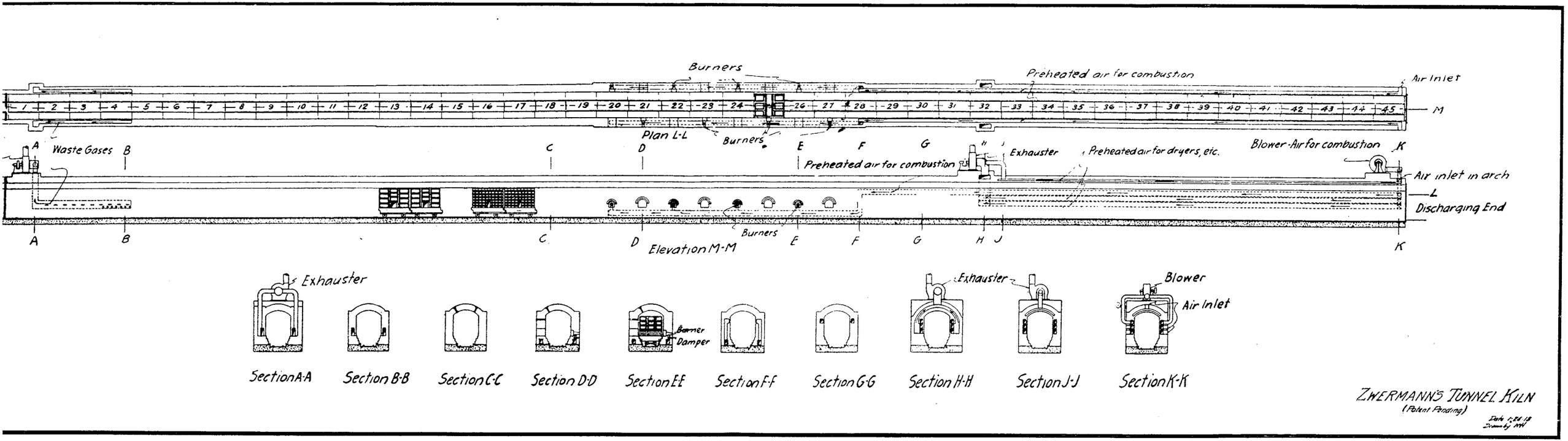


Figure 57.—Zwermann's Tunnel kiln. (From Amer. Cer. Soc.)

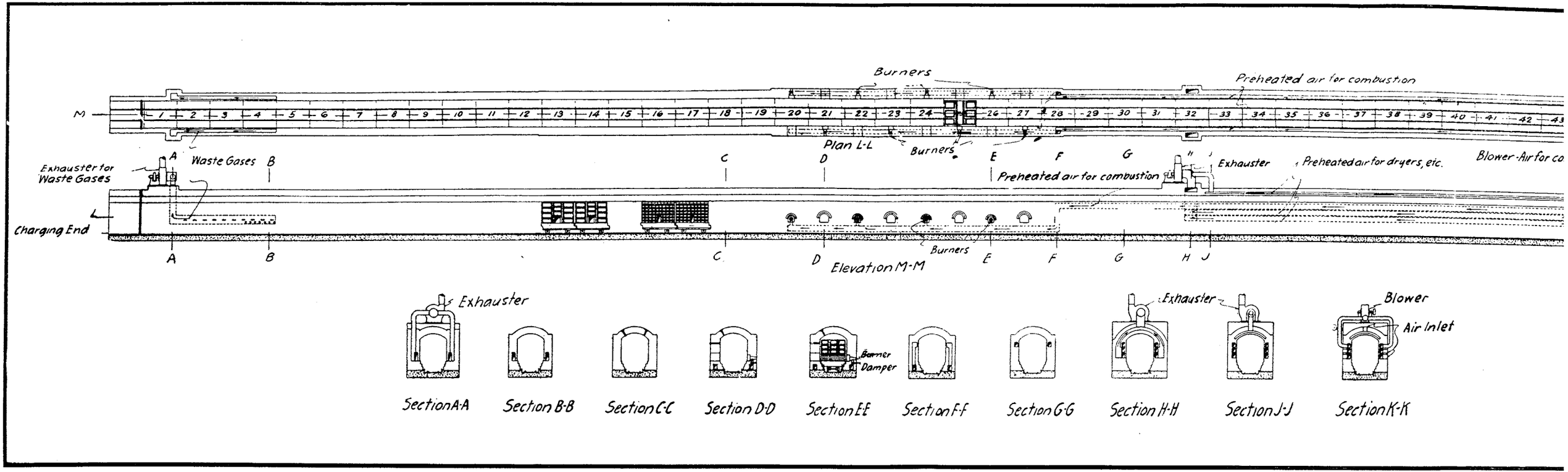


Figure 57.—Zwermann's Tunnel kiln. (From Amer. Cer. Soc.)

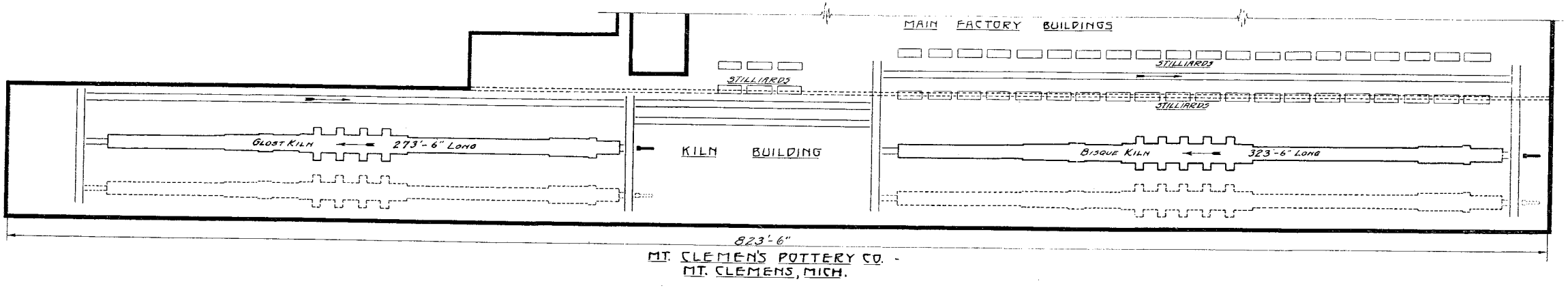


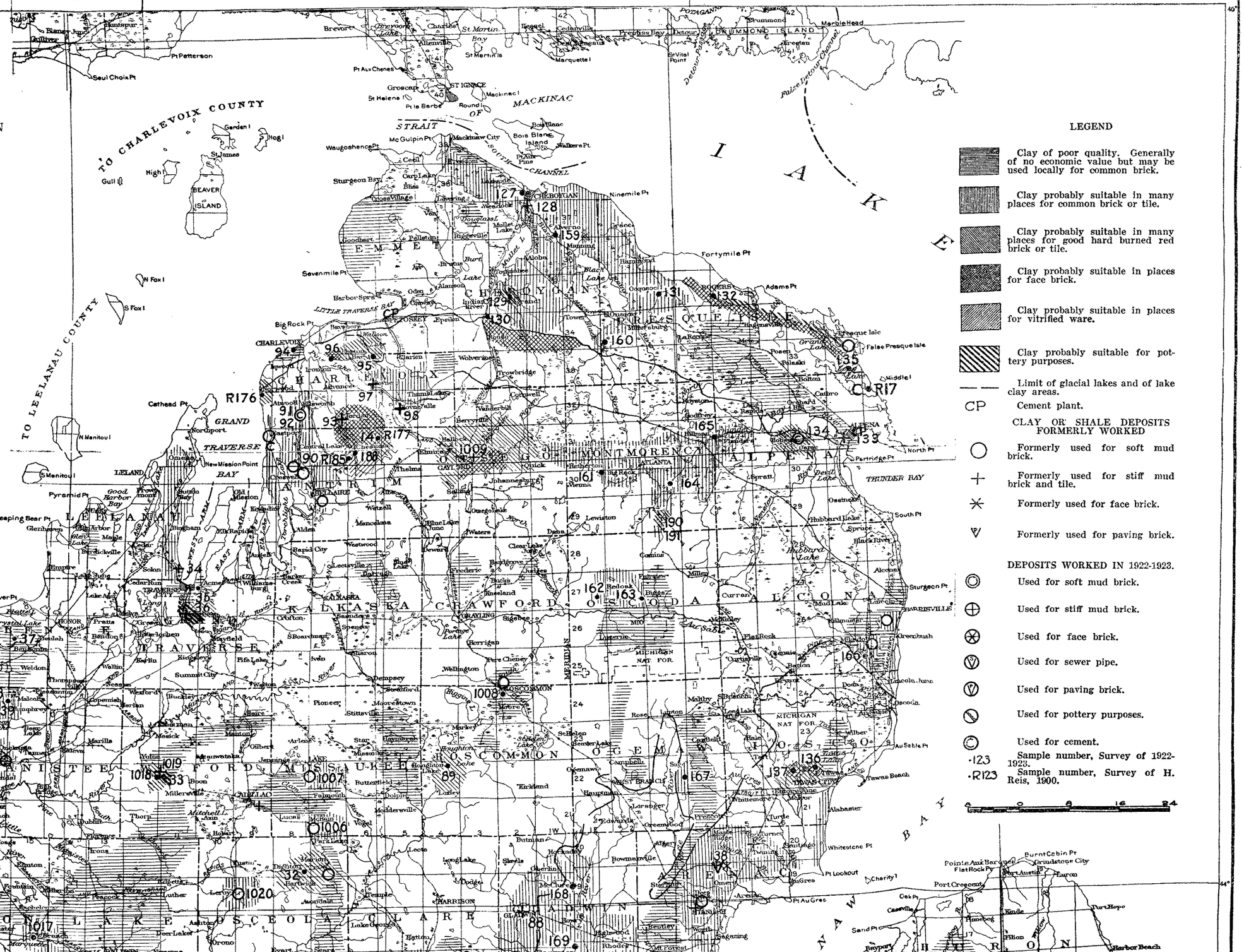
Figure 66.—Plant layout, Mt. Clemens (Amer. Cer. Soc.)

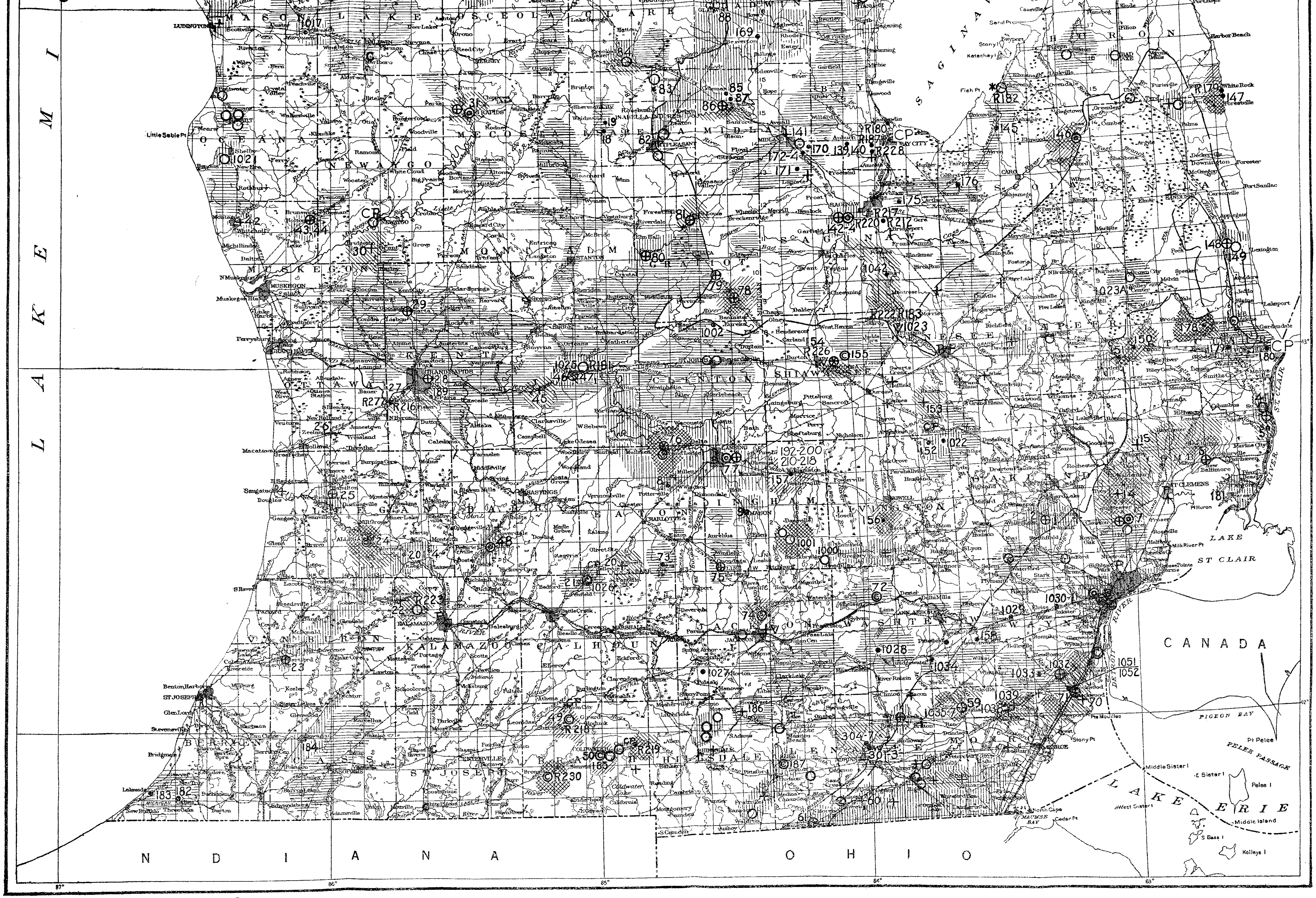
STATE OF MICHIGAN
DEPARTMENT OF CONSERVATION
JOHN BAIRD, DIRECTOR

STATE GEOLOGICAL SURVEY DIVISION
R. A. SMITH, STATE GEOLOGIST

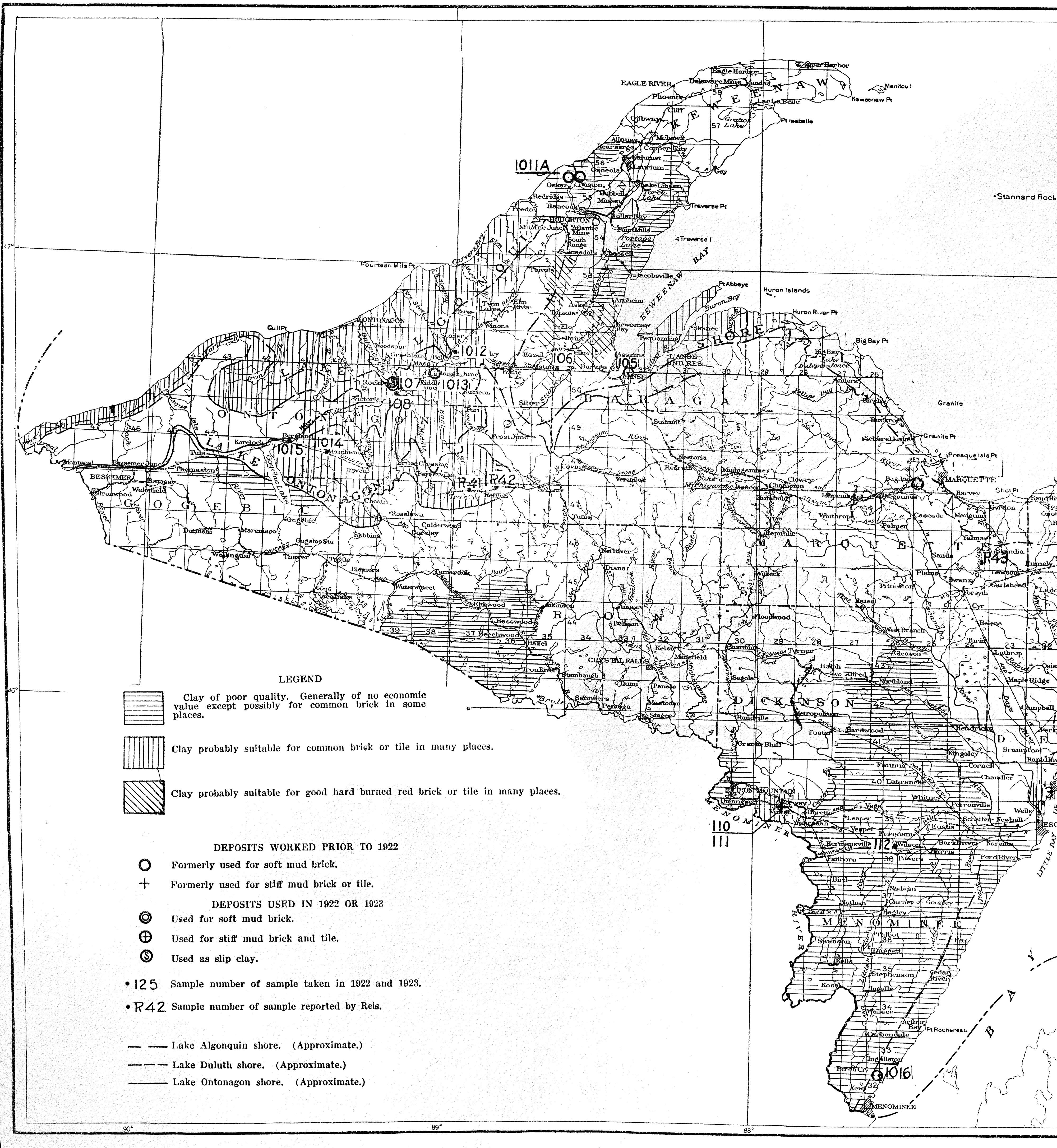
MAP OF CLAY AND SHALE AREAS OF THE SOUTHERN PENINSULA OF MICHIGAN

Prepared by Dr. George G. Brown, from the results of field and laboratory investigations made during 1922 to 1924 in cooperation with the Department of Chemical Engineering, University of Michigan.





L A K E M I
MASON
LAKE
OSCEOLA
CLARE
GLADWIN
HURON
OCEANA
NEWAYGO
MECOSTA
ISABELLA
MIDLAND
BAY
SAGINAW BAY
MUSKEGON
MONTCALM
GRATIOT
SAGINAW
TUSCOLA
SANILAC
OTTAWA
KENT
IONIA
CLINTON
SHIAWASSEE
GENESEE
LAPEER
ST CLAIR
ALLEGAN
BARRY
EATON
INGHAM
LIVINGSTON
OAKLAND
MACOMB
VAN BUREN
KALAMAZOO
CALHOUN
JACKSON
WASHTENAW
WAYNE
BERRIEN
CASS
ST JOSEPH
BRANCH
HILLSDALE
LENAWEE
MONROE
LUDINGTON
MUSKEGON
GRAND RAPIDS
LANSING
SAGINAW
BAY CITY
FLINT
PORT HURON
MT CLEMENS
PONTIAC
DETROIT
ANN ARBOR
JACKSON
KALAMAZOO
BATTLE CREEK
ST JOSEPH
MONROE
LAKE ST CLAIR
ST CLAIR RIVER
DETROIT RIVER
CANADA
PIGEON BAY
Pt Pelee
PELEE PASSAGE
Pelee I
Middle Sister I
E Sister I
West Sister I
Middle Island
S Bass I
Kelleys I
LAKE ERIE
MAUMEE BAY
N D I A N A
O H I O
87°
86°
85°
84°
83°
43°
42°



LEGEND
Clay of poor quality. Generally of no economic value except possibly for common brick in some places.
Clay probably suitable for common brick or tile in many places.
Clay probably suitable for good hard burned red brick or tile in many places.
DEPOSITS WORKED PRIOR TO 1922
Formerly used for soft mud brick.
Formerly used for stiff mud brick or tile.
DEPOSITS USED IN 1922 OR 1923
Used for soft mud brick.
Used for stiff mud brick and tile.
Used as slip clay.
•125 Sample number of sample taken in 1922 and 1923.
•R42 Sample number of sample reported by Reis.
Lake Algonquin shore. (Approximate.)
Lake Duluth shore. (Approximate.)
Lake Ontonagon shore. (Approximate.)
KEWEENAW
ONTONAGON
GOGEBIC
BARAGA
MARQUETTE
IRON
DICKINSON
MENOMINEE
LAKE ALGONQUIN
LAKE ONTONAGON
SHORE
KEWEENAW BAY
BAY
Copper Harbor
Eagle Harbor
EAGLE RIVER
Manitou I
Keweenaw Pt
Pt Isabelle
Stannard Rock
Traverse Pt
Traverse I
Calumet
Laurium
HOUGHTON
Hancock
Portage Lake
Torch Lake
Fourteen Mile Pt
Gull Pt
ONTONAGON
Pt Abbaye
Huron Islands
Huron River Pt
Big Bay Pt
Granite
Granite Pt
Presque Isle Pt
MARQUETTE
Shot Pt
BESSEMER
Ironwood
CRYSTAL FALLS
IRON MOUNTAIN
MENOMINEE
Pt Rochereau
LITTLE BAY
1011A
1012
1013
1014
1015
1016
105
106
107
108
110
111
112
R41
R42
R43
47°
46°
90°
89°
88°

STATE OF MICHI
DEPARTMENT OF CON
JOHN BAIRD, DIREC

STATE GEOLOGICAL SUR
R. A. SMITH, STATE GE

MAP

OF

CLAY AND SHAL

OF THE

NORTHERN PEN OF MICHIG

Prepared by Dr. George G. Brown, from laboratory investigations made during 192 with the Department of Chemical Eng Michigan.

1925

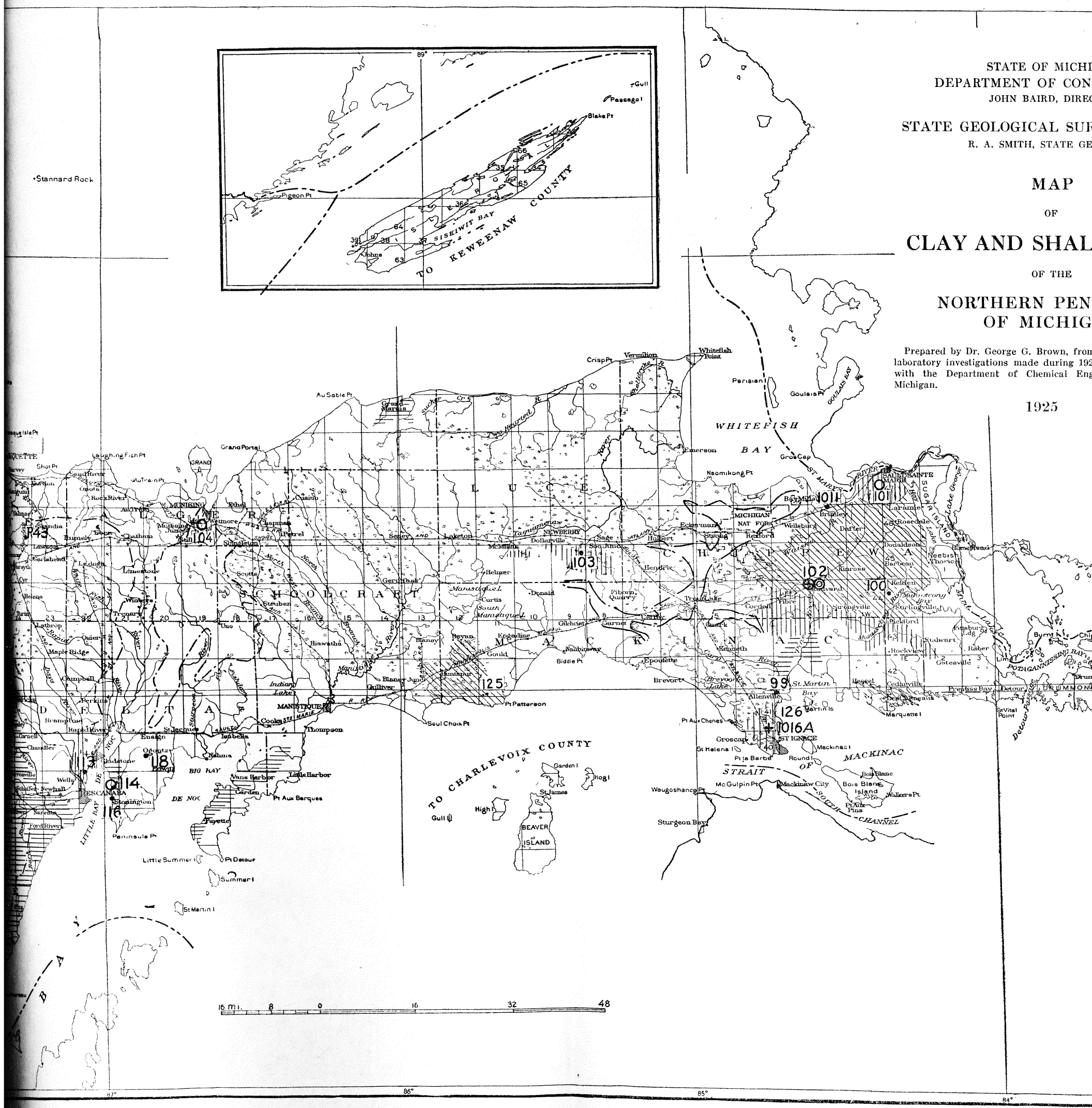
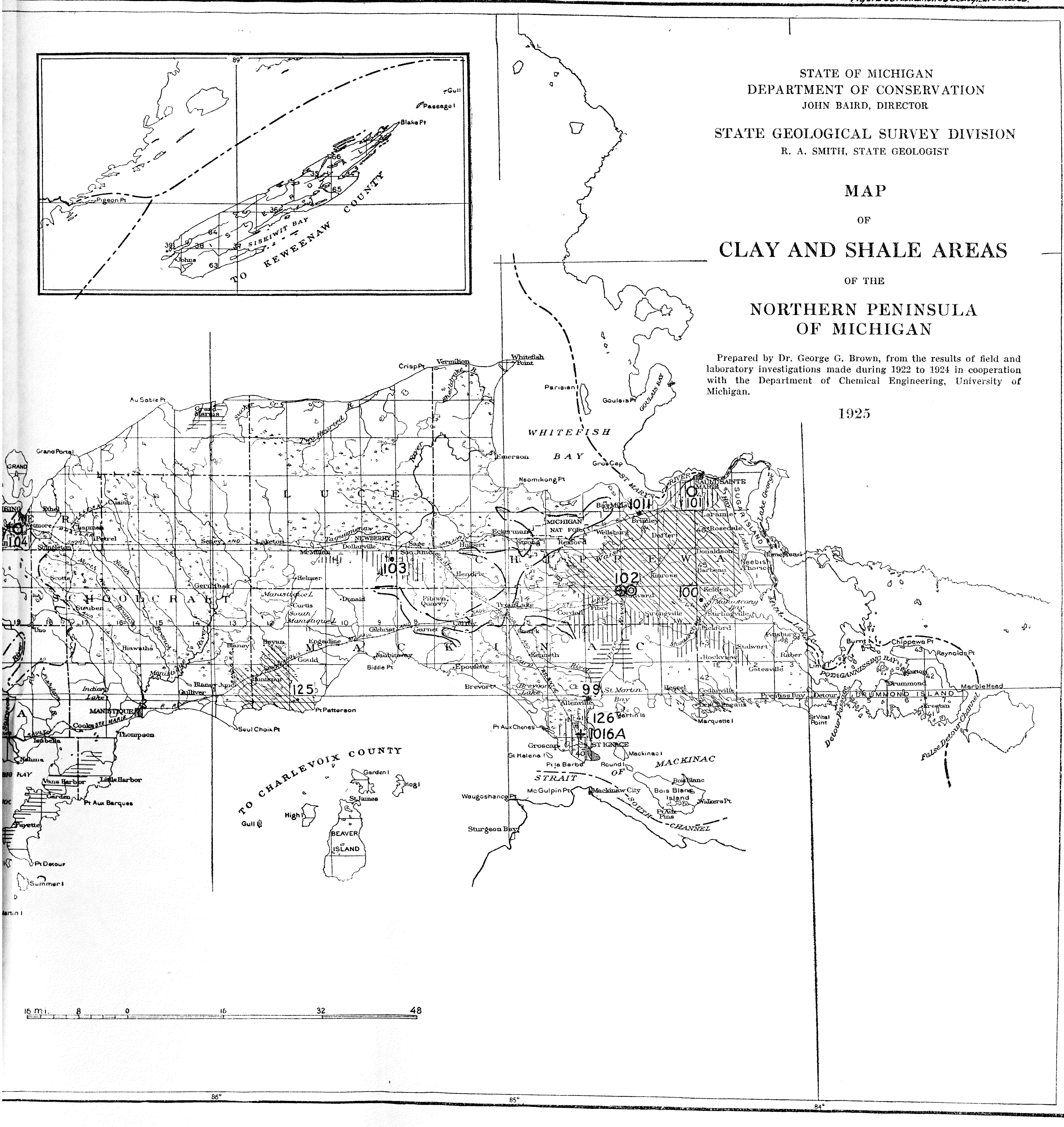



Figure 68 Publication 36 Geological Series 30.