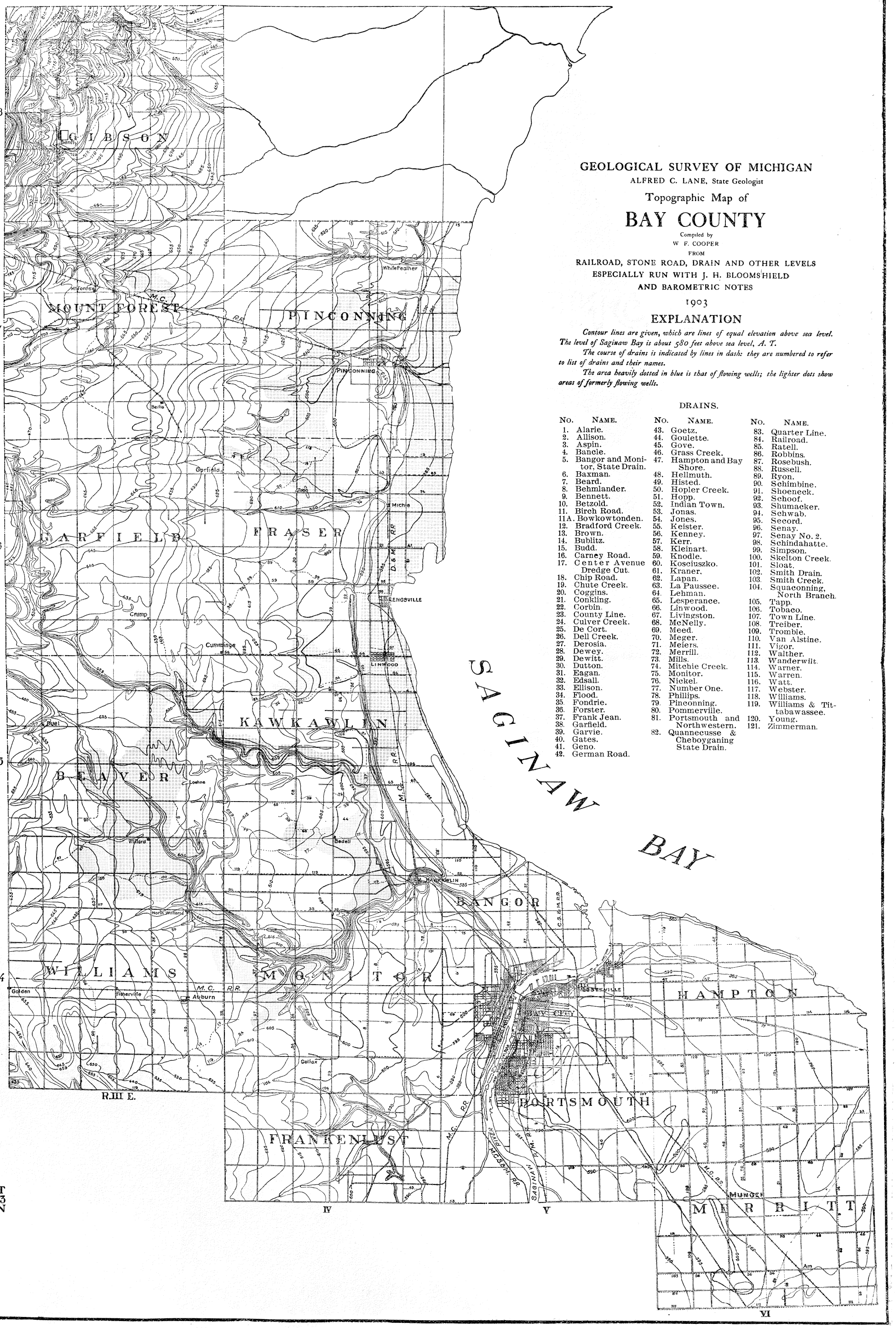


GEOLOGICAL SURVEY OF MICHIGAN

ALFRED C. LANE, State Geologist

Topographic Map of

BAY COUNTY

Compiled by
W. F. COOPER
FROM
RAILROAD, STONE ROAD, DRAIN AND OTHER LEVELS
ESPECIALLY RUN WITH J. H. BLOOMSHIELD
AND BAROMETRIC NOTES

1903

EXPLANATION

Contour lines are given, which are lines of equal elevation above sea level. The level of Saginaw Bay is about 580 feet above sea level, A. T.

The course of drains is indicated by lines in dash: they are numbered to refer to list of drains and their names.

The area heavily dotted in blue is that of flowing wells; the lighter dots show areas of formerly flowing wells.

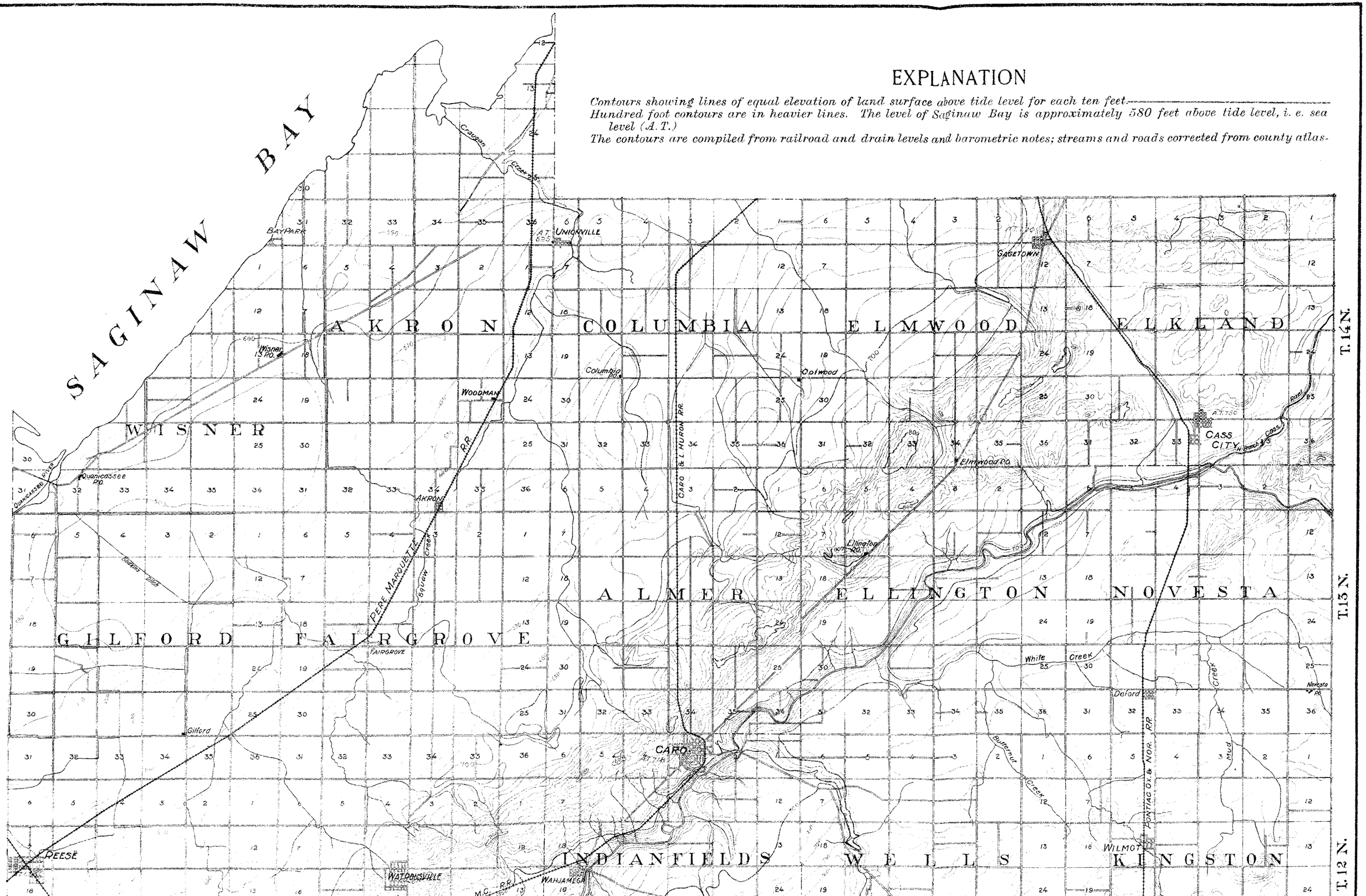
DRAINS.

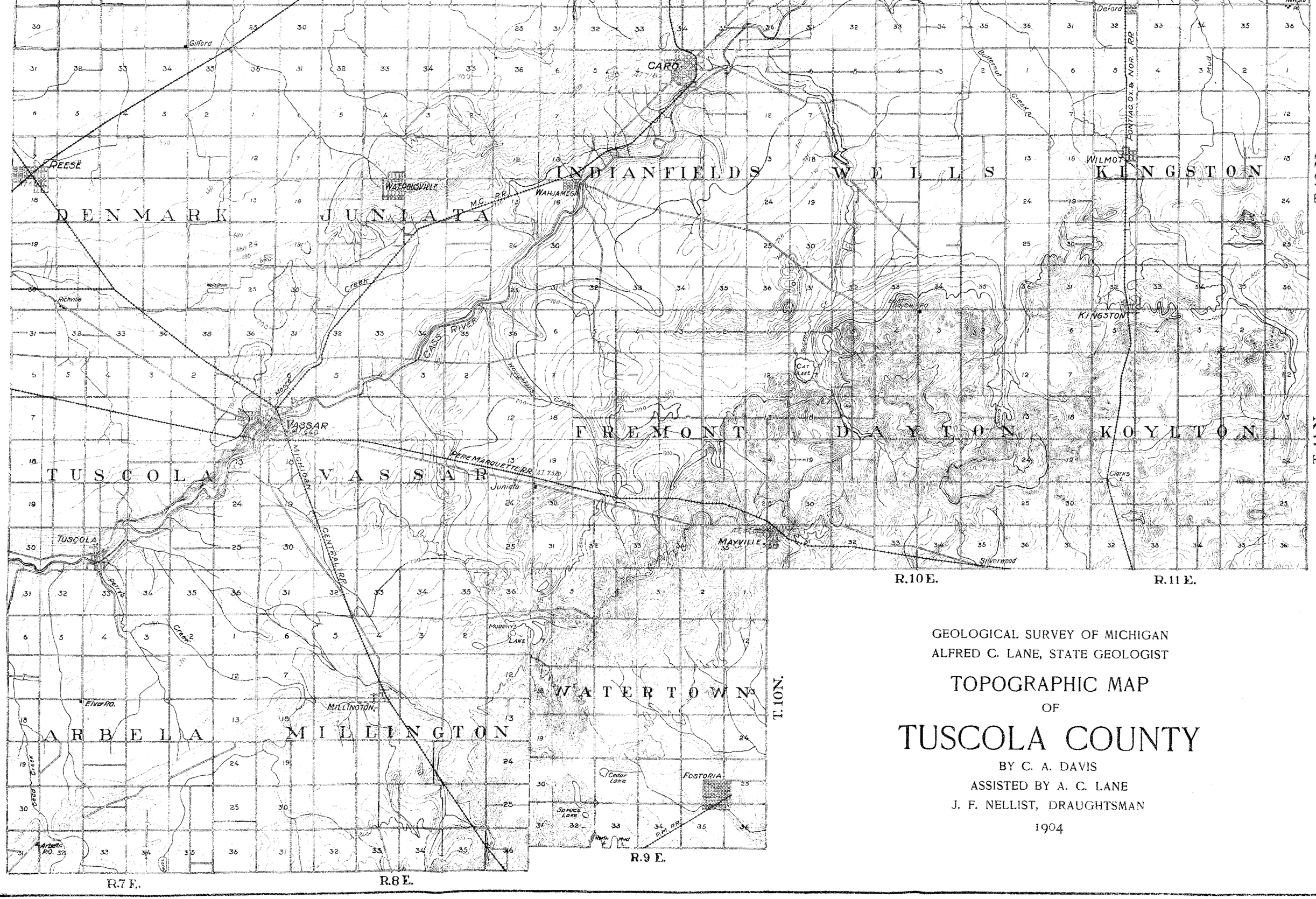
No.	Name.
1.	Alarie.
2.	Allison.
3.	Aspin.
4.	Bancle.
5.	Bangor and Monitor, State Drain.
6.	Baxman.
7.	Beard.
8.	Behmlander.
9.	Bennett.
10.	Betzold.
11.	Birch Road.
11A.	Bowkowtonden.
12.	Bradford Creek.
13.	Brown.
14.	Bublitz.
15.	Budd.
16.	Carney Road.
17.	Center Avenue Dredge Cut.
18.	Chip Road.
19.	Chute Creek.
20.	Coggins.
21.	Conkling.
22.	Corbin.
23.	County Line.
24.	Culver Creek.
25.	De Cort.
26.	Dell Creek.
27.	Derosia.
28.	Dewey.
29.	Dewitt.
30.	Dutton.
31.	Eagan.
32.	Edsall.
33.	Ellison.
34.	Flood.
35.	Fondrie.
36.	Forster.
37.	Frank Jean.
38.	Garfield.
39.	Garvie.
40.	Gates.
41.	Geno.
42.	German Road.
43.	Goetz.
44.	Goulette.
45.	Gove.
46.	Grass Creek.
47.	Hampton and Bay Shore.
48.	Hellmuth.
49.	Histed.
50.	Hopler Creek.
51.	Hopp.
52.	Indian Town.
53.	Jonas.
54.	Jones.
55.	Keister.
56.	Kenney.
57.	Kerr.
58.	Kleinart.
59.	Knodle.
60.	Kosciuszko.
61.	Kraner.
62.	Lapan.
63.	La Paussee.
64.	Lehman.
65.	Lesperance.
66.	Linwood.
67.	Livingston.
68.	McNelly.
69.	Meed.
70.	Meger.
71.	Meiers.
72.	Merrill.
73.	Mills.
74.	Mitchie Creek.
75.	Monitor.
76.	Nickel.
77.	Number One.
78.	Phillips.
79.	Pinconning.
80.	Pommerville.
81.	Portsmouth and Northwestern.
82.	Quannecusse & Cheboyganing State Drain.
83.	Quarter Line.
84.	Railroad.
85.	Ratell.
86.	Robbins.
87.	Rosebush.
88.	Russell.
89.	Ryon.
90.	Schimbine.
91.	Shoeneck.
92.	Schoof.
93.	Shumacker.
94.	Schwab.
95.	Secord.
96.	Senay.
97.	Senay No. 2.
98.	Schindahatte.
99.	Simpson.
100.	Skelton Creek.
101.	Sloat.
102.	Smith Drain.
103.	Smith Creek.
104.	Squaconning, North Branch.
105.	Tapp.
106.	Tobaco.
107.	Town Line.
108.	Treiber.
109.	Tromble.
110.	Van Alstine.
111.	Vigor.
112.	Walther.
113.	Wanderwilt.
114.	Warner.
115.	Warren.
116.	Watt.
117.	Webster.
118.	Williams.
119.	Williams & Titabawassee.
120.	Young.
121.	Zimmerman.

EXPLANATION

Contours showing lines of equal elevation of land surface above tide level for each ten feet. Hundred foot contours are in heavier lines. The level of Saginaw Bay is approximately 580 feet above tide level, i. e. sea level (A. T.)

The contours are compiled from railroad and drain levels and barometric notes; streams and roads corrected from county atlas.

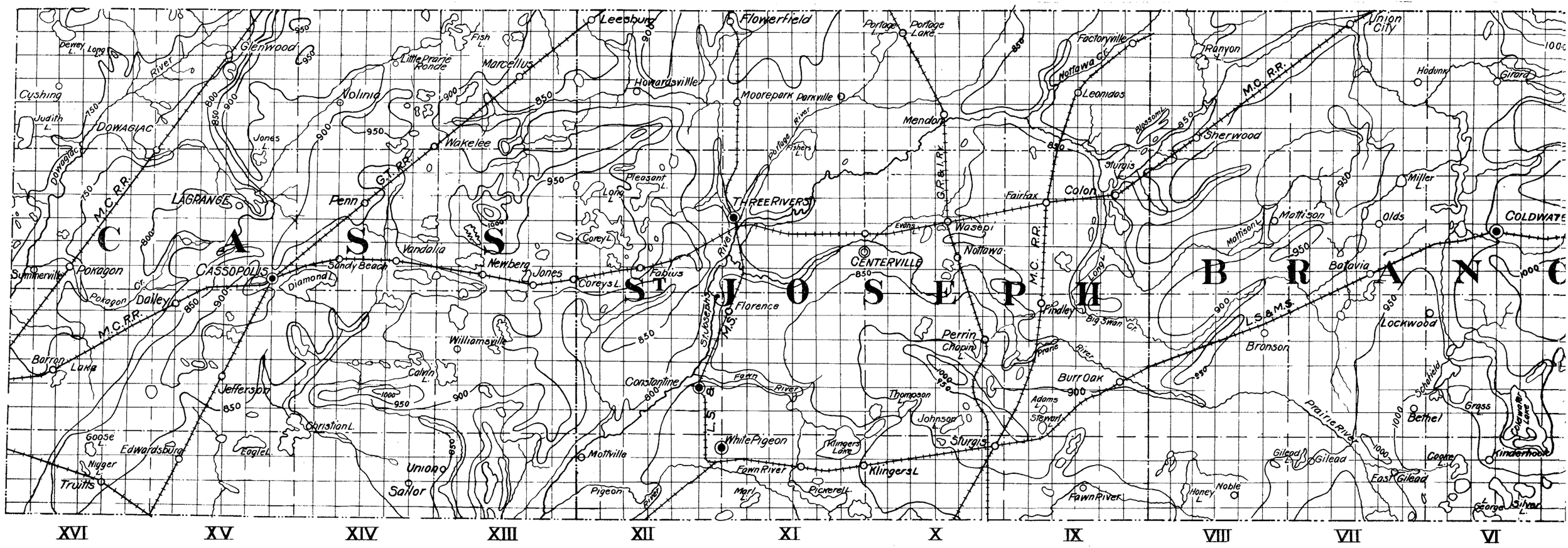




GEOLOGICAL SURVEY OF MICHIGAN
ALFRED C. LANE, STATE GEOLOGIST

TOPOGRAPHIC MAP OF TUSCOLA COUNTY

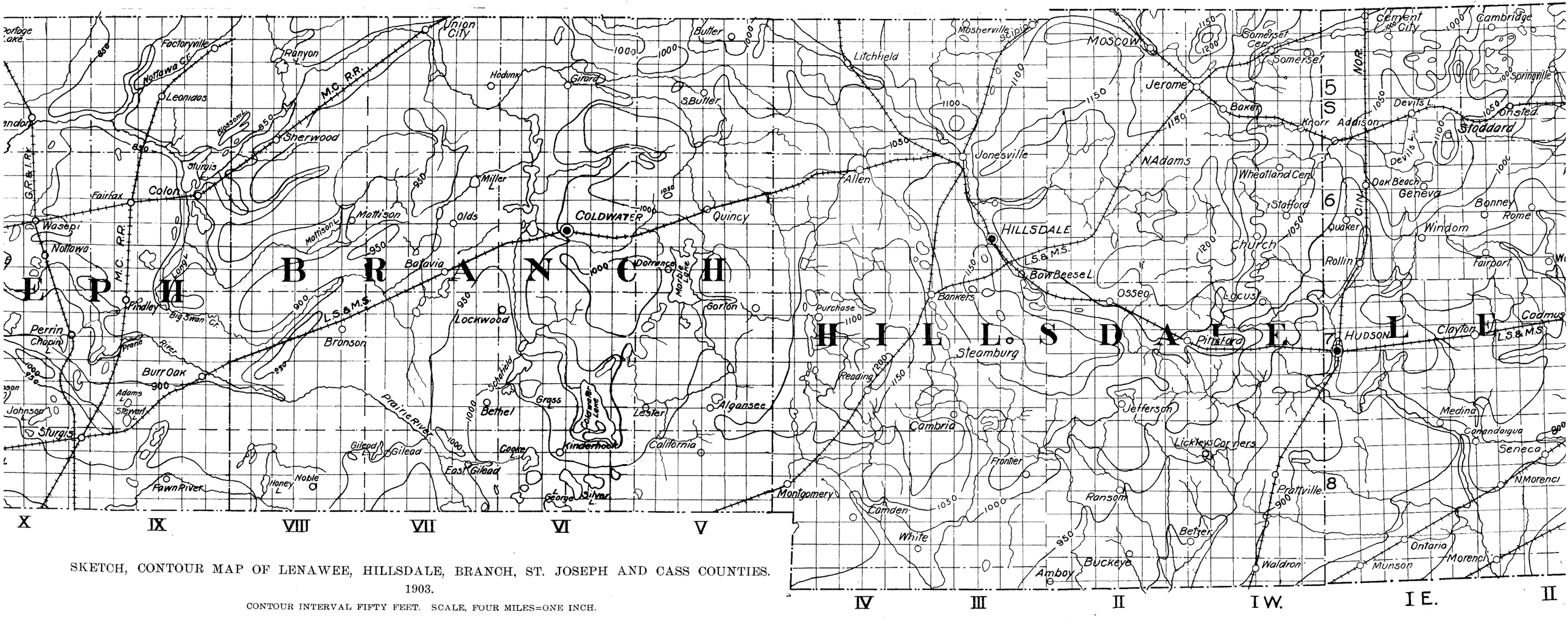
BY C. A. DAVIS
ASSISTED BY A. C. LANE
J. F. NELLIST, DRAUGHTSMAN
1904



SKETCH, CONTOUR MAP OF LENAWEE, HILLSDALE, BRANCH, ST. JOSEPH AN

1903.

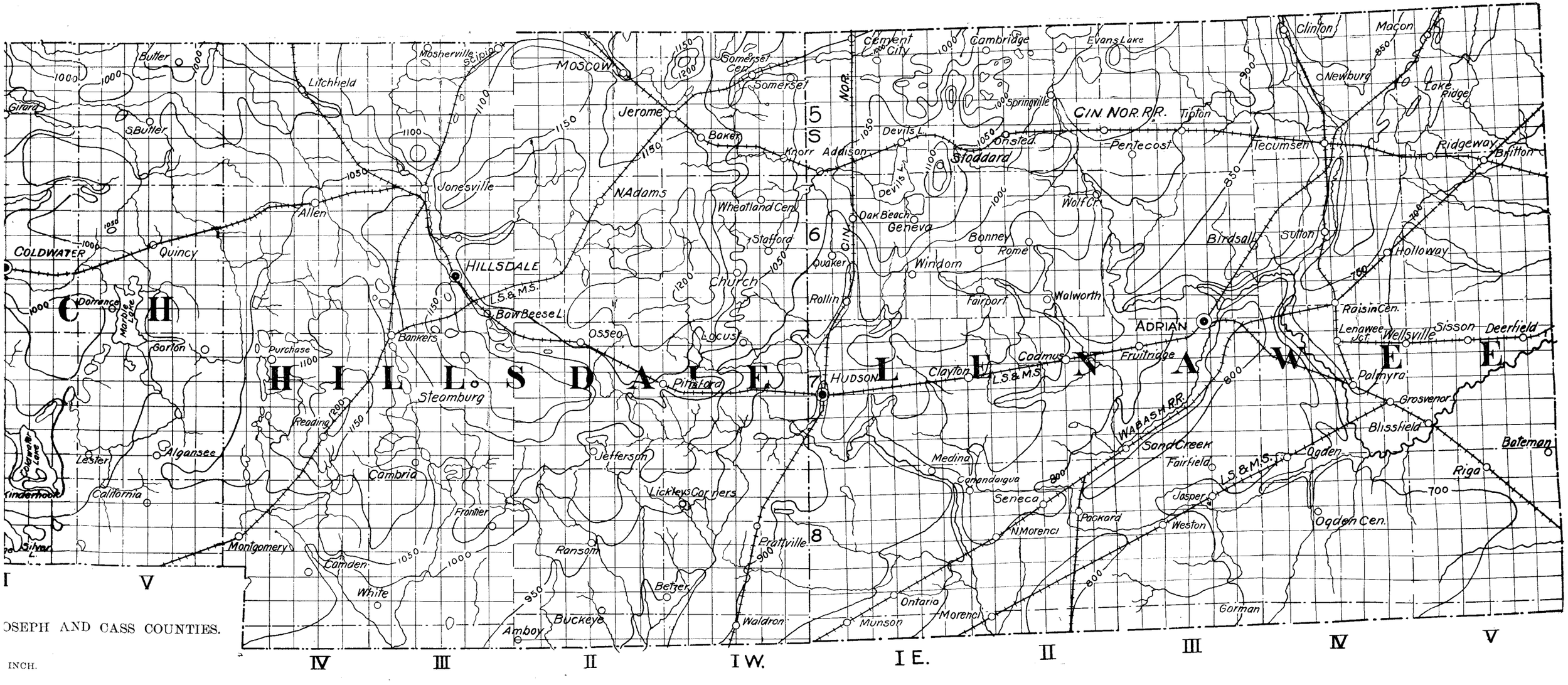
CONTOUR INTERVAL FIFTY FEET. SCALE, FOUR MILES=ONE INCH.



SKETCH, CONTOUR MAP OF LENAWEE, HILLSDALE, BRANCH, ST. JOSEPH AND CASS COUNTIES.

1903.

CONTOUR INTERVAL FIFTY FEET. SCALE, FOUR MILES=ONE INCH.



OSEPH AND CASS COUNTIES.

INCH.

Board of Geological Survey for 1903

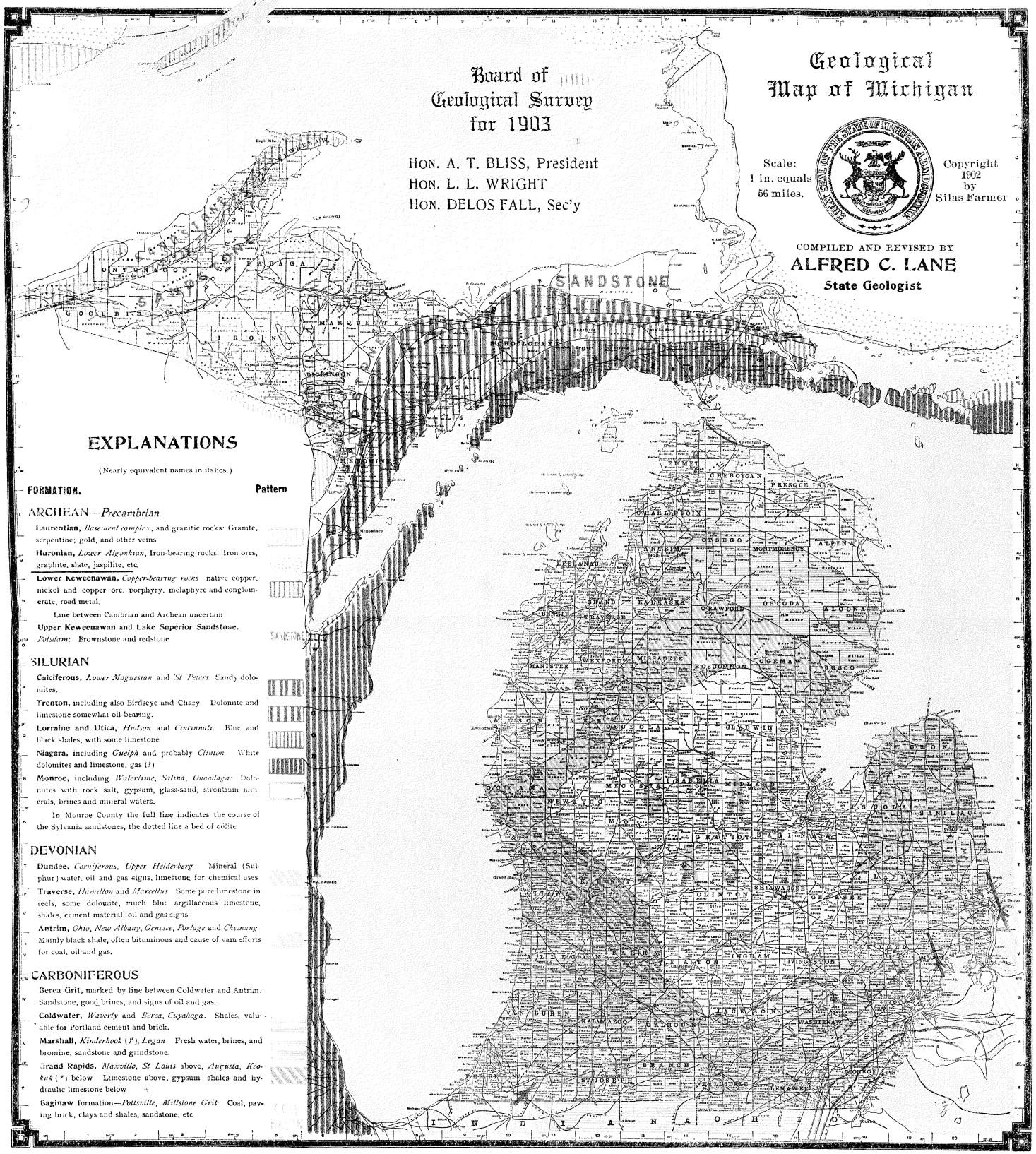
HON. A. T. BLISS, President
HON. L. L. WRIGHT
HON. DELOS FALL, Sec'y

Geological Map of Michigan

Scale: 1 in. equals 56 miles.

Copyright 1902 by Silas Farmer

COMPILED AND REVISED BY
ALFRED C. LANE
State Geologist



EXPLANATIONS

(Nearly equivalent names in italics.)

FORMATION. **Pattern**

ARCHEAN—*Precambrian*

Laurentian, *Basement complex*, and granitic rocks: Granite, serpeutine; gold, and other veins

Huronian, *Lower Algonkian*, Iron-bearing rocks. Iron ores, graphite, slate, jaspilite, etc.

Lower Keweenawan, *Copper-bearing rocks*: native copper, nickel and copper ore, porphyry, melaphyre and conglomerate, road metal.

Line between Cambrian and Archean uncertain

Upper Keweenawan and Lake Superior Sandstone. *Potsdam*: Brownstone and redstone

SILURIAN

Caciferous, *Lower Magnesian* and *St Peters*: Sandy dolomites.

Trenton, including also Birdseye and Chazy: Dolomite and limestone somewhat oil-bearing.

Lorraine and Utica, *Hudson* and *Cincinnati*: Blue and black shales, with some limestone

Niagara, including *Guelph* and probably *Clinton*: White dolomites and limestone, gas (?)

Monroe, including *Waterlime, Salina, Onondaga*: Dolomites with rock salt, gypsum, glass-sand, strontium minerals, brines and mineral waters.

In Monroe County the full line indicates the course of the Sylvania sandstones, the dotted line a bed of oölite.

DEVONIAN

Dundee, *Corniferous, Upper Helderberg*: Mineral (Sulphur) water, oil and gas signs, limestone for chemical uses

Traverse, *Hamilton* and *Marcellus*: Some pure limestone in reefs, some dolomite, much blue argillaceous limestone, shales, cement material, oil and gas signs.

Antrim, *Ohio, New Albany, Genesee, Portage* and *Chemung*: Mainly black shale, often bituminous and cause of vain efforts for coal, oil and gas.

CARBONIFEROUS

Berea Grit, marked by line between Coldwater and Antrim. Sandstone, good brines, and signs of oil and gas.

Coldwater, *Waverly* and *Berea, Cuyahoga*: Shales, valuable for Portland cement and brick.

Marshall, *Kinderhook* (?), *Logan*: Fresh water, brines, and bromine, sandstone and grindstone.

Grand Rapids, *Maxville, St Louis* above, *Augusta, Keokuk* (?) below: Limestone above, gypsum shales and hydraulic limestone below

Saginaw formation—*Pottsville, Millstone Grit*: Coal, paving brick, clays and shales, sandstone, etc