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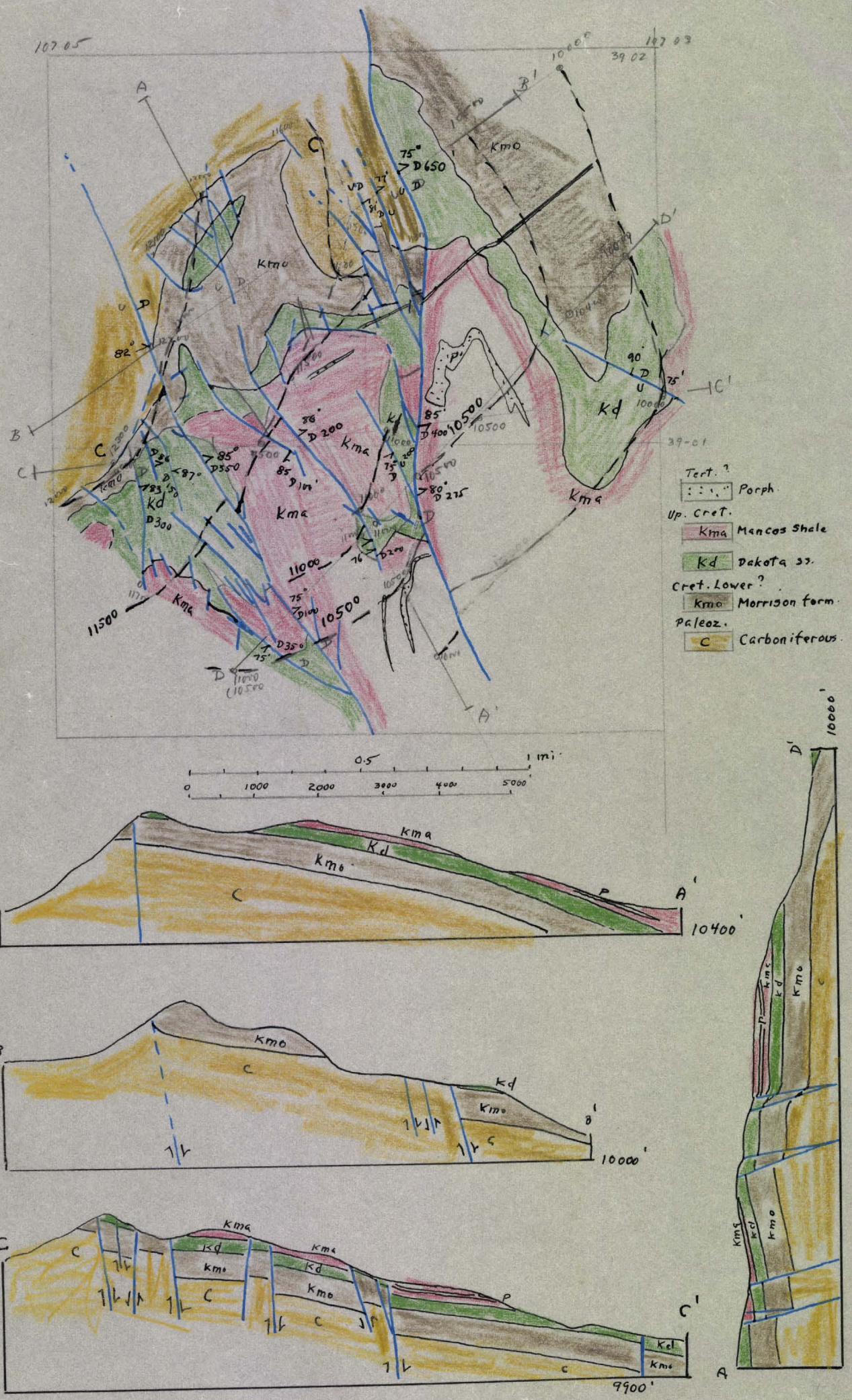
ANTICLINE; PLUNGING. NO COMPRESSION

GALENA MT., COLO. J.W.Vanerwilt: Preliminary Geologic Notes on Galena Mt., a part of Snowmass Mt.,Colo. Proc.Colo.Sci.Soc. vol.13,Pt.1, 1932, 1-25.

20 mi.SW of Aspen. SE end of NW anticline or elngated dome.Tertiary? granite in core.Around intrusion Carb.red beds, originally shaly,altered to fg.micaceous rock. Abone, Ju Morrision,mainly shalembakedxxxx hard, brittle. zAbove, K Dakota ss.,massive. Kx Mancos shale with IB ls. Seds.dip E,SE,S away from uplift. Minor flexures,curving with curving beds,so peripheral around this quadrant of dome. Flow wrinkles in soft beds connected solely with vertical uplift. No compression.

Longit.NW faults,mostly syntheic,aiding uplift.These are funnel-patern faults roughly perp. to structural contours. Displacements on these die out to SE showing connection with the plunging anticline.

Ore depositsin minor fissures at S end,where displacement on major flts dies out. In ls. and calc.shale of the Mancos.ZnS, PbS,ccpy,py, spec. on massive or spmggy qtz gangue. practically allthe faults however are n premineral,showing qtz at intervals.


Tert.?
Porph.
Up. Cret.
Kma Mancos Shale
Kd Dakota ss.
Cret. Lower?
Kmo Morrison form.
Paleoz.
C Carboniferous
0.5
1 mi
0
1000
2000
3000
4000
5000
A
A'
B
B'
C
C'
D
D'
10400'
10000'
9900'
11500
11000
10500

Uplift-Domal

PRELIMINARY GEOLOGIC NOTES ON GALENA MOUNTAIN, A PART OF SNOWMASS MOUNTAIN, COLORADO.

John W. Vanderwilt.
Proc. Colo. Sci. Soc. 13, 1, 1-25, 1932.

About 20 mi. SW of Aspen.

Rock Formations.

Carboniferous Red Beds.- Like other seds., metamorphism has affected the red beds: dark grey on fracture, weathers light gray. Medium-grained feldspathic ss., s.t. 1/2" qrz. pebbles. Although well-bedded, rocks appear massive on cliffs etc. Qtz, felds., muscovite in varying %. Orig. shaly beds alt. to fine-grained micaceous rock. Thickness or place in section unknown.

Lower (?) Cretaceous Morrison.- 440'. Thin basal ss 40', then several hundred ft. of shales with some ss, ls-. Shale s.t. calcareous, s.t. arenaceous, with ss beds. Due to alteration beds gray to green; also, Morrison shale, which unaltered crops out in gentle slopes, with soil, here crops in sheer cliffs indicative of hard, strong rocks. Major bedding planes preserved but shalle bedding obliterated. Alt. shale hard like chert, with dense porcelain texture. Is therefore a brittle rock here.

Cretaceous (Dakota?) Sandstone.- 200' plus, uniformly f.g., gray; qtz. Bsal conglom, small qtz pebbles. (May beless than 1" thick). Massive, bedding poorly defined, irreg.

Upper Cretaceous Mancos Shale.- Thin basal portion only. 30' impure ls. bed 150' above base, 15' similar bed 300' up. Metamorphism while it has not removed all the black color, hasin many places obliterated the shaly bedding; rock mainly gray, indurated, massive. Abundant blocky jointing-short. Ls. beds recryst. to very f, g. dense rock.

IMP Correlation.- Mancos identified by fossils; lower formations, no fossils. Since Treasury Mt., of which Galena Mt. is a part, is a dome flanked on all sides by the Mancos formation, older beds cannot be traced outward into previously mapped areas.

Porphyry.- Qtz. phenos abundant, conspicuous, flds. phenos also commonly present. As large but sparse dikes and sills.

Structure.- Galena Mt. is the SE end of a dome-like uplift, NW, 4 x 6 mi. Tertiary (?) granite crops in central portion of dome, which is undoubtedly of intrusive origin. Seds. dip 10-30° E, SE, S, away from higher part of dome. Strike changes from E in S part of area to N in E part.

Minor flexures occur, axes about parallel to dip of beds. Faults: Displacement of the 4 major NE-dipping faults (normal) decreases to the S, ending in the Mancos shale. Faults have drag folds in FW and HW; also drag flts. branching to NW into FW blocks of major flts.

Metamorphism.- Shale to hard porcelain rock; ss. to qtzite.; red color removed. 3 or 4 mi. W of Galena Mt. marble is quarried. CM mins. observed in places. The Tertiary (?) granite mentioned caused the meta.

Mineralization.- Area affected is several times larger than Galena Mt. On that mountain, practically all faults pre-mineral, have qtz. along them in places. Some large qtz. veins. (Clown does not say which). Qtz. veins commonly contain abundant specularite; PbS, ZnS local. Most extensive prospecting along small faults, many of which too poorly defined to be mapped, in the ls. and calc. shale of Mancos, on S slope of mt. Dumps generally show ZnS, PbS, ccpy, py., spec., in a massive or spungy qtz. gangue. Mon. also along certain beds in ls. of lower Morrison.

Rock Compet.

Note by E.W.- Structural contours and fracture pattern indicate more or less typical fracturing associated with apportion of an elongated dome. Most of the faults are synthetic, contributing to the uplift (Sections B-B', C-C') but distinct antithetic faults are shown at te the S end, indicating stretching here perp. to the fracture set. Note that most of prospects are in this end, in fractures too weak to map, i.e. that could be pulled open by the stretching without destroying rock rock competence. Note also that displacements on the real faults decrease to the south. This is probably not because they enter the Mancos shale, but because they are leaving the uplift; or a combination of the two causes. Biggest fault seems to pass toward flexure to S.

NW FW branch faults suggest relative movement of FW, up and to SE, or away from granite core of dome.