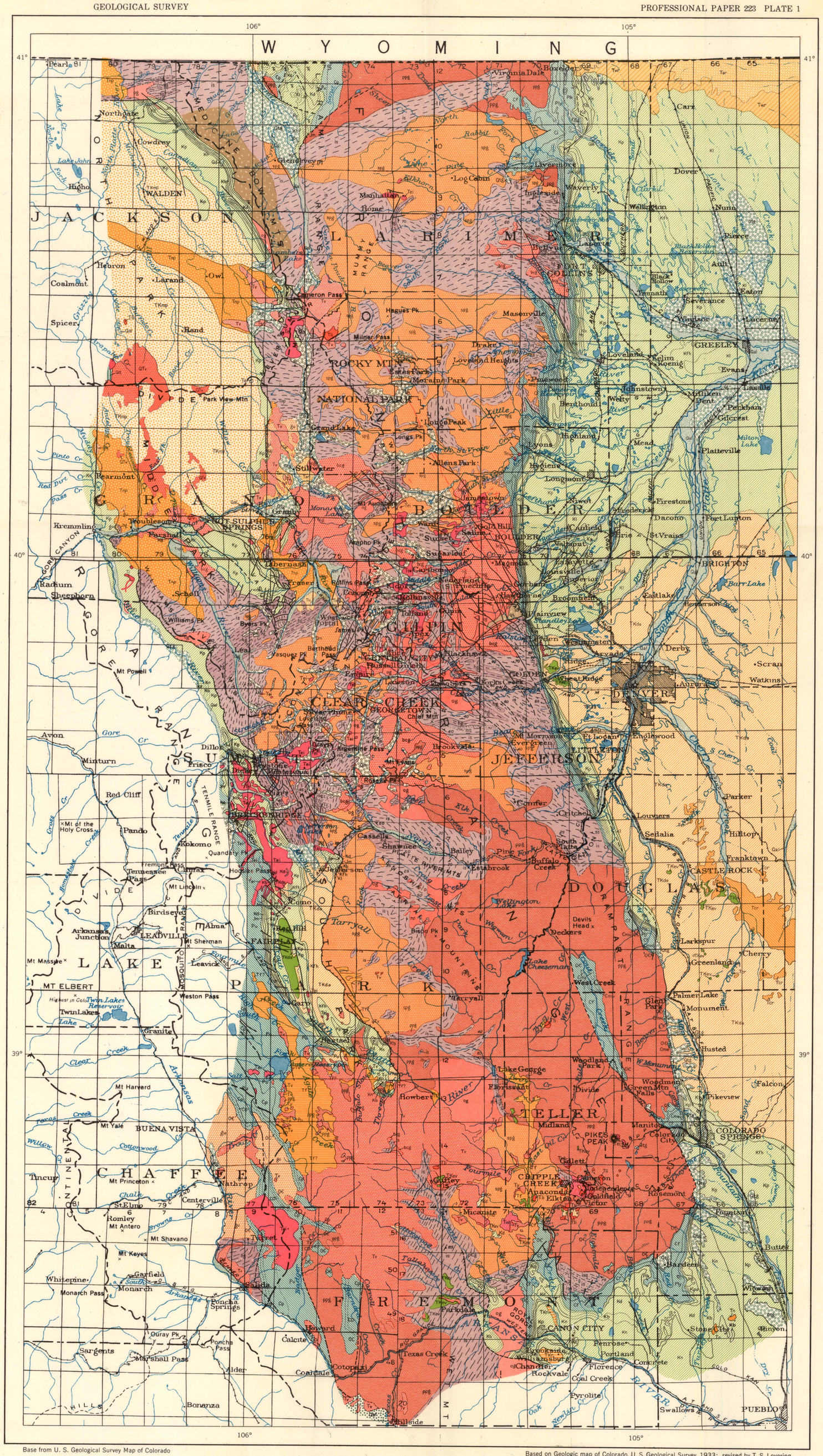

Base from U. S. Geological Survey Map of Colorado

Based on Geologic map of Colorado, U. S. Geological Survey, 1933; revised by T. S. Lovering and E. N. Goddard. New data: In Frazer area from Ogden Tweto, in Milner Pass area from Kenneth Gorton, and in South Park area from C. H. Behre, J. T. Stark, and others. Separation of pre-Cambrian granites based on field work by authors and by M. F. Boos.

GEOLOGIC MAP OF THE FRONT RANGE OF COLORADO AND ADJOINING REGION

Scale $\frac{1}{500000}$

10 0 10 20 30 40 Miles

10 0 10 20 30 40 50 Kilometers

EXPLANATION

QUATERNARY

Recent

- Qal — Alluvium
- Qd — Dune sand
- Qfc — Compound alluvial fans and torrential wash

Pleistocene

- Qtg — Terrace gravels
- Ql — Landslides and talus
- Qm — Moraines

Pliocene

- QTv — Andesite and basalt. *Mostly flows of late Tertiary and Quaternary (?) age*
- Tn — Nussbaum formation. *Pliocene (?)*

TERTIARY

Miocene

- Tu — Tertiary continental deposits undivided
- Tmb — Phonolite breccia. *Cut by intrusive masses of phonolite, latite-phonolite, syenite, and alkaline basaltic rocks*
- Tli — Late Tertiary intrusive rocks
- Tv — Volcanic rocks undivided. *Basalt, andesite, latite, rhyolite flows, breccia, agglomerate, tuffs, and unclassified volcanic rocks. Eocene to Pliocene, but chiefly Miocene*
- Ti — Tertiary intrusive rocks undivided
- Tnp — North Park formation
- Tar — Arikaree formation
- Tf — Florissant lake beds

Oligocene

- Twr — White River formation
- Tcr — Castle Rock conglomerate

Eocene and Paleocene

- Tei — Early Tertiary intrusive rocks
- TKev — Basalt and rhyolite. *Includes basalt flows in Denver formation near Golden; rhyolite flow and tuff interbedded in upper part of Dawson arkose in Castle Rock quadrangle; and rhyolite and volcanic breccia in the Denver formation in South Park*
- TKmp — Middle Park formation
- TKr — Raton formation
- TKda — Denver and Arapahoe formations and Dawson arkose undivided

CRETACEOUS

Upper Cretaceous

- Kl — Laramie formation
- Kfh — Fox Hills sandstone
- Kt — Trinidad sandstone
- Kp — Pierre shale
- Kn — Niobrara formation
- Kb — Benton shale
- Kd — Dakota sandstone

Lower Cretaceous

- Kpu — Purgatoire formation

JURASSIC

- Jm — Morrison formation

TRIASSIC

- R — Triassic undivided

PERMIAN

- Plk — Lykins formation
- Pu — Permian undivided
- Ply — Lyons sandstone

CARBONIFEROUS

Pennsylvanian

- Ci — Ingleside formation
- Cp — Pennsylvanian undivided
- Cf — Fountain formation

Mississippian

- Cmw — Madison and Williams Canyon limestones
- CD — Mississippian and Devonian undivided. *Includes Leadville limestone (Mississippian) and Chaffee formation (Devonian)*

ORDOVICIAN AND CAMBRIAN

- OC — Ordovician and Cambrian undivided

PRE-CAMBRIAN

- spg — Silver Plume granite
- ppg — Pikes Peak granite
- bcg — Boulder Creek granite
- gu — Undifferentiated granite and related rocks
- og — Orthogneiss. *Includes quartz monzonite gneiss, granite gneiss, and gneissic aplite and pegmatite*
- qt — Quartzite at Coal Creek
- mu — Undifferentiated metamorphic rocks. *Includes Idaho Springs formation, hornblende gneiss, and granite gneiss*
- hg — Hornblende gneiss. *Includes Swandyke hornblende gneiss and gneissic diorite*
- is, isq — Idaho Springs formation. *Includes quartzite layers,* isq

Contact
Dashed where approximately located, dotted where based on meager data

Normal or steep reverse fault
Dashed where approximately located, dotted where concealed

Thrust or low-angle reverse fault
Dashed where approximately located, dotted where concealed. Saw teeth on side of upper plate

35
Strike and dip of foliation