monument
Bench mark *(Temporary bench mark shown by brass cross and black figures without lettering)*
Cemeteries
Church, School *(distinguished on recent maps)*
Coke ovens
Tanks and oil reservoirs
Oil wells
Mine or quarry
Prospect
Shaft
Mine tunnel
Mine tunnel *(showing direction)*
Lighthouse or beacon
Lightship
Life saving station

RELIEF
(printed in brown)

Figures *(showing height above mean sea level unless mentally determined)*
Contours *(Contours showing depth of water printed in blue)*
Depression contours
Levee
Wash
Cliffs *(as shown by outcrops)*
Mine dumps
Tailings or mining debris
Sand and sand dunes

WATER
(printed in blue)

Streams
Falls and rapids
Intermittent streams and ditches
Canals or ditches
Aqueducts or waterpipes
Aqueduct tunnels
Lake or pond
Unsurveyed stream and abandoned canal
Intermittent lake
Glacier *(Ice shown by contours printed in blue)*
Spring
Well
Salt marsh
Fresh marsh
Grassy pond
Tidal flats

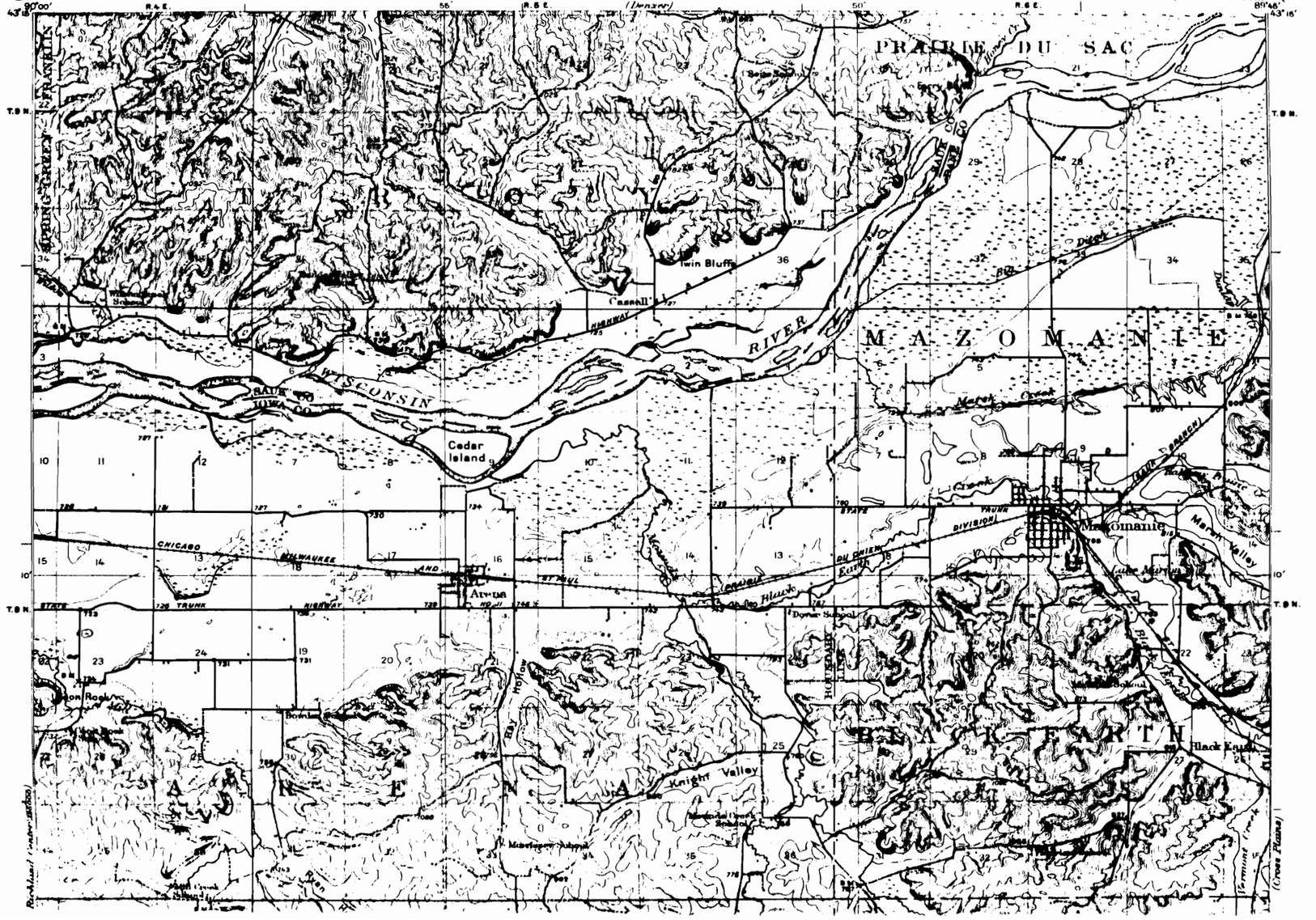
WOODS
(when shown, printed in green)

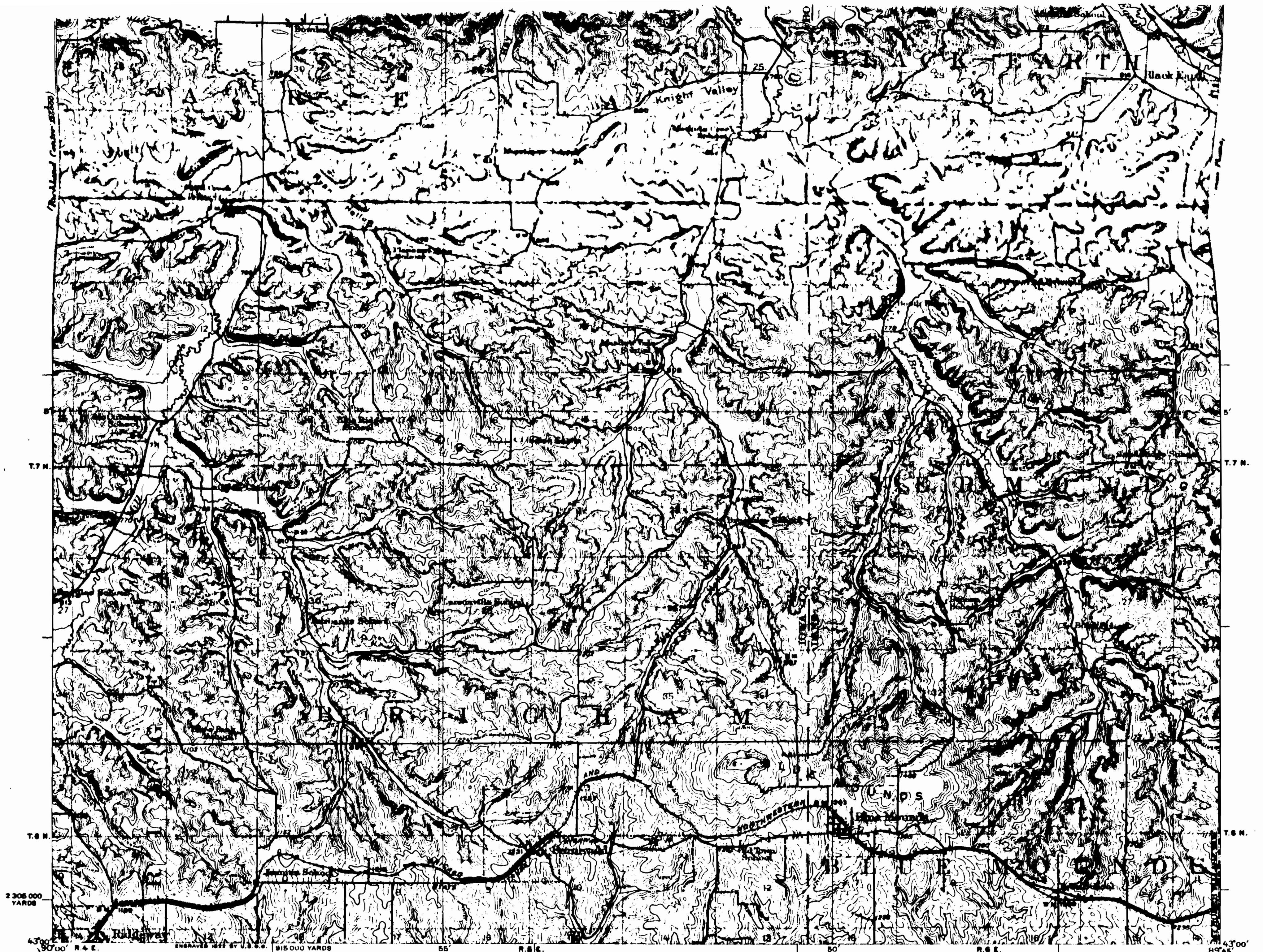
DEPARTMENT OF THE INTERIOR
ALBERT B. FALL, SECRETARY
U. S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST

WISCONSIN
BLUE MOUNDS QUADRANGLE





C.H.Birdseye, Chief Topographic Engineer.
W. H. Herron, Topographic Engineer in charge.
Topography by O.H.Nelson and R.M.Herrington.
Control by U.S.Coast and Geodetic Survey.

Polyconic projection. North American datum.
5000 yard grid based upon zone C for P.M.M.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps or atlas sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for any quadrangle depending on its nature and its probable future development, and consequently though the standard atlas sheets are of nearly uniform size they represent areas of different sizes. On the lower margin of each sheet are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

The standard scales used on these maps are multiples of the fraction $\frac{1}{1,000,000}$. Quadrangles in thickly settled or industrially important regions are mapped on a scale of $\frac{1}{62,500}$, or about 1 mile to an inch, and cover areas measuring 15′ in latitude and longitude. Quadrangles in less thickly settled or industrially less important districts are mapped on a scale of $\frac{1}{125,000}$, or about 2 miles to an inch, and cover areas measuring 30′ in latitude and longitude. Reconnaissance maps of desert or sparsely inhabited regions have been made on a scale of $\frac{1}{250,000}$, or about 4 miles to an inch, covering areas measuring 1° in latitude and longitude. Maps for special purposes are made on scales larger than $\frac{1}{62,500}$.

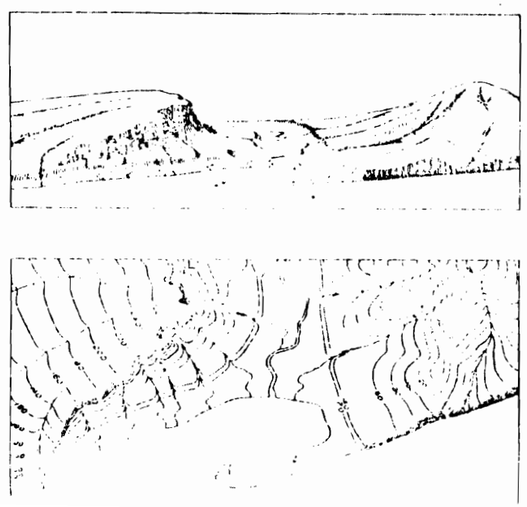
A topographic survey of Alaska has been in progress since 1898, and nearly 35 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 3,500 square miles has been mapped on a scale of $\frac{1}{62,500}$.

A large part of the Hawaiian Islands has been surveyed, [illegible] published on a scale of [illegible]

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in mapping only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour, for example, would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins that are issued free by the Geological Survey.

The lettering and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,800 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price

[illegible] in latitude and longitude [illegible] made the united large sheet size.

A topographic survey of Alaska has been [illegible] about 1898, and nearly 35 per cent of the area has since been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 3,500 square miles has been mapped on a scale of $\frac{1}{62,500}$.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land [illegible] culture (works of man), such as towns, [illegible] and boundaries. The [illegible] features are shown and [illegible] some earlier maps, and [illegible] some special maps.

The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a [illegible] and [illegible]. On each side of the valley is [illegible]

Index maps of each [illegible] geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by [illegible] money order (not postage stamps) and should be [illegible]

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

CONVENTIONAL SIGNS