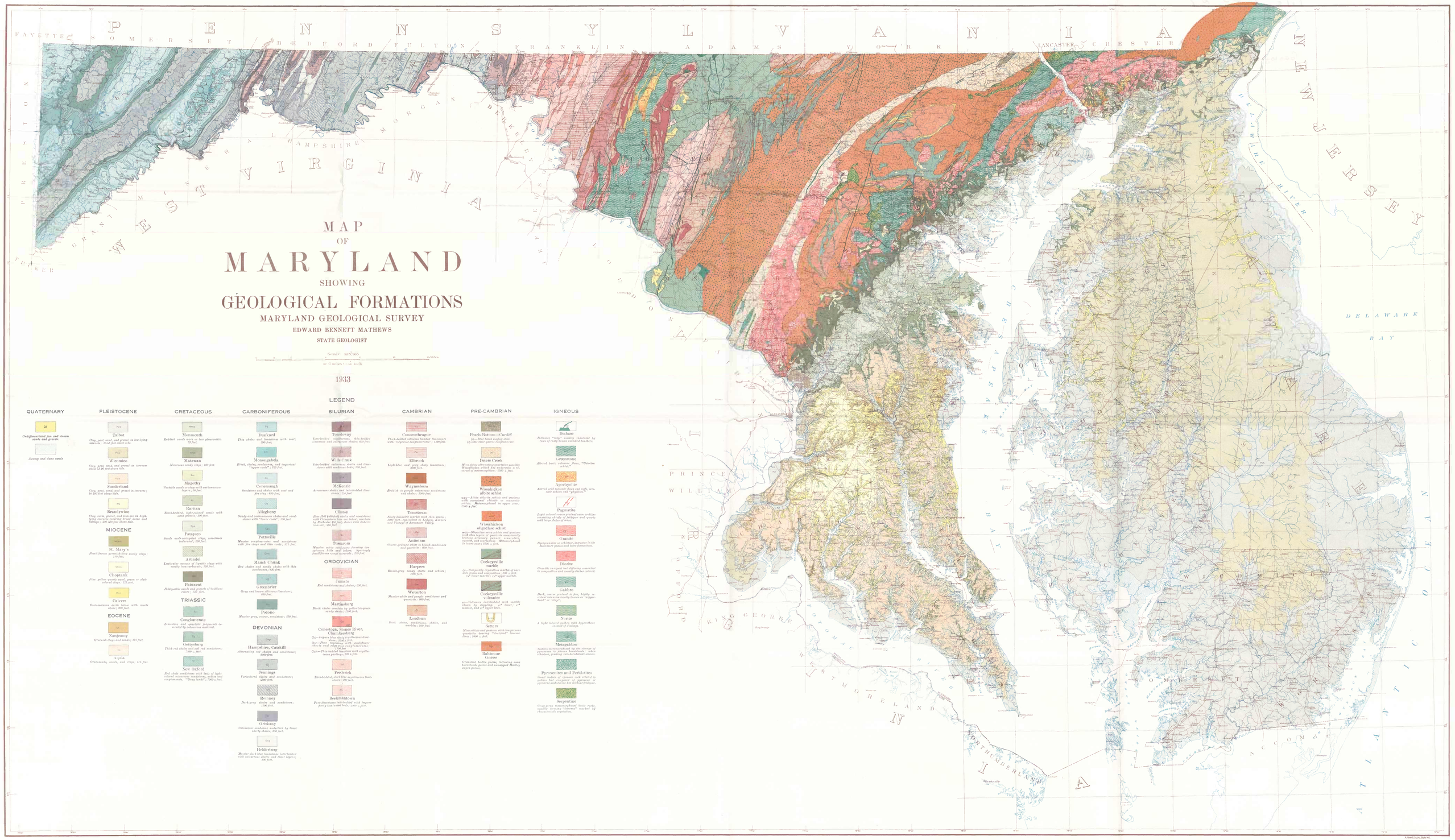
MAP
OF
MARYLAND
SHOWING
GEOLOGICAL FORMATIONS
MARYLAND GEOLOGICAL SURVEY
EDWARD BENNETT MATHEWS
STATE GEOLOGIST
Scale 1:625,000
or 9 miles to an inch
1933
LEGEND
QUATERNARY
Qd
Undifferentiated fan and stream sands and gravels.
Swamp and dune sands
PLEISTOCENE
Pvt
Talbot
Clay, peat, sand, and gravel, in low-lying terraces; 25-35 feet above tide.
Pcw
Wicomico
Clay, peat, sand, and gravel in terraces about 50 feet above tide.
Pcs
Sunderland
Clay, peat, sand, and gravel in terraces; 90-100 feet above tide.
Pb
Brandywine
Clay, loam, gravel, and iron ore in high, long terraces; 200-300 feet above tide and hilltops; 300-400 feet above tide.
MIOCENE
Mmc
St. Mary's
Fossiliferous greenish-blue sandy clays; 150 feet.
Mcck
Choptank
Fine yellow quartz sand, green or slate colored clays; 175 feet.
Mcl
Calvert
Diatomaceous earth below with marls above; 300 feet.
EOCENE
En
Nanjemoy
Greenish clays and sands; 175 feet.
Ec
Aquia
Greensands, sands, and clays; 175 feet.
CRETACEOUS
Kmo
Monmouth
Reddish sands more or less glauconitic, 75 feet.
Kmp
Matawan
Micaceous sandy clays; 100 feet.
Km
Magothy
Variable sands or clays with carbonaceous layers; 50 feet.
Kr
Raritan
Thick-bedded, light-colored sands with some gravels; 300 feet.
Kpa
Patapsco
Sands and variegated clays, sometimes indurated; 100 feet.
Ka
Arundel
Lenticular masses of lignitic clays with sandy iron carbonate; 100 feet.
Kp
Patuxent
Feldspathic sands and gravels of brilliant colors; 50 feet.
TRIASSIC
Tc
Conglomerate
Limestone and quartzite fragments cemented by calcareous material.
Tg
Gettysburg
Thick red shales and soft red sandstones; 7500 ± feet.
Tn
New Oxford
Red shale sandstones with beds of light colored micaceous sandstones, arkose and conglomerate. "Gray beds"; 7000 ± feet.
CARBONIFEROUS
Pd
Dunkard
Thin shales and limestones with coal; 300 feet.
Pm
Monongahela
Black shales, sandstones, and important "upper coals"; 150 feet.
Pc
Conemaugh
Sandstones and shales with coal and fire clay; 650 feet.
Pa
Allegheny
Sandy and carbonaceous shales and sandstones with "lower coals"; 300 feet.
Mp
Pottsville
Massive conglomerate and sandstone with fire clays and thin coals; 375 feet.
Mc
Mauch Chunk
Red shales and sandy shales with thin sandstones; 850 feet.
Pg
Greenbrier
Gray and brown siliceous limestone; 400 feet.
Mp
Pocono
Massive gray, coarse, sandstone; 750 feet.
DEVONIAN
Dhp
Hampshire, Catskill
Alternating red shales and sandstones; 3000 feet.
Dj
Jennings
Variegated shales and sandstones; 1500 feet.
Dr
Romney
Dark-gray shales and sandstones; 1500 feet.
Do
Oriskany
Calcareous sandstone underlain by black cherty shales; 300 feet.
Dhg
Helderberg
Massive dark blue limestones interbedded with calcareous shales and chert layers; 300 feet.
SILURIAN
Sc
Tonoloway
Interbedded argillaceous, thin bedded limestone and calcareous shales; 600 feet.
Sw
Wills Creek
Interbedded argillaceous shales and limestones with nodulous beds; 500 feet.
Sm
McKenzie
Arenaceous shales and interbedded limestones; 750 feet.
Sc
Clinton
Rose Hill (100 feet) shales and sandstones underlain by Rochester (50 feet) shales and underlain by Rochester (50 feet) shales with Medina (100 feet); 150 feet.
Sn
Tuscarora
Massive white sandstones forming conspicuous hills and ridges. Sparingly fossiliferous corrugated annulata; 150 feet.
ORDOVICIAN
Oj
Juniata
Red sandstones and shales; 500 feet.
Om
Martinsburg
Black shales overlain by yellowish-green sandy shales; 1500 feet.
Oc
Conestoga, Stones River, Chambersburg
Oc—Impure blue shale argillaceous limestone; 1000 ± feet.
Osr—Pure white limestones, sandstones, shales and edgewise conglomerates; 1500 feet.
Och—Thin bedded limestone with argillaceous partings; 300 ± feet.
Of
Frederick
Thin-bedded, dark blue argillaceous limestones; 700 feet.
Ob
Beekmantown
Pure limestones interbedded with impure fossiliferous beds; 1400 ± feet.
CAMBRIAN
Ꞓc
Conococheague
Thick-bedded siliceous banded limestones with "calcareous conglomerates"; 1500 feet.
Ꞓe
Elbrook
Light-blue and gray shaly limestones; 3000 feet.
Ꞓw
Waynesboro
Reddish to purple calcareous sandstones and shales; 2000 feet.
Ꞓt
Tomstown
Shaly dolomitic marble with thin shales; 1000 feet. Includes Ledger, Kittatinny and Vintage of Lancaster Valley.
Ꞓa
Antietam
Coarse-grained white to bluish sandstones and quartzites; 800 feet.
Ꞓh
Harpers
Bluish-gray sandy shales and schists; 1250 feet.
Ꞓv
Weverton
Massive white and purple sandstones and quartzite; 500 feet.
Ꞓl
Loudoun
Dark shales, sandstones, shales, and marbles; 500 feet.
PRE-CAMBRIAN
pz
Peach Bottom—Cardiff
pz—Blue black roofing slate.
CC—Schistic quartz conglomerate.
Pc
Peters Creek
Mica shists and schists, sometimes quartzitic Wissahickon gneisses; a recessional of metamorphism. 1500 ± feet.
Wsa
Wissahickon albite schist
wsa—Albite chlorite schist and gneiss with occasional chlorite or muscovite schists. Metamorphosed in upper zone; 1500 ± feet.
Wso
Wissahickon oligoclase schist
wso—Oligoclase mica schists and gneisses; wso—Mica schists and gneisses sometimes bearing staurolite, garnet, sillimanite, cyanite, and tourmaline. Metamorphosed in lower zone; 1500 ± feet.
Cockeysville marble
cy—Complexly crystalline marble of variable grain and composition; 500 ± feet. cy3 lower marble, cy2 upper marble.
Cockeysville volcanics
v1—Volcanics interbedded with marble shown by stippling. v1a lower, v1b middle, and v1c upper beds.
Setters
Mica schists and gneisses with conspicuous quartzite; bearing "clarified" limestone; 1000 ± feet.
Baltimore Gneiss
Granitoid biotite gneiss, including some hornblende gneiss and accompanied thereby augen gneiss.
IGNEOUS
Diabase
Intrusive "trap" usually indicated by rows of rusty brown rounded boulders.
Greenstone
Altered basic volcanic flows, "Catoctin schist."
Aporhyolite
Altered acid volcanic flows and tuffs, sericitic schists and "phyllites."
Pegmatite
Light colored coarse grained veins or dikes consisting chiefly of feldspar and quartz with large flakes of mica.
Granite
Epizonalite or schistose, intrusive in the Baltimore gneiss and later formations.
Biotite
Granitic in aspect but differing somewhat in composition and usually darker colored.
Gabbro
Dark, coarse grained in fine, highly resistant intrusive locally known as "nigger-head" or "frog."
Norite
A light colored gabbro with hypersthene instead of diallage.
Metagabbro
Gabbro metamorphosed by the change of pyroxene to fibrous hornblende; also schistose, passing into hornblende schists.
Pyroxenites and Peridotites
Small bodies of igneous rock related to gabbro but composed of pyroxene or pyroxene and olivine but without feldspar.
Serpentine
Gray-green metamorphosed basic rocks usually forming "barrens" marked by characteristic vegetation.
PENNSYLVANIA
WEST VIRGINIA
VIRGINIA
NEW JERSEY
DELAWARE
DELAWARE BAY
DELAWARE RIVER
CHESAPEAKE BAY
FAYETTE
SOMERSET
BEDFORD
FULTON
FRANKLIN
ADAMS
YORK
LANCASTER
CHESTER
HAMPSHIRE
MORGAN
BERKELEY
PRESTON
GRANT
TUCKER
PRINCE WILLIAM
KING GEORGE
WICOMICO
SOMERSET
ACCOMAC
NORTHUMBERLAND
A Poor & Co.N. Balto Md.