THE T 1 SITE AT NATIVE POINT, SOUTHAMPTON ISLAND, N.W.T.

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The discovery of flint bearing sites of considerable antiquity in Alaska, Canada and Greenland during the past decade has opened a new chapter in Arctic archaeology. Though not as old as Paleo-Indian sites to the south, the early Arctic flint complexes have close affinities with Mesolithic cultures of Eurasia. Organic material from one of the Alaskan sites, the Trail Creek cave on Seward Peninsula, has been dated at 6,000 years B.P., and on the basis of typology the site would appear to be somewhat later than the Denbigh Flint Complex. As the oldest radiocarbon dates for Eskimo sites are only 3,000 years for Chaluka on Umnak Island in the Aleutians and 2,258 years for Okvik on St. Lawrence Island, it is apparent that the flint sites are pre-Eskimo in the sense that they were occupied probably several thousand years before the establishment of the pattern of culture which we call Eskimo. They cannot, however, be entirely dissociated from Eskimo. Indeed, one of the most important conclusions to emerge from the new discoveries is that of a cultural continuity, indicated by specific trait linkages, between the Arctic flint sites and early Eskimo patterns, particularly the Dorset. The early or proto-Dorset site described here, for which a radiocarbon date of 2,000 ± 230 years has been obtained, affords additional evidence of such connections.

The site is located at Native Point, on the southeast coast of Southampton Island, 40 miles south of Coral Harbour. It takes its name from Tunermiut, the Aivilik Eskimo name for Native Point, which was the principal settlement of the Sadlermiut Eskimos who became extinct in 1903. In addition to T 1, there are three other archaeological sites at Native Point: the old Sadlermiut village, consisting of over 75 stone and sod house ruins; T 2, a small Dorset site, later than T 1, adjacent to the Sadlermiut site; and T 3, a small site similar in cultural content to T 1, but apparently somewhat later. This paper is concerned only with the T 1 site.

Excavations were carried out at these four sites, as well as others in the vicinity, during the summers of 1954 and 1955.[1]

[1] The T 1 site was discovered by G. D. Bell, a member of Dr. J. B. Bird's geographical expedition of 1950, and it was on the basis of his description of this and the Sadlermiut site (Bird, 1953) that Native Point was chosen for excavation. The 1954 expedition was sponsored by the Smithsonian Institution, National Museum of Canada and National Geographic Society; the party consisted of the writer, Dr. J. N. Emerson, William E. Taylor, Jr., and Eugene Ostroff. In 1955 the sponsoring institutions were the Smithsonian, National Museum of Canada and American Philosophical Society, and the party consisted of Emerson, Taylor, James V. Wright and myself. We are grateful to the U. S. Quartermaster Corps for providing military rations and the loan of tents and Arctic clothing, to the R.C.A.F. for air transportation from Montreal to Coral Harbour and return, and to Mr. A. T. Swaffield, Hudson's Bay post manager at Coral Harbour, for arranging for our local transportation by Eskimo dog team and Peterhead boat.

The T 1 site is situated on the top of a 70-foot high headland or plateau 1 mile east of the Sadlermiut site and half a mile from the present beach. The plateau is formed of glacial till consisting of limestone gravel and sand (Bird, 1953). On its flat gently sloping surface are a number of low ridges—old beach lines—the pattern of which is clearly visible only from the air. Between the base of the plateau and the sea are six younger, more prominent beach lines. The T 3 site is on the oldest of these ridges, adjacent to T 1, and 45 feet above sea level.

The T 1 site consists entirely of shallow middens, concentrated for the most part on the northern and western parts of the plateau, and covering an area, though not continuous, of over 30 acres. The midden areas are covered by a low sparse growth of vegetation, mostly saxifrages, Dryas, grasses and lichens, which does not differ in any respect from that growing on other parts of the site. The entire top of the plateau has the appearance of a flat, level pasture, and the middens are recognizable only because of bleached animal bones, flint flakes, or artifacts that project here and there from the turf or are exposed on the surface where wind erosion has removed the vegetation. There are no house ruins, pits or irregularities of any kind on the surface. Several hearths and irregular arrangements of flat stones suggestive of flooring were uncovered but we found nothing else to indicate substantial house construction in the areas excavated. No graves, cairns or other surface structures were found nearby that could be positively identified with the T 1 occupation. All such structures in the vicinity of T 1 that could be identified as to origin were found to be Sadlermiut.

Selected midden areas at different parts of the site were staked off in 5-foot squares. Twenty-five squares were excavated in 1954 and thirteen in 1955. The average depth of the middens was 12 inches and the maximum depth (in Midden 4) was 20 inches. Grass roots have penetrated even the deepest layers. The midden deposits are not frozen and permafrost is encountered only in the underlying gravel, usually below a depth of 2 feet. Despite the absence of protective permafrost the bone and ivory in the midden is for the most part solid and well preserved, though to a certain extent weathered and patinated. The color is that of a creamy tan or light grayish brown, not the dark chocolate brown usually seen on such material at other Dorset sites. This difference in patination results probably from differences in moisture and chemical composition of the soil in which the organic materials lie; the T 1 site rests on dry, well-drained sand and gravel of limestone origin, while most other Dorset sites that have been excavated are in areas of granitic and other crystalline rocks where the soil is dense, black and moist. Though 2,000 years of seasonal freezing and thawing have had relatively little effect on the bone and ivory (assuming the correctness of the C 14 dating), wood and all other organic materials have completely disappeared; not a scrap of wood was found in the excavations, though it must have been used for harpoon shafts and many other purposes.

There were indications of differences in seasonal occupation and

possibly in age between the eastern and western parts of the site. The heaviest concentration of refuse was on the western side of the plateau in the areas designated as Middens 1 to 5. Here, in nineteen 5-foot squares, where the cultural bearing stratum was no more than 12 inches thick, over 25,000 mammal bones were excavated in 1954, along with immense quantities of flint chips and several thousand artifacts of stone, bone and ivory. The underlying material was a fine-grained yellowish sand with relatively little gravel. In contrast, the eastern part of the site was preponderately gravel. Here the culture layer reached a maximum depth of 20 inches at one spot but contained fewer artifacts, especially those of bone and ivory. Some of the types of stone artifacts, such as those shown on Plates III and V, were especially characteristic of this part of the site. Mammal bones were much less numerous, totaling only 340 in six squares, but bird bones were more abundant. The preponderance of bird bones suggests that the eastern part of the site was occupied mainly in summer when large numbers of migratory birds were present.

All bird bones were brought back for identification. The mammal bones were counted and as many as possible identified in the field. Those identified were skulls, mandibles, limb bones, scapulae, pelvic bones, and some ribs. Vertebrae, phalanges, and most of the ribs, being too difficult for positive identification in the field, were counted but are not included in the tabulation of identified bones in Table 1. The table shows only the mammal bones excavated in 1954; those excavated in 1955 are not yet tabulated. Significant differences in the food economy of the proto-Dorset and Sadlermiut people are revealed by the bone analysis. The seal was the principal food animal of both peoples. Foxes were considerably more important to the early T 1 people than to the Sadlermiut; dog bones were completely absent at T 1. Caribou, which were the second most important source of food for the Sadlermiut, were hunted very little by the earlier people. This was undoubtedly a matter of necessity rather than choice. The T 1 people had no dogs and therefore no effective means of winter transportation. Lacking the mobility of the later Sadlermiut, who possessed the dog sled, they would have been unable to make long hunting trips to the highlands

Table 1. Distribution of Identifiable Mammal Bones Excavated At T 1 and Sadlermiut Sites

	T 1		Sadlermiut	
	Number	*Percent*	*Number*	*Percent*
Seal	2035	66.5	1840	65.2
Walrus	379	12.4	149	5.3
Bearded Seal	299	9.7	204	7.2
Fox	315	10.3	75	2.7
Caribou	25	.8	332	11.8
Polar Bear	4	.1	38	1.3
Dog	0	.0	180	6.4
Whale	0	.0	6	.2
Total	3057	99.8	2824	100.1

in the eastern part of the island where the caribou mostly lived. With their hunting activities thus restricted, they would be forced to depend almost entirely on local food resources, mainly sea mammals and birds.

Typical T 1 artifacts of ivory and bone are illustrated on Plate I. An antler lance head with the tip broken is shown on Pl. I, Fig. 1; it has an open shaft socket and a wide shallow lashing groove on the opposite side, a small line hole through the spur and a slot for a side blade 30 mm long and 6 mm deep in thick right edge; the left edge is sharpened. Wissler (1918, p. 125) illustrates a lance head of this type from Rensselaer Harbor, Smith Sound, and another incomplete specimen from Pearyland is described by Knuth (1952, Fig. 11, 1). The most common type of harpoon head at T 1 is that shown on Pl. I, Fig. 3. It is a short rather heavy type and is made of ivory, like all of the T 1 harpoon heads. It has the usual Dorset rectangular closed socket, a large central line hole and a blade slit at the end parallel with the socket. On one side—the side shown—there is a steep bevelling from above the line hole to the ends of the two basal spurs, and a narrow tapering slot is cut through the bevelled area to connect with the socket. The type seems to have been restricted to Southampton and neighboring islands. The second most important type (Fig. 4) is larger, with the same form of socket, spur and blade slit. Like Fig. 2, it also had a slot cut through to connect with the socket. The upper surface (shown) is arched or thickened in order that the line hole could be cut through it parallel with the socket and blade slit; thus both line hole openings are on the same side. The opposite side is flat and has a large slot at the center which opens into the line hole. Fig. 2, a small slender form without end blade, has the same kind of socket, spurs, and line hole as Fig. 3. A fourth type not illustrated resembles Fig. 2 except that it has an open socket. Fig. 5 is an unusual type with wide shallow open socket and opposite lashing groove, a small line hole and a second narrow slot through the edge; the upper end has been reworked and is broken. This may be the lower portion of a barbed head such as illustrated in Figs. 16 and 17. Fig. 6 is the upper part of a large heavy foreshaft of ivory which fits perfectly into the socket of such heads as Fig. 4. As these were the largest of the harpoon heads they were no doubt used for walrus, the largest animal hunted. Fig. 7 is a long slender ivory foreshaft which had a central hole at the point where it is broken; it fits the sockets of the smaller harpoon heads, which were probably used in sealing. Two barbed ivory harpoon heads are illustrated in Figs. 16 and 17. Both have shallow open sockets with lashing grooves, straight bases and small line holes. Fig. 16 has two barbs and a slot through the upper end; Fig. 17 originally had three barbs and an end blade. The tips of two slender barbed points of ivory are shown in Figs. 8 and 9. Figs. 18 and 19 are two slender ivory objects of uncertain function, possibly fish stringers. Two examples of a common T 1 implement, a small composite ivory handle or socket, are shown in Figs. 10 and 11. The straight inner side has a narrow shallow socket designed for holding a slender stone cutting tool, possibly a spall like the smaller examples

shown on Pl. VII. A groove across the back suggests that two of them were lashed together so as to enclose the spall, only the tip of which projected. Fig. 12 is an ivory flaking hammer, with both ends battered. The most common type of flaking tool, probably a light hammer, is illustrated in Figs. 13 and 14. They are always made from the dense, heavy bone of a walrus maxillary or mandible, usually the bone surrounding the tusk; the lower end is rounded or bluntly pointed. The tapering, wedge shape suggests that they were set into a wooden socket. Fig. 15 is a flint flaker made of walrus rib. A bone object of unknown use, resembling a harpoon rest for lashing to the deck of a kayak, is shown in Fig. 21. It is made from piece of a seal scapula, with two holes for lashing it in place. Highly characteristic of the T 1 site is a spatulate knife-like implement of ivory with pointed or rounded end, rather sharp edges and a suspension hole at the base (Figs. 27 and 29); a similar form of implement (Fig. 28) is rounded or pointed at both ends and lacks the basal perforation. Bone needles (Figs. 30-32) were the most numerous of all bone or ivory artifacts. The eyes are tiny oval slots, never round, and are countersunk on both sides. The upper ends are always pointed, never rounded or flat, and the tips are almost as sharp as those on steel needles. They were all made of bird bone, usually a large humerus (Fig. 33). The ivory object shown in Fig. 20 is possibly a needle case. It is made from the proximal hollow end of a young walrus tusk. Two low protuberances were carved on the sides to represent an animal's ears. A broken ladle made of antler and an unidentified ivory object decorated with a row of short oblique lines are illustrated in Figs. 25 and 26. The small polar bear (Fig. 24), the pendant carved in the shape of a caribou hoof (Fig. 34), and a realistic caribou with straight line decoration, not illustrated, are the only examples of animal carvings found at T 1. All are of ivory. Other rather simple ornaments illustrated are a slotted tube of bird bone (Fig. 22), two thin bone disks (Figs. 23 and 36), a triangular section of purple clam shell (Fig. 35), and a small ivory object with two "legs," a central perforation and surface decoration consisting of short incised lines Fig. 37). Perforations on all specimens were cut or gouged out, in typical Dorset fashion, never drilled.

One of the most striking features of the site was the abundance of flint and flint artifacts. Along the edges of the plateau where there was not plant cover the surface of the ground was littered with innumerable flakes of various sizes, tiny chips, and broken or complete artifacts, and in digging the middens we had to proceed very slowly because of the great quantities of such material encountered at all levels. The material most commonly used was a very fine-grained chert which breaks with a concoidal fracture; it is smooth and glossy in texture and ranges in color from a light gray to almost black. A second variety of gray chert, of a more granular or gritty texture, was used exclusively for making spall implements (Pl. VII) and those with rubbed edges and surfaces Pl. X, Figs. 1-4). Chalcedony was conspicuously absent and there were only one or two implements of

quartz. The only other varieties of stone present were rock crystal, soapstone, slate and nephrite. Implements of transparent rock crystal —delicately made micro-blades, tiny tanged knife blades, and end scrapers—constituted an important minority of the lithic complex. Rubbed slate and nephrite were far less common, totaling less than a dozen blade fragments each, with no rejectage or raw material, and soapstone pot fragments were almost as rare. Slate, nephrite, and soapstone are not native to Southampton Island. The gray chert, which constitutes at least 99 percent of the lithic material at the site, occurs as sporadic nodules or masses in the limestone formations characteristic of the southeastern part of the island. A fist-sized block of gray chert was seen in a limestone slab used to cover one of the Sadlermiut burials, but in no other instance was it observed, either as loose nodules or *in situ* in the few outcrops of limestone bedrock in the vicinity of Native Point. As suggested by Bird (1953, p. 62), the source of the flint may have been Lake Brook, about 35 miles to the southeast, where nodules are known to occur in some abundance. The absence of a readily accessible source of supply may explain why there were so few large pieces of chert at T 1; the raw materials would have to be brought in from a distance and therefore would have been carefully preserved and as much of it as possible utilized for making tools. In contrast, at the Sadlermiut site where flint implements and rejectage were far less abundant than at T 1, we found more larger pieces of the material. This would suggest that it was easy for the Sadlermiut to reach the source of supply, either by dog team or by boat, whereas the T 1 people had no dog teams and we cannot even prove that they had boats.

Typical end blades for projectiles and knives are illustrated on Pl. II. These and all other stone implements illustrated are of chert unless otherwise indicated. The majority of the end blades at T 1 were made from flakes, with the bulbar surface unmodified or only partly worked. Examples are those shown on Pl. II, Figs. 1, 6, 7, 10, 13, 15, 16, 18, 19. Most of the others now appear as bifaces because the original bulbar surface has been obscured by chipping. Figs. 6 and 15 are unique in that the outer surface (shown) is unmodified while the edges of the bulbar surface are worked. A median ridge on the outer face is a common feature of the T 1 blades, e.g. Pl. II, Figs. 3, 4, 6, 7, 12, and also on the end scraper, Pl. IX, Fig. 2. None of the end blades are stemmed and only a few, such as Figs. 4 and 6, are side notched at the base. The bases are usually straight or slightly concave, only a few, like Fig. 10, being convex. None of the blades had the deeply concave base characteristic of the Dorset culture. The wider forms illustrated on the second row of Pl. II are most likely end blades for harpoons; the most common type of harpoon head (Pl. I, Fig. 3) had a slit that would accomodate blades of this shape and thickness. The smaller, more slender blades shown on the upper row could also have been used on harpoon heads though they would ordinarily be classed as arrow points. If they were arrow points they were attached directly to the end of a wooden shaft, Indian fashion,

for no bone arrowheads of Eskimo type, either with or without slits for end blades, were found at T 1, nor have they turned up at other Dorset sites. The use of bow and arrow is therefore conjectural. Pl. II, Figs. 16-19 were probably end blades for knives, or possibly lances, despite the fact that no end-socketed knife handles or lance heads of bone or ivory were found; in all probability they were knife blades, set in wooden handles which have not been preserved. The type of blade shown in Figs. 20-22, with slanting base and rounded corner, is unique at T 1. They were probably side blades for heavy lances. A large lance head was found with side socket suitable for holding a blade of this length and thickness.

A different type of side blade, designed for knives or lances, is illustrated on Pl. III, Figs. 1-7. These are long straight-sided flakes with the outer surface carefully worked and the bulbar surface unmodified. Both edges are sharpened except Fig. 5 which has the right edge dulled by chipping. Fig. 2 is unique in being thicker than the others and in having the bulbar surface (shown) also worked along the edges. These narrow rectangular blades were especially characteristic of the eastern part of the site; they are closely similar to side blades from Mesolithic and Early Neolithic sites in Siberia and Mongolia but have not been described from other sites in the American Arctic. Figs. 8 and 9 are tentatively indentified as side blades because of their size and shape, though in technique they belong with the curious type of blade, unique at T 1, illustrated on Pl. VIII. In Fig. 8 the lower half of the right edge is dulled by chipping. On the opposite edge a long spall has been struck off vertically from the tip (shown at bottom), as in a burin, and a smaller spall removed from the other end. It might, indeed, have been a burin. It would no doubt be so classified if it were found alone, but in view of its structural affinities with the implements shown on Pl. VIII its identification is uncertain. Fig. 9 is similar in shape with the right edge dulled by chipping and the left edge sharp from the original flake. Various forms of shorter, wider side blades are shown in Figs. 10-17.

The most numerous of all implements at T 1 were micro-blades (Pl. IV).[2] They are illustrated here with the bulbar end down except Fig. 22, a tanged form. They range in length from 5.7 cm (Fig. 2) to 1.9 cm (Fig. 14), and are about equally divided between the thicker forms, triangular in section with two longitudinal flake scars, and the thinner forms with three such facets. On some of the blades the outer surface is strongly curved or arched (Figs. 2, 5, 7, 10, 11, 13, 14, 17), while others are relatively flat. The sides are usually parallel and the ends rounded or straight, but in some of the more slender examples the edges converge to a point (Figs. 7, 9, 12-17). Occasionally, as in Fig. 6, the outer surface of the bulbar end is retouched as in a

[2]Following Movius and Giddings I am using this term for the narrow parallel-sided blades which I and others have previously called lamellar flakes. As Solecki (1955) has shown, there are valid objections to the term "lamellar flake," but I am not sure that "microblade" is a perfect choice either, as many of these blades are much larger than such a name would imply.

scraper. In most cases both edges show minute flake scars from use as cutting or scraping tools, and occasionally there is retouching on the edges (Figs. 1, 2, 4, 8); one has a prominent side notch (Fig. 6). Many of these blades have the bulbar end carefully notched or worked to form a tang (Figs. 19-21, 23-25); in the case of Fig. 22 the tang is at the distal end, opposite the bulb of percussion. Fig. 19 differs from the others in having the entire left side and tip retouched. Tanged blades of this kind seem rare at other Arctic sites but a few have been described from Pointed Mountain (MacNeish, 1954, Fig. 66, 14) and Mongolia (Maringer, 1950, Fig. 38, p. 141). Though from their shape and regularity it is certain that these micro-blades were struck from carefully prepared cores, very few of the latter were found. One of these, with three narrow flake scars at one of the sloping ends and two at the other, is shown on Pl. X, Fig. 12. Most of the cores were evidently used and reused until exhausted.

On Pl. V are shown a number of implements that fall in the general category of backed blades in that one edge is sharp for cutting while the opposite edge is thick or steep. Some of them are ordinary micro-blades with one edge thickened by steep flaking (Figs. 2, 5, 6, 8, 12). Others are thicker, heavier flakes, triangular in section, with the thick edge either steeply flaked (Figs. 13, 16, 17, 21, 22, 23, 25, 26) or left plain (Figs. 11, 15, 18, 19, 20). In some of the blades the thickening of one edge was accomplished by removal of one or more longitudinal flakes (Figs. 1, 3, 4, 9, 10, 14). In Figs. 7 and 24 the thicker edge, shown at left, was formed originally by removal of a long flake and then lightly retouched; both of these blades also have basal notches or tangs. Fig. 14 has a small notch on each side. In all cases the thinner cutting edge shows tiny notches resulting from use.

The implement shown on Pl. VI, Fig. 1, is the best example of a burin found at T 1. The burin facet at the right upper edge, produced by removal of a spall 1 cm long and .3 cm wide, shows a distinct negative bulb of percussion. On the sloping edge below it are several notches or jags which were left when earlier spalls were removed. Four additional smaller flakes have been struck off from the opposite side and face of the upper end to shape it for cutting or gouging. Other implements shown on the same plate (Figs. 2-8, 11, 12) lack a clearly discernable negative bulb of percussion. Nevertheless the upper or working ends have been shaped by removal of vertical flakes struck or pressed off from above, so that they were produced in the manner of burins and in all probability were used as such. In the case of Fig. 2 the point was produced by removal of three rather wide flakes. Fig. 3 has a trimmed left edge, intersected at the tip by a single broad oblique flake scar 2.2 cm long and .6 cm wide. Figs. 4, 5, and 8 have gouge-like tips, all showing wear marks. The rounded tip of Fig. 4 bears four exceedingly small but distinct flake scars, while in Fig. 5 there are five larger such scars. Fig. 6, a micro-blade, had a single short spall removed from the upper left corner. Fig. 7 is an implement of the kind illustrated on Pl. VIII. Its outer face is carefully worked and the greater part of the right edge is blunted by steep chipping. The wide notch at the upper left corner seems purposeful and the

tip shows several secondary flake scars. Figs. 11 and 12 are thin delicate flakes which despite their small size were carefully shaped for a burin function by removal of minute spalls from the tip; three flake scars are clearly visible on Fig. 11 and two on Fig. 12. The small flake implement shown in Fig. 9 somewhat resembles a Folsom graver, though only the right side of the projecting tip is reworked; the opposite side of the tip and the sharp edge below it to the left show marks of use. In Figs. 13-16 are shown four examples of nephrite "burin-like" implements such as are frequently found at Dorset sites. Each implement is different in shape though all are ground on both faces and edges. Fig. 16, which is the tip only, resembles the Old Bering Sea and Ipiutak examples, as well as Dorset. Fig. 15 has a rounded base and two deep side notches; Fig. 14 has shallower notches and a deep vertical groove on both faces. Two small thin rim sherds of soapstone vessels are shown in Figs 17 and 19. They are 4 and 5 mm thick and have a black encrustation of burned blubber on the outer surface (shown). Two round repair holes, cut not drilled, are visible on Fig. 17. Fig. 21 is the upper end of a large rubbed slate blade with three facets on the outer surface. Figs. 18 and 20 are sections of thicker, narrower blades of banded red slate. These and the other fragments of slate blades, though few in number, are significant as indicating the occasional use of rubbed slate implements by the early or proto-Dorset people.

On Pl. VII are shown a number of flint spalls, which are characteristic of the site. Those on the upper row have the form of rather thick rods, mostly triangular in section and with one or more of the sides steeply flaked. Fig. 7 differs in having a fine retouch along the left edge. The upper ends of Figs. 1-4 are also worked to produce a tip suitable for gouging. Some of the smaller, more slender spalls such as Figs. 14-16, 21, 27-33 might be described as burin spalls; their size and shape are such as might be expected of spalls struck from burins. It is doubtful, however, whether the majority of these spalls are in any way connected with burin manufacture. They were struck from a variety of blades or flakes, some apparently from unmodified flakes, others, such as Figs. 8-12, 19, and 34 from the retouched margins of finished blades. In the case of Fig. 34 and several others not illustrated even the tip of the finished parent blade adheres to the lower end of the spall. Most of the spalls illustrated here were, I believe, produced intentionally; they were tools in their own right rather than casual by-products of burin manufacture, even the few which may actually have been struck from burins. Giddings (1956) has come to the same conclusion regarding the burin spalls from Cape Denbigh and Knife River. Like his spalls, a number of those from T 1 Figs. 19-34) have the upper end carefully retouched for use as a minute cutting or grooving tool. Such spall implements would themselves have had the function of burins, designed for the fine grooving and slotting so characteristic of the bone and ivory artifacts at T 1. The tiny slotted eyes on the bone needles, for example, presuppose the existence of extremely small cutting tools, and it would seem quite likely that some of the smallest of the spalls, e.g. Figs. 9, 10, 31-33, and 44, were

fitted into the narrow ivory handles or sockets such as Pl. I, Figs. 10 and 11, to provide the cutting end of a composite tool designed for fine grooving and slotting.

The slender spalls shown on Pl. VII, Figs. 35-44 are a specialized type of implement that has not been described previously. Most of them are quadrangular in section with one to three of the sides rubbed and showing the same white patina as the "burin-like" implements shown on Pl. X, Figs. 2-4. In fact, most of them, perhaps all, were struck from the edges of such implements usually from the left, squared-off edge; several of these implements were found with the left edge flaked off to produce such a spall. The upper working end of the spall either retains the sharpened bevel of the parent implement or has been rubbed down secondarily to produce such a point. It is of interest to note that not only all of the spalls of this particular type but also most of the others shown on Pl. VII are made of the course-grained, gritty chert that was always used for making the "burin-like" tools; only those shown in Figs. 4, 10, 18, 19, 27, and 33 are of the smooth shiny variety of chert from which the great majority of the T 1 implements were made.

Next to micro-blades, the most important and characteristic implements at T 1 were the slender triangular blades of unknown use illustrated on Pl. VIII. The type is a highly specialized one that has not been reported as yet from other Arctic sites or for that matter from anywhere in America though some of the examples are in certain respects suggestive of Mesolithic types from Eurasia. They are made from thin, delicate flakes, with the bulb of percussion at the upper narrow end. The inner, bulbar face is unworked while the outer face, which is illustrated here, is usually covered wholly or in part by shallow surface flaking; a few examples (Figs. 17, 18, 33, 35) have no surface flaking. They are triangular in shape with a straight or slanting base, and they range in length from 3.6 mm (Fig. 1) to 1.2 cm (Fig. 28). The most characteristic feature structurally is the treatment of the edges, which in most cases had a long flake removed from the upper end, as in a burin, with the opposite edge dulled by steep, usually vertical flaking. They may be divided into six general categories:

A. One edge dulled, opposite edge with flake removed (Pl. VIII, Figs. 1-28)
B. One edge dulled, opposite edge sharpened by chipping (Figs. 29-31)
C. One edge dulled, opposite edge sharp from original flake (Figs. 32,33)
D. One edge with flake removed, opposite edge with smaller flake removed (Figs. 34-37)
E. One edge with flake removed, opposite edge sharpened by chipping (Figs. 38-42)
F. One edge with flake removed, opposite edge sharp from original flake (Figs. 43, 44).

Some of these microliths with sharply sloping bases (Figs. 19, 38) have the appearance of side blades and may have been used as such.

On these and some others such as Figs. 1, 4-6, 8, 9, 35, 39, the lateral flake was removed at a slant, not straight across the edge of the blade, thus leaving an edge sharp enough for cutting, and on three of them (Figs. 1, 4, 39) there are tiny flake scars indicating such a use. The only others that show use marks along the edge are Figs. 18, 29, 30, 33, 38, 40, 43, and 44. In some cases the basal end was reworked (Figs. 3, 7, 9, 10, 12, 15, 19, 24). In the majority of cases the lateral flake was struck off at right angles to the blade, as on a burin, leaving a blunt edge that would have been as unsuitable for cutting as was the opposite edge which had been deliberately blunted by steep flaking. We may therefore recognize the possibility that some of these implements were designed and used as burins but it is difficult in that case to explain the consistent dulling of opposite edge.

End scrapers (Pl. IX, Figs. 1-9) occur in a variety of forms which, however, do not include those most common in the Dorset culture such as the very small triangular types and those with expanding or flaring lower ends. In shape the T 1 scrapers range from triangular (Figs. 1-3) to ovoid (Fig. 9) to quadrangular (Fig. 7). They are all made from heavy flakes, with the under surface unmodified or only slightly worked. The triangular scrapers are straight-sided with straight or slightly convex lower ends; Figs. 2 and 3 are keel-shaped with a prominent median ridge on the outer face. Others are more rounded in contour (Figs. 4, 5). Fig. 6 is the lower end of a scraper which may have been either quadrangular or roughly triangular in total contour. Fig. 7 is quadrangular, almost square, with an abruptly thickened lower end. Fig. 8 is a unique type, roughly triangular, with the lower thickened end slanting instead of straight. Fig. 12 is irregular in shape and might be described as a core scraper in that the thickened scraping end, at the left, has a vertical face 1.3 cm high which was produced by removal of a series of narrow flakes struck off from the lower edge. Fig. 10 is somewhat similar in outline, with the lower and left edges strongly arched and the maximum thickness (1 cm.) at the center. Fig. 11 has the upper end broken off obliquely and may originally have been of about the same shape as Fig. 4. Figs. 13 and 14 are two knife-like scrapers with rounded ends and basal tangs for hafting; both surfaces are carefully worked so that they have the appearance of bifaced tools though they may have been formed originally from thick flakes. The wider scraper with upper end broken off (Fig. 15) was made from a flake, the under surface of which was only slightly worked. Fig. 16 is the haft end of an implement, probably a scraper similar in shape to Fig. 15 but with thee notches on each side of the tang.

Two scrapers of a different form are illustrated on Pl. X, Figs. 5 and 11. The first is a large thick curved flake 6.5 cm long and 1.9 cm wide, the convex outer face of which retains the cortex of the nodule from which it was derived. The bulb of percussion is at the upper, narrow end. It is worked only at the lower end which is steeply flaked to produce a scraping edge. The smaller scraper (Fig. 11) is of the same general shape but is steeply flaked over the entire outer

surface with a prominent ridge extending down the center; the under surface is retouched along the left edge.

Implements with ground flat surfaces and edges, one of the most characteristic types of the Dorset culture, were equally important at T 1 (Pl. X, Figs. 2-4). These are the implements that have been sometimes referred to as "boot creasers" but which I have called "burin-like" tools because, as De Laguna first pointed out, they were provided with a strong sharp corner designed for gouging or grooving, and thus probably functioned as burins. The T 1 examples are remarkably uniform in appearance. Figs. 2 and 4 represent the most common form—rather narrow, quadrangular, and notched at the base for hafting; Fig. 3 is wider and somewhat thinner. In all cases the left edge is perfectly straight, usually from 4 to 6 mm wide at the lower end and tapering upward to a point; the face of the smoothed widened edge is at right angles to the adjacent and similarly smoothed flat surfaces of the blade. The upper end is bevelled to a cutting edge by rubbing. The right edge is only slightly rubbed, usually at a bevel like the upper end, but the rubbing was not strong enough to efface the original chipping. The flat surfaces, as shown by the fine striations, were always rubbed transversely, while the left edge was rubbed in the opposite direction, longitudinally. The implements were always made of the tough, gritty textured chert, not the smooth glossy variety used for other tools. The smoothed areas, and only those, invariably exhibit a whitish patina, an alteration of the surface produced evidently by the heat or friction of rubbing. An adz-like scraper is shown on Pl. X, Fig. 1. The lower end is rubbed to produce a flat straight edge 7 mm wide. The lower part of the upper surface is similarly rubbed and meets the adjacent straight edge at almost a right angle. This is a characteristic implement of the Dorset, Old Bering Sea and Ipiutak cultures. Four long thick flakes, possibly unfinished tools, are shown in Figs. 6-9. All are triangular in section. Only Fig. 7 has been worked to any extent—on the lower end of the bulbar surface, opposite the bulb. Its edges and those of the others show light chipping resulting from use. Fig. 10 resembles the other four except that it is curved and shows no signs of use. Fig. 12 is the double ended fluted core previously referred to in connection with the micro-blades. Fine chipping on the lower right edge is evidence that it was also used as a scraper. Fig. 13 is a large heavy flake with a burin-like upper tip formed by intersecting flake scars. It is retouched at intervals along the edges, and the lower end has been fashioned into an oval-pointed projecting tip.

In analyzing the T 1 material we may first ask how it compares with that from other Dorset sites. The following specific Dorset types are present at T 1: Barbed dart points, needles, micro-blades, cores, burins, small triangular projectile points, burin-like implements and adz-like scrapers with rubbed edges and sides, flat bone runner for hand sled, and soapstone vessels; moreover the general Dorset character of the culture is shown by such features and tendencies as rectangular

closed sockets on harpoon heads, multiple notches on blade tangs, cut or gouged holes in implements, use of nephrite and rock crystal, presence of a simple straight line incised ornamentation, and the small and delicate nature of the bone and ivory implements.

On the other hand the following characteristic Dorset features were missing at T 1: Closed socket harpoon heads with two line holes. open socket heads with single spur and line hole at edge, harpoon foreshafts with lateral line hole, small knife handles with deep side sockets, ivory runners for hand sleds with ends fitted together, ivory spatulas, projectile points with deeply concave bases, end scrapers with expanded edges, concave side scrapers, asymmetric knife blades, grotesque human and animal carvings, and stylized chevron and other incised designs. The absence of these typical Dorset features at T 1 can hardly have been accidental, for the amount of material excavated here was considerably greater than from any other Dorset site.

Many of the T 1 implements are types that are new not only to the Dorset but to any other culture. In evaluating these we should remember that every Dorset site thus far excavated has differed in some degree from all others; despite a number of recurrent features the Dorset culture on the whole is rather variable. In a collection as large as that from T 1 it is to be expected that some new forms of local specializations will appear. Consequently, some of the ornaments and objects of unknown use shown on Pl. I would occasion no surprise; anyone familiar with Dorset material would at once recognize their general Dorset character even though they had not been previously reported from the Dorset culture. Nevertheless, the fact remains that almost all of the dominant types at T 1, those that occur in the largest numbers and give the culture its distinctive stamp, are new. This applies to the small composite handles or sockets (Pl. I, Figs. 10, 11), the flaking hammers (Figs. 12-15), spatulate knife-like implements (Figs. 27-29), large blades with slanting base (Pl. II, Figs. 20-22), large parallel-sided side blades (Pl. III, Fig. 1-7), micro-blades with tangs (Pl. IV, Figs. 19-25), backed blades (Pl. V, Figs. 1-26), micro-blades and other very small implements of rock crystal (not illustrated), microlithic triangular flake-blades (Pl. VIII, Figs. 1-44), and several kinds of scrapers (Pl. IX, Figs. 8, 10, 12, and Pl. X, Figs. 5, 11).

In view of the pronounced differences it is obvious that the T 1 site cannot be equated with the Dorset culture as we have known it. Neither can it be separated completely from Dorset. It formed a part of the general Dorset continuum, two later stages of which were found at Native Point. As it is so different from other Canadian Dorset sites, and older, it would seem appropriate to call it formative or proto-Dorset. An age of 2,000±230 years was obtained by the University of Pennsylvania Carbon 14 Laboratory from samples of charred mammal and bird bones from the eastern section of the site. This bone, like all material of human origin at the site, had been penetrated by grass roots so that it might have been contaminated, in which case the radiocarbon date would be a minimum one. On the other hand, if current geological

opinion is correct we would not expect an archaeological site on Southampton Island with an elevation of only 70 feet above sea level to be much more than 2,000 years old when other parts of the island are known to have been uplifted more than 600 feet since the postglacial marine submergence.

Based on cultural comparisons the proto-Dorset site T 1 should be older than known Dorset sites in Canada, probably contemporary with Knuth's early Dorset phase in Pearyland but later than his earliest culture there and later also than Sarqaq in Disko Bay and Knife River west of Hudson Bay, all of which might be called pre-Dorset in the sense they represent earlier stages from which the recognizable Dorset pattern eventually emerged. On this basis T 1 should also be considerably later than the early flint sites further west such as Cape Denbigh, Anaktuvuk Pass, Trail Creek, the Campus site, Pointed Mountain, etc.

It may be of interest to examine the typological resemblances and differences between T 1 and the earlier flint sites.

Burins. These are few in number and highly variable in form. There are no examples at T 1 of the well defined Denbigh, Anaktuvuk or Sarqaq types. On the other hand, one of the most important T 1 implements, the triangular microliths shown on Pl. VIII, were made by removal of spall from one or both edges, a burin technique.

Spalls. Giddings (1951, 1956) has been the first to recognize the importance of these small and inconspicuous implements, which probably occure more frequently at Arctic sites than the published reports would indicate. The Denbigh and Knife River spalls were actually struck from burins while most of those from T 1 were not. Nevertheless the edges of some of the T 1 spalls were retouched (Pl. VII, Figs. 19-34) as at Denbigh, Knife River and Sarqaq, so that functionally the spall implements from these sites are comparable.

Micro-blades. These are too widely distributed to be of diagnostic value except in a very broad sense. Their widespread occurrence in the American Arctic, their persistence there from the time of the Denbigh Flint Complex to probably less than a thousand years ago, as contrasted to their spotty and limited distribution south of the Arctic, is one of the strongest indications of a direct relationship between the early Eskimo and pre-Eskimo cultures of Arctic America and the Mesolithic cultures of Eurasia. Micro-blades occur in greater abundance at T 1 than probably any other Arctic site, and in about the same proportion as at Cape Denbigh and Pointed Mountain. It is of interest to note that Denbigh resembles T 1 and differs from Sarqaq and Knife River in its strong emphasis on micro-blades, just as it resembles the latter two and differs from T 1 with respect to burins.

Side blades. The T 1 rounded side blades and those with one straight edge (Pl. III, Figs. 10-17) are much closer to Ipiutak forms than to those at the older Arctic sites. The large parallel-sided blades with retouch over the outer surface (Pl. III, Figs. 1-7) have not been described from other Arctic sites but occur in Mesolithic and early Neolithic sites in Mongolia and Siberia (Maringer, 1950, Pl. XXX, Figs. 1, 4, 5; Okladnikov, 1950, Fig. 62).

End Blades. The small triangular end blades at T 1 (Pl. II, Figs. 1-13) fall within the general Dorset range even though the most characteristic Dorset type, with deeply concave base, is missing. In outline the rather wide, straight-based forms (Figs. 8-12) bear a certain resemblance to those from Cape Denbigh and Ipiutak. However the Denbigh blades are more delicately flaked, and like those from Ipiutak are more standardized in appearance than the T 1 examples. Some of the Mongolian end blades (Maringer, 1950, Pl. XV, Figs. 5, 8, 9, 12; Pl. XXIX, Fig.18) are closely similar to those from T 1, but this may be of no particular significance in view of the wide distribution of this simple type of blade.

Backed blades. Micro-blades and heavy triangular-sectioned flakes with one edge sharp for cutting and the opposite edge thickened or blunted by steep flaking or the removal of longitudinal spalls (Pl. V), have not been reported from other Arctic sites. Most of the T 1 examples may, however, be compared in a general way with some of the backed blades of the Old World Paleolithic and Mesolithic.

Triangular microliths. These curious little blades of uncertain function (Pl. VIII) formed an important part of the lithic complex at T 1 but have not been described from any other site. In general shape and in the blunting of one of the long edges they are suggestive of som of the Mesolithic microliths from Eurasia. They differ from these however in the shallow flaking of the outer surface and in the burin-like flake scar along one edge. In fact, some of these T 1 implements may represent a new and delicate type of burin.

It is indicative of the growing cohesiveness of the archaeological picture in the far North that the proto-Dorset site T 1 must be considered in relation to both the classic Dorset Eskimo culture of the eastern Arctic and the much earlier pre-Eskimo flint complexes of Alaska and Canada. It strengthens the linkage between Dorset and the early flint horizons in the west, and indicates more clearly than ever that the latter were the source from which the original eastern pattern of Eskimo culure was derived. Also, though it is probably some thousands of years later than the oldest Alaskan sites, T 1 contributes several new components to the impressive list of traits shared in common by the early Eskimo and pre-Eskimo Arctic cultures and the Mesolithic cultures of Eurasia.

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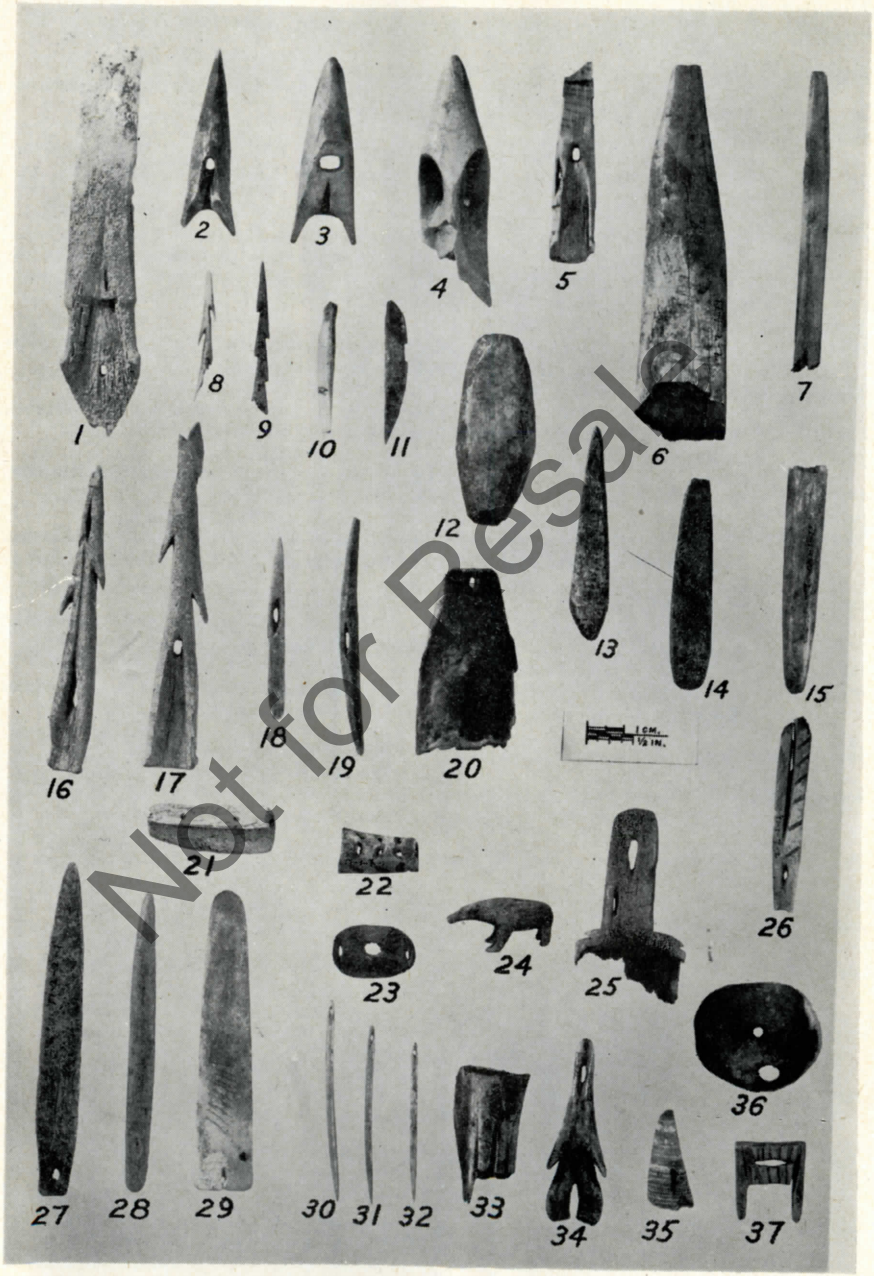

Plate 1. Ivory, bone, and antler artifacts from T 1. One half natural size.

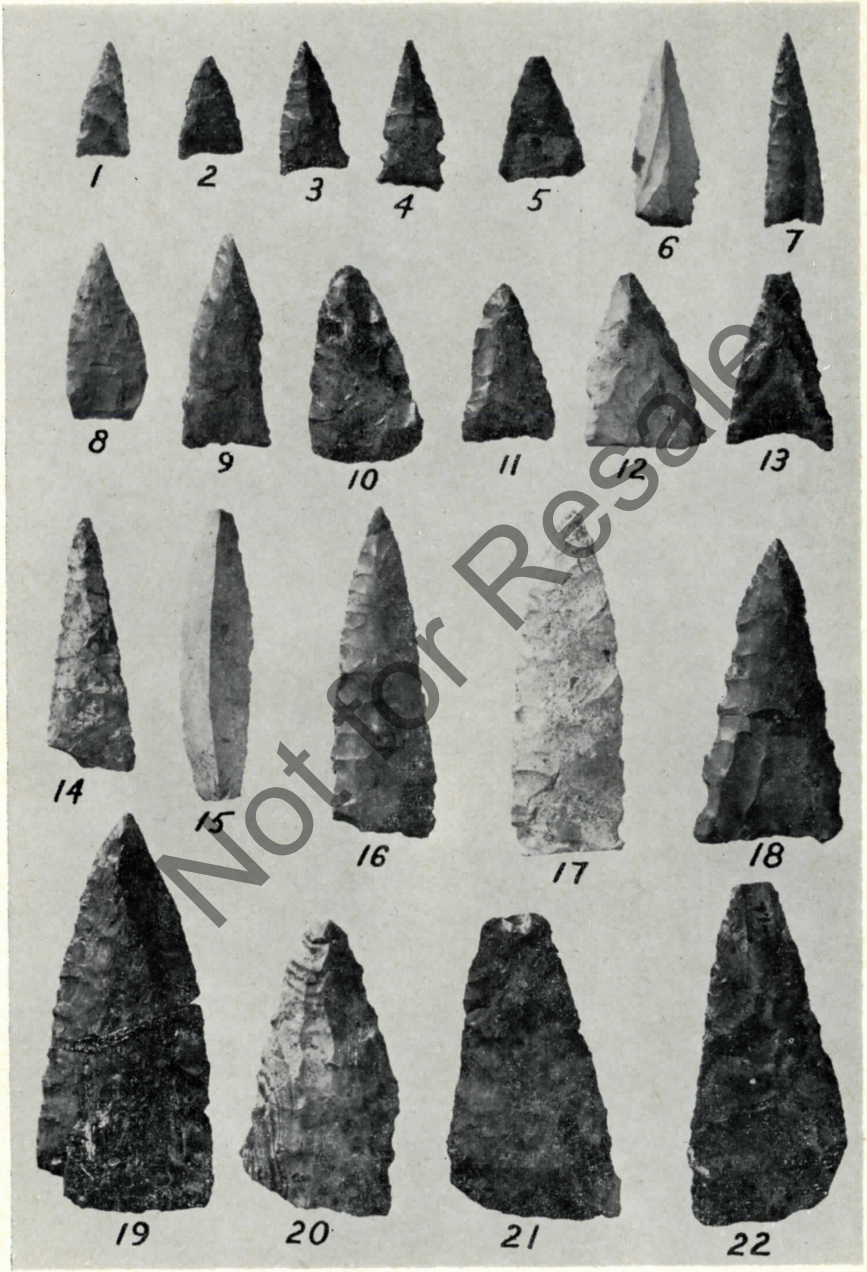

Plate II. End and side blades from T 1. Chert. Natural size.

Plate III. Side blades from T 1. Chert. Natural size.

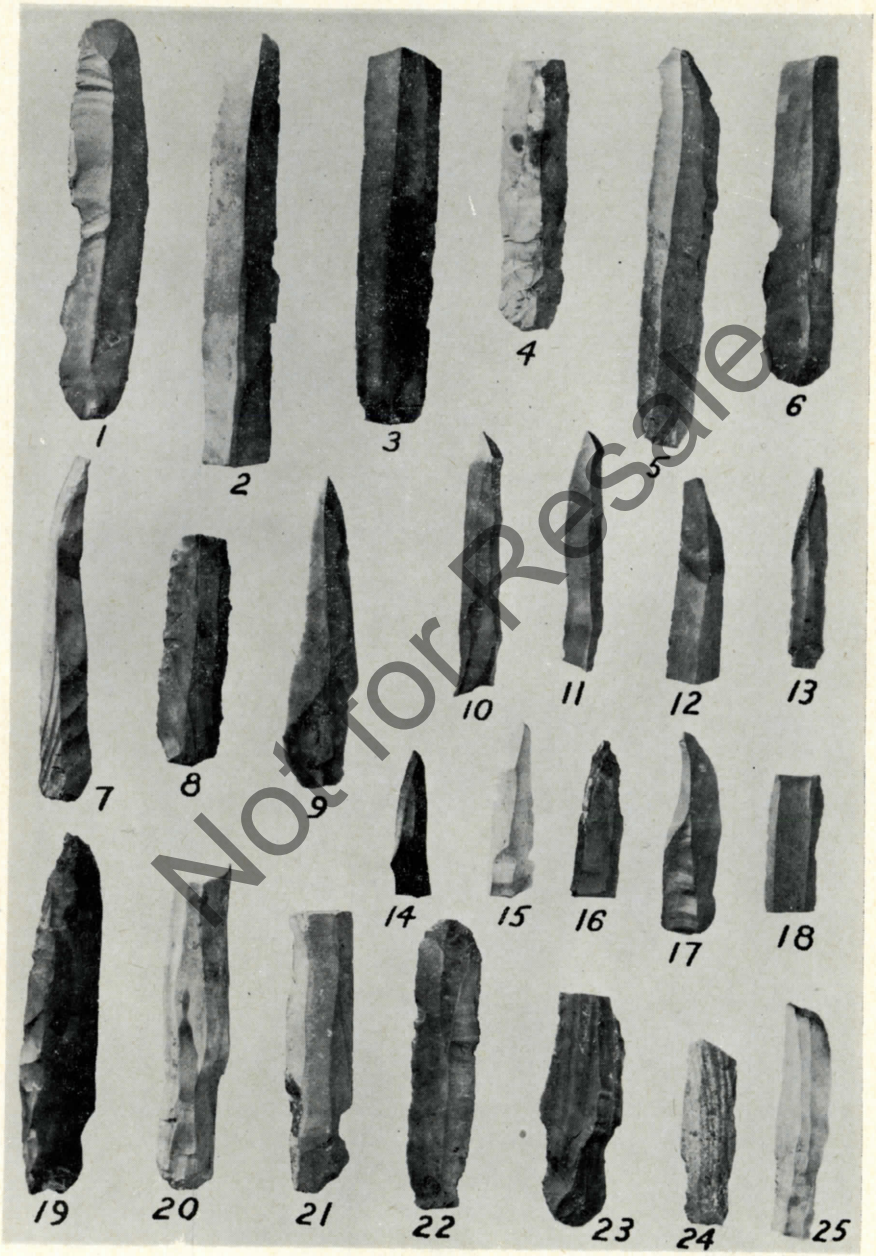

Plate IV. Micro-blades from T 1. Chert. Natural size.

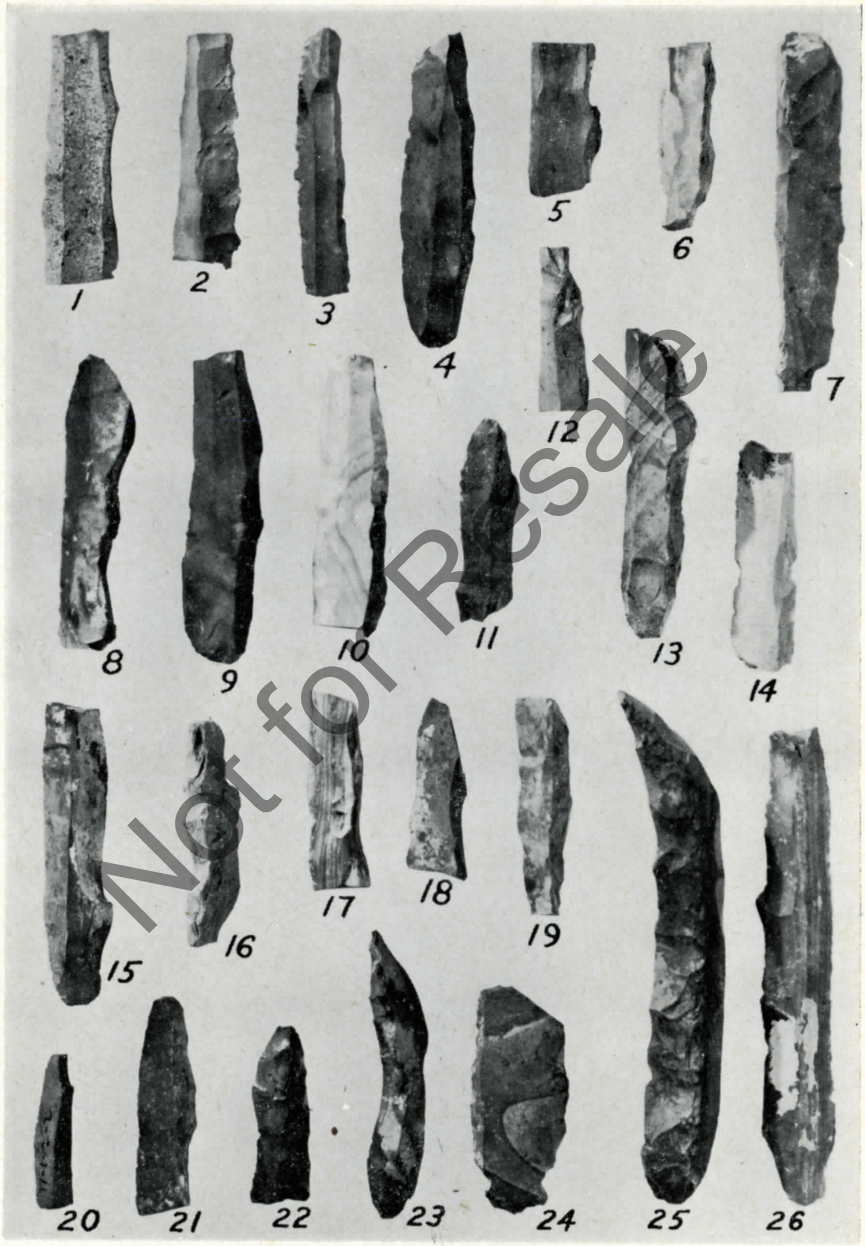

Plate V. Backed blades from T 1. Chert. Natural Size.

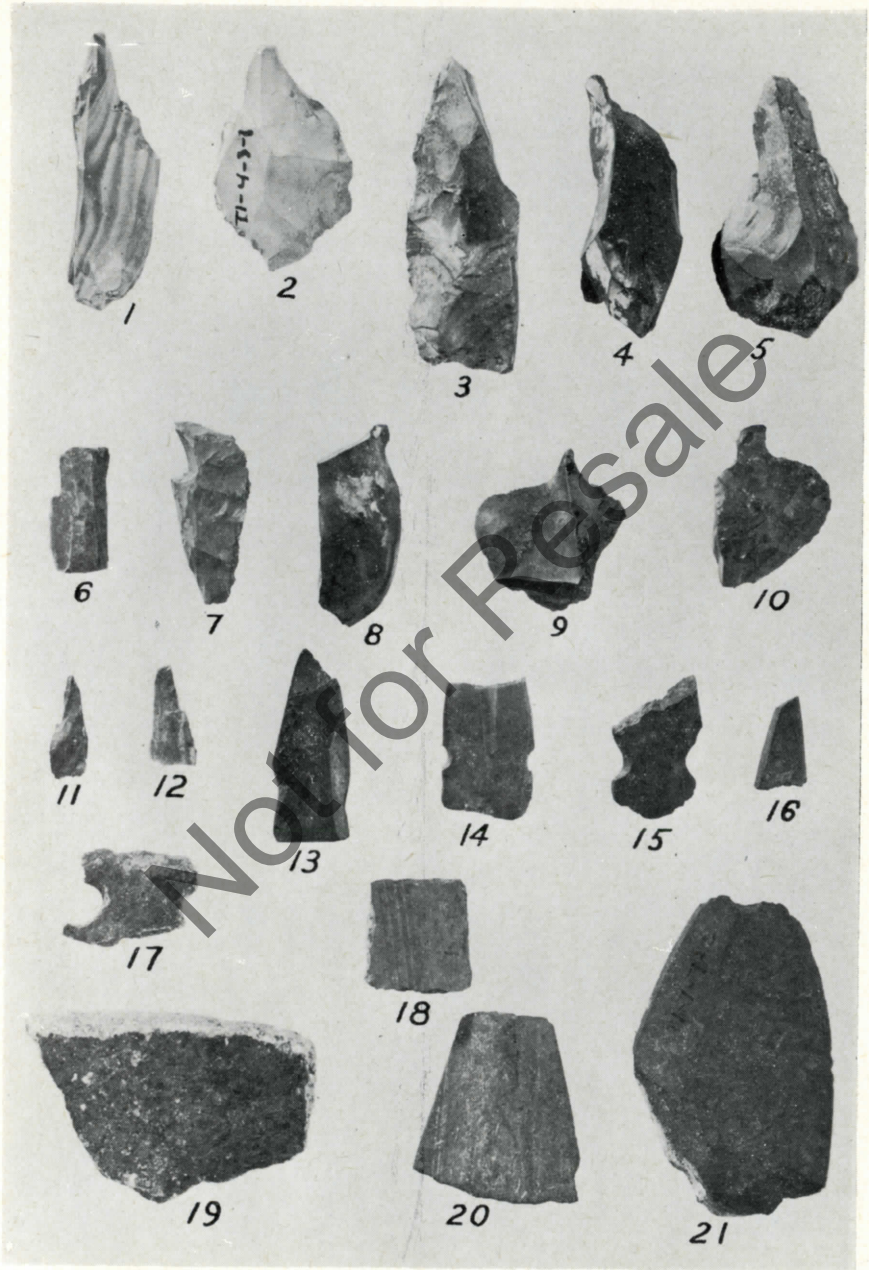

Plate VI. Burins, gouges, and gravers, chert; nephrite implements with rubbed edges; steatite potsherds, and slate blades. T 1. Natural Size.

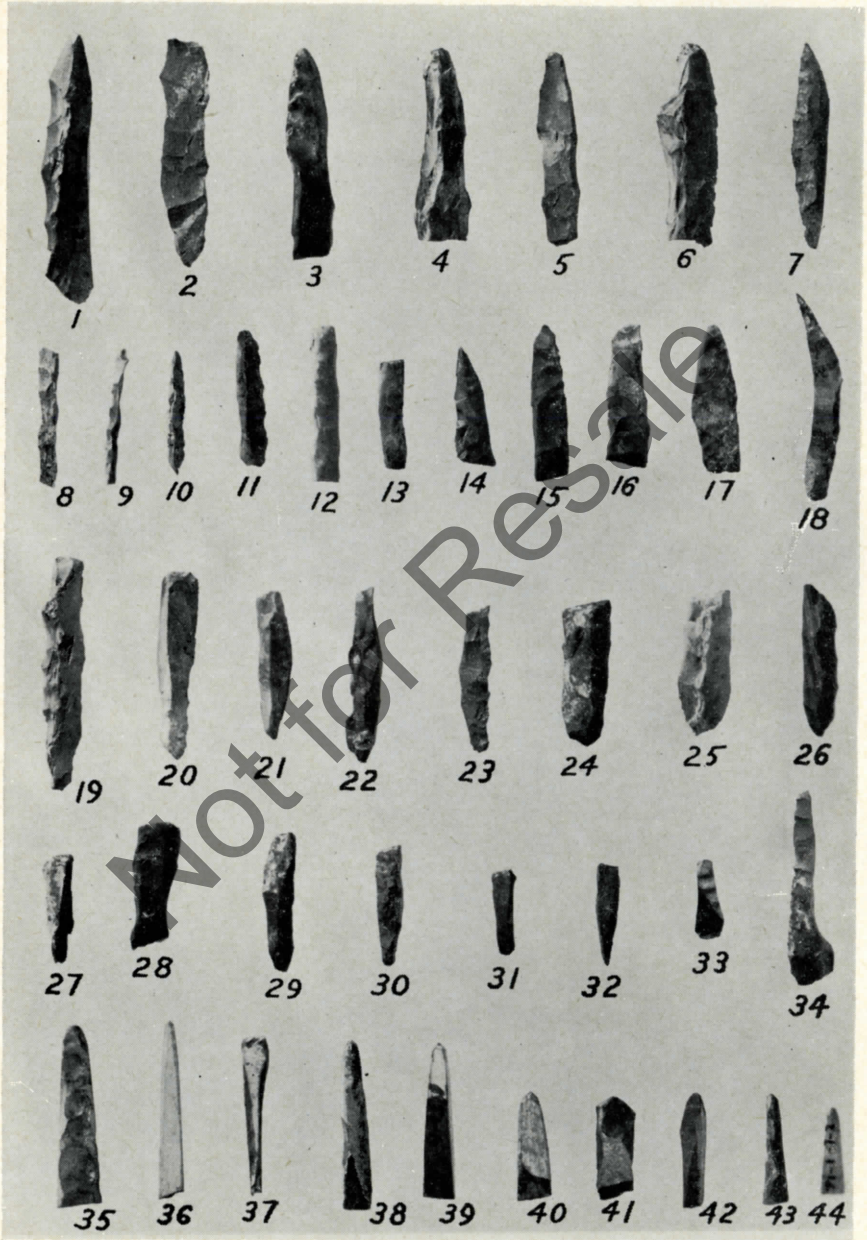

Plate VII. Spall implements from T 1. Chert. Natural size.

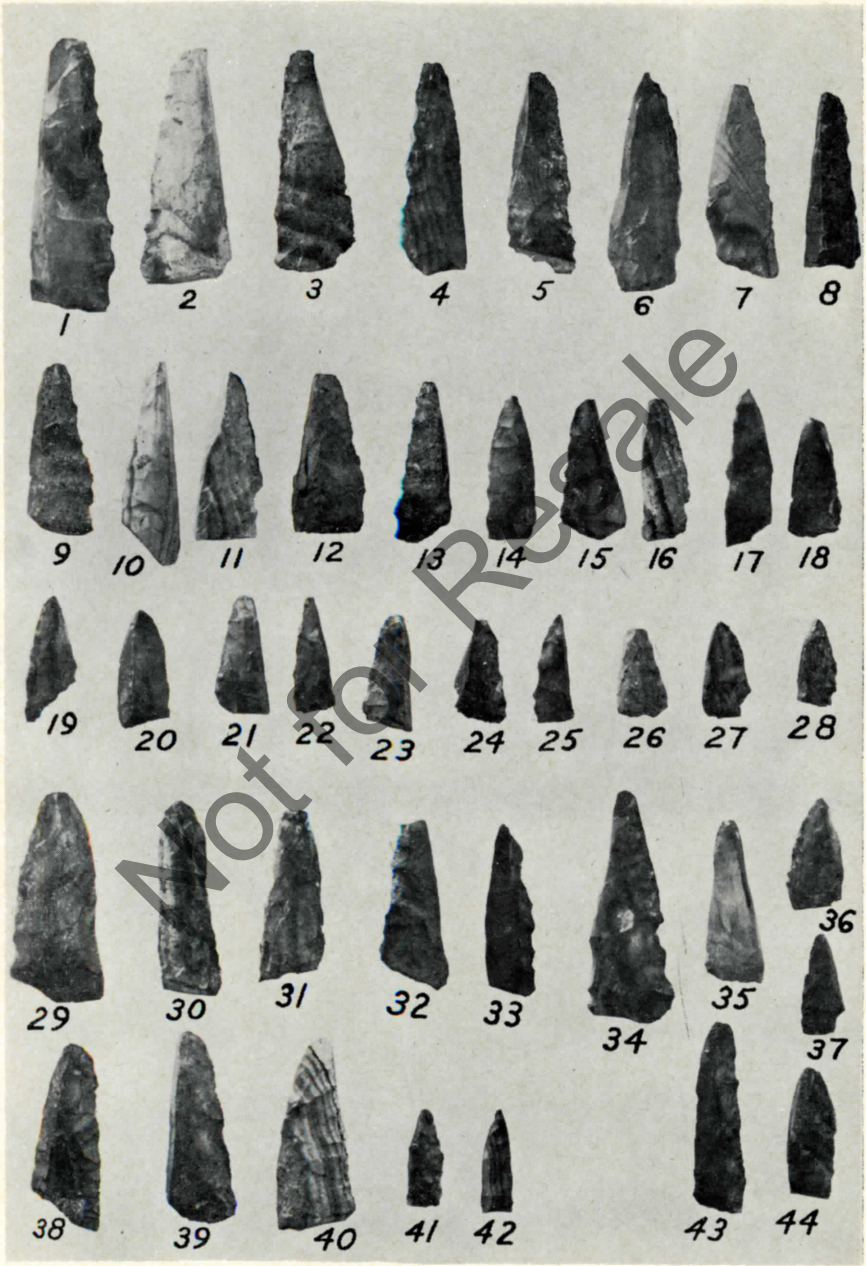

Plate VIII. Triangular microliths from T 1. Chert. Natural size.

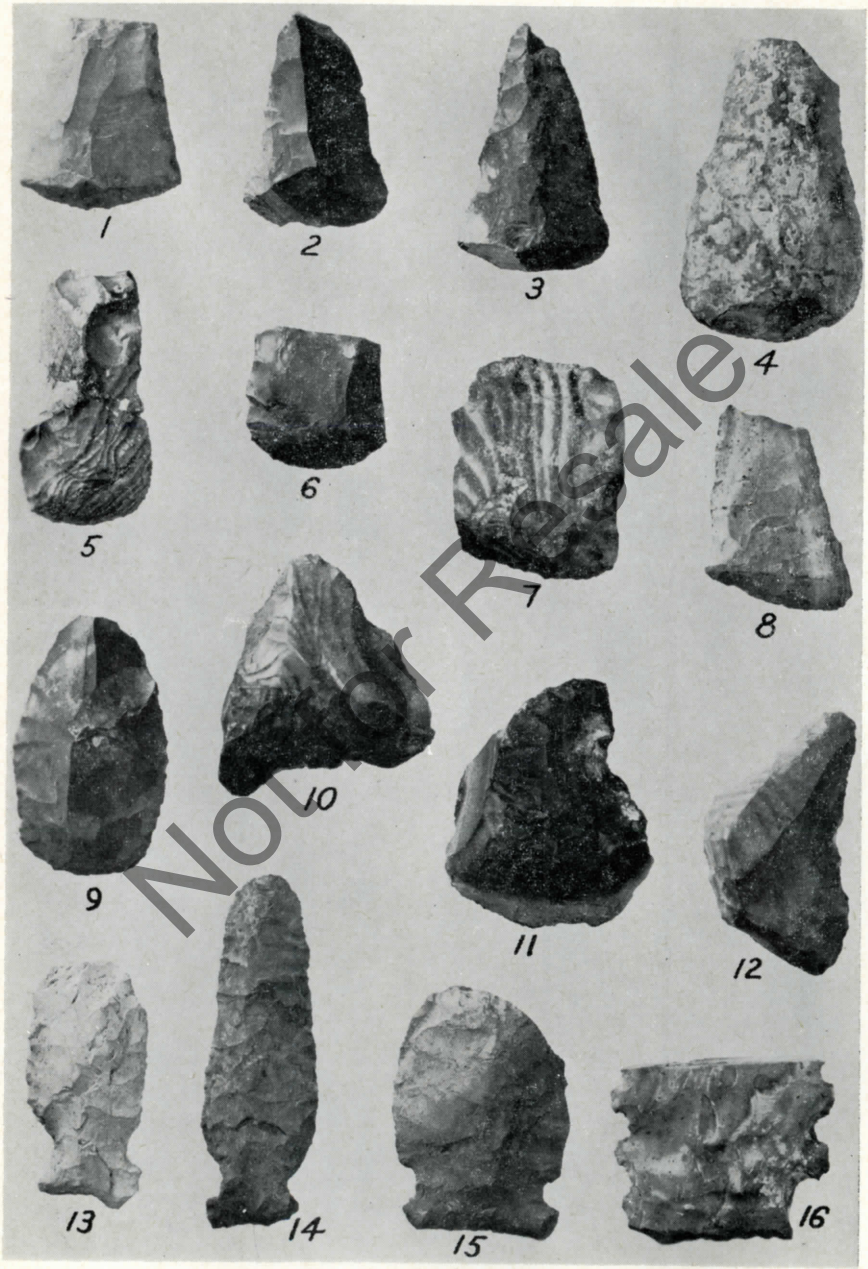

Plate IX. Scrapers from T 1. Chert. Natural size.

Plate X. Scrapers, implements with rubbed edges, heavy flakes, and core. T 1. Chert. Natural size.