

NOTES FOR PROSPECTING  
THISTLE MOUNTAIN DISTRICT

As noted already, both structure and limited knowledge of mineral occurrence confirm the presence of a definite mineral district; and the following notes, to accompany the air photo interpretation, are designed as a guide to prospecting.

1. Photo interpretation, although extremely valuable, adds only one type of guide to this district picture; that is, it is limited to defining the precise location of some of the lineaments or zones of bedrock weakness that can be expected to contain vein-type deposits, but will give little clue to replacement or other type of deposits. It would lead directly only to deposits localized along fault or fracture zones, that is, vein- or lode-type deposits from which present indications are most likely to be silver-lead, gold, and copper.
2. Moreover, even for this class of deposit, the photo interpretation reveals only those zones that are visible due to the nature of topography and overburden; at a guess, only a fraction of the number that actually exist.
3. In almost all cases the visible lineament caused by such a zone of weakness consists of a break in slope, a small swale, discontinuity in normal bedrock trends, or difference in vegetation types. Thus it is very unlikely that a vein zone itself will be exposed, but it will be covered by thin or moderate overburden. However, subsidiary vein matter, mineralization, gangue, or alteration will be very probably be visible upon close inspection of the sides or walls of such zones or lineaments.
4. Due to the unglaciated nature of this area, all outcrops or float will be deeply weathered, consisting of oxides, rust, etc., and float itself will be difficult to find because of the extensive cover of residual soil, moss, and other vegetation. Conversely, however, the source of any placer

minerals or float will without any doubt lie upstream or upslope, thereby leading to easier tracing than in glaciated areas.

5. A pick, shovel, and goldpan, or at least a small grubhoe, to be used in any 'juicy-looking' spot or easily tested placer, are an absolute necessity. Many places may require very little digging but prospecting without these tools in this unglaciated area is useless.
6. Prospecting can be directed at investigating the air photo lineament areas (Nos. 1-8) in roughly that order of preference since these at least provide definite goals to check. However, as pointed out, these are only one guide and should not be followed to the exclusion of other clues or possibilities such as, for example, heavy minerals (tin, tungsten, mercury, etc.) in placer, replacement-type deposits near limestones, or contact metamorphic mineralization, etc.
7. Pannings from bedrock rims, bottoms of holes dug, etc., should be examined and saved for possible laboratory examination. Even if a trench dug in a zone on a hilltop shows nothing, pannings from the bottom may reveal lead or zinc oxides such as anglesite, etc., which could be assayed for silver.
8. The lineaments marked with a check should be examined in the localities circled on the photos, since these are the most likely places where overburden may be shallow, float may be visible, or veins may even outcrop.
9. Careful notes and sketches should be kept on all major rock types or unusual features so that these can be plotted to give some additional picture; for example, where the main quartzite or limestone sections are, the occurrence of small intrusives, alteration zones, etc. Wall rock alteration, seen best in basic or limy rocks, is often the best indication of unexposed mineralization.
10. In conclusion, the air photo lineaments should be checked carefully but should not govern the way the area is prospected in case other guides or types of deposits prove more valuable. Only one of the directions of lineaments (NNE, NNW, or EW) may prove interesting, perhaps more than one, perhaps even the main fault zone, perhaps none; but they do indicate a structural pattern which in addition to the previously known structure and mineralization makes the area very attractive for prospecting.

\* \* \* \* \*

*Harold E. Hlo*