

Mapmaking of granitic and calcareous building stone resources in Japan

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People who live on the islands of Japan are well aware of the geological activeness of their lands, which often results in earthquakes or volcanic hazards, but are not so much aware that the same geological setting yielded diverse rocks and stones in the small islands. Large amount of building stones is used in the Japanese cities, especially for the interiors and exteriors of commercial and/or public buildings. Many of the stones are, however, imported materials nowadays, because of economic reasons and because the reserves are generally small in Japan. As the results, the knowledge of the occurrence of building stones in Japan are not very well known. The stone resource is one of the important constituents of our lands. It should be worried if the knowledge of our stone resources, the fact that our country boasts of a variety of stones, is going to perish. It is the aim of this research to preserve the knowledge about our lands, by mapping the various building stone resources of Japan. The knowledge would also be useful in encouraging reuse and recycle of the stone resources in the construction works.

This report investigates quarries of granites and limestones (including marbles, hereafter) in Japan. Granites are mainly used for the exteriors, limestones are for the interiors. First, major quarries of granites and limestones were picked up by searching literatures: the commentaries on famous architectures, or the description notes of regional geology. Each quarry was then interviewed on the aspect of production of the stone. The interviewees were not always the quarry people, but people at the municipality, commerce, or museum were also interviewed.

Most granite quarries are located around the Inland Sea, where the Ryoke metamorphic belt lies with granitic intrusions. Many of the quarries are in operation, since granites are popular for the use for the graves in Japan. Some still handles building stones. It seemed that limestone quarries are classified into larger and smaller ones. Larger quarries still handle limestones but most of the production is for industrial purpose. Some of the small limestone quarries have already shut down. Little Japanese limestone is in circulation as building stones.

Granites and limestones that are applied for the exterior and interior finishings of buildings in Tokyo were investigated. Japanese limestones were investigated in the interiors of the House of Councillors. It was confirmed that granitic exterior walls are free of maintenance for decades, unless the stones were applied as panels. The color, pattern, or texture of each building stone were described. The descriptions were put into the granite and calcareous building stone resource maps, together with the result of the interviews on the quarries.