

THE ARCTIC SMALL TOOL TRADITION IN SOUTHERN ALASKA

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Abstract: By 3800 ¹⁴C yr BP, representatives of the Arctic Small Tool tradition (ASTt) were present in the interior caribou range on the Bering Sea side of the Alaska Peninsula, and within a few centuries were plentiful in the area of the upper Naknek River drainage, with numerous semi-subterranean habitations positioned for fishing by people of the Brooks River Gravels phase. The earliest dated ASTt appearance in south mainland Alaska, however, is on the lower Kenai Peninsula, dated about 4000 ¹⁴C yr BP. By about 3500 ¹⁴C yr BP, possible vague reflections of ASTt technology are reported from the Pacific coast of the peninsula and among the developed culture of the Kodiak Archipelago, and somewhat stronger diffusional indications have been claimed for sites on the southwestern tip of the peninsula and in the easternmost Aleutian Islands, where certain ASTt characteristics appear in otherwise coast-oriented material cultures. By 3000 ¹⁴C yr BP, Small Tool evidence disappeared from the northern peninsula, precisely where it had been strongest, leaving an occupational hiatus there that endured for nearly a millennium. At the peninsula tip and in the eastern Aleutians the ASTt effect was absorbed by the developing marine-focused cultures that led to the historic Aleuts.

Key words: Naknek River, Kenai Peninsula, Alaska Peninsula, Arctic Small Tool tradition, Aleutian Islands

INTRODUCTION

In the report of a survey conducted more than fifty years ago, William Irving (1957:47) suggested somewhat tentatively that a trio of artifacts he had recovered near Tyone Lake in the uppermost Susitna River drainage of south-central Alaska (Fig. 1, site 1) might pertain to an “arctic small-tool tradition” that he was later to characterize and define (Irving 1962, 1964, 1969–1970). As known at the time of his mid-1950s Susitna survey, candidates for membership in this proposed tradition were confined to the Denbigh Flint complex, recently discovered at Cape Denbigh, and a handful of sites from the north Alaskan Brooks Range, plus sites of arctic Canada and Greenland that apparently predated the Dorset culture. In the years that followed, numerous additional sites attributed to the Denbigh Flint complex were reported, but most of them were confined to Alaska north of Bering Strait.

Irving’s original definition (1962) was obviously centered on characteristics of the Denbigh Flint complex, modified slightly by his own later work (Irving 1964) and with reference to certain other collections. These were

characterized by what Irving (1962:56) had described as a “unique style and technique of workmanship,” involving very delicate, narrow, and highly controlled flake removal, often parallel and diagonal. This technique was represented on very small and commonly bipointed endblades and crescentic sideblades less than four centimeters in length. Such artifacts appeared with microblades, diminutive burins struck on small bifaces, a few larger knife-like artifacts as much as ten centimeters long, small and finely made scrapers, a limited number of small chipped adze blades with polished bits, an equally limited number of small (“burin-like”) grooving implements in which the burin facet was replaced by a polished face (e.g., Dumond 1977:79); however, relative frequencies of these types might vary rather substantially from site to site.

Here, I review evidence presented since 1960 for the appearance in southwestern and south-central Alaska of materials of the Arctic Small Tool tradition (ASTt) as defined in this way. I note that in this I trail a paper that was drafted some years ago, but published only recently

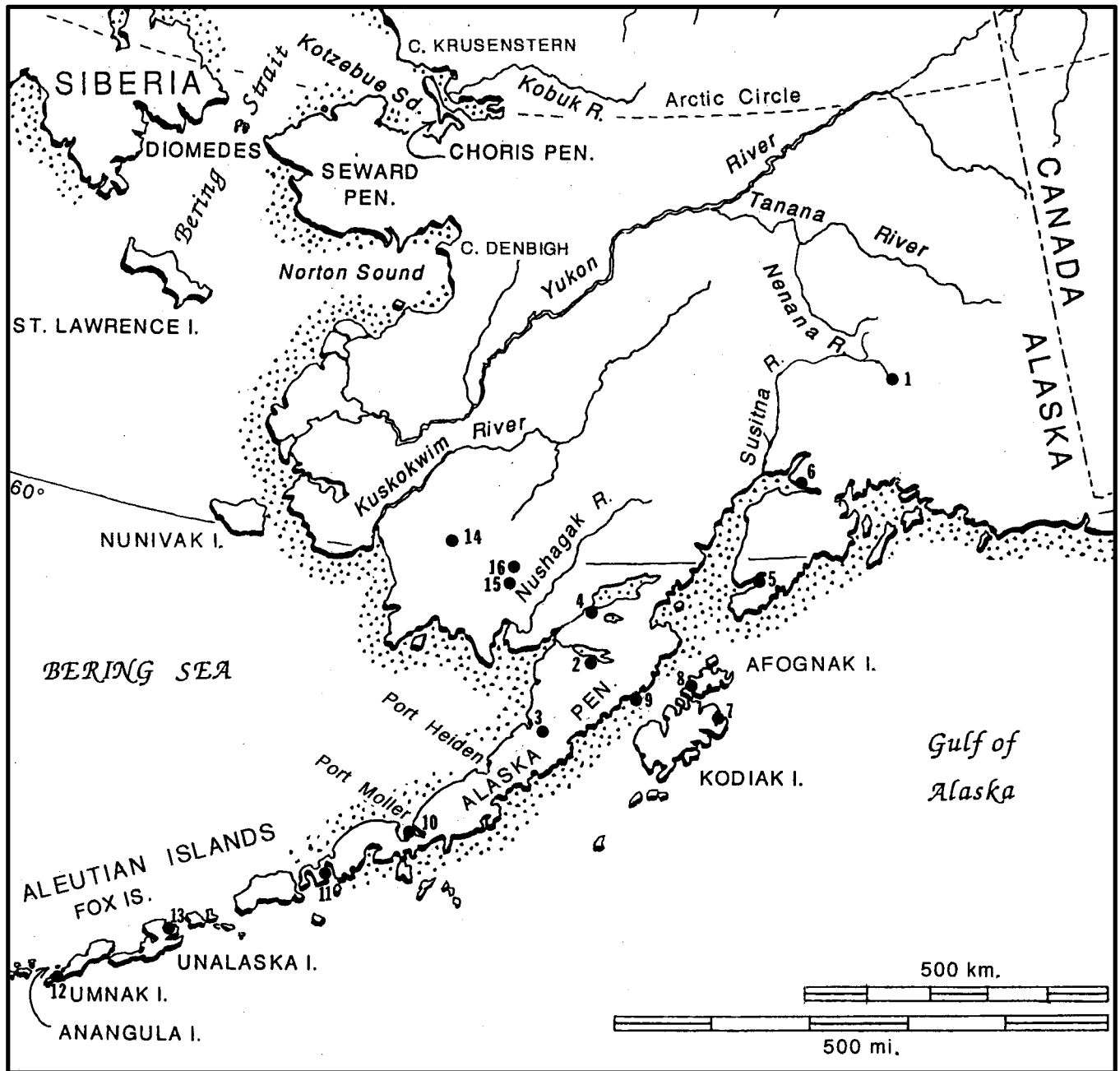


Figure 1. South mainland Alaska. Numbered site locations refer to: 1) site near Tyone Lake, upper Susitna River drainage; 2) Brooks River sites, upper Naknek River drainage; 3) Ugashik Narrows site, upper Ugashik River drainage; 4) Igiugig Airport site, upper Kvichak River; 5) Chugachik Island site, Kachemak Bay; 6) Beluga Point site, Turnagain Arm; 7) Chiniak Bay sites, Kodiak Island; 8) Malina Creek site, Afognak Island; 9) Takli site, Takli Island; 10) Hot Springs site, Port Moller; 11) Russell Creek site, near Cold Bay; 12) Chaluka site, Umnak Island; 13) Margaret Bay site, Unalaska Bay; 14) site near Eek Lake, upper Eek River drainage; 15) site DIL-153 at the outlet of Lake Beverley; 16) Raleigh Knoll site on Tikchik Lake.

(Workman and Zollars 2002), which covers much the same ground, although with a somewhat different focus.

THE NORTHERN ALASKA PENINSULA

After Irving's Susitna drainage site, the first more fully confirmed find of material from south mainland Alaska that was assignable to the Arctic Small Tool tra-

dition as Irving came to define it, was in 1961 when two Denbigh-like sites on the Brooks River tributary of the Naknek River drainage of the Alaska Peninsula were dated at more than 3000 ¹⁴C yr BP (Fig. 1, site 2). The similarity of this Brooks River Gravels phase to the Denbigh Flint complex was unmistakable, especially in the small, well-flaked bipointed endblades of cryptocrystalline silicates, the small adze blades with polished bit,

and the diminutive scrapers, although frequencies of artifacts such as microblades and burins varied from those in the northern assemblages (Dumond 1963). Two years later more field evidence of the Gravels phase was revealed, with a vastly expanded artifact inventory that in addition to artifact types already recovered included a few more microblades, small burins, and polished (“burin-like”) groovers, now supported by numerous radiocarbon dates (Dumond 1981).

In the first few years after the discovery of the Gravels phase, and in consideration of the linguistic and gross material cultural similarities between historic Eskimo (Inuit) and Aleut (Unangan) peoples, it seemed reasonable that the two had diverged from a common ancestor somewhere in southern or southwestern Alaska. Given the known presence in the eastern Aleutian Islands of the Anangula Blade site, which had been dated at 8000 BP or slightly earlier, in 1965 it seemed reasonable to hypothesize that sometime around 6000 BP an archaeologically recognizable common ancestor of Inuit and Unangan would be found on the Alaska Peninsula, and that it would forecast development of the earliest Arctic Small Tool tradition on one hand, and the lowest levels of the Aleutian Islands Chaluka site on the other, both of which were known to date from around 4000 radiocarbon years BP (Dumond 1965).

But when 6000-year-old sites on the Pacific coast of the peninsula were found and explored in 1964 and 1965 (especially the Takli site; see G. H. Clark 1977), they suggested no ancestral relationship at all to the 4000-year-old ASTt, whereas they did indicate relationship to the earliest assemblages then being reported from Kodiak Island (D. W. Clark 1966), and a similarity to what I took to be post-Anangula but pre-Chaluka artifact styles from the Aleutians (Dumond 1969–1970, 1971:appendix)—an opinion tentatively confirmed within the next decade by Laughlin’s (1975) announcement of an eastern Aleutian “transition culture.” In short, it appeared that ASTt people had arrived on the peninsula from the north sometime in the second millennium BC, intruding on earlier occupants of the region who were related both toward Kodiak and toward the Aleutian archipelago. There has been no reason to modify this conceptualization since the mid-1960s.

Brooks River

As research on the Alaska Peninsula continued into the 1970s, details of the Gravels phase occupation were further worked out. Whereas the few earlier users of Brooks River had camped exclusively at what was then the mouth of the river as it emptied into Naknek Lake,

the succeeding Gravels phase people left their campsites along virtually the entire course of the two-kilometer length of the river that drained Brooks Lake into Naknek Lake. Indeed, these ASTt habitations and camps were found on essentially every river terrace that had been in existence at the time of their occupation, which was now dated between 3600 and 3100 ¹⁴C yr BP. Occupation was especially heavy in proximity to the waterfall that had appeared in the central course of the river sometime around 4000 years ago as a result of the continued lowering of Naknek Lake through erosion at the head of its outlet stream, the Naknek River.

Although a few of these Brooks River camps were evidently surficial when occupied, the vast majority involved constructed houses, roughly square and about four meters on a side, excavated twenty centimeters or more through the thick layer of yellow tephra (volcanic ash G in our field sequence) that lay within the sod at that time, and entered by means of a sloping entrance passageway. A cluster of rocks was commonly central, around which was charcoal and a scattering of fire-cracked pebbles apparently used in stone boiling (Fig. 2). Postholes were not regularly identified.

Although small fragments of charred mammal bone were occasionally found, none was identifiable to genus. But careful screening and washing of floor samples led to the recovery of numerous salmonid teeth. Although there is no absolute certainty that these were salmon rather than large trout, the clustering of sites along the river and especially near the falls suggests that the occupation was based on the summer and fall availability of the Pacific salmon, which today transit through Brooks River in great numbers, leaving many to spawn there. This summer-seasonal conclusion is despite the fact that the form of the houses suggests winter residence. Nevertheless, by analogy with the ASTt elsewhere, one must suppose that caribou also provided a staple—and historically caribou of the strong Alaska Peninsula herd have been available in winter as far north as the Naknek region.

Thirteen of these houses have been uncovered in whole or in part, and a careful estimate based on known frequency and distribution suggests that remains of well over one hundred comparable structures lie along the two-kilometer length of the Brooks River as it existed during the second millennium BC (it is now some 2.4 km from head to foot). All houses have lain above the yellow volcanic ash mentioned, and all were covered by a later tephra. Ending by 3000 BP, the ASTt occupation was succeeded by a cultural hiatus of several centuries (Dumond 1981).

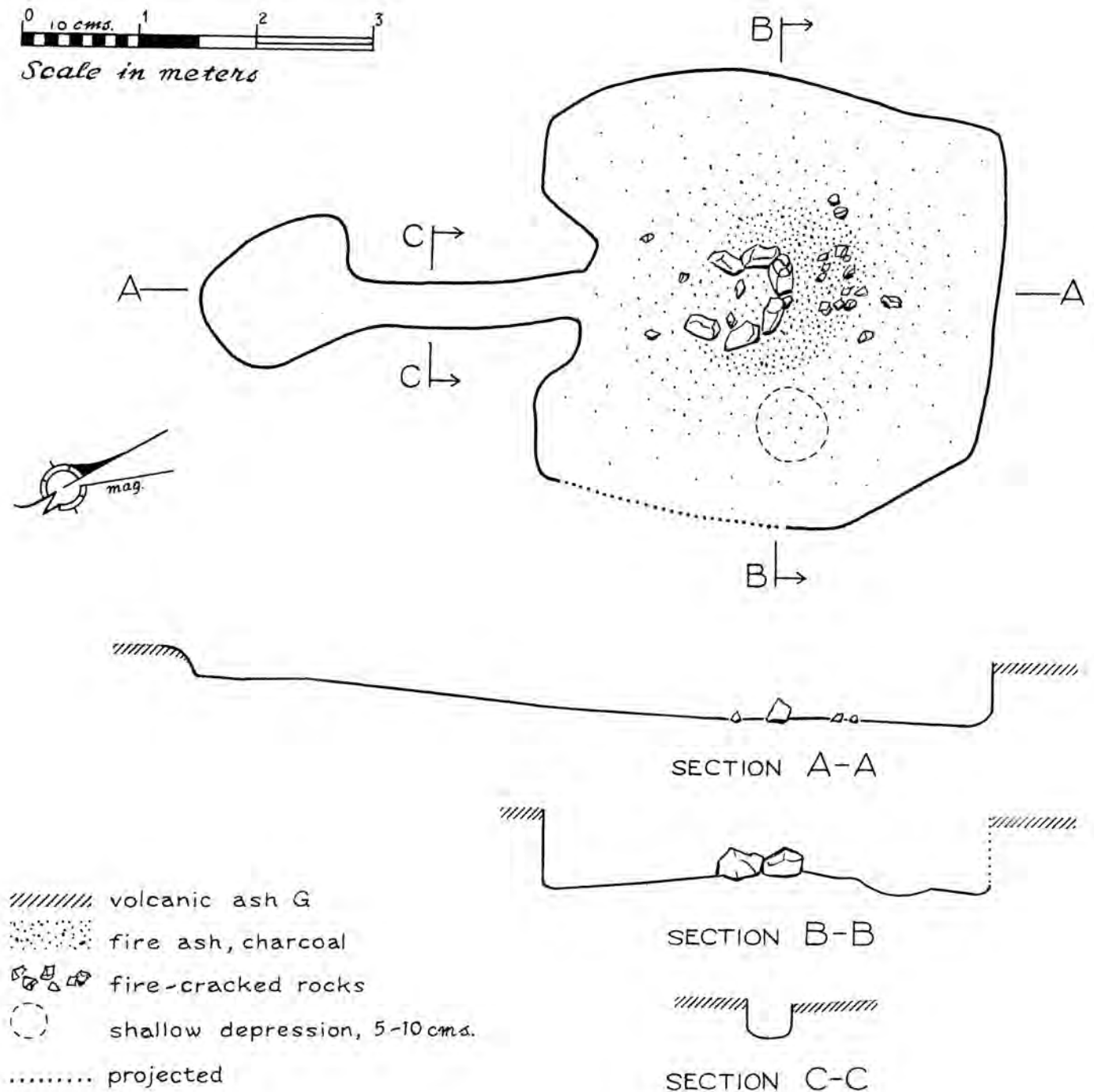


Figure 2. Plan and profiles of excavated house, Brooks River Gravels phase (from Dumond 1981:fig. 6.7). The first ASTt habitation to be completely cleared at Brooks River, its locality was field-designated BR-12, now identified in Alaska state site files as a portion of XMK-012.

Ugashik Narrows

In 1974 and 1975, field operations 150 km to the southwest, in the upper Ugashik River drainage system, revealed a similar habitation that yielded similar artifacts and was located in a similar geomorphic position—on a shallow and salmon-rich waterway or narrows connect-

ing two lakes (Fig. 1, site 3). Again, a square, semi-subterranean floor, scattered hearth, with no postmolds identified. Again, cut through a recognizable tephra, and covered by a later volcanic ash deposit. This floor yielded two dates that place it between about 3900 and 3600 ¹⁴C yr BP, possibly although not definitively earlier than the Gravels phase occupation at Brooks River. Other depres-

sions nearby were suspected to indicate other houses, but time did not permit their exploration. Again, it appears that the ASTt occupation was followed by a cultural hiatus of some centuries (Henn 1978:fig. 11).

For some years the Brooks River and Ugashik Narrows occupations remained alone as the ASTt representatives not only on the Alaska Peninsula, but in all territory south of the Bering Sea. More recently, however, additional claims have surfaced of ASTt presence in the region. One of these involves the northernmost section of the Alaska Peninsula on the Upper Kvichak.

Upper Kvichak River

At Igiugig, located on the Kvichak River a short distance below its head at Iliamna Lake (Fig. 1, site 4), archaeologists of the Alaska Office of History and Archaeology excavated the roughly squared corner of a habitation floor yielding artifacts strongly reminiscent of the Gravels phase, especially small bipointed endblades of cryptocrystalline silicates as well as rhyolite microblades. In the center of the floor was a partial ring of stones with surrounding lenses of charcoal and flanked by another cluster of charcoal with fire-cracked rocks. Three possible postholes were identified near the circle of stones. Charcoal from within this “fire ring” yielded an age of 3330 ± 60 ^{14}C yr BP (Beta-76533, CAMS-16358) (Holmes and McMahan 1996). The form of the exposed floor, as well as the apparent date, suggests an occupation comparable to that of the Brooks River Gravels phase, although the artifact inventory departs slightly from the Gravels phase in its higher proportion of microblades.

Further suggestions of ASTt presence, of varying degrees of confirmability, involve other sites near Nushagak Bay, sites in the Cook Inlet region, in the Kodiak group of islands, on the lowermost Alaska Peninsula, and in the eastern Aleutians. These will be considered in turn.

VICINITY OF NUSHAGAK BAY

Wood River Lake System

In the mid-to-late 1980s, and again in 1995, archaeologists of the Bureau of Indian Affairs (BIA) investigated the site now identified as DIL-153, located at the outlet of Lake Beverley of the Wood River Lakes complex, at the extreme head of the Agulukpak River on its right bank (Fig. 1, site 15). Results have been analyzed and summarized by DePew (n.d.), but not yet published or presented in a final statement. DePew reports that the lowest of five identified components produced three slab-

lined hearth features, a few small and delicately chipped endblades, microblades, and at least one scraper and a small whetstone. Four ^{14}C ages apparently associated with the hearth features produced a mean age of 3488 ± 29 ^{14}C yr BP (DePew n.d.:table 4). In 2005, I was able to examine the artifacts in the BIA office in Anchorage. The nature of the small collection and the ^{14}C age suggest that an affiliation with ASTt is entirely reasonable.

From some 45 km north of DIL-153, but still within the Wood River Lakes district, Shaw (1990) briefly describes and illustrates a small collection made at the Raleigh Knoll site, remnant of a temporary camp now “set back from the modern shore of Tikchik Lake” (Fig. 1, site 16). The illustrated artifacts (Shaw 1990:26) are of plausible ASTt affiliation, although the ^{14}C age thought most likely to date the occupation is reportedly about 2700 BP, a few centuries later than other the collections enumerated here.

Lower Kvichak River

A site tested briefly by BIA archaeologists in 1985 and identified as DIL-088, located approximately 30 km above the outlet of the Kvichak on Bristol Bay and thus well downstream from Igiugig (or Fig. 1, site 4), produced no clearly diagnostic artifacts of any identifiable archaeological complex. But a single radiocarbon determination on charcoal from more than eighty centimeters below surface provided a ^{14}C age of 3580 ± 150 yr BP (Beta-14507) (BIA 1986). The date is provocative and the area is that in which an ASTt presence might be expected, although the evidence is certainly not adequate to provide confirmation.

COOK INLET

Kachemak Bay

In the 1980s a relatively ephemeral but clear ASTt artifact assemblage was revealed at the base of a Kachemak tradition occupation on Chugachik Island near the upper end of Kachemak Bay (Fig. 1, site 5). Three small hearth areas with artifacts and waste flakes were confined to a roughly elliptical space of two by six meters. Bark and charcoal from a floor area provided ages of 4005 ± 110 (WSU-4303) and 4220 ± 110 ^{14}C yrs BP (Beta-87008) (Workman and Zollars 2002). Faunal remains and specific house features were lacking. Although no final description of the collection has appeared, after examining it firsthand on two separate occasions, I have no doubt that any of the artifacts could easily be lost in the Gravels phase assemblage from Brooks River.

As with the site on the Kvichak River, the Chugachik Island site can be accepted as closely related to the ASTt occupations at Brooks River. The Kvichak River site with its apparent constructed semi-subterranean dwelling is coeval with the Brooks River occupation, whereas that on Chugachik Island involves an occupation evidently earlier and also more ephemeral. With regard to all of the sites to be mentioned below, however, although ASTt relationships have been suggested—with differing degrees of commitment—they are poorly attested.

Turnagain Arm

The Beluga Point site on Turnagain Arm (Fig. 1, site 6) has been described as a Cook Inlet site in which certain artifacts are suggestive of ASTt contacts or even a possible presence (Workman and Zollars 2002, citing the Ph.D. dissertation of Douglas Reger). The samples, involving two separate components, are extremely small, in one dated case (close to 4000 ¹⁴C yr BP) involving three artifacts associated with a polished slate piece that is entirely unlike an ASTt implement, and in the other (not directly dated) involving only knife bifaces of an apparent style that is present although comparatively rare in Brooks River and other southern ASTt assemblages.

KODIAK ARCHIPELAGO

In at least three cases, scattered artifacts identified by excavators as ASTt have been reported from sites with primary affiliations in other directions. These include two sites on Chiniak Bay of northeastern Kodiak Island proper (Fig. 1, sites numbered together as 7): the Rice Ridge site, in late Ocean Bay levels dated about 3800 BP; and a seasonal camp of Kachemak tradition on Near Island (next to the town of Kodiak), where it is overlain by materials dated to 3050 ± 60 ¹⁴C yrs BP (Beta-113163). In addition, at Malina Creek on Afognak Island, a few ASTt-like artifacts were reportedly interstratified between an earlier Ocean Bay component and a later Kachemak one (Fig. 1, site 8). These occurrences are summarized by Workman and Zollars (2002), but are much more thoroughly examined by Steffian and Saltonstall (this issue) and will not be treated further here.

As concluded by Steffian and Saltonstall, the ASTt attributions are based on typological identifications of artifacts found scattered through other cultural contexts. In this sense they are parallel in incidence to a few artifacts found in deposits on the Pacific coast of the Alaska Peninsula, discussed below.

PENINSULA PACIFIC COAST

In the 1960s, a few small and well-made bipointed projectile blades were recovered in deposits of the Takli Birch phase, from Takli Island on the Pacific (i.e., Shelikof Strait) coast immediately offshore of the Alaska Peninsula (Fig. 1, site 9). Appearing in an assemblage of roughly 3500 ¹⁴C yrs BP that is totally unlike the Gravels phase—an assemblage that includes large polished slate implements as well as large chipped bifaces, oil-burning stone lamps, and clear evidence of maritime subsistence—these scattered implements were long ago concluded to reflect just enough of the ASTt to verify contemporaneity with the Brooks River Gravels phase located on the opposite side of the Aleutian Range of mountains on the Bering Sea slope of the peninsula (G. H. Clark 1977; Dumond 1971). In the fall of 2004, however, I had the opportunity in Seattle to examine the collection from the Tanginak Spring site on Sitkalidak Island, located on the southeastern area of the Kodiak group; there I found essentially the same small bipoints, but from levels of a site that on the basis of multiple radiocarbon determinations must date entirely before 6000 radiocarbon years BP. These artifacts were evidently integral to the early Ocean Bay collection, although in low frequency (examination and ages courtesy of J. Benjamin Fitzhugh). Given this circumstance, the identification not only of the Takli Birch phase artifacts, but comparable items from the Kodiak Island sites mentioned above, appear much less clearly assignable to the ASTt. It may well be that none of them has anything to do with that more northern cultural complex.

THE LOWER ALASKA PENINSULA

Recently, two sites on the southwestern Alaska Peninsula have been represented as affiliates of the Arctic Small Tool tradition. These include certain isolated levels of a large village site (the Hot Springs site) located at Port Moller (Fig. 1, site 10), and the site of Russell Creek near Cold Bay (Fig. 1, site 11).

Port Moller

In their paper as first drafted several years ago, Workman and Zollars suggested that a limited assemblage of relatively small chipped artifacts from the base of one trench at the Hot Springs site, described by the original excavators as largely of cryptocrystalline material and associated with a radiocarbon age of 3520 ± 95 ¹⁴C yrs BP (Gak-5416), was likely related to the ASTt collection from the Ugashik Narrows site. Following actual examination of the material recently by Workman, however, the suggestion has been essentially withdrawn,

as is emphasized in one of the published paper's end notes (Workman and Zollars 2002:note 5). A suggestion of ASTt affinity for the same small assemblage as well as material from other strata of the same trench has also been made by Maschner and Jordan (2001). Nevertheless, examination of these collections with consideration of materials and scale shows no really substantial morphological similarity to known ASTt materials. This, together with evidence of an ocean-side adaptation at Port Moller that is unknown in Alaskan sites of ASTt affiliation as defined by Irving, is sufficient to rule out Port Moller as a bona fide ASTt site. This point will be returned to later, after a brief discussion of the second Alaska Peninsula site mentioned just above, and following attention given to the eastern Aleutian Islands in a subsequent section.

Russell Creek

As a centerpiece to their discussion of the Hot Springs site, Maschner and Jordan (2001) specifically assign occupation of their Russell Creek site, located near Cold Bay toward the tip of the peninsula (Fig. 1, site 11), to the Arctic Small Tool tradition. Dated somewhat after 3500 ¹⁴C yrs BP, floors of two houses of elliptical plan were excavated completely and at least four others were partially cleared. Stone artifacts, almost all of basalt, included small indented- and contracting-base points, scrapers, polished "plummets," an adze blade with a polished bit, stone bowl fragments, and a stone lamp. Bone artifacts included fishhook and leister barbs, harpoon dart heads, awls, and wedges. The artifact collection was determined to be closely related to those assemblages from the Hot Springs site at Port Moller. Fauna were also well represented at Russell Creek, including many fish, especially cod; birds, especially geese; low frequencies of land mammals; and many sea mammals, especially seal, which was determined to be the major subsistence item. There seems to be no question that the focus was strongly oceanside, as was the case with the site at Port Moller.

THE EASTERN ALEUTIAN ISLANDS

Umnak Island

Concerning the eastern Aleutians, the first relatively concrete suggestion of ASTt involvement was made long ago by Denniston (1966), who called attention to a set of small chert artifacts from basal levels of one area of the Chaluka site on Umnak Island (Fig. 1, site 12). She concluded that they might represent ASTt imports into an otherwise prehistoric Aleutian context. This suggestion was repeated in the earlier version of the Workman and Zollars (2002) paper, and at least partially withdrawn when

the paper was published. Knecht, Davis, and Carver (2001), however, revive Denniston's conclusions and use them in connection with their description of the Margaret Bay site near Unalaska Bay in Dutch Harbor (Fig. 1, site 13), addressed below.

Unalaska Island

At Margaret Bay, Knecht, Davis, and Carver suggest that remains from strata 2 and 3, producing radiocarbon ages from about 3600 to 3100 ¹⁴C yr BP, are decidedly reminiscent of ASTt assemblages. Key implements are said to include small, well-flaked projectile blades, often of chert, as well as "small round and beaked endscrapers, bell shaped scrapers, [and] polished adzes" (Knecht and Davis 2001:276). The occupations represented in those strata, however, are also characterized by stone-lined and evidently semi-subterranean habitations, stone bowls, stone lamps, plummet and cobble fishing weights, labrets, and composite fishhooks of bone, as well as socket pieces and harpoon heads. Of these, the habitation style, stone vessels, fishing weights, labrets, and fishing and harpoon technology are unknown in the Alaskan sites commonly assigned to Irving's ASTt, although, to be sure, the absence of fishhooks and harpoon parts depends on organic preservation, which is essentially nil in Alaskan ASTt sites.

CONCLUDING DISCUSSION

To turn first and briefly to the assemblages of the lower Alaska Peninsula and the eastern Aleutians (Port Moller, Russell Creek, Chaluka, and Margaret Bay), all of them date between about 4000 and 3500 ¹⁴C yr BP to about 3100 ¹⁴C yr BP, and in their overall characteristics they are not strikingly dissimilar. In most but not all of these cases, the relatively small artifacts involved in the suggestions of ASTt affinity appear more consistently of chert and of smaller size than is usual in the collections in which they are found; many exhibit quite fine flaking, hence in those respects they do approach characteristics of ASTt assemblages. Compared with the diminutive Brooks River Gravels phase materials, however, the artifacts as a whole can only be called gross (see Dumond 2001:fig. 14.2).

In all of the cases, furthermore, the context includes stone vessels, oil-burning lamps, and abundant evidence of a specialized ocean-edge subsistence focus, all of which are foreign to Irving's conceptualization of the ASTt as it occurs in Alaska. Indeed, the only fairly well-explored coastal appearances of ASTt sites in Alaska are those at Capes Denbigh and Krusenstern, while traces have been

reported in a handful of others. In most or all of these cases, the sites have been interpreted as seasonal hunting stops, possibly for spring sealing from shore-edge ice—cases in which hunting techniques may depart little from those used against terrestrial animals. This small number of sites contrasts with the dozens of ASTt sites reported from inland regions, especially the two slopes of the Brooks Range where sites lie athwart caribou migration routes (see, for example, the distribution shown in Dumond 1982:table 1, fig. 1).

Elsewhere I have discussed these peninsula and Aleutian sites at much greater length. On the basis of a trait comparison I suggested that the assemblages might relate to one another and thus might be lumped together in a classificatory cultural unit (which simply for operational purposes I termed a “Macro Margaret Bay phase”). But I suggested rather emphatically that they are not seriously to be assigned directly to the originally defined Arctic Small Tool tradition as it is known anywhere in Alaska or, presumably, Canada (Dumond 2001). I reassert those conclusions here.

Yet the calls for recognition of ASTt affinity must provoke further thought. The intrusive appearance of these artifacts within the local sequences in which they occur may result from some measure of contact with people related to the ASTt presence at Kachemak Bay and around Bristol Bay—a suggestion also made by Workman and Zollars (2002). What might be the mechanisms involved?

At Margaret Bay, though fauna are not well represented in Levels 2 and 3, the preceding Level 4, generally dated earlier than about 4000 ¹⁴C yr BP, produced a large faunal assemblage that in addition to predictable ocean-side mammalian products from the Unalaska region as it is known today (e.g., harbor seal and porpoise) also included finite quantities of ice-edge fauna: ringed seal, walrus, and polar bear (Davis 2001). Although the Hot Springs site at Port Moller on the peninsula is known for both ringed seal and walrus, that site is positioned not far from what is today the southeastern edge of heavy winter drift ice of the Bering Sea, which on the peninsula commonly falls somewhere between Port Moller and Port Heiden, at about 57° N latitude. This point is 3° N and 500 km or so east-northeast of Margaret Bay. More directly to the northwest of Unalaska, the southern edge of winter ice often (but by no means every year) has appeared as far south as the Pribilof Islands—again, at 57° N and nearly 400 km distant from Margaret Bay, this time across the open Bering Sea (e.g., appropriate sections in USCGS 1954). That is, the occurrence of ice-edge fauna may

indicate that the Margaret Bay people of the time traveled some distance to hunt at the ice edge—moving either north over the open Bering Sea and 3 degrees of latitude (and there has been no definitive evidence showing that precontact Aleutian Islanders ever visited the Pribilofs, for instance), or east-northeast along islands and the peninsula to a similar latitude. On the other hand it seems much more likely that during the crucial interval, which was the time of the so-called Neoglacial period (ca. 5000–3000 BP), it was winter ice that did the advancing, moving far to the south of its present limit, even if only during sporadic and unsettled environmental interludes.

Is an association of Margaret Bay people with the ice edge, perhaps intermittently, significant in terms of possible ASTt contacts? The known distribution of ASTt sites is virtually limited to tundra-covered lands adjacent to sea coasts that freeze fast in winter (Dumond 1965). Thus it is not impossible, or even unlikely, that the presence of sea ice and ice-edge fauna on the southernmost end of the Alaska Peninsula and the eastern Aleutian Islands would have played some part in facilitating contact between peoples who otherwise might have gone their ecologically separate ways. On one hand, the incursion of the ASTt people to the south might have been related to overall cooling of the climate with an attendant southward movement of the edge of winter sea ice. On the other, if people of the eastern Aleutians were introduced to ice-edge fauna near at home through the same climatic fluctuation, it would be reasonable for them to travel eastward to intercept the edge of the ice as it intersected with the southwestern Alaska Peninsula.

Whatever the immediate stimulus for movement, it seems clear that sometime around 4000 ¹⁴C yr BP, campsites of ASTt people appeared at Kachemak Bay, and possibly elsewhere along Cook Inlet. Their absence on the northern Alaska Peninsula at this time may relate to the heavy deposit of tephra that suggests volcanic events that apparently affected much of the region on the Bering Sea slope of the Peninsula at that time. Within a few centuries, however, ASTt people had colonized salmon-rich rivers flowing over the peninsula to the Bering Sea as well, apparently, as parts of the Wood River drainage to the north. Here they established what seem to have been relatively stable settlements involving constructed habitations partially excavated into the contemporaneous ground.

By this time, there is also an indication of possible ASTt influence on people of the lower Alaska Peninsula and even of the easternmost Aleutians. The same may

have been the case on the Pacific coast of the northern peninsula, and possibly even on Kodiak Island. Nevertheless, the earlier maritime focus of these lower peninsula and island peoples was retained. This alone, given the nature of ASTt remains elsewhere in Alaska as well as in the more easterly Arctic, sets them apart from the basically terrestrial ASTt as its assemblage components are known.

By not later than about 3000 ¹⁴C yrs BP, the ASTt people of the Bering Sea slope of the Alaska Peninsula vanished, possibly again as a result of catastrophic volcanism, to judge from the presence of tephra. But is this sufficient to explain the relatively lengthy period of abandonment that evidently followed in that region? The Alaska Peninsula caribou herd of recent years has had its center of gravity, and its calving area, toward the center of the peninsula in the vicinity of Port Heiden. Immediately east of Port Heiden is Aniakchak Volcano, and a short distance to the southwest is Veniamenof Volcano. Sometime before 3000 ¹⁴C yrs BP each of these volcanoes produced one or more massive eruptions in which pyroclastic material flowed to the shores of both the Bering Sea and the Pacific Ocean (Miller and Smith 1987). Any such occurrence, one must suppose, would have had a significant effect on the well-being of the peninsula caribou. Added to this, recent productivity studies in lakes of the Alaska Peninsula and Kodiak region have indicated the probable presence of some prehistoric intervals in which salmon runs were drastically reduced if not entirely absent (Finney et al. 2002). Thus, if any such traumatic event, especially concurrent events, served to remove one or more essential subsistence resources, they would certainly have encouraged the ASTt people to depart from the region. At the same time, the effects of any impact that ASTt contact may have had on more coastally oriented people of the general region would have been thoroughly integrated into local culture, producing not an ASTt occupation, but an amalgam.

A final question remains: Although ASTt affiliates on the Alaska Peninsula endured for a number of centuries, no sites of a comparable affiliation are conclusively known between the region around Bristol Bay and Cape Denbigh. This may be simply a sampling problem, for that region has been little surveyed. In addition to the report of the possible ASTt traces in the upper Susitna River drainage (Irving 1957) mentioned at the beginning of this paper, there is another of a possibly ASTt-affiliated surface scatter recorded in the mainland mountains of southwest Alaska near Eek Lake (Fig. 1, site 14), not far north of the Wood River Lakes site or sites. This attribution, however, appears to be based primarily on a single artifact (Ackerman 1979:9–10).

In addition to the matter of sampling, a further possibility lies with the location of major caribou herds, at least to the extent that the modern distribution of herds mirrors that of 4000 BP. Although a major herd is known to have occupied the Alaska Peninsula since at least the nineteenth century (and caribou remains are common in all prehistoric sites in which bone is preserved), and a somewhat smaller one is found on the Kenai Peninsula, much of the region south of the Seward Peninsula has recently been less well endowed in terms of strong herds (Hemming 1971). If, as one might suspect, the earliest ASTt immigrants were principally hunters of caribou, their route southward from north Alaska may have lain well inland from the coast, where other thriving herds are now located.

But when ASTt people finally arrived on the Alaska Peninsula, they found themselves beguiled by the presence not only of a vital caribou herd, but of major and relatively stable salmon runs that would provide an inducement to settle in more sedentary fashion than they had been accustomed. This relative stability lasted for half a millennium or slightly longer, only to be ended for at least some of the people (those best sampled to date) apparently rather abruptly, for reasons that — as indicated here — are at present uncertain. If at their departure they left behind any legacy, stylistic or adaptive, it was as reworked elements incorporated into lifeways of other peoples who were long native to the region.

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