U.S.GEOLOGICAL SURVEY
CHARLES D.WALCOTT, DIRECTOR

AREAL GEOLOGY SHEET

SOUTH DAKOTA—NEBRASKA
OELRICHS QUADRANGLE

(Harvey Peak) (Hermosa) (Edgemont)

LEGEND

SEDIMENTARY ROCKS
(continued)

CARBONIFEROUS

- **Cmk** — Minnekahta limestone *(very thin-bedded gray limestone in massive ledges)*
- **Cc** — Opeche formation *(bright-red sandy shale; pinkish at top)*
- **Cmj** — Minnelusa sandstone *(red, yellow, and gray calcareous sandstone)*

Sandstone dikes in Graneros shale *(material derived from Dakota sandstone)*

Sections

Quarries

LEGEND

SURFICIAL ROCKS
(Areas of Surficial rocks are shown by patterns of dots and circles.)

PLEISTOCENE

- **Pds** — Dune sand
- **Pal** — Alluvium *(only the larger deposits represented.)*
- **Pt** — Older terrace deposits *(sand, gravel, and loam)*
- **Ptc** — Terrace conglomerate *(locally lithified gravel beds in older terrace deposits)*
- **Prg** — Residual gravel *(from Chadron sand.)*

SEDIMENTARY ROCKS
(Areas of Sedimentary rocks are shown by patterns of parallel lines.)

OLIGOCENE — EOCENE

- **Eb** — Brule clay *(massive, sandy, pale-pink and buff clay)*
- **Ec** — Chadron sand *(white to gray sand with thin limestone near top)*

CRETACEOUS

- **Kp** — Pierre shale *(dark-gray shale or clay with bony concretions)*
- Limestone lenses in Pierre shale *(form Tepee buttes)*
- **Kn** — Niobrara formation *(impure chalky limestone or calcareous clay; weathers light buff)*

Subdivisions of the Benton formation

- **Kcr** — Carlile formation *(gray shale and thin sandstone)*
- **Kg** — Greenhorn limestone *(impure slabby limestone)*
- **Kgs** — Graneros shale *(black fissile shale)*
- **Kd** — Dakota sandstone *(massive buff sandstone with thinner beds at top)*
- **Kf** — Fuson formation *(massive sandy clay of various colors)*
- **Kmw** — Minnewaste limestone *(massive gray limestone)*
- **Klk** — Lakota formation *(massive buff sandstone with clay intercalations)*

JURATRIAS

JURASSIC
- **Ju** — Unkpapa sandstone *(massive fine-grained sandstone, red, purple, white, yellow, and buff)*
- **Jsd** — Sundance formation *(buff sandstone and greenish shale)*

TRIASSIC
- **Jsf** — Spearfish shale *(red sandy shale)*

Legend is continued on the left margin.

Geology by N.H.Darton.
Surveyed in 1899.

A.H.Thompson, Geographer.
E.M.Douglas, Topographer in charge.
Triangulation by E.M.Douglas.
Topography by T.M.Bannon.
Surveyed in 1893.

Scale 1/125000
1 3/4 0 1 2 3 4 5 Miles
1 3/4 0 1 2 3 4 5 Kilometers

Contour interval 50 feet.
Datum is mean sea level.
Edition of June 1902.