

REFERENCES

- Anonymous 1972. Penrose field conference on ophiolites. *Geotimes* **17**: 24-25.
- Arai, S. 1992. Chemistry of chromian spinel in volcanic rocks as a potential guide to magma chemistry. *Mineralogical Magazine* **56**: 173-184.
- Arai, S. 1994a. Characterization of spinel peridotites by olivine-spinel compositional relationships: Review and interpretation. *Chemical Geology* **113**(1994): 191-204.
- Arai, S. 1994b. Compositional variation of olivine-chromian spinel in Mg-rich magma as a guide to their residual spinel peridotites. *Journal of Volcanology and Geothermal Research* **59**(1994): 279-293.
- Arai, S., and Hisada, K. 1991. Detrital chromian spinels from the Ishido Formation of the Sanchu Cretaceous Formation, Kanto Mountains, central Japan. *Journal of Mineralogy, Petrology and Economic Geology* **86**: 540-553 (in Japanese with English abstract).
- Arai, S., and Matsukage, K. 1996. Petrology of the gabbro-troctolite-peridotite complex from Hess Deep, equatorial Pacific: implications for mantle-melt interaction within the oceanic lithosphere. In C. Mevel, K.M. Gillis, J.F. Allan, and P.S. Meyer (eds.), *Proceedings of the Ocean Drilling Program, Scientific Results* **147**: 135-155.
- Arai, S., and Okada, H. 1991. Petrology of serpentine sandstone as a key to tectonic development of serpentine belts. *Tectonophysics* **195**(1991): 65-81.

- Arai, S., Kadoshima, K., Manjoorsa, M.V., David, C.P., and Kida, M. 1997. Chemistry of detrital chromian spinels as an insight into petrological characteristics of their source peridotites: an example from the Ilocos Norte ophiolite, northern Luzon, Philippines. *Journal of Mineralogy, Petrology and Economic Geology* **92**: 137-141.
- Barr, S.M., and Macdonald, A.S. 1991. Toward a late Palaeozoic-early Mesozoic tectonic model for Thailand. *Journal of Thai Geosciences* **1**(1991): 11-22.
- Basu, A., Young, S.W., Sutter, L.J., James, W.C., and Mack, G.H. 1975. Re-evaluation of the use of undulatory extinction and polycrystallinity in detrital quartz for provenance interpretation. *Journal of Sedimentary Petrology* **45**: 873-882.
- Basu, A.R., and Molinaroli, E. 1991. Reliability and application of detrital opaque Fe-Ti oxide minerals in provenance determination. In A.C. Morton, S.P. Todd, and P.D.W. Haughton (eds.), *Developments in Sedimentary Provenance Studies, Geological Society of London, Special Publication 57*, pp. 55-65.
- Bouma, A.H. 1962. *Sedimentology of some flysch deposits: a graphic approach to facies interpretation*. Amsterdam: Elsevier.
- Bunopas, S. 1981. *Paleogeographic history of western Thailand and adjacent parts of Southeast Asia – a plate tectonics interpretation*. Ph.D. Thesis, Victoria University of Wellington, New Zealand. (reprinted 1982 as Geological Survey Paper No. 5, Department of Mineral Resources, Ministry of Industry, Thailand, 810 p.)
- Cawood, P.A. 1991. Nature and record of igneous activity in the Tonga arc, SW Pacific deduced from the phase chemistry of detrital grains. In A.C. Morton, S.P. Todd, and P.D.W. Haughton (eds.),

- Developments in Sedimentary Provenance Studies, *Geological Society of London, Special Publication 57*, pp. 305-321.
- Chaodumrong, P. 1992a. *Stratigraphy, sedimentology and tectonic setting of the Lampang Group, central north Thailand*. Unpublished Ph.D. Thesis, University of Tasmania.
- Chaodumrong, P. 1992b. *Report of investigation – continuation of the geologic rock units among the 1:250,000 scale geological maps of the Eastern Thailand*. Report of Investigation no. 187, Geological Survey Division, Department of Mineral Resources, Ministry of Industry, Bangkok, Thailand (in Thai).
- Chaodumrong, P. 1994. Sedimentary and tectonic implication of Triassic submarine fans, Lampang Group, central north Thailand. In P. Angsuwathana, T. Wongwanich, W. Tansathien, S. Wongsomsak, and J. Tulyatid (eds.), *Proceedings of the International Symposium on Stratigraphic Correlation of Southeast Asia*, pp. 208-225. 15-20 November 1994, Bangkok, Thailand: Department of Mineral Resources, Ministry of Industry.
- Charoentitirat, T. 2002. *Permian fusulinoidean biostratigraphy and carbonate development in the Indochina block of Thailand with their paleogeographic implication*. Unpublished D.Sc. Dissertation, the University of Tsukuba, Japan.
- Charusiri, P., Clark, A.H., Farrar, E., Archibald, D., and Charusiri, B. 1993. Granite belts in Thailand: evidence from the $^{40}\text{Ar}/^{39}\text{Ar}$ geochronological and geological syntheses. *Journal of Southeast Asian Earth Sciences* **8**: 127-136.
- Charusiri, P., Pongsapitch, W., Daorerk, V., and Charusiri, B. 1992. Anatomy of Chantaburi granitoids: geochronology, petrochemistry, tectonics, and associated mineralization. In C. Piancharoen (ed.),

Proceedings of a National Conference on Geologic Resources of Thailand: Potential for Future Development, pp. 383-392. 17-24 November 1992, Bangkok, Thailand: Department of Mineral Resources, Ministry of Industry.

Chonglakmani, C. 1999. The Triassic system of Thailand: implications for the paleogeography of Southeast Asia. In B. Ratanasthien, and S.L. Rieb (eds.), *Proceedings of the International Symposium on Shallow Tethys (ST) 5*, pp. 486-495. 1-5 February 1999, Chiang Mai, Thailand: Department of Geological Sciences, Faculty of Sciences, Chiang Mai University.

Chonglakmani, C., and Sattayarak, N. 1978. Stratigraphy of the Huai Hin Lat Formation (Upper Triassic) in northeastern Thailand. In P. Nutalaya (ed.), *Proceedings of the Third Regional Conference on Geology and Mineral Resources of Southeast Asia*, pp. 739-762. 14-18 November 1978, Bangkok, Thailand: The Asian Institute of Technology.

Chutakositkanon, V. 1996. *Lithostratigraphy of the Khao Pun area, Amphoe Kaeng Koi, Changwat Saraburi*. Unpublished B.Sc. Senior Project Report, Department of Geology, Faculty of Science, Chulalongkorn University, Bangkok, Thailand.

Chutakositkanon, V. 1999. *Characteristics of detrital chromian spinels in sandstones from the Nam Duk Formation, Amphoe Lom Sak and Amphoe Nam Nao, Changwat Phetchabun*. Unpublished M.Sc. Thesis, Department of Geology, Faculty of Science, Chulalongkorn University, Bangkok, Thailand.

Chutakositkanon, V., Charusiri, P., and Sashida, K. 2000. Lithostratigraphy of Permian marine sequences, Khao Pun area, central Thailand: paleoenvironments and tectonic history. *The Island*

Arc 9 (2000): 173-187.

- Chutakositkanon, V., Hisada, K., and Charusiri, P. 2001a. Late Paleozoic paleogeography and tectonic history of the western margin of Indochina in Thailand. In H.J. Koh and Y.S. Choi (eds.), *Tectonic Evolution of East Asia, Proceedings of Third Joint Meeting of Japanese and Korean Structure and Tectonic Research Groups*, pp. 125-127. 21-23 August 2001, Daejeon, Korea: Korea Institute of Geoscience and Mineral Resources (KIGAM).
- Chutakositkanon, V., Hisada, K., and Charusiri, P. 2002. Proposal for the Sa Kaeo-Chanthaburi accretionary complex. In *Geodynamic processes of Gondwanaland-derived terranes in East and Southeast Asia: Their Crustal Evolution, Emplacement and Natural Resources Potential, Proceedings of Fourth Symposium of IGCP Project No. 411*, pp. 72-74. 17-25 November 2002, Phitsanulok, Thailand: Geological Society of Thailand; and Department of Mineral Resources, Ministry of Industry.
- Chutakositkanon, V., Hisada, K., Charusiri, P., and Arai, S. 1999a. Detrital chromian spinels from the Nam Duk formation: a key to elucidate the tectonic evolution of central Mainland Southeast Asia and the Loei suture zone in Thailand. In B. Ratanasthien, and S.L. Rieb (eds.), *Proceedings of the International Symposium on Shallow Tethys (ST) 5*, pp. 450-456. 1-5 February 1999, Chiang Mai, Thailand: Department of Geological Sciences, Faculty of Sciences, Chiang Mai University.
- Chutakositkanon, V., Hisada, K., Charusiri, P., and Arai, S. 2001b. Tectonic significance of detrital chromian spinels in the Permian Nam Duk Formation, central Thailand. *Geosciences Journal* 5: 89-96.

- Chutakositkanon, V., Hisada, K., Charusiri, P., and Arai, S. 2003a. Detrital chromian spinels from the Sa Kaeo-Chanthaburi accretionary complex: traces of tectonic evolution of eastern Thailand. In *2003 Japan Earth and Planetary Science Joint Meeting*, G015-011. 26-29 May 2003, Chiba, Japan: Japan Earth and Planetary Science Joint Meeting Organization.
- Chutakositkanon, V., Hisada, K., Charusiri, P., and Arai, S. 2003b. Reconstruction of tectonic evolution of the Sa Kaeo-Chanthaburi accretionary complex, eastern Thailand ~Detrital chromian spinel studies~. In *Proceedings of 110th Annual Meeting of the Geological Society of Japan*, O-107. 19-23 September 2003, Shizuoka, Japan: Geological Society of Japan.
- Chutakositkanon, V., Hisada, K., Charusiri, P., Arai, S., and Charoentitirat, T. 1999b. Characteristics of detrital chromian spinels from the Nam Duk Formation: implication for the occurrence of mysterious ultramafic and volcanic rocks in central Thailand. In C. Khantaprab and others (eds.), *Proceedings of the Symposium on Mineral, Energy, and Water Resources of Thailand: Towards the Year 2000*, pp. 604-606. 28-29 October 1999, Bangkok, Thailand: Department of Geology, Faculty of Science, Chulalongkorn University; Department of Mineral Resources, Ministry of Industry; and Chulalongkorn University Geology Alumni.
- Cobbing, E.J., Mallick, D.I.J., Pitfield, P.E.J., and Teoh, L.H. 1986. The granites of the SE Asian tin belt. *Journal of the Geological Society* **143**: 537-550.
- Coleman, R.G. 1977. *Ophiolites*. Mineral and Rocks 12. Berlin-Heidelberg-New York: Springer-Verlag.
- Cookinboo, H.O., Bustin, R.M., and Wilks, K.R. 1997. detrital chromian

- spinel compositions used to reconstruct the tectonic setting of provenance: implications for orogeny in the Canadian Cordillera. *Journal of Sedimentary Research* **67**(1): 116-123.
- Dawson, O., and Racey, A. 1993. Fusuline–calcareous algal biofacies of the Permian Ratburi Limestone, Saraburi, central Thailand. *Journal of Southeast Asian Earth Sciences* **8**: 49-65.
- Dick, H.J.B., and Bullen, T. 1984. Chromian spinel as a petrogenetic indicator in abyssal and alpine-type peridotites and spatially associated lavas. *Contributions to Mineralogy and Petrology* **86**(1984): 54-76.
- Dickinson, W.R. 1982. Compositions of sandstones in Circum-Pacific subduction complexes and fore-arc basins. *American Association of Petroleum Geologists Bulletin* **66**: 121-137.
- Dickinson, W.R. 1985. Interpreting provenance relations from detrital modes of sandstones. In G.G. Zuffa (ed.), *Provenance of Arenites*, pp. 333-361. Dordrecht-Boston-Lancaster: D. Reidal Publishing
- Dickinson, W.R., and Suczex, C.A. 1979. Plate tectonics and sandstone compositions. *American Association of Petroleum Geologists Bulletin* **63**: 2164-2182.
- Dickinson, W.R., Beard, L.S., Brakeridge, G.R., Erjavec, J.L., Ferguson, R.C., Inman, K.F., Knepp, R.A., Lindberg, F.A., and Ryberg, P.T. 1983. Provenance of North American Phanerozoic sandstones in relation to tectonic setting. *Geological Society of America Bulletin* **94**: 222-235.
- Folk, R.L. 1951. Stages of textural maturity in sedimentary rocks. *Journal of Sedimentary Petrology* **21**: 127-130.
- Folk, R.L. 1974. *The petrology of sedimentary rocks*. Austin, Texas: Hemphill Publishing.

- Fontaine, H., and Salyapongse, S. 1997. Biostratigraphy of East Thailand. In P. Dheeradilok and others (eds.), *Proceedings of the International Conference on Stratigraphy and Tectonic Evolution of Southeast Asia and the South Pacific*, p. 73-82. 19-24 August 1997, Bangkok, Thailand: Department of Mineral Resources, Ministry of Industry.
- Fontaine, H., Salyapongse, S., Tansuwan, V., and Vachard, D. 1997. The Permian of East Thailand: biostratigraphy, corals, discussion about the division of the Permian. In P. Dheeradilok and others (eds.), *Proceedings of the International Conference on Stratigraphy and Tectonic Evolution of Southeast Asia and the South Pacific*, p. 109-127. 19-24 August 1997, Bangkok, Thailand: Department of Mineral Resources, Ministry of Industry.
- Garver, J.I., Royce, P.R., and Smick, T.A. 1996. Chromium and nickel in shale of the Taconic foreland: a case study for the provenance of fine-grained sediments with an ultramafic source. *Journal of Sedimentary Research* 66(1): 100-106.
- Ghiorso, M.S., and Sack, R.O. 1991. Thermochemistry of the oxide minerals. In D.H. Lindsley (ed.), *Oxide minerals: petrologic and magmatic significance*, *Reviews in Mineralogy* 25, pp. 221-264. Mineralogical Society of America.
- Glassley, W. 1974. Geochemistry and tectonics of the Crescent volcanic rocks, Olympic Peninsula, Washington. *Geological Society of America Bulletin* 85: 785-794.
- Hada, S., Bunopas, S., Ishii, K., and Yoshikura, S. 1997. Rift-drift history and the amalgamation of Shan-Thai and Indochina/East Malaya blocks. In P. Dheeradilok and others (eds.), *Proceedings of the International Conference on Stratigraphy and Tectonic Evolution of Southeast Asia and the South Pacific*, p. 273-286. 19-24 August 1997,

Bangkok, Thailand: Department of Mineral Resources, Ministry of Industry.

- Hada, S., Bunopas, S., Ishii, K., and Yoshikura, S. 1999. Rift-drift history and the amalgamation of Shan-Thai and Indochina/East Malaya blocks. In I. Metcalfe (ed.), *Gondwana Dispersion and Asian Accretion*, pp. 67-87. Rotterdam, The Netherlands: A.A. Balkema Publishers.
- Haggerty, S.E. 1976. Oxidation of opaque mineral oxides in basalts. In D. Rumble, III (ed.), *Oxide minerals, Reviews in Mineralogy 3*, pp. Hg 1-Hg 100. Mineralogical Society of America.
- Haggerty, S.E. 1991. Oxide mineralogy of the upper mantle. In D.H. Lindsley (ed.), *Oxide minerals: petrologic and magmatic significance, Reviews in Mineralogy 25*, pp. 355-416. Mineralogical Society of America.
- Helmcke, D., and Kraikhong, C. 1982. On the geosynclinal and orogenic evolution of Central and Northeastern Thailand. *Journal of the Geological Society of Thailand 5(1)*: 52-74.
- Helmcke, D., and Linderberg, H.G. 1983. New data on the Indosinian orogeny from central Thailand. *Geologische Rundschau 72(1)*: 317-328.
- Helmold, K.P. 1985. Provenance of feldspathic sandstones – effect of diagenesis on provenance interpretations: a review. In G.G. Zuffa (ed.), *Provenance of Arenite*, pp. 139-163. Dordrecht-Boston-Lancaster: D. Reidel Publishing.
- Hisada, K., Chutakositkanon, V., Charusiri, P., and Arai, S. 2000. Tectonic significance deduced from detrital chromian spinels in the Permian Nam Duk Formation, central Thailand. Short papers for the Second International Symposium of IGCP Project No. 411 on the

- Geodynamic Processes of Gondwanaland-derived Terranes in Eastern Asia: Their Crustal Evolution, Emplacement and Natural Resources Potential (28-29 August 2000), *Geosciences Journal* **4**: 102-104.
- Hiscott, R.N. 1984. Ophiolite source rocks for Taconic-age flysch: trace-element evidence. *Geological Society of America Bulletin* **95**: 1261-1276.
- Ingersoll, R.V., Bullard, T.F., Ford, R.L., Grimm, J.P., Pickle, J.D., and Sares, S.W. 1984. The effect of grain size on detrital modes: a test of the Gazzi-Dickinson point-counting method. *Journal of Sedimentary Petrology* **54**: 103-116.
- Irvine, T.N. 1965. Chromian spinel as a petrogenetic indicator: Part 1 Theory. *Canadian Journal of Earth Science* **2**: 648-672.
- Irvine, T.N. 1967. Chromian spinel as a petrogenetic indicator: Part 2 Petrologic applications. *Canadian Journal of Earth Science* **4**: 71-103.
- Jungyusuk, N., and Khositantont, S. 1992. Volcanic rocks and associated mineralization in Thailand. In C. Piancharoen (ed.), *Proceedings of a National Conference on Geologic Resources of Thailand: Potential for Future Development*, pp. 522-538. 17-24 November 1992, Bangkok, Thailand: Department of Mineral Resources, Ministry of Industry.
- Kerr, P.F. 1977. *Optical mineralogy*. 4th edition. McGraw-Hill, Inc.
- Klein, C., and Hurlbut, C.S., Jr. 1993. *Manual of mineralogy*. 21st edition. New York: John Wiley & Sons.
- Lash, G.G. 1985. Recognition of trench fill in orogenic flysch sequences. *Geology* **13**: 867-870.
- Metcalf, I. 1988. Origin and assembly of Southeast Asian continental

- terrane. In M.G. Audley-Charles and A. Hallam (eds.), *Gondwana and Tethys, Geological Society of London Special Publication 37*, pp. 101-118. London, UK: Geological Society of London.
- Metcalf, I. 1996a. Pre-Cretaceous evolution of SE Asian terranes. In R. Hall and D.J. Blundell (eds.), *Tectonic Evolution of Southeast Asia, Geological Society Special Publication 106*, pp. 97-122. London, UK: Geological Society Publishing House.
- Metcalf, I. 1996b. Gondwanaland dispersion, Asian accretion and evolution of Eastern Tethys. *Australian Journal of Earth Sciences* **43**: 605-623.
- Metcalf, I. 1998. Palaeozoic and Mesozoic geological evolution of the SE Asian region: multidisciplinary constraints and implications for biogeography. In R. Hall and J.D. Holloway (eds.), *Biogeography and Geological Evolution of SE Asia*, pp. 25-41. Leiden, The Netherlands: Backhuys Publishers.
- Metcalf, I. 1999. Gondwana dispersion and Asian accretion: an overview. In I. Metcalf (ed.), *Gondwana Dispersion and Asian Accretion*, pp. 9-36. Rotterdam, The Netherlands: A.A. Balkema Publishers.
- Metcalf, I., Spiller, F.C.P., Liu B.P., Wu, H.R., and Sashida, K. 1999. The Palaeo-Tethys in mainland East and Southeast Asia: contributions from radiolarian studies. In I. Metcalf (ed.), *Gondwana Dispersion and Asian Accretion*, pp. 259-281. Rotterdam, The Netherlands: A.A. Balkema Publishers.
- Morton, A.C. 1991. Geochemical studies of detrital heavy minerals and their application to provenance research. In A.C. Morton, S.P. Todd, and P.D.W. Haughton (eds.), *Developments in Sedimentary Provenance Studies, Geological Society of London, Special Publication 57*, pp. 31-45.

- Pettijohn, F.J., Potter, P.E., and Siever, R. 1972. *Sand and sandstone*. Berlin-Heidelberg: Springer-Verlag.
- Pober, E., and Faupl, P. 1988. The chemistry of detrital chromian spinels and its implications for the geodynamic evolution of the Eastern Alps. *Geologische Rundschau* 77: 641-670.
- Pongsapich, W., Pisutha-Arnond, V., and Charusiri, P. 1983. Reviews of felsic plutonic rocks of Thailand. In P. Nutalaya and others (eds.), *Proceedings of the Workshop on Stratigraphic Correlation of Thailand and Malaysia*, Vol. 1 Technical papers, pp. 213-232. 8-10 September 1983, Haad Yai, Thailand: Geological Society of Thailand and Geological Society of Malaysia.
- Powers, M.C. 1989. Comparison chart for estimating roundness and sphericity. In Dutro, J.T., Dietrich, R.V. and Foose, R.M. (eds.), *AGI Data Sheets for Geology in the Field, Laboratory, and Office*. American Geological Institute, p. 30.1. Alexandria, Virginia: American Geological Institute.
- Press, S. 1986. Detrital spinels from alpinotype source rocks in the Middle Devonian sediments of the Rhenish Massif. *Geologische Rundschau* 75: 333-340.
- Reed, S.J.B. 1996. *Electron microprobe analysis and scanning electron microscopy in geology*. Great Britain: Cambridge University Press.
- Rogers, J.J.W. 1996. A history of continents in the past three billion years. *Journal of Geology* 104: 91-107.
- Rogers, J.J.W., and Santosh, M. 2003. Supercontinents in earth history. Special issue in honour of Prof. John J.W. Rogers on Supercontinents and Crustal Evolution, *Gondwana Research* 6: 357-368.
- Roser, B.P., and Korsch, R.J. 1986. Determination of tectonic setting of

- sandstone-mudstone suites using SiO_2 content and $\text{K}_2\text{O}/\text{Na}_2\text{O}$ ratio. *Journal of Geology* **94**: 635-650.
- Ross, G.M., and Parrish, R.R. 1991. Detrital zircon geochronology of metasedimentary rocks in the southern Omineca belt, Canadian Cordillera. *Canadian Journal of Earth Sciences* **28**: 1254-1270.
- Sack, R.O., and Ghiorso, M.S. 1991. Chromite as a petrogenetic indicator. In D.H. Lindsley (ed.), Oxide minerals: petrologic and magmatic significance, *Reviews in Mineralogy* **25**, pp. 323-353. Mineralogical Society of America.
- Salyapongse, S. 1992. *Graywacke in the Eastern Thailand*. Geological Survey Division, Department of Mineral Resources, Ministry of Industry, Bangkok, Thailand (in Thai).
- Salyapongse, S., Fontaine, H., Putthapiban, P., and Lamjuan, A. 1997. Geology of the Eastern Thailand (Route no. 1). *Guidebook for Excursion of the International Conference on Stratigraphy and Tectonic Evolution of Southeast Asia and the South Pacific*. 22-24 August 1997, Bangkok, Thailand: Department of Mineral Resources, Ministry of Industry.
- Sashida, K., Adachi, S., Igo, H., Nakornsri, N., and Ampornmaha, A. 1997. Middle to Upper Permian and Middle Triassic radiolarians from Eastern Thailand. *Science Reports of the Institute of Geoscience, University of Tsukuba* **18**: 1-17.
- Sashida, K., and Igo, H. 1999. Occurrence and tectonic significance of Paleozoic and Mesozoic radiolaria in Thailand and Malaysia. In I. Metcalfe (ed.), *Gondwana Dispersion and Asian Accretion*, pp. 175-196. Rotterdam, The Netherlands: A.A. Balkema Publishers.
- Scowen, P.A.H., Roeder, P.L., and Helz, R.T. 1991. Re-equilibration of chromite within Kilauea Iki lava lake, Hawaii. *Contributions to*

Mineralogy and Petrology **107**: 8-20.

Trevena, A.S., and Nash, W.P. 1981. An electron microprobe study of detrital feldspar. *Journal of Sedimentary Petrology* **51**: 137-150.

Ueno, K. 1999. Gondwana/Tethys divide in East Asia: solution from Late Paleozoic foraminiferal paleobiogeography. In B. Ratanasthien, and S.L. Rieb (eds.), *Proceedings of the International Symposium on Shallow Tethys (ST) 5*, pp. 45-54. 1-5 February 1999, Chiang Mai, Thailand: Department of Geological Sciences, Faculty of Sciences, Chiang Mai University.

Vanders, I., and Kerr, P.F. 1967. *Mineral recognition*. New York-London-Sydney: John Wiley & Sons.

Wielchosky, C.C., and Young, J.D. 1985. Regional facies variations in Permian rocks of the Phetchabun fold and thrust belt, Thailand. *Proceedings of the Conference on Geology and Mineral Resources Development of the Northeast, Thailand*, pp. 41-55. 26-29 November 1985, Khon Kaen, Thailand: Khon Kaen University.

Wilson, M. 1989. *Igneous petrogenesis*. London: Unwin Hyman.

Zuffa, G.G. 1980. Hybrid arenites: their composition and classification. *Journal of Sedimentary Petrology* **50**: 21-29.