ART. XLV.—*On Climatic Conditions at Nome, Alaska, during the Pliocene, and on a new Species of Pecten from the Nome Gold-bearing Gravels*; by WILLIAM HEALEY DALL,* Paleontologist U. S. Geol. Survey.

THE conditions indicated by the faunas of the Post-Eocene Tertiary on the Pacific Coast from Oregon northward are a cool temperate climate in the early and middle Miocene, a warming up toward the end of the Miocene culminating in a decidedly more warm-water fauna in the Pliocene, and a return to cold if not practically Arctic temperatures in the Pleistocene. In these particulars the climatic variations are not unlike those of the southeastern Atlantic Coast of the United States.

On the north side of Norton Sound, Alaska, where the town of Nome is situated, the conditions are practically Arctic at the present time, as the sound is covered with heavy ice during a third of the year or even more.

This gives a particular interest to a small collection of marine shells from the gravels near Nome, recently received through Dr. A. H. Brooks, U. S. G. S., from Messrs. Moffit and Beaver of Nome.

These prove to contain, not only species inhabiting at present only a more southern habitat, but also a conspicuous large scallop at present living only in northern Japan, the *Pecten swifti* Bernhardt, a most unexpected find.

Several species occur, like *Monia macroschisma* Desh., and *Macoma middendorffi* Dall, which are now known in the living state only south of the line of floating ice in winter, in Bering Sea and the Aleutian Islands.

Nine determinable species were found, of which four extend from the Arctic to Puget Sound at the present time; three are known only from south of the winter line of floating ice; one occurs at Hakodadi, Japan, and the following, probably extinct species, appears to be new.

Under the circumstances the gravels in question are identifiable as Pliocene in age, but that there are both later and earlier gravels on the northern coast of Norton Sound is quite probable.

Pecten (Chlamys) lioicus Dall, n. sp.

Shell of the general form of *P. islandicus* Müller, but externally smooth, or sculptured only with incremental lines and, near the posterior basal margin, with extremely faint indica-

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tions of obsolete radial threads, flattish and about a millimeter in width; submargins showing minute traces of vermicular, scaly, minor sculpture; byssal ear large, concentrically rugose, with a broad, concavely striated byssal fasciole, above which are four or five shallow radial grooves; ctenolium short with

six denticles; posterior ear small, with about four faint radial grooves; hinge line straight; internally with a rather large ligamentary pit and muscular scar; interior of the disk smooth; color of the shell apparently yellowish-red originally. Alt. of shell, 61; lat. of shell, 55; do. at ctenolium, 25; do. at hinge line, 30^{mm}. (Fig. 1, seven-ninths natural size.)

Fifty feet below the surface in marine gravels near Nome, Norton Sound, Alaska, Moffit, U. S. N. Mus. 110480.