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Abstract

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Discovery of agate geode and nodules at Mount Conner, Semporna, Sabah

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Abstract: An exposure of agate geode and nodules in Mount Conner, Sabah, provides an essential aspect to the geological formation in Semporna. This paper briefly report results from petrography analyses on the agate geode and nodules and its significance to the volcanic rocks and sedimentary rocks formation in Mount Conner. The geode and nodules can be divided into agate, and nodules and most of them are sub-rounded. Nodules are usually small in size and display brownish colour. It commonly occurs in volcanic rocks (dacite and rhyolite) and contained amygdale filled by secondary mineral such as microcrystalline and macrocystalline quartz. In contrast, sedimentary rocks in Mount Conner contain both nodules and geodes, which nodules shows similar characteristic with nodules in volcanic rocks and geodes contained empty vesicles or spaces surrounded by colourless to milky white quartz crystals. Both geode and nodules exhibit conchoidal fracture, while geode shows vesicle features and nodules in volcanic rocks show amygdale texture. The formation of geodes and nodules in Mount Conner might as result of precipitation under low temperature from hydrothermal solution.

Keywords: Geode, Mount Conner, nodule, Semporna

Abstrak: Penemuan geod akik dan nodul di Gunung Conner, Sabah, telah memberikan aspek yang penting kepada formasi geologi di Semporna. Kertas ini secara ringkasnya melaporkan hasil analisis petrografi terhadap geod akik dan nodul, dan kepentingannya terhadap formasi batuan volkanik dan batuan sedimen di Gunung Conner. Geod akik dan nodul boleh dibahagikn kepada akik, kalsedoni dan nodul, serta bersifat separa bulat. Ciri-ciri yang terdapat pada nodul yang tersingkap pada batuan volkanik (dasit dan riolit) ialah ia bersifat padat dengan tiada ruang diantara nodul, berwarna kecoklatan dan mempunyai saiz-saiz yang kecil. Manakala, batuan sedimen di Gunung Conner pula mengandungi kedua-dua jenis seperti nodul dan geod. Nodul mempunyai ciri-ciri seperti yang tersingkap pada batuan volkanik dan geod pula mempunyai vesikel didalamnya yang turut mengandungi kristal kuarza yang tidak berwarna dan berwarna putih susu. Kedua-dua geod dan nodul mempunyai retakan konkoidal dan tekstur amigdal. Pembentukan geod dan nodul di Gunung Conner mungkin disebabkan oleh mendakan dibawah suhu yang rendah daripada larutan hidrotermal.

Kata kunci: Geod, Gunung Conner, nodul, Semporna

INTRODUCTION

The occurrences of geodes and nodules can be found all over the world, and it is mostly associated mostly with volcanic rocks and sedimentary rocks. Geode and nodules tend to have rough, and dull-looking spherical objects which resemble mud balls, however, inside geode have a cavity that contains various types of silica crystals (Makhlouf *et al*., 2015). Those silica crystals generally show varieties of colour due to elements impurities. Conner, Semporna, accompanied by minor milky white quartz. Some quartz rarely shows other colour such as pink, purple, yellow and smoky grey. Geodes are usually filled by quartz crystal however other types of minerals such as calcite, barite, selenite, marcasite, sphalerite, and pyrite might be present (Makhlouf *et al*., 2015).

The natural geological formation of agate geode and nodules are developed when the gas bubbles remain trapped in the magma, then the silicon deposits itself