EXPLANATION

QUATERNARY

Recent

Qd — Mine or mill dumps

Qal — Younger alluvium or colluvium
(may include small areas of Qt + Qoal)

Qls | Qt — Qls: Landslides ; Qt: rubble + talus

Pleistocene

Qoal — Older alluvium
(may include some material of Tmf age)

TERTIARY

Miocene (?) and Pliocene

Tmf — Mimbres formation
Somewhat consolidated gravels and sands

UNCONFORMITY

Tbi — Iddingsite and olivine-bearing basalt dikes and plugs

Tbv (Tm, Tss) — Basaltic lava flows
Tm: rhyolitic or quartz latitic crystal and pumiceous tuffs. Tss: well-bedded sandstone locally at base.

Tbg — Boulder + gravel deposits within and at base of basaltic lava flows in the north part of district. Locally consists largely of rhyolite-qtz. latite tuff fragments

UNCONFORMITY

Miocene (?)

Tknu — Upper member of Kneeling Nun quartz latitic crystal tuffs
Locally, a pitchstone flow overlain by sandstone at base.

Tctn — Rhyolitic or quartz latitic crystal tuffs of the northern part of district

Tkn — Lower or main member of Kneeling Nun quartz-latite crystal tuffs

Tgt | Tbs | Tgt — Lucky Bill formation
Tgt: gravel, sand, and pumiceous tuffs. Tbs: brown sandstone member

Trp | Trpf — Rubio Peak formation
Trp: gravels and tuffs
Trpf: andesite flows

not exposed in map area but it is thick and prominent in S.E. corner of Santa Rita quadrangle and farther to the S.E. in Sherman Quadrangle.

UNCONFORMITY

TERTIARY

Early Tertiary

Tli | Tliq — Post-Wimsattville dikes and irregular plugs
Tli: sparse quartz group - latite & monzonite porphyry.
Tliq: quartzose group - qtz. monz. - qtz. latite porphyry.
Tliq group may include equivalents of the Turnerville and Republic dikes.

Tw — 1000 ± ft.
Wimsattville formation
Bedded and unbedded arkosic gravel, sandstone and consolidated talus filling crater-like hole near Hanover.

UNCONFORMITY

Tti — Turnerville and Republic dikes
salic - quartz monzonite - qtz. latite porphyry
Pre-Wimsattville fm. Possible equivalents west and north of Hanover may be included in Tliq group.

TKgm (gm) — Groundhog quartz monzonite porphyry dikes

TKgd | TKgd₁ | TKgd₂ — Granodiorite Intrusives
TKgd or simply gd: granodiorite porphyry dikes; intrude stocks.
$TKgd_1$: granitoid hornblende diorite - qtz. diorite, locally biotite rich largely in south lobe of Hanover-Fierro stock.
$TKgd_2$: porphyritic granodiorite stock rock and apophyses

Late Cretaceous

KTlp — Quartz diorite sills and dikes
(The Later quartz diorite of Bulletin 870)

KThp — Hornblende porphyry dikes and sills

KTep — Quartz diorite porphyry
(Earlier quartz diorite of Bulletin 870)

UNCONFORMITY

TKcf₁ | TKcf₂ — Copper Flat intrusives
TKcf₁: monzonite porphyry; TKcf₂: quartz monzonite porphyries (4 facies).

Tg₁ | Tg₂ — Orthoclase gabbro plugs
Tg_1 coarser grained, light gray, granitoid facies
Tg_2 Dark gray less feldspathic + probably older facies.

TKab — Andesitic breccia and clastic rocks

UNCONFORMITY

KTphd — Pyroxene - hornblende diorite porphyry
Laccoliths and sills

KTaq — Albite - quartz porphyry
(Known only underground in district)

Tk | Td | Tu — North Star Basin Suite
TK: Kersantite dikes
Td: diorite dikes; several varieties and ages; some resemble KTlp, KTphd; some have large inclusions of hornblendite.
Tu: undifferentiated dikes; includes augite + pigeonite andesite porphyries, augite-biotite andesite porphyry, augite diorite and hornblende andesite porphyries
Dikes too numerous to map; small proportion shown

Cretaceous

Upper Cretaceous

Colorado formation

Kc — 0 - 1000 ft.
Sandstone member: conglomerate key bed near top shown. thin limestone beds in lower 100 ft.

Ku — Undifferentiated and brecciated Colorado fm.

Kcs — 0 - 200 ft.
Shale member: black, fissile. 20' quartzite 80' above base locally.

Upper (?) Cretaceous

Kb — 50-140 ft.
Beartooth quartzite
mostly quartzite, minor shale, sandstone and conglomerate lenses

UNCONFORMITY

Carboniferous

Permian

Ca — 0 - 500 ft.
Abo formation
Red shale, mudstone, and limy mudstones; a few thin conglomerate beds.

UNCONFORMITY

Magdalena Group

Cs — 170 - 390 ft.
Syrena formation
Lower part shale and impure limestone; upper part limestone, some shale

Cu — Undifferentiated Carboniferous

Co — 330 - 420 ft
Oswaldo formation
Limestone, some thin shales. Parting shale (0-25') at base. Sandstone lenses locally: Coss.

UNCONFORMITY

Pennsylvanian

Lower Mississippian

Ch | Clv — 100 ± ft | 300 ± ft
Lake Valley formation
Limestone and marly limestone: Clv;
Ch: upper part pure crinoidal limestone - "Hanover ls"
Ch base, past side (Hanover-Fierro stock), is inferred north of Pewabic area.

Upper Devonian

Dpm | Dp — 230 - 315 ft.
Percha shale
Dp: black fissile shale: Ready Pay member or undifferentiated Percha.
Dpm: shale with limestone nodules, locally mapped separately: Box member.

UNCONFORMITY

Silurian Devonian

SOfm — 30-40 ft. | 370-470 ft.
Fusselman limestone (30-40') (Silurian) and Montoya limestone (Ordovician) (370-470 ft)
dolomite and dolomitic limestone; thin sandstone, 1'-20 ft, at base locally - the Cable Canyon sandstone member.

Ordovician

Upper Ordovician

Lower Ordovician

Oep — 560 ft max.
El Paso limestone
limestone and dolomitic limestone

Cambrian

Upper Cambrian

Cb — 146 ft.
Bliss formation
dolomitic and shaly limestone, shale, some conglomerate and one or two quartzite members, glauconitic in part.

UNCONFORMITY

Precambrian

P^c — Siliceous spotted hornfels + mica schist; greenstone east of the district

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Contact
Dashed where approximately located

Inferred contact and boundary of surficial deposits

Concealed contact

Fault showing downthrown side (U) and direction and amount of dip if known
dashed where approximately located, dotted where concealed

Doubtful or probable fault

Thrust or reverse fault
(T, upper plate or side)

Weak fracture

Strike and dip of beds
amount of dip shown where determinable

Strike and dip of overturned beds

Horizontal beds

Strike and dip of joints

Strike of vertical joint

Strike and dip of foliation and rake of lineation

Qls
Landslide, approximate limits
Geology of slightly disrupted slides shown if not concealed

Wavy line represents very narrow dikes

approximate boundary of brecciated ground, but not all brecciated areas can be shown

Shaft and pit

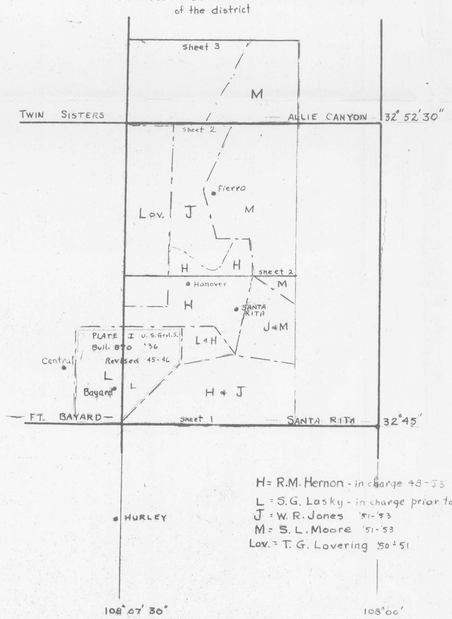
adit

caved adit

Narrow veins in North Star basin

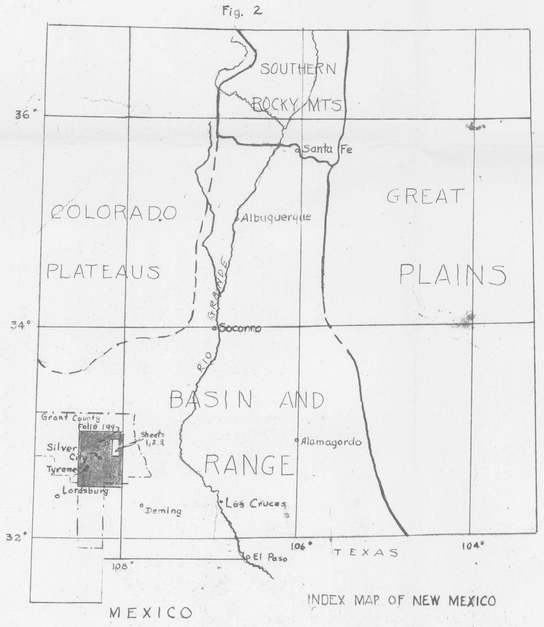
INDEX MAP

showing location of sheets 1, 2, + 3 with respect to quadrangle boundaries; subdivided to show main contributor in each sector of the district

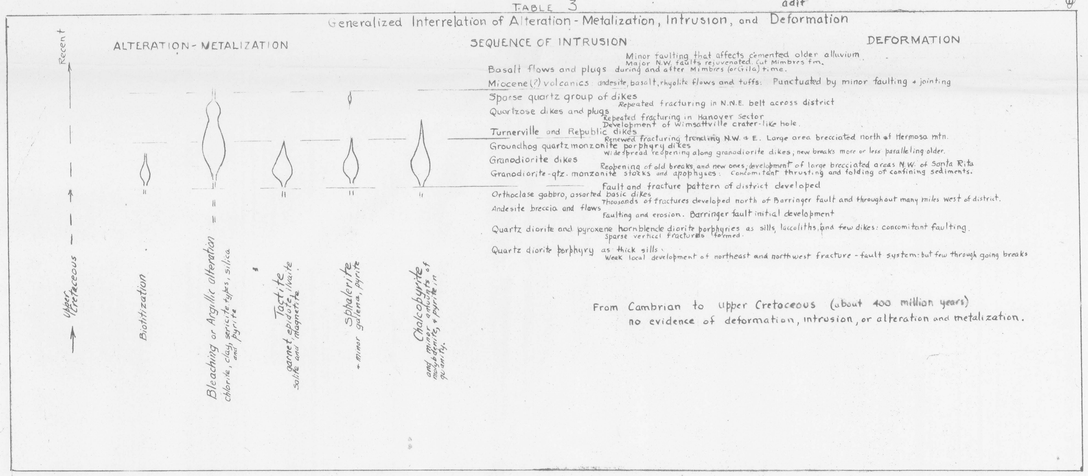


H = R.M. Hernon - in charge 48-55
L = S.G. Lasky - in charge prior to 48
J = W. R. Jones '51-'53
M = S. L. Moore '51-'53
Lov. = T. G. Lovering '50 ± '51

Fig. 2



INDEX MAP OF NEW MEXICO

TABLE 3

Generalized Interrelation of Alteration - Metalization, Intrusion, and Deformation