Further changes at Peter I Øy

For a previous edition of *Polar Research* (26[2]; p. 204) I wrote a letter noting the partial collapse of a spectacular triple natural arch on the island of Peter I Øy, reported in November 2006. Two years later I was again off the island, in exceptionally clear visibility, and noted that the collapse was now complete. The island was approached from the south-east on the afternoon of 22 November 2008, again aboard the Russian icebreaker, *Kapitan Khlebnikov*. Aboard were 104 tourists, with 24 staff, and a complement of 62, on a voyage arranged by Quark Expeditions. The icebreaker anchored in Sandefjordbukta, which was used last time, and on several previous visits. The anchor was dropped in about 35 m of water about half a nautical mile from the coast. Landings were intended on one of the beaches of Sandefjordbukta, but winds of 20 m s^{-1} made this impracticable. The winds, however, caused such a reduction in cloud cover that the entire island, notably Lars Christensentoppen (1640 m elevation), was clearly visible.

Several of those aboard had visited Peter I Øy on previous occasions, and were able to make further observations of changes. The most notable difference now was the entire collapse of much of the formerly magnificent natural arch at Pingvinholet. On the previous visit (22 November 2006) the central column of the composite arch was noted as having fallen. Now, the entire structure has collapsed: only a reduced stack of dark basalt rubble extending inland from Framnæsodden indicated where the triple arch once stood. The unstable rubble reaches some 20 m above the surface of the ocean. Pingvinholet is thus no longer extant.

An examination of the low remains at the base of the former stack and the columnar basalt spit off Framnæsodden showed that a small number of chinstrap penguins (*Pygoscelis antarctica*) were present. Although a large nesting area for southern fulmars (*Fulmaris glacialoides*) had collapsed with the arch, these birds were abundant around the icebreaker, as on previous visits, indicating other nesting sites remained.

A brief view through Tsarporten, just north of Sandefjordbukta, was obtained as the icebreaker departed westbound, which confirmed that this longer natural arch remains standing. The reef extending from Kapp Ingrid Christensen was clearly indicated by breakers, as the tide was low and the wind was strong. Similarly, breakers were seen off Framnæsodden, indicating uncharted reefs in that vicinity. Toftebreen, south of Sandefjordbukta, shown with a large seaward extension in the Norwegian Polar Institute chart of 1988, has retreated, and its snout now approximates the coastal cliffs. Some vestiges of the Norwegian Polar Institute automatic weather station remain visible atop Tvistein in the distance.

On this occasion Peter I Øy was reached from the south-east, which was the first time for *Kapitan Khlebnikov*, which previously used a northern approach. During the visit weather was good and surprisingly clear. The swell was light but the winds were strong and gusty. Drifting pack-ice was sparse and not much was seen along the beaches. Approximately three hours were spent at anchor. The icebreaker was making a voyage from Ushuaia in Argentina to Lyttleton in New Zealand, as has been customary every few years since 1992.

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