ALASKA FOSSIL OF THE MONTH

SAPELNIKOVIELLA SANTUCCII – A NEW ALASKAN SILURIAN BRACHIOPOD GENUS AND SPECIES IS BORN

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This month's selection for the Alaska Fossil of the Month is a newly described brachiopod *Sapelnikoviella santuccii* Blodgett, Baranov, Boucot, and Rohr, 2013 (see Figure 1) from the upper Silurian Willoughby Limestone on Drake Island in Glacier Bay, Southeast Alaska (see Blodgett et al., 2013a for the formal taxonomic naming paper).

The genus name is in honor of Vadim P. Sapelnikov (1930-2004) of Ekaterinburg, Russia, a leading scholar of Ordovician-Devonian brachiopods, and an expert in particular on the Suborder Pentameridina to which the new genus belongs. The species name is in honor of Vincent L. Santucci, geologist/paleontologist with the US National Park Service, in recognition of his strong support for paleontological work being conducted on National Park Service lands and for being the 'father' of National Fossil Day. National Fossil Day is a partnership to promote the scientific and educational values of fossils. Over 230 partner museums, scientific and educational organizations, fossil sites, agencies and amateur groups collectively host fossil events and activities in all 50 states, making National Fossil Day a nation-wide celebration.

The fossil locality (11RB16) where the new fossil was found is situated on the southwest side of Drake Island (Fig. 2) in Glacier Bay. Both sides of Glacier Bay consist primarily of spectacular exposures of Paleozoic age formations (i.e., Willoughby Limestone, Tidal Formation, Pyramid Peak Limestone, etc.) (see Fig. 3 for generalized columnar section of the rock units exposed here). The basic stratigraphic framework geology of the region was provided by Rossman (1963) and Seitz (1959). Documenting such new and biostratigraphically significant fossils is important to Alaskan geological studies, as very few Paleozoic age fossils have been described from the State, despite over 100+ years of active field work. Documenting these fossils is obviously most critical in providing fossil age control, but also provide invaluable information on the ecologic setting in which the host strata were deposited, and also in providing paleobiogeographic signals needed in our terrane-bound rocks to determinate original sites of origin and possible wandering paths prior to accretion.

I was invited by the staff at Glacier Bay National Park & Preserve to undertake a paleontological assessment of the fossil resources throughout the entire areal extent of the park, the results of which are now partially published (Blodgett et al., 2010a, 2012), and a large Excel spreadsheet was also provided to the park showing all previously known and reported fossil occurrences therein. This work in part overlapped with collaborative studies with other colleagues on the fossil fauna from Glacier Bay (Rohr and Blodgett, 2003; Rohr et al., 2003) and also to the south on northeast Chichagof Island where similar faunas and facies are found: Kříž et al., 2013; Boucot et al., 2012; Rohr et al., 2011). One emerging facet of the study is the overwhelming faunal evidence which indicates that the Alexander terrane faunas of Silurian and Devonian age are most similar to those found in Northeast Asia (Kolyma region), suggesting a rift origin of the Alexander terrane ultimately from that region (Blodgett et al., 2010b, 2013b). Overall lithofacies similarities and some new emerging detrital zircon ages are also concordant with that view.

Sapelnikoviella santuccii occurs in a small-pocket like accumulation of brachiopods (predominantly this species and the genus *Septatrypa*), allong with high-spired murchisoniid gastropods (see Fig. 4) which occur within massive microbial reefs that appear to have occurred on the seaward edge of the Willoughby Limestone platform edge (see Fig. 5 for view of locality). An new interesting aspect of our regional study in Glacier Bay is that the classical view of Rossman (1963) of the deeper-water Tidal Formation (in places bearing graptolites) succeeding the Willoughby Limestone is now suspect. Our work indicates that these two units rather represent facies equivalents of one another, with the upper Silurian Willoughby Limestone occurring primarily on the west side of Glacier Bay (with the exception of the exposures at Gloomy Knob), and the age equivalent Tidal Formation restricted areally to exposures to the east. In Tidal Inlet, one can even observe large olistoliths blocks seeming derived from the Willoughby Limestone reef edge (Rohr et al., 2013). The overall Silurian facies pattern expressed in Glacier Bay continues to the southeast onto northeast part of Chichagof Island, where the Willoughby Limestone is represented the Kennel Creek Limestone (shallow-water carbonate platform) and the Tidal Formation is represented by the lower part of the Cedar Cove Formation. One amazing fact about the Silurian age succession in Glacier Bay is that in overall thickness it is one of the thickest succession of rocks of such age in North America, and in fact, in much of the world.

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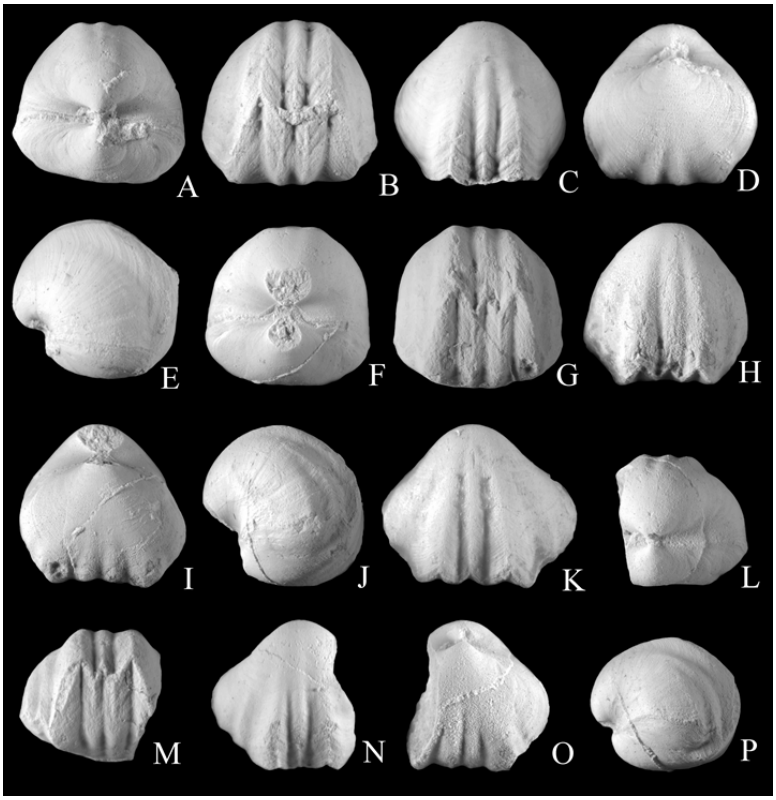

Figure 1. *Sapelnikoviella santuccii* Blodgett et al., 2013a , Willoughby Limestone (Ludlow, or upper Silurian), locality 11RB16, Drake Island, Glacier Bay, Southeast Alaska. Four specimens are shown on this plate.

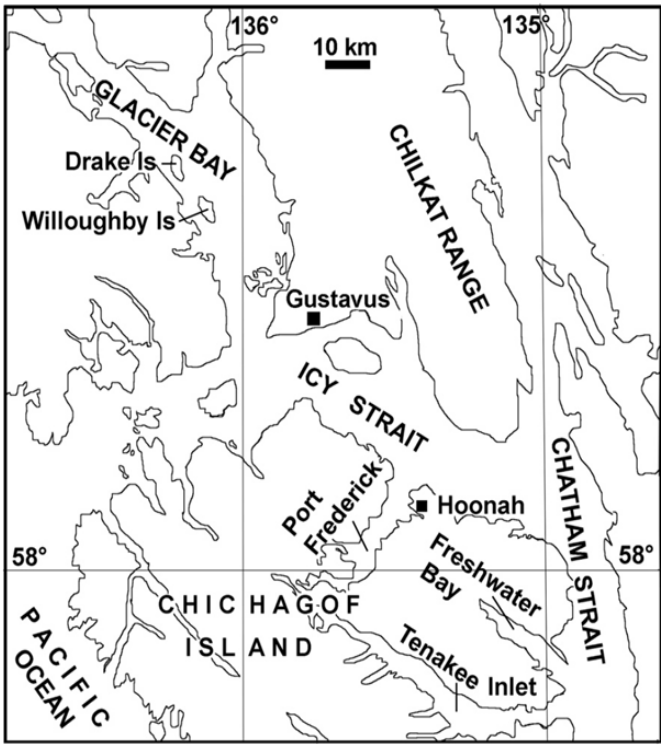

Figure 2. Index map of the northern part of Southeast Alaska showing the location of some of the geographic features referred to in the text (Drake Island, Willoughby Island, Chichagof Island).

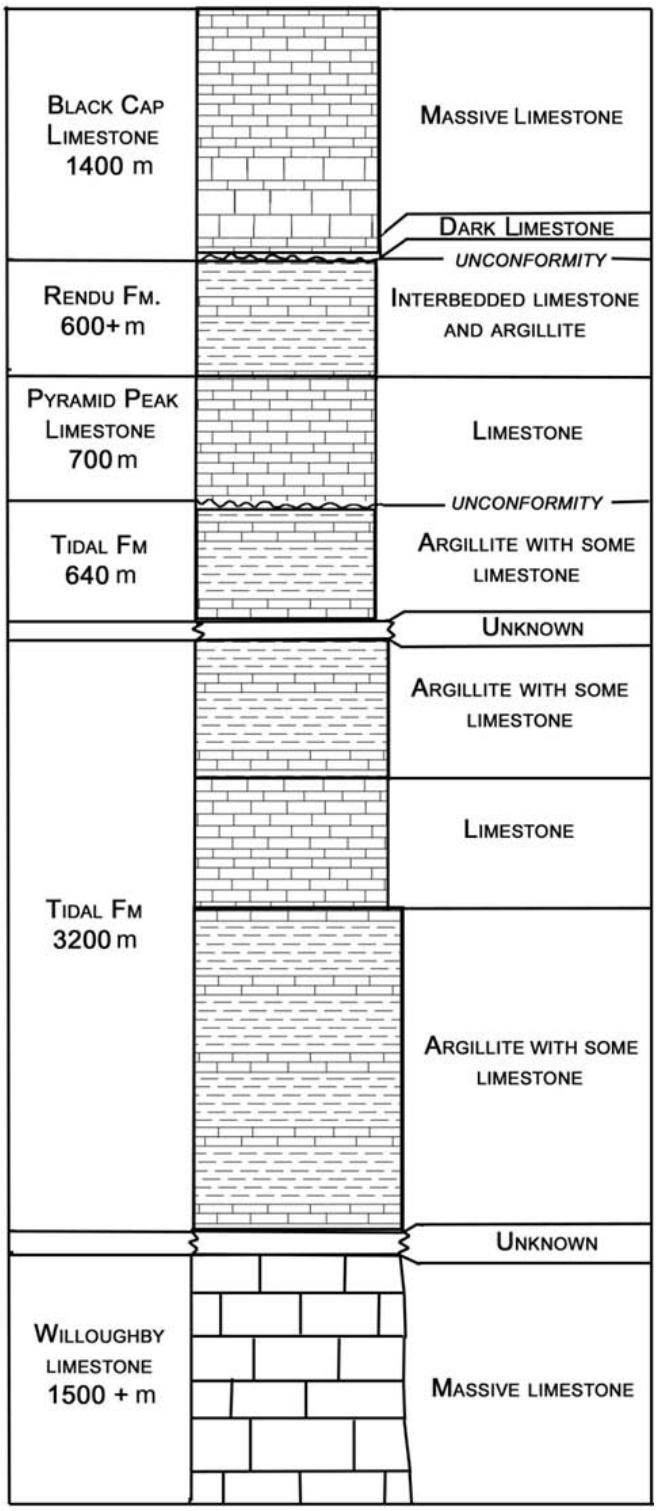

Figure 3. Generalized columnar section of Paleozoic rocks in Glacier Bay (modified from Rossman 1963, fig. 2).

Figure 4. Photograph of pocket-like accumulation of brachiopods (*Septatrypa*, *Sapelnikoviella santuccii*) and high-spired murchisoniid gastropods at locality 11RB16 on the southwest shore of Drake Island. Note presence of spiralia in *Septatrypa*. Coin 24 mm.diameter.

Figure 5. View of fossil locality 11RB16 in microbial limestone buildups in the Willoughby Limestone on the west side of Drake Island, Glacier Bay, Southeast Alaska. Vincent L. Santucci (NPS) standing near fossil site. View to the NNW.

Figure 6. Large limestone olistolith block (white colored) derived from platform edge of Willoughby Limestone and deposited in the coeval basinal equivalent beds of the Tidal Formation on the south side of Tidal Inlet. Vincent L. Santucci (left) and David M. Rohr (right).

GSA & AGS

Annual Spring Picnic

Wednesday, May 29, 2013; 5-8:30 pm

Kincaid Park, picnic pavilion

$12 per individual and $30 for family (in advance)

$20 per individual and $40 for family (at event)