tion of H.R.H. the Duc d'Abruzzi found the summit of the mountain to consist of diorite, and diorite probably occurs in many of the higher peaks of the range.

Pyroxenite.—A large, coarse-grained, intrusive mass consisting mainly of augite and iron ore cuts the Dezadeash series of the St. Elias range on the Dezadeash river.

Diabase.—This rock occurs at the canyon on Sheep creek and also at the head of Kluane lake.

Dunite.—A small area of dunite was found on Burwash creek. The olivine of this rock is partly altered to serpentine.

Andesite.—Andesites occur principally in connection with the lignite-bearing tertiary areas. A vesicular variety of this rock outcropping on Telluride creek was found to contain small quantities of bitumen.

Rhyolite.—Light-coloured rhyolite rocks occur in small areas on Kimberly and Bullion creeks.

Effusive volcanic rocks.—Large areas covered with successive sheets of lava of various kinds occur in the interior of the St. Elias range. The largest of these, in the district examined, commences near the junction of the Dezadeash and Kaskawulsh rivers, and extends southward for many miles. It has not been outlined, but must cover several hundred square miles. A second large area crosses Duke river valley near the upper forks.

The lava sheets are level or incline at low angles, and are evidently younger than the main mountain-making movements. They are, however, of considerable age, being traversed by wide valleys and having been worn into ridges and peaks closely resembling those in other portions of the range.

The varieties of the effusive rocks collected include dark diabases, gray andesites, white ryholitic-lookng rocks, and red, black and gray vesicular lavas. Indurated tuffs and agglomerates occur with the effusives.

Very little is known in regard to the structure of the St. Elias range. The general strike of the bedded rocks is nearly magnetic east and west, or parallel to the trend of the range. Local deviations from this direction, due to the numerous intrusive masses, are, however, frequent. The beds are steeply tilted, but are seldom, so far as observed, overturned or broken; they dip in both directions. No evidence of great over-thrust faulting, such as obtains in the Rocky mountain range, was noticed. The effect of overthrust faulting is to reverse the normal sequence of the beds and to place older formations above more recent ones. For instance, in the Rocky mountains the palæozoic limestones of the front ranges often rest on Cretaceous beds. In the St. Elias range, on the other hand, the bordering plains and ridges are underlaid by old schists, while the mountains are built of much younger rocks. It is noteworthy that, notwithstanding the strongly folded condition of the beds in the St. Elias range, the old Kluane schists are nowhere brought to the surface. It is possible that the upheaval of the range and the folding of the beds are due in large measure to the repeated invasions of the district by igneous rocks and not to great general earth movements due to compression, such as produced the Rockies. Normal faulting probably occurred along the base of the range.

All the lowlands of the districts reported on were buried beneath ice during the glacial period, but there is no evidence that the higher ranges were overridden. The ice poured down from the St. Elias range, the main gathering ground, through every opening in the outer ridges. It moved down northward-sloping valleys, like those of Bullion creek and Slims river, and up southward-sloping valleys, like those of Jarvis river and the Dezadeash. It flooded the great Shakwak valley at the foot of the range to a depth, in places, of probably 3,000 ft., and streamed eastward up the broad valley of the Dezadeash to the low Dezadeash-Tahkini divide, and then down the latter valley to the Lewes. Smaller streams flowed up the steep valleys, incising the southward slope of the Ruby range, and, in some instances, as at the head of Lake creek, crossed this range and descended into the valley of the Aishihik.

The Kluane hills, with an elevation of, approximately, 2,650 ft. above Kluane lake, and 5,150 ft. above the sea, were completely covered with ice, as shown by the presence of rounded foreign boulders and pebbles on the highest points. Ruby range was glaciated up to an elevation of about 5,200 ft. above the sea. Below this point the contours are rounded and foreign drift material is always present. Above it the topographic angles are sharper and the slopes and summits are strewn with angular frost-riven fragments derived from the underlying schists.

The deep wide valleys traversing the region north of the St. Elias range are bottomed everywhere with glacial deposits, principally boulder-clays and silts, to a depth, in places, of several hundred feet. The boulder-clay is usually interbanded with stratified gravel beds. It is confined to the valley flats and bordering terraces, and does not occur on the summits and upper slopes of the riges.

The boulder-clay is aimost always overlaid by heavy beds of white silt and is occasionally interbanded with it. These white silts are precisely similar to the fine glacial material from the Kaskawulsh glacier now being carried away by Slims river and deposited in the upper end of Kluane lake and the lower sluggish part of the river; there is little doubt that they originated in the same way. Kluane lake will eventually, if the present conditions be maintained, become filled up and will be replaced by a silt plain similar to those bordering portions of the upper Lewes, the McMillan, and most of the other rivers draining the glaciated highlands surrounding the Yukon plateau.

The glaciers of the St. Elias range are now receding, but not very rapidly. Undisturbed morainic groups occur in front of the Kaskawulsh glacier for at least half a mile, and long lateral moraines, heading in glaciers, border some of the tributaries of Telluride creek. Reasons have already been given for