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THE ASIATIC-NEW WORLD CONTINUUM AND THE ORIGIN AND DEVELOPMENT OF BERING SEA MONGOLOIDS, WITH SPECIAL EMPHASIS UPON THE ALEUTS

The continental shelf between eastern Siberia and Alaska, and those adjacent mainlands comprise Beringia. Because of its position between intercontinental and interhemispherical dispersal routes, Beringia played a strategic role in the evolution and dispersal of northern biota including humans. During the late Cenozoic both interior, terrestrial and coastal, marine zones were involved and together, and separately, they may be examined in terms of multiple routes of dispersal and isolating effects as these pertain to the evolution of human population systems.

Exposures of the continental shelves during regressions, and changes in the circulation of water across them during transgressions of the sea have had marked climatic effects. A dichotomy between a more continental climate in upland and lowland interior Beringia to the north, and a more ameliorated, marine climate along its southern coastal fringe, has been an enduring feature of Beringian history. Similarly, a dichotomy between a more fragile, interior terrestrial ecosystem and a more stable, coastalmarine ecosystem has pertained. In late Cenozoic times Beringia has been characterized by tundra and steppe vegetational formations, with or without forest refugia. The northern coast seldom was ice free during the year; certainly it was not hospitable. In contrast are the increasingly ice-free ocean conditions as one moves eastward from Siberia along the southern coast of Beringia.

The last glacial cycle culminated in a maxima of cold between 20,000 and 13,000 years ago.

Glaciers covered large areas in the Brooks Range of Alaska and the mountains of Chukotka, as well as the mountain ranges bordering the Pacific Ocean and southwest Bering Sea. The latter glaciation, an extension of Cordilleran ice from the south, did not retreat from the Aleutian terminus of Beringia until 14,000 years ago, at which time that area became accessible to human occupation. Access was limited since the Cordilleran ice lay longer to the south and southeast while the Alaskan interior was ice-free to the north and east.

Bering Strait was reopened as a shallow sea-way between 14,000 and 13,000 years ago. While the southern Beringian coast retreated with the rise in sea level and actually increased in length, the Beringian tundrasteppes interior diminished in area. The period brought milder climate to western Alaska while the interior remained cold and dry. Here, a rapid warming is indicated by sharp vegetational changes about 10,000 years ago when reforestation of the interior took place. By that same time the Aleutian Islands were accessible from the Bering Sea coast from the east along the Alaska Peninsula.

Generally speaking the eastern Aleutians have not been placed in proper perspective with respect to Beringia. But most significantly we have not taken advantage of the information provided by the Aleuts for whom we have a nearly continuous and unambiguous archaeological record. The area and people shed light upon the origin and differentiation of Bering Sea Mongoloids (Arctic Mongoloids of the Old and New Worlds), multiple routes, populations

and timings involved in the peopling of the New World, and the antiquity and history of Asiatic maritime adaptive strategies.

It is in regard to these three Beringian problems that the following facts assume importance. First, prior to 12,000–11,000 years ago, the Alaska Peninsula and the eastern Aleutians including Unalakleet and Anangula Islands were largely under an extensive ice cap that cut off any flow of land based organisms between the mainland and the central Aleutians. Deglaciation occurred beginning about 11,000 years ago and opening the Aleutians for successful human occupation. The evidence suggests occupation was by *colonists* with a developed coastal-marine adaptation, points to be elaborated upon below.

Second, geological evidence indicates that sea level was near its present stand about the time of deglaciation. Thus, the passes between the islands have been open and largely ice-free since deglaciation. This has certain implications for the technological means of the early colonists, quite apart from the technology required for successful exploitation of available resources. It also relates to the means of extending the population within the Aleutians. Both points are discussed below.

Third, the Aleutian coastal waters are ice-free year around. The timing of stabilized sea level stands is crucial to the cutting of strandflats which support sessile and free-swimming marine life in greater richness and variety than in any other part of Beringia. Recent geological evidence indicates this important animal life was available to humans in increasing quantity through the climatic optimum when stable sea level stands were attained. The richness of the strandflats has decreased to some degree during the past 1,000–2,000 years as this process continues. The relationship between the cutting of the strandflats and the attendant changes in the quantities and accessibility of sessile and free-swimming forms, and their potential significance for human populations in terms of density, size distribution, structure and colonizing ability are discussed below.

Fourth, total changes of habitat and environment in the Aleutians since deglaciation were less than for any part of Beringia. Thus, requirements for successful human adaptational strategies have undergone little change. We find the area archaeological record indicative of an overall conservative but highly successful adaptation from the initial evidence of human colonization more than 8,500 radiocarbon years ago on Anangula. We may speculate that this contrasts with other parts of Beringia occupied by Bering Sea Mongoloids as early, but which have undergone more environmental, and therefore, vegetational and faunal changes, and which include in addition to their marine, a terrestrial ecosystem to which the human adaptive strategies were geared. The evidence recently reported by Dumond for the upper Peninsula, with dates nearly 8,000 B.P. bear upon this.

Fifth, all things considered, in all of Beringia the Aleutians contain the most favorable and stable

conditions for the record of survival and maintenance of humans. The area has been geographically altered less than the rest of ancient Beringia also. The Aleutians as a linear chain of islands have but one contact border on the Peninsula and so are an isolable human container which is also definable (by them and us) as a single ecosystem. The history of humans here is of intrinsic interest. But more important to matters at hand, the very isolation and the intact records of necessity reflect upon the adaptational capabilities obtaining for all Bering Sea Mongoloids in terminal Pleistocene times, as well as for other coastal Asiatic Mongoloids, for whom changing geography has obliterated (drowned) the record.

Our archaeological data spanning the Holocene pertain to the Aleuts, one of the Arctic or Bering Sea Mongoloid (BSM) populations. The others are the Eskimo, Chukchi, Koryak, and Kamchadal. The history of any one, the route of entry into the New World, the timing and mode of that movement, and the attending adaptational strategy employed, reflects upon the history of the others.

Anangula, our earliest site, represents a permanent, base village of a coastal community with true maritime skills and boats. Their satellite camps and collecting stations formed their *exploitational area* which was used through the year by different age, sex, and structural components of the community. Successful exploitation required a core or critical mass of able maritime hunters, thus restricting the mode of expansion to colonization or "budding off" from the main community.

For the Aleuts, the cutting of the strandflats was significant among mid-Holocene geomorphologic events. The littoral yielded easily accessible, nutritious foods to normally disadvantaged cohorts of the population. Initially, probably, longevity was increased. This increased survival led to a population increase (at the same time old people made contributions to the intellectual and other aspects of community life). It is possible that better nutrition also led to more successful childrearing and therefore to increased population.

Even given this set of changes which resulted in a larger population, higher density, and expansion by colonization, the Aleuts maintained remarkable settlement and organizational continuities, as well as continuities in economic and locational strategies. As other BSM maintained and elaborated the winter ice and interior modes of their economies, the Aleuts concentrated upon the maritime aspects of the original BSM repertoire. Indeed, these new data on the antiquity of Aleut maritime hunting are consonant with the evidence of maritime fishing in Initial Jomon. Maritime adaptations seem to be widely distributed among north Asiatic coastal peoples by terminal Pleistocene times.

The antiquity of the Aleuts provides a terminal date for the differentiation of the BSM as well. Automatic differentiation of the population must have been occurring equally early at the Siberian end of this long, coastally distributed BSM stock. With the BSM on the Beringian coasts in terminal

Pleistocene times, the interior was the broad route open to other, differently adapted Asiatic Mongoloids. These Amerinds probably began peopling the New World through the interior in pre-Wurm maximum times and received additional inputs over the subsequent millenia. Thus, our Aleutian data support a model of peopling the New World which involves at a minimum two different populations,

Amerinds and BSM, entering by two routes — interior and coast, initiated at two different times.

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