CHAPTER V

CONCLUSION

1. The diorite is the major intrusive rock in the Khao Phra Ngam area. It was responsible for the transformation of the host massive to thick bedded limestone and dolomitic limestone of Khao Khad Formation into marble and minor diopsidic marble and reaction skarn rimming chert nodules or chert beds, and for the subsequent formation of metasomatic skarns.

2. The zonation of prograde skarn is observed from the host rock side to intrusive side as follows: marble with minor diopside marble, wollastonite skarn, garnet-clinopyroxene skarn, garnet skarn and contaminated diorite. These zonal arrangement was probably related to metasomatic infiltration of fluids between the host marble and diorite as well as the decreasing temperature and variability of the components of the fluids in progressively away from the intrusive during the prograde skarn formation.

3. Chemical analysis indicates that clinopyroxene in the skarns belongs to diopsidide-hedenbrgite series in which it is closer to diopside end member and the garnet belongs to a large compositional range of grosular-andradite series.

4. The retrograde alteration of early skarns by later meteoric fluid is quite limited. The development of prograde skarn is restricted to a narrow shell surrounding the diorite intrusion. This skarn was, therefore, formed at relatively deep level.

5. Iron (magnetite later altered to hematite) mineralization at Khao Thab Kwai and traces of copper (chalcopyrite + bornite) mineralization at Wat Thung Singto were probably took place during the prograde skarn formation.

6. Cross-cutting relationship reveals that granodiorite postdated the diorite and skarn formation. It is unlikely to cause any further development of skarn the area.

7. The skarn at Khao Phra Ngam to Khao Thab Kwai areas can be classified as calcic iron $\pm$ coppr skarn deposit. They are probably related to oceanic subduction and island-arc environment.