

CHAPTER 6

CONCLUSIONS

The main conclusions of this study may be summarized as follows :

1. The Mae Chedi granites consist of two granitic series (the GM- and the GR-series) which belong to calc-alkaline, peraluminous, and the so-called S-type granitoids. Both of them are unlikely related to each other.
2. Judging from the major element data displayed on Q-Ab-Or plots reveal that the GR-granitic series tend to cluster on the quartz-feldspar field boundary which is close to the ternary minimum at about 0.5 kb whereas those of the GM-granitic series tend to cluster on the quartz-feldspar field boundary at about 1 kb. Thus, both granite systems appear to have been developed at relatively shallow depths (epizonal plutons).
3. Hydrothermal alterations are considered to be the most likely mechanism in association with tin-tungsten related granites of the Mae Chedi area. On the contrary, the process of fractional crystallization of the main granitic phases throughout the area is not given rise to tin-tungsten mineralization. These findings may be applied not only in the study area but also elsewhere in the Khuntan Mountain Range.
4. The occurrence of tin and tungsten in the Mae Chedi Mine are primarily due to hydrothermal ore-forming fluids. The phenomena

are associated with wall-rock alterations including K-feldspathization, tourmalinization, chloritization, sericitization, muscovitization, and albitization.

5. Tin and tungsten mineralizations at the Mae Chedi Mine are not contemporaneous. It is envisaged that tin mineralization is more intensive in the first episode of hydrothermal activity and tungsten mineralization presents a later phase.

6. It is likely that the major Ca which used to form scheelite may have been derived from the pre-existing plagioclase of the GM-1 by the process of albitization.

7. At Mae Chedi, pyrite, chalcopyrite and arsenopyrite are often typical accessories for tin-tungsten mineralization. Hence, Cu and As could be useful pathfinders in the search for exhalative tin-tungsten deposits.