

REFERENCES

- Ahfed, F., 1967, "Metallogenetic Epochs and Provinces of Bolivia", Min. Deposita 2, p. 291-311.
- Ahmad, J.B., 1979, "The Petrology of the Benom Igneous Complex", Geol. Sur. Malaysia, Special Paper 2, 141 p.
- Anukananich, N., (compiled), 1975, Mineral Resources of Thailand, 1/2,500,000 scale map, Dept. Miner. Res., Bangkok.
- Anthoine, P., et al., 1967, "The Symetian Tin Deposits", Technical Conference on Tin, London, p. 421-455.
- Aranyakanon, P., 1961, "The Cassiterite Deposit of Haad Sompan, Ranong Province, Thailand", Thai Dept. Miner. Res., Rept. Invest., No. 4. 182 p.
- , 1965 "Diamond Discovery in Phangnga and Phuket, South Thailand", Thai Dept. Miner. Res., Rept. Invest., No. 1, p. 35-36.
- , 1978, "Some Criteria of Tin-bearing Granites in Thailand "(abstract), Proc. 3rd. Res. Conf. Geol. Miner. Res. SE Asia, Bangkok, p. E5-1.
- Arndt, P., 1979, "Zinngehalte in Schwermineralen aus Thailandischen Zinnseifen", Berliner Geowiss. Abh., (A) 11, 96 p. (in German).
- Asnachinda, P., 1978 a, "The Mineralization in the Burmese Malayan Peninsula - A Plate Tectonic Model", in Proc. 3rd. Reg. Con., Nov. 14-18, 1978, edited by Nutalaya, P., AIT. p. 293-300.

- Asnachinda, P., 1978 b, "Tin Mineralization and Petrochemistry Relationship of the Thai Granitoids (A Preliminary Synthesis)", Dept. Geol. Sci., Chiangmai Univ., Special Pub., no. 2., 32 p.
- Aw, P.C., 1977, "Peninsular Malaysia", ESCAP Atlas of Stratigraphy of Sedimentary Basin of the Region: Malaysia, Compiled by Aw, P.C., Chen, S.P., Lau, J.W.E., and Leang, K.M., 12 p.
- Barsukov, V.L., 1957, "Geochemistry of Tin", Geochemistry I, p. 41-52.
- , 1967, "Metallogenic Speciallization of Granitoid Intrusion", Chemistry of the Earth, v.2, Israel Proc. Sci. Trans. Jerusalem, p. 211-231.
- , and Durasova, 1966, "Metal Content and Metallogenic Speciallization of Intrusive Rocks in the Regions of Sulphide-Cassiterite Deposits", Geochem., v. 1, p. 168-179.
- Bateman, P.C., and Chappel, B.W., 1979, "Crystallization, Fractionation, and Solidification of the Toulumme Intrusive Series, Yosemite National Park, California", Geol. Soc. America Bull., v. 90, p. 465-482.
- Beckinsale, R.D., 1979, "Granite Magmatism in the Tin Belt of AE Asia", in Origin of Granite Batholiths: Geochemical Evidence, edited by Antherton & Tarney, Chiva Publ., London, p. 34-44.

Beckinsale, R.D., et al., 1979, "Geochronology and Geochemistry of Granite Magmatism in Thailand in Relation to a Plate Tectonic Model", Jour. Soc. London, v. 136, p. 529-540.

Beus, A.A., 1976, Geochemistry of the Lithosphere (translated from the Russian by V. Agranet), Mir Publishers, Moscow, 366 p.

, Zalashkova, N.E., 1962, "On the Process of High-temperature Postmagmatic Metasomatism in Granitoids" (in Russian), Izd. Akad. Nauk SSSR, Ser. Geol., no. 4, p. 13-31.

Bignell, J.D., 1972, The Geochronology of the Malayan Granites, Ph.D. Thesis, University of Oxford.

, and Snelling, N.J., 1977, Geochronology of Malayan Granites, Overseas Geol. Miner. Res., v. 47, p. 1-72.

Bleackley, D., 1965, The Heavy Mineral Content of Concentrate and Tailing Samples from Tin Working in South Thailand, 8 p. (n.p.).

Bignell, J.D., and Snelling, N.J., 1977, "Geochronology of Malayan Granites", Overseas Geol. Miner. Res., v. 47, p. 1-72.

Black, L.P., et al., 1978, "Ages of Granites and Associated Mineralization in the Herberton Tinfield on Northeast Queensland", BMR Jour. Australian Geol. Geophys., v. 3, no. 3, p. 173-180.

Bleackley, D., 1965, The Heavy Mineral Content of Concentrate and Tailing Samples from Tin Working in South Thailand, 8 p. (n.p.). , et al., 1965, "The Regional Geology of the Loei-Phum Lead-zinc Mineral Deposits", Rept. Overseas Geol. Surv. & R. Thai Dept. Miner. Res., 12 p.

Boom, G., et al., 1979, "Geochemical Exploration for Tin Deposits in Northern Thailand, Part I, Orientation Survey", Federal Inst. Geosc. Nat. Res., no. 8212/79, 22 p.

- branshaw, P.M.D., 1967, "Distribution of Selected Elements in Feldspar, Biotite and Muscovite from British Granites in Relation to Mineralization", Inst. Min. Metal. Trans., v. 76, sec. B, p. 137-148.
- Brown, G.F., et al., 1951, "Geologic Reconnaissance of the Mineral Deposits of Thailand" , US Geol. Surv. Bull. 984, 183 p.
- Chappel, B.W., and White, A.J.R., 1974, "Two Contrasting Granite Types" , Pacific Geol., v. 8, p. 173-174.
- Chauris, L. , 1965, "Les Mineralisation Pneumatolytique du Massif" , American Mem. du BRGM, 31 p.
- Chhibber, H.L., 1934, Geology of Burma, Macmillan, London, 538 p.
- Compton, R.R., 1962, Manual of Field Geology, John Wiley & Sons, New York, p. 275.
- Department of Mineral Resources, 1976, Mineral Statistics of Thailand. Annual 1971-1976, Statistic Section, Economic and Information Division, 87 p.
- El Bouseily, A.M., and El Sokkary, A.A., 1975, "The Relation between Rb, Ba and Sr in Granitic Rocks", Chem. Geol., v. 16, p. 207-219.
- Ewers, G.R., and Scott, P.A., 1977, "Geochemistry of the Cullen Granite, Northern Territory" , BMR Jour. Australian Geol. & Geophys., v. 2, p. 165-176.
- Fairbridge, R.W. (Ed.) , 1972, The Encyclopedia of Geochemistry and Environmental Science, Vanstrand Reinhold, Toronto, 1321 p.
- Flanagan, E.J. (Compiler), 1976, "Description and Analyses of Eight New USGS Rock Standards" , Geol. Surv. Prof. Paper 840, 192 p.
- Flinter, B.H., 1971, "Tin in Acid Granitoids : The Search for a Geochemical Scheme of Mineral Exploration" , Geochemical Exploration Can. Inst. Mining Met., Spec. 11, p. 322-330.

- Flinter, B.H., et al., 1972, "Selected Geochemical Mineralogical and Petrological Features of Granitoids of the New England Complex, Australia, and their Relation to Sn, W, Mo and Mineralization" , Econ. Geol., v. 67(8), p. 1241-1262.
- Flood, R.H., and Shaw, S.E., 1975, "A Cordierite-bearing Granite Suite from the New England Batholith, N.S.W., Australia" , Contr. Miner. Petrol., v. 52, p. 157-164.
- Garson, M.S., et al., 1969, "Lepidolite Pegmatite in the Phangnga Area of Peninsular Thailand" , Proc. 2nd Tech. Conf. Tin, ITC, Bangkok, 14 p. 14 p.
- Mitchell, A.H.G., 1970, "Transform Faulting in the Thai Peninsula" , Nature, v. 228, no. 5266, p. 45-47.
- , et al., 1975, "The Geology of the Tin Belt in Peninsular Thailand around Phuket, Phangnga, and Takua Pa" , Inst. Geol. Overseas Mem., no. 1, 112 p.
- Goblet, D.J., and Hutchison, C.S. (Eds.), 1973, Geology of the Malay Peninsula, Wiley Interscience, New York, p. 10-15.
- Gocht, W., and Pluhar, E., 1979, Types of Tin-bearing Pegmatites in Phuket, Thailand, with Special References to Tantalum-rich Ores, 14 p. (n.p.).
- Gossen, P.J., 1978, "The Metallogenic Provinces of Burma : Their Definitions, Geologic Relationships and Extension into China, India, and Thailand" , in Proc. 3rd. Reg. Conf. Geol. Miner. Res. SE Asia, edited by Nutalaya, P., AIT, p. 431-492.
- Gotman, Y.D., and Rub, M.G., 1961, "Comparative Characteristics of the Tin-bearing Granites of Different Ages of South Primor'ye and Certain Other Tin-bearing Areas" , Inter. Geol. Rev., v. 3, p. 878-884.

- Groves, D.I., 1972, "The Geochemical Evolution of Tin-bearing Granites in the Blue Tier Batholith, Tasmania" , Econ. Geol., v. 67, p. 445-457.
- , and Taylor, R.G., 1973, "Greisenization and Mineralization at Anchor Tin Mine, North-east Tasmania" , Trans. Inst. Min. Met., Section B (Applied Earth Science), B 135-B 136.
- , 1974, "Geochemical Variation within Tin-bearing Granites, Blue Tier Batholith, NE Tasmania" , in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., Geol. Sur. Prague, p. 154-158.
- , and McCarthy, T.S., 1978, "Fractional Crystallization and the Origin of Tin Deposits in Granitoids" , Miner. Deposita (Berlin), v. 13, p. 11-26.
- Gudsonbun, T., 1974, "Genetic Relationship between the Tin-tungsten Deposits and Granitic Magmatism of Mongolia" , in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., Geol. Sur. Prague, p. 99-103.
- Guild, P.W., 1972, "Metallurgy and the New Global Tectonic" , 24th Int. Geol. Cong., Abstract, p. 126.
- Haapala, I., 1974, "Some Petrological and Geochemical Characteristics of Rapakivi Granite Varieties Associated with Greisen-type Sn, Be and W Mineralization in the Eurajoki and Kymi Areas, Southern Finland" , in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., Geol. Sur. Prague, p. 170-180.
- Heir, K.S., and Taylor, S.R., 1959, "Distribution of Li, Na, K, Rb, Cs, Pb, and Ti in Southern Norwegian Precambrian Alkali Feldspar" , Geochem. et Cosmochim. Acta, v. 18, p. 284-304.

- Heir, K.S., and Billings, G.K., 1970, "Rubidium", in Handbook of Geochemistry, v. II-2, edited by Wedepohl, W.H., Springer Verlag, New York, p. 54.
- Hesp, W.R., 1971, "Correlation between the Tin Content of Granitic Rocks and their Chemical and Mineralogical Composition", Geochemical Exploration. Can. Inst. Min. Met., sp. v. 11, p. 341-353.
- , and Rigby, D., 1974, "Some Geochemical Aspects of Tin Mineralization in the Tasman Geosyncline", Mineral. Deposita, v. 9, p. 49-60.
- Hine, R., et al., 1978, "Contrast between I-and S- Granitoids of the Kosciulko Batholith", Jour. Geol. Soc. Australia, v. 25, p. 219-234.
- Hosking, K.F.G., 1965, "The Search for Tin : Part II" Mining Mag., v. 113, p. 368-391.
- , 1967, "The Relationship between Primary Tin Deposits and Granitic Rocks", Proc. 1st Tech. Conf. Tin, London, p. 267-311
- , 1969, "The Nature of Primary Tin Ores of the South-west of England", Proc. 2nd Tech. Conf. Tin, Bangkok, p. 1-90.
- , 1971, "Problems Associated with the Application of Geochemical Methods of Exploration in Cornwall, England", in Proc. 3rd Exploration Int. Geochem. Expl. Sym. (1970), Can. Inst. Min. Met., sp. v. 11, p. 176-189.
- , 1973, "Primary Mineral Deposits", in Geology of the Malay Peninsula West Malaysia and Singapore, edited by Gobbett, D.J. and Hutchison, C.S., Wiley Interscience, p. 335-390.
- , 1979, "Tin:Distribution Patterns", in Geology of Tin Deposits, Geol. Soc. Malaysia Bull., no. 11, edited by Yeap, E., p. 1-70.

- Hummel, C.L., and Phawandon, P., 1967, "Geology and Mineral Deposits of the Phuket Mining District, Southern Thailand", Dept. Miner. Res., Rept. Invest., no. 5, 118 p.
- Hunter, D.R., and Lenthail, D.H., 1976, "A Preliminary Review of Tin Mineralization with Particular Reference to the Bushveld Complex", Univ. Witwaterand Econ. Geol. Unit, Inf. Circ., 61 p.
- Hutchison, C.S., 1974, Laboratory Handbook of Petrographic Techniques, John Wiley & Sons, New York, 527 p.
- , 1977, "Granite Emplacement and Tectonic Subdivision of Peninsular Malaysia", Geol. Soc. Malaysia Bull., no. 9, p. 187-207.
- , and Taylor, D., 1978, "Metallogenesis in SE Asia", Jour. Geol. Soc. (London), v. 135, p. 407-428.
- , and Chakabarty, K.R., 1979, "Tin : A Mantle and Crustal Sources", in Geology of Tin Deposits, Geol. Soc. Malaysia Bull., no. 11, edited by Yeap, E., p. 71-79.
- Ianova, G.F., 1963, "Content of Tin, Tungsten, and Molybdenum in Granites Enclosing Tin-tungsten Deposits", Geochem., v. 5, p. 492-500.
- Ishihara, S., 1971a, "Modal and Chemical Composition of the Granitic Rocks Related to the Major Molybdenum and Tungsten Deposits in the Inner Zone of Southwest Japan", Jour. Geol. Soc. Japan, v. 77, p. 441-452.
- , 1971b, "Major Molybdenum Deposits and Related Granitic Rocks in Japan", Rept. Geol. Sur. Japan, v. 239, p. 1-178.
- , 1977, "The Magnetite-series and Ilmenite-series Granitic Rocks", Mining Geol. (Tokyo), v. 27, p. 293-305.

- Ishihara, S., and Terashima, S., 1977, "Tin Content of the Japanese Granitoids and Its Geological Significance on the Cretaceous Magmatism" , Jour. Geol. Soc. Japan, v. 83, p. 657-664 (in Japanese).
- , 1978, "Metallogenesis in the Japanese Island Arc System" , Jour. Geol. Soc. London, v. 3, p. 389-406.
- , et al., 1978, "Granitic Rocks in Southern Thailand" , in Proc. 3rd Reg. Conf. Geol. Miner. Res. SE Asia, edited by Natalaya, P., AIT, p. 431-492.
- , et al., 1979, "The Magnetite-series and Ilmenite-series Granitoids and Their Bearing on Tin Mineralization, Particularly of the Malay Peninsula Region" , P.S.U. Geol. Res. Proj. Publ., no. 3, p. 35-41.
- Israngkoon, P., 1973, "Distribution of Heavy Minerals in the Phuket and Phangnga Areas, Southern Thailand" , Eco. Geol. Bull., no. 9, p. 29-47.
- Itsikson, M.I., 1967, "Geological and Geochemical Types of Tin-bearing Formations of the Active Belts and Regions of Tectonic and Magmatic Activisation" , Sov. Geol., v. 11, p. 92-103.
- James, R. & Hamilton, D., 1969, "Phase Relations in the System Na Al Si₃O₈-KAlSi₃O₈ - Ca Al₂Si₂O₈ - SiO₂ at 1 Kb Water Vapour Pressure" , Contr. Miner. Petrol., v. 21, p. 111-141.
- Janecka, J., and Stemprok, M., 1967, "Endogenous Tin Mineralization in Bohemian Masif" , Proc. 1st Tech. Conf. Tin, London, p. 245-265.
- Jaskolski, S., 1967, "Erwagungen über die Genese zinnführender Schiefer in Isergebirge" , Polska Akad. Nauk, Prace Geol., Warsaw, v. 12, p. 33-53.

- Juniper, P.N., and Kleeman, J.D., 1979, "Geochemical Characterization of Some Tin Mineralizing Granites of New South Wales" , Jour. Geochem. Expl., v. 11, p. 321-333.
- Kloosterman, J.B., 1976, "A Tin Province of the Nigerian Type in South Amazonia" , Proc. 1st Tech. Conf. Tin, London p. 381-399.
- Klominsky, J., and Groves, D.I., 1970, "The Contrast in Granitic Rock Types in Tasmania" , Proc. Australias Inst. Min. Met., v. 234, p. 71-77.
- and Absolonova, E., 1974. "Geochemistry of the Karlov Vary Granite Massif ,Czechoslovakia", in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., p. 189-198.
- Kolbe, P., and Taylor, S.R., 1966, "Geochemical Investigation of the Granitic Rocks of the Snowy Mountains Area, New South Wales" , Jour. Geol. Soc. Australia, v. 13, p. 1-25.
- Kozlov, V.D., 1974, "The Sequences of Phases and Facies in the Massifs. of Rare-metal Granites in Transbaikalia and the Problem of their Ore-bearing Capacity" , in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., Geol. Sur. Praque, p. 197-200.
- Kuntz, M.A., and Brock, K., 1977, "Structure and Petrogenesis of the Treasurevault Stock, Mosquito Range, Colorado" , Jour. Geol. Soc. America Bull., v. 88, p. 465-479.
- Kuts, V.P., and Mishcenko, V.S., 1963, "Distribution of Lithium, Rubidium, and Some of the Minerals that Contain Them in the Kamemmge Mogily and Yekaterinovka Granites" , Geochem., no. 12, p. 1175-1192.

- Lawrence, R.G., 1974, "The Use of Rubidium/Strontium Ratios as a Guide to Mineralization in the Galway Granite, Ireland", in Geochemical Exploration: 1974, Proc. 5th Inter. Geochem. Explor. Symp., Vancouver, Canada, edited by Elliot & Fletcher, Elsevier Publ., Amsterdam, p. 353-370
- Lee, W.M. 1923, "Reconnaissance Geological Report on the Province of Phuket, Surat Thani, Nakorn Srithamarat, and Patani in Siamese Malaya", Rept. State. Railw. Siam. (n.p.).
- Lugov, S.F., 1978, "Tin Mineralization during Evolution of the Crust", Internat. Geol. Rev., -V. 21, no. 1, p. 1-10.
- Luakovich, V.V., 1967, "Distribution of Rare Earths among the Accessory Minerals of Granites", Ibid., v. 4, p. 691-696.
- Macdonald, E.H., 1969, "Report on Investigation on Heavy Minerals in the Phuket and Phangnga Regions of Thailand", ECAFE, Document CCOP/TAG (v)/8, Sixth Session of CCOP, 25p.
- , 1971, "Detrital Heavy Mineral of Thailand", Tech. Bull Vol. 5 (special volume), p. 84-107.
- Macleod, W.N., et al., 1971, "The Geology of the Jos Plateau, Volume 1 : General Geology", Geol. Sur. Nigeria Bull., no. 32, p. 12-20.
- Mantajit, N., 1978, "A Note on the Permian and Carboniferous Stratigraphic Succession in Southern Thailand", Paper present at Proc. 3rd Reg. Conf. Geol. Miner. Res. SE Asia, Bangkok, Nov. 14-15 (abstract).
- , et al., 1979, "Geology of Phuket and Phangnga Areas", Jour. Geol. Soc. Thailand (in prep.).
- McCarthy, T.S., and Hasty, R.A., 1976, "Trace Element Distribution Patterns and their Relation to the Crystallization of Granitic Melts", Geochim. et Cosmochim. Acta, no. 40, p. 1351-1358.

- Mitchell, A.H.G., et al., 1970, "The Phuket Group, Peninsular Thailand : A Paleozoic Geosynclinal Deposit" , Geol. Mag., v. 107, p. 411-428.
- , and Garson, M.S., 1972, "Relationship of Porphyry Copper and Circum-Pacific Tin Deposits to Paleo-Benioff Zones" , Trans. Inst. Min. Met., B.81, p. 10-25.
- Mitchell, A.H.G., 1973, "Metallogenic Belts and Angle of Dip of Benioff Zones" , Nature Phys. Sci., v. 245, p. 49-52.
- , 1976, "Southeast Asian Tin Granites : Magmatism and Mineralization in Subduction and Collision Setting" , CCOP Newsletter, v. 3, no. 1 & 2, p. 10-14.
- , and Garson, M.S., 1976, "Mineralization at Plate Boundaries" , Miner. Sci. Eng'ng, v.8, no. 2, p. 129-169.
- , 1979, "Rift, Subduction-and Collision-Related Tin Belts" , in Geology of Tin Deposits, Geol. Soc. Malaysia Bull., no. 11, edited by Yeap. E., p. 81-102.
- Muang Thein, 1973, "A Preliminary Synthesis of the Geological Evolution of Burma with Reference to the Tectonic Development of Southeast Asia" , Geol. Soc. Malaysia Bull., no. 6, p. 87-116.
- Mulligan, R., 1974, "Geology of Canadian Tin Occurrences" , Geol. Surv. Can. Eco. Geol. Rept. 28, 155p.
- Newnham, L.A., 1975, "Renison Bell Tin Field" , in Economic Geology of Australia and Papua New Guinea, v. 1, Met. Mon. Series, no. 5, edited by Knight, C.L., p. 581-583.
- Noakes, L.C., and Poothai, C., 1967, "Prospects for Detrital Heavy Minerals Other Than Tin in Thailand" , ECAFE, Rept. 4th Session of CCOP, p. 119-123.

Noble, J.A., 1974, "Metal Provinces and Metal Finding in the Western United States" , Miner. Deposita, v. 9, p. 1-25.

Nockolds, S.R., 1954, "Average Chemical Composition of Some Igneous Rocks", Geol. Soc. America Bull., no. 65, p. 1007-1032.

Oyarsun, M.J., 1974, "Rubidium and Strontium as Guides to Copper Mineralization Emplaced in Some Chilean Andesitic Rocks" , in Geochemical Exploration 1974, Proc. 5th Inter. Geochem. Explor. Symp., Vancauver, Canada, edited by Elliot & Fletcher, Elsevier Publ., Amsterdam, p. 333-340.

Petrova, Z.I., and Legcydo, V.A., 1965, "Geochemistry of Tin in the Magmatic Process" , Geokhimiya, no. 4, p. 482-489.

Pitakpaiwan, K., 1969, "Tin-bearing Granite and Tin-barren Granite in Thailand" , Proc. 2nd Tech. Conf. Tin, Bangkok, p. 283-298.

Piyasin, S., 1975, "Stratigraphy and Sedimentology of the Kaeng Krachan Group (Carboniferous)" , in Proc. Conf. Geol. Thai, Dept. Geol. Sci, Chiengmai Univ., Special Publication, no. 1, v. 2, edited by Stokes, R.B., and Tantisukrit, C., p. 25-35.

Plimer, I.R., and Elliot, S.M., 1979, "The Use of Rb/Sr Ratios as a Guide to Mineralization" , Jour. Geochem. Expl., v. 12, p. 21-34.

Pongsapich, W., and Mahawat, C., 1977, "Some Aspects of Tak Granites, Northern Thailand" , Geol. Soc. Malaysia Bull., no. 9. p. 175-186.

Poothai, C., et al., 1969, "Heavy Mineral Associated with Tin in Alluvial and Beach Deposits in Southern Thailand" , Proc. 2nd Tech. Conf. Tin, Bangkok, 15 p.

Pluhar, E., 1979, "Die Geochemie von Monaziten aus Thailand und ihre Anwendung bei der Praspektien von Zinnerzen" , Berliner Geowiss. Abh.(A),

- Rasrikriangkrai, C., 1967, "Petrochemistry of the Western Offshore Granite, Peninsular Thailand" , Jour. Geol. Soc. Thailand, v. 2, no. 1-2, p. 11-29.
- Rattigan, J.H., 1963, "Geochemical Ore Guides and Techniques in Exploration for Tin" , Proc. Australia Inst. Min. Met., v. 207, p. 137-151.
- , 1964, Characteristics of Granitic Rocks in Relation to the Occurrence of Tin, unpublished Ph.D. Thesis, Univ. New South Wales, Sidney.
- Ridd, M.F., 1971a, "Southeast Asia as a Report of Gondwanaland", Nature, v. 234, p. 531-533.
- , 1971b, "The Phuket Group of Peninsular Thailand." , Geol. Mag., p. 445-446.
- Sainsbury, C.L., and Hamilton, J.C., 1967, "The Geology of Lode Tin Deposit" , Proc. 1st Tech. Conf. Tin, London, p. 267-306.
- , 1969, "Tin Resources of the World" , U.S. Geol. Surv. Bull., no. 1310, 14 p.
- Saukin, F.J., 1972, "Sulfide Ore Deposits in Relation to Plate Tectonics" , Jour. Geol., v. 80, p. 377-397.
- Schuling, R.D., 1967, "Tin Belts on the Continents around the Atlantic Ocean" , Econ. Geol., v. 62, p. 540-550.
- Shapiro, L., 1975, "Rapid Analysis of Silicate and Carbonate Rocks" , Geol. Surv. America Bull., no. 1056, 132 p.
- Sharkawi, M.A.H., and Dearman, W.R., 1966, "Tin-bearing skarns from the Northwest Border of the Dartmoor Granite, Devonshire, England" , Econ. Geol., v. 61, p. 362-369.

- Sheraton, J.W., and Labonne, B., 1978, "Petrology and Geochemistry of Acid Igneous Rocks of Northeast Queensland, Bureau Miner. Res. Australia, Bull., no. 169, 139 p.
- Sillitoe, R.H., 1972, "A Plate Tectonic Model for the Origin of Porphyry Copper Deposits" , Econ. Geol., v. 67, p. 184-197.
- , 1974, "Tin Mineralization Above Mantle Hot Spots" , Nature, v. 248, p. 497-499.
- Sminova, N.V., 1974, "Age and Space Relationships between Granites and Rare-metal Metasomatite in the Southern Part of the Baltic Shield", in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., Geol. Sur. Prague, p. 119-122.
- Smith, E.I., 1978, "Precambrian Rhyolites and Granites in South Central Wisconsin : Field Relations and Geochemistry" , Geol. Soc. America Bull., no. 89, p. 875-890.
- Smith, J.D., and Burton, J.D., 1972, "The Occurrence and Distribution of Tin with Particular Reference to Marine Environment", Geochim. et Cosmochim. Acta, v. 57, p. 621-629.
- Smith, T.E., and Turek, A., 1976, "Tin-bearing Potential of Some Devonian Granitic Rocks in S.W. Nova Scotia" , Miner. Deposita (Berlin), v. 11, p. 234-245.
- Snelling, N.J., et al., 1970, "Age Determination on Samples from the Phuket Region of Thailand" , Rept. Inst. Geol. Soc., London, no. IGU 70, 19 p. (n.p.)
- Stemprok, M., 1970, "Geochemical Association of Tin" , Proc. 2nd Tech. Conf. Tin, Bangkok, 24 p.

- Stemprok, M., and Skvor, P., 1974, "Composition of Tin-bearing Granites from the Krone Hory Metallogenic Province of Czechoslovakia" , Sb. Geol. Ved., Loziskova Geol. Miner., v. 16, p. 7-87.

, 1979, "Mineralized Granites and Their Origin", Episodes, v. 1979, no. 3, p. 20-24.

Stephens, E.A., and Batesson, J.H., 1966, "An Investigation into the Occurrence of Diamonds and the Regional Geology of the Phuket-Phangnga Area of Peninsular Thailand" , Rept. Oversea Division, Inst. Geol. Sei., United Kingdom, 31p.

Streckeisen, A.L., 1973, "Plutonic Rocks. Classification and Nomenclature Recommended by the IUGS Subcommission on the Systematic of Igneous Rocks" , Geotimes, v. 18, p. 26-30.

Suensilpong, S., 1977a, "The Role of Plate Collision in Tin Mineralization in Thailand" , 7th Circum-Pacific Plutonism Project Meeting, Japan, 15 p.

, 1977b, "The Possible Age of Tin Mineralization in Thailand" , 3rd Inter. Tin Sym., La Paz, Bolivia, 8 p.

, et al., 1977, The Granitic Rocks and the Mineralization at the Khuntan Batholith, Lampang" , Geol. Soc. Malaysia Bull., no. 9, p. 159-174.

, Putthapiban, P., 1979, "Some Aspects of Tin Granites and Its Relationship to Tectonic Setting" , 2nd Meeting on Tin, Manaus, Brazil, December 1979, 15 p.

, et al., 1978, "Geological Evolution and Igneous Activity of Thailand and Adjacent Areas", Episodes, no.3, 7 p.

, 1980, Personal Communication.

Tantithamsephen, A., 1980, Personal Communication.

- Tauson, L.V., 1968, "Distribution Regularities of Trace Elements in Granitoid Intrusions of the Batholith and Hypabyssal Types" , Inter. Series Monograph, p. 629-639.
- , et al., 1966, "Behaviour of Tin in 'Tin-bearing' and 'Non-tin-bearing' Granites of Eastern Transbaikaliya (Abst.)" , Geochem. Int., v. 3, p. 95-96.
- , and Kozlov, V.D., 1973, "Distribution Functions and Ratios of Trace-element Concentration as Estimates of the Ore-bearing Potential of Granites" , in Geochemical Exploration 1972, Proc. 4th Int. Geochem. Expl. Symp. London, Inst. Min. Met., p. 37-44.
- , 1974, "The Geochemical Types of Granitoids and Their Potential Capacity of Ore" , in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., Geol. Sur. Prague, p. 221-227.
- , 1977, "Geochemical Types and Potential Ore-bearing Capacity of Granitoids" (in Russian) , Nauka, Moskva, p. 14-60.
- , et al., 1956, "Some Anomalous K/Rb Ratios in Igneous Rocks and their Petrological Significance" Geochim. et Cosmochim. Acta, v. 70, p. 224-229.
- Taylor, S.R., 1965, "The Application of Trace Element Data to Problem in Petrology" , Phys. Chem. Earth, v. 6, p. 133-213.
- , 1968, "Geochemistry of Andesites" , in Origin and Distribution of Elements , Int. Ser. Monogr. Earth Sci., v. 30, edited by Ahrens, p. 559-583.

- Taylor, S.R., et al., 1968, "Leucogranites and Rhyolites : Trace Element Evidences for Fractional Crystallization and Partial Melting" , Lithos, v. 1, p. 179-186.
- , and Hutchison, C.S., 1978, "Pattern of Mineralization in Southeast Asia, their Relationship to Broad Scale Geological Features and the Relevance of Plate-tectonic Concepts to their Understanding" , Inst. Min. Met, (Hongkong), no. 68, 15 p.
- , 1979, Geology of Tin Deposits, Elsevier Scientific Publ., New York, 544 p.
- Thanasutipitak, T., 1978, "A Review of Igneous Rocks of Thailand" , in Proc. 3rd Reg. Con. Geol. Miner. Res. SE Asia, edited by Nutalaya, P., AIT, p. 775-782.
- Thornton, C.P., and Tuttle O.F., 1960, "Chemistry of Igneous Rocks : I. Differentiation Index" , American Jour. Sci, v. 258, p. 664-684.
- Tischendorf, G., 1973, "The Metallogenetic Basis of Tin Exploration in the Erzgebirge" , Trans. Inst. Min. Met., B-82, B-9, B-24.
- , 1977, "Geochemical and Petrographic Characteristics of Silicic Magmatic Rocks Associated with Rare-metal Mineralization" , in Metallization Associated with Acid Magmatism, v. 2, edited by Stempok, M., Brunol, L., and Tischendorf, G., Geol. Sur. Prague, p. 41-96.
- , et al., 1972, "Geochemical Specialization of Granitoid in the Territory of the German Democratic Republic" , 24th Int. Geol. Cong., Sec. 4, p. 266-275.
- Trewartha, G.T., 1954, An Introduction to Climate, McGraw Hill, New York, p. 65-104.

Tsuesve, A., and Ishihara, S., 1974, "Iron-titanium Oxides and Chemical Composition of the Granitic Rocks in the Molybdenum, Tungsten, and Tin Provinces" , in Metallization Associated with Acid Magmatism, v. 1, edited by Stempok, M., Geol. Sur. Prague, p. 217-220.

Tuttle, O.F., and Bowen, N.L., 1958, "Origin of Granite in Light of Experimental Studies in the System $\text{NaAlSi}_3\text{O}_8 - \text{KAlSi}_3\text{O}_8 - \text{SiO}_2 - \text{H}_2\text{O}$ ", Geol. Soc. America Mem., v. 74, 153 p.

Varlamoff, N., 1972, "Central and West African Rare Metal Granitic Pegmatites, Related Aplites, Quartz Veins and Mineral Deposits" , Mineralium Deposita, v. 7, p. 202-216.

Vokes, F.M., 1963, "Geological Studies of the Caledonian Puritic Zinc-lead Orebody at Bleikvassli, Nordland, Norway" , Norges Geol. Underskelse, v. 222, p. 1-84.

Wasteneck, J., et al., 1974, "Late Magmatic and High-to Medium-temperature Post Magmatic Metasematism in Saxonian, Erzgebirge (G.D.R.)" , in. Metallization Associated with Acid Magmatism, v. 1, edited by M. Stempok, Geol. Sur. Prague., p. 228-231.

White, A.J.R., et al., 1977, Geology of the Berridale 1:100,000 Sheet (8625) , Geol. Surv. N.S.W.

White, A.J.R., and Chappel, B.W., 1977, "Ultrametamorphism and Granitoid Genesis" , Tectonophysics, v. 43, p. 7-22.

Whitney, J.A., and Walker, R.L., 1976, "Age and Origin of the Stone Mountain Granite, Lithonia District, Georgia" , Geol. Soc. America Bull., no.87, p. 1067-1077.

- Wright, J.B., 1969, "A Simple Alkalinity Ratio and its Application to Questions of Non-orogenic Granite Genesis" , Geol. Mag., v. 106, p. 370-384.
- Wright, J.B., and McCurry, P., 1973, "Magma, Mineralization and Sea-floor Spreading" , Geol. Rdsch., v. 62, p. 116-125.
- Ympa, P.J.M. and Simons, J.H., 1969, "Genetical Aspect of the Tin Mineralization in Durango, Mexico" , Proc. 2nd Tech. Conf. Tin, Bangkok, International Tin Concil, v. 1, p. 171-191.
- Zalashkova, N.E., and Gerasimovskii, V.V., 1974, "Petrographic and Geochemical Features of Rare Metal Amazonite Granites" , in Metallization Associated with Acid Magmatism, v. 1, edited by Stemprok, M., Geol. Sur. Prague., p. 232-236.

APPENDICES

Appendix 1

Table A Modal analyses of 11 stained thin sections for granites of Phuket Plutons

No.	Sample no.	point count	Q	F	P	B	M	ACC	Classified type
	Grid no.								
1	19-5-2 (229740)	tot. %	2000	611 30.5	721 36.1	428 21.4	119 8.0	102 5.1	19* 0.9
2	32-11-2 (242732)	tot. %	2000	742	660	468	78	40	12* G-2
3	9-1-13 (352729)	tot. %	2000	661	767	330	23.4 124*1	2.0 59	0.6 59
4	31-8-1 (200718)	tot. %	2000	575	801	446	60	11	107 G-3
5	38-1-3 (375760)	tot. %	2000	575	417	631	290	26	54 G-2
6	9-3-1 (336727)	tot. %	2000	550	592	712	67	36	43 G-4
7	32-1-2 (230710)	tot. %	2000	691	628	452	91	72	66* G-4
				34.6	31.4	22.6	4.5	3.6	3.3

Table A (continued)

No.	Sample no.	point count	Q	F	P	B	M	ACC	Classified type
	Grid no.								
8	26-5-2	tot.	2000	556	729	609	63	21	22*
	(194731)	%		27.8	36.5	30.4	3.1	1.1	1.1
9	15-3-2	tot.	2000	693	681	412	92	80	42*
	(315728)	%		34.7	30.4	20.6	4.6	4.0	2.1
10	38-1-6	tot.	2000	758	450	581	tr	159	52
	(375762)	%		37.9	22.5	29.1	tr	7.9	4.6
11	11-5-1	tot.	2000	704	833	291	tr	129	43
	(323722)	%		35.2	41.7	14.5	tr	6.5	2.1

tr = trace ACC = mostly zircon, apatite;

*1 = chloritized biotite;

* = with tourmalene

+ = with allanite, sphene

Table B. Modal analyses of 32 stained rock-slabs for granites of Phuket Plutons

No.	Sample no.	point count	Q	F	P	B	M	Classified type	stained surface (cm ²)
	Grid no.								
1	14-3-1 (256735)	tot. 1310 %	337 25.7	463 35.3	366 27.9	123 9.5	21 1.6	G-3	12.5 x 10.5
2	26-2-1 (203783)	tot. 1520 %	429 28.2	486 32.0	435 28.6	151 9.9	19 1.3	G-3	15 x 11.5
3	26-7-1 (190778)	tot. 1516 %	385 25.4	378 24.9	507 33.5	246 16.2	tr tr	G-3	13 x 9
4	33-6-1 (263729)	tot. 1290 %	355 27.5	299 23.2	368 28.5	217 16.8	51 4.0	G-3	10 x 8
5	28-3-3 (310770)	tot. 771 %	178 22.1	249 32.3	232 30.1	105 13.6	7 0.9	G-2	9 x 6
6	26-5-1 (195781)	tot. 1275 %	465 36.5	462 36.2	254 19.9	59 4.6	35 2.8	G-4 (float)	10.5 x 10
7	9-1-18 (347728)	tot. 1158 %	358 30.9	501 43.3	197 17.0	63 5.4	39 3.4	G-4	11 x 10
8	29-4-1 (210753)	tot. 1597 %	468 29.3	638 40.0	338 21.1	91 5.7	62 3.9	G-4	15 x 12

Table. B (continued)

No.	Sample no.	point count	Q	F	P	B	M	Classified type	stained surface
	Grid no.								
9	28-2-2 (300778)	tot. %	1507 27.3	412 413	559 487	278 353	135 117	124 54	G-4 G-4
10	32-2-1 (235708)	tot. %	1424 29.0	413 34.2	487 24.8	353 8.2	117 32	54 3.8	9 x 9 12 x 7.5
11	33-8-2 (267708)	tot. %	1389 24.6	341 41.3	573 26.8	372 5.1	71 30	32 67	G-4 G-4
12	Kao-2 (330759)	tot. %	1173 53.8	632 28.0	328 10.0	116 2.5	30 67	67 5.7	9 x 9 9 x 8
13	32-10-1 (241720)	tot. %	1297 30.2	392 42.5	425 32.8	311 23.9	102 7.9	67 5.2	9 x 8 10 x 9
14	31-6-1 (210718)	tot. %	1282 30.0	849 216	412 32.2	302 23.6	95 7.4	88 6.8	G-4 G-4
15	28-3-1 (306780)	tot. %	849 25.4	216 37.1	315 27.3	232 6.4	54 32	32 3.8	9 x 9 10 x 9
16	19-5-3 (229740)	tot. %	1348 29.1	392 33.5	452 23.4	316 7.3	98 171	90* 6.7	G-5 10 x 9
17	19-4-2 (220800)	tot. %	1305 26.4	345 31.9	416 28.6	373 13.1	171 -	- -	G-1 12 x 10.5

Table. B (continued)

No.	Sample no.	point count	Q	F	P	B	M	classified type stained surface (cm ²)
	Grid no.							
18	27-4-1 (246753)	tot. 1426 %	417 29.2	41.5 29.1	442 31.0	152 10.7	-	G-1 14 x 7.5
19	25-7-1 (249787)	tot. 1362 %	370 27.2	492 36.1	376 27.6	124 9.1	-	G-1 13 x 11.5
20	25-10-1 (216685)	tot. 1349 %	375 27.8	402 29.8	418 31.0	154 11.4	-	G-1 12 x 12
21	23-6-2 (257799)	tot. 1130 %	398 35.2	276 24.4	326 28.9	130 11.5	-	G-1 9.5 x 9
22	23-3-1 (261796)	tot. 1400 %	451 32.2	422 30.1	348 24.9	179 12.8	-	G-1 11 x 9
23	13-1-1 (292718)	tot. 1674 %	407 24.3	445 26.6	529 31.6	293 17.5	-	G-1 12 x 11
24	30-2-1 (236741)	tot. 1120 %	265 24.3	329 28.8	364 32.5	162 14.5	-	G-1 12 x 6.5
25	22-6-1 (258768)	tot. 1612 %	445 27.6	501 31.1	534 33.1	132 8.2	-	G-1 10 x 8
26	27-5-3 (245755)	tot. 1124 %	281 25.0	290 25.8	382 34.0	171 15.2	-	G-1 10 x 7

Table. B. (continued)

No.	Sample no.	point count	Q	F	P	B	M	Classified type	stained surface
	Grid no.								
27	6-3-1 (248768)	tot. 1260 %	272 21.6	361 28.7	426 38.8	201 15.9	-	G-1	11.5 x 10.5
28	22-3-1 (265778)	tot. 1315 %	332 25.2	394 30.0	428 32.6	161 12.2	-	G-1	11 x 7
29	33-1-1 (272796)	tot. 1269 %	395 31.1	367 28.9	372 29.3	135 10.7	-	G-1	15 x 6
30	22-2-2 (254753)	tot. 1165 %	280 24.0	359 30.8	404 34.7	122 10.5	-	G-1	10.5 x 7
31	34-4-1 (281704)	tot. 1171 %	250 21.3	330 28.2	354 30.2	237 20.3	-	G-1	9.5 x 8.5
32	38-1-4 (375760)	tot. 820 %	226 27.6	189 23.1	273 33.3	132 16.0	-	G-2 1	10 x 6

** as total mafic minerals, * including tourmalene

Appendix 2Locations of analysed granite specimens

A total of 32 specimens of Phuket-Pluton granites are chemically analyzed both for major-oxiue and trace element concentrations. The consonant of prefix in the parenthesis, i.e. M denotes major element analysis and T denotes trace-element analysis. The sample locations are also indicated in the locality map (Map 4).

No.	Sample No.	Grid. Ref.	Description of locality & nature of exposures	Classified Type
1	22-6-1	258768	Kathu Fall in Kathu-kamala Valley, blasted sample from a large boulder near the fall	G-1 (M,T)
2	13-1-5	292718	Chao Fa Quarry, near Chao Fa Mine, quarry front	G-1 (M,T)
3	34-3-2	280707	Khao Nakha, natural exposure at summit	G-1 (M,T)
4	27-4-1	246753	Khao Kwan Wa, natural exposure near summit	G-1 (M,T)
5	25-7-2	249787	Khao Khek Nei, natural exposure in the creek	G-1 (M,T)

No.	Sample No.	Grid Ref.	Description of locality & nature of exposures	Classified Type
6	3-7-1	310772	Khao Panthu Rat, natural exposure at summit	G-2 (M)
7	3-7-2	310772	Khao Panthu Rat, small outcrop at summit near No. 6	G-2 (T)
8	38-1-4	375760	Ko Maprao, natural exposure on the southern beach	G-2 (M,T)
9	9-1-18	347728	To Sae Quarry (1), quarry front, 1 km. NE of Phuket Town	G-4 (M,T)
10	3-1-12	352729	To Sae Quarry (2), quarry front at Ban Tachin	G-4 (M,T)
11	9-3-1	336727	Khao To Sae, natural exposure near summit	G-4 (M,T)
12	29-4-3	210753	Khao Nakha Lae, exposures along the beach near Ban Nakha Lae	G-4 (M,T)
13	22-1-2	230710	Khao Khaw, natural exposures at the fall	G-4 (M,T)
14	32-11-2	242732	Wang Chi Ouan Fall, exposure on the western slope of Khao Mai Tao Sip Song	G-4 (M,T)

No.	Sample No.	Grid Ref.	Description of locality & nature of exposure	Classified Type
15	11-3-1	328770	Khao Sapem, in the small valley, outcrop exposed by top-soil removal from road construction	G-4 (M,T)
16	15-3-2	315728	Khao Pak's Quarry, quarry front	G-4 (T)
17	31-7-1	219719	Khao Nai Grang, exposure on the northern slope	G-4 (M,T)
18	26-5-2	194781	Khao Pak Bang, large boulder at summit, sample obtained by blasting	G-4 (M,T)
19	26-9-1	201783	Khao Pak Bang, beach exposure, Ban Kamela	G-3 (M,T)
20	31-8-1	200718	Khao Tri Trang, beach exposure, Ban Tri Trang	G-3 (M,T)
21	26-2-2	200780	Khao Pak Bang, exposure on the northern slope	G-3 (M,T)
22	23-6-1	263729	Khao Mai Tao Sip Song, eastern slope, near the small fall	G-3 (M,T)
23	19-5-2	229740	Ban Kalim, beach exposure	G-5 (M,T)
24	35-5-1	211718	Khao Nai Grang, near No. 17, natural exposure	G-5 (M,T)

No.	Sample No.	Grid Ref.	Description of locality & nature of exposure	Classified Type
25	35-1-6	375762	Ko Maprao, exposure on the southern beach	G-5 (M,T)
25	19-2-1	235773	Khao Nakha Lae, exposure on the northern slope near Ban Klang	G-2 (T)
27	Kung-I	310724	Khao Rang (Nok), large boulder, sample obtained by sledging	greisen (T)
28	11-5-1	329776	Khao Sapam, natural exposure	greisen (T)
29	Kao I	329760	Sahakit Mine, exposure on the southwestern slope of Khao Sapam	greisen (T)
30	Kao 2	330750	Sahakit Mine, boulder on the southwestern slope of Khao Sapam	greisen (T)
31	38-1-3 (xe*)	375760	Ko Maprao, exposure on the beach	xenolith (M)

* xe - specimen from xenolith



VITA

Punya Charusiri was born in Bangkok, Thailand on January 2, 1965. In 1977 he received a B.Sc. degree in Geology from the Department of Geology, Faculty of Science, Chulalongkorn University. In the same year he was presented a certificate from Dr. Tab's Fund Foundation for his distinct academic performance. During April 1978, he was granted a scholarship from the Geological Society of Thailand to participate in an intensive and training course on tin exploration in Malaysia. At present he is working as an instructor in the Department of Geology, Chulalongkorn University.