A LATE PALEO-INDIAN AND EARLY ARCHAIC SEQUENCE IN SOUTHERN LABRADOR

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by

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ABSTRACT

The coast of Southern Labrador is an area ideal for archaeological research. With its abundant marine resources a constant attraction for man, both in prehistoric times and the more recent past, it is a region with the potential to have reconstructed for it an uninterrupted sequence of cultural development from the seventh millenium B.P. to the Christian era as had been demonstrated by the temporally continuous and stylistically related material found by McGhee and Tuck in their 1974-75 surveys.

The excavation of the Cowpath site (EjBe-7) allows the amplification of the early part of this sequence as represented by the Paleo-Indian derived triangular projectile point and the succeeding projectile point forms and whole complexes which are seen to issue from this. At the site, four loci of intermittent and independent occupation were revealed, with four temporally discrete units subsumed within these occupations, as indicated by as many forms of projectile points which, found and dated elsewhere in Southern Labrador, disclose themselves to be culturally related and temporally successive. The Cowpath East (EjBe-22) and Cowpath West (EjBe-23) sites represent single occupations, refining and reinforcing the more than 2000 year temporal span of the Cowpath site.

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CHAPTER ONE

REVIEW OF EASTERN PALEO-INDIAN RESEARCH

Up to fifty years ago prehistorians hesitated to place the antiquity of man in North America past 5000 years ago. However, in 1926, in Folsom, New Mexico, the discovery of a fluted projectile point in association with an extinct form of bison indicated that man had occupied North America for over 10,000 years. Since then, earlier fluted points have been found in the Southwestern United States in direct association with remains of mammoth, columbian elephant, mastadon, bison and horse, carbon 14 dating placing this early Clovis occupation between 12,000 and 11,000 years ago (Williams and Stoltman, 1965:670). Although there has been scattered evidence of a pre-projectile point horizon with dates of 20,000 years and more (cf. Bryan, 1969; Carter, 1957; Dragoo, 1967; Willey, 1956) the authenticity of such material is equivocal at best, thus affording the fluted point makers temporal priority as the earliest Indians in the New World.

Comparable material found in the East has long been assumed derivative of the Southwestern manifestations. However, as the date ranges for both areas are equivalent some have been prompted to re-examine the question of origins, as well as the validity of the implicit tendency to define the whole of the Paleo-Indian tradition on the basis of the Southwestern data, a

definition misleading for the Eastern material which is a product of a more variable and fluctuating environmental milieu and of settlement rather than kill sites (cf. Mason, 1962).

The Paleo-Indian complex of the East is recognized primarily and outstandingly by the distinctive fluted projectile point, which in certain areas is later replaced by points exhibiting the technique of fine parallel "ribbon" and collateral flaking (Mason, 1962:219). Characteristic of the attendant assemblage are bifacial knives; a predominant unifacial industry including side scrapers, flake knives, and retouched flakes; small end scrapers, a high percentage of which have graving spurs; and commonly, although not consistently, spokeshaves (Funk, 1972:17ff.). Pièces esquillees have been recovered from many sites and have, no doubt, been unrecognized in a number of assemblages thus having been assigned to the miscellaneous category. The more complex sites, such as Debert in Nova Scotia and West Athens Hill in New York, have produced rough stone tools such as hammerstones, anvilstones, and abrading stones, one or more of which have been found infrequently in other sites, such as the Silver Springs site in Florida which yielded two abrading stones and a chopper (Mason, 1962:240), and the Williamson site in Virginia and the Bull Brook site in Massachusetts where hammerstones were recovered (MacDonald, 1968:145; Funk, 1972:20). Tools such as drills, awls, perforators, and pulping planes are absent in most sites although abundant at Debert (MacDonald, 1968:145).

Also characteristic of this complex is a widely diffuse population based on the hunting of large Pleistocene mammals, although direct evidence of such is absent. In fact, Fitting (1970:38) suggests, on the basis of faunal remains from Modoc Rock Shelter and Graham Cave as well as on the low percentage of projectile points in Southeastern Paleo-Indian assemblages as compared to their Northeastern counterparts, that the Paleo-Indians of the Southeast were primarily gatherers and small game hunters (cf. also Wilmsen, 1971). Although Funk, Fisher and Rielly (1970) argue for the contemporaneity of man, mastadon, and mooselk in the Northeast, the only direct association of animal and man is the caribou (Funk, 1972:24).

The general homogeneity of Paleo-Indian assemblages over a wide geographic area and through time suggests that dispersal of population was fairly rapid and that regional specialization with concomitant breakdown in communication did not quickly ensue, although some slight indications of regional variations are perceivable at this time, increasingly so towards the late Paleo-Indian and early Archaic periods and well defined by the late Archaic.

For the purpose of presenting an outline of development and distribution of Paleo-Indian in the east this area has been divided into three sub-areas: 1) the Southeast which includes, east of the Mississippi River, the states of Kentucky,

West Virginia, Virginia, Tennessee, Mississippi, Alabama, North and South Carolina, Georgia, and Florida as well as the southern extremes of Illinois, Indiana and Ohio; 2) the Great Lakes area including Wisconsin, Michigan, Northern and Central Illinois, Indiana and Ohio, Northwest Pennsylvania and Southern Ontario; 3) the Northeast, which includes the coastal states from Delaware to Maine, Southern and Northeastern Pennsylvania, Vermont, the Atlantic Provinces and Labrador.

The first area to be discussed is the Southeast. In the following pages it may seem that undue stress is placed on projectile points, but, while recognizing the inherent weakness in such an approach, it appears to be an unavoidable consequence of the paucity of other kinds of data.

In the Southeast Clovis or, following Roosa (1969) "Clovis-like" projectile points are well represented and are considered as representative of the basal cultural stratum from which subsequent developments are seen to emerge. Many of these points are surface finds but the Williamson site in Southeast Virginia (McCary, 1951), the Parrish site in Northwestern Kentucky (Webb, 1951), the stratified Silver Springs site in North Central Florida (Neill, 1958), the Wells Creek Crater site in Tennessee (Dragoo, 1965), and the stratified Nuckolls site, also in Tennessee (Lewis and Kneberg, 1958) have been excavated yielding early material which has been dated at around 11,000 years ago by means of comparison with dated cultural remains from the Southwest (Williams and Stoltman, 1965:670).

From this area a large number of post-Clovis projectile points have been collected and excavated: Redstone points, which might be considered as a variant of the Clovis points (cf. Mason, 1962), Cumberland points, more widespread although centering primarily upon Kentucky and Tennessee (Williams and Stoltman, 1965:672), Quad points, occurring mainly in Northern Alabama, Kentucky and Tennessee (ibid.), Suwanee points, found in Florida and possibly related to the Dalton point (Mason, 1962:239; cf. Bullen, 1962), and the many varieties of Dalton, such as the Greenbrier, Hardaway and Nuckolls points. If one accepts as a sound and workable proposition the trend from full fluting through stages of partial fluting to non-fluting then these points may be tentatively set up in chronological order. Williams and Stoltman, in their detailed review of the Southeast, arrange a sequence of Clovis (Redstone)-Cumberland-Quad-Dalton on the basis of inferred typological classification rather than on demonstrated stratigraphic position. Mason (1962:239) also points out that, in the absence of the Clovis-Folsom succession of the Southwest, the Cumberland point could typologically be considered as the eastern counterpart of the Folsom point. The temporal position of the Dalton point is not in dispute for it has been radiocarbon dated at the Stanfield-Worley site in Alabama at 7690±450 B.B. and 6970±400 B.C. (De Jarnette et al., 1962) and prior to 7000 B.C. at Graham Cave, Missouri (Coe, 1964:120).

The Dalton occupation has assumed a position transitional from the late Paleo-Indian to the early Archaic. Aside from the apparent morphological continuities of the point itself (its basal thinning or partial fluting and concave base reminiscent of the Paleo-Indian fluted point and its concave lower lateral edges suggestive of later side-notching) its stone tool assemblage is unmistakeably Paleo-Indian with unifacially flaked scrapers, ovate scrapers, large unifacial knives, small gravers or perforators and, occasionally, bifacial knives (Tuck, 1974:74).

Other sites significant for this transitional stage are the Nuckolls site, mentioned above, the Flint Creek Rock Shelter (Cambron and Walters, 1959), and the Asbury Rock Shelter, in Alabama (De Jarnette et al., 1964), and the Doerschuk and Hardaway sites in North Carolina (Coe, 1964). At these last mentioned sites in the Carolina Piedmont Coe convincingly demonstrates continuous development from the late Paleo-Indian into the Archaic. At the base of a long cultural sequence Hardaway-Dalton points are found and dated at prior to 7000 B.C. on the basis of comparison with the Graham Cave materials (Coe, 1964:120). Seen to issue from these are the small corner-notched Palmer points, probably a form transitional between the Big Sandy side-notched point, found elsewhere and a derivative of the preceding Dalton complexes, and the later Kirk corner-notched and stemmed points which follow in Coe's sequence (Tuck, 1974:75). These then appear to develop into Stanly stemmed forms which are dated at around 5000 B.C. by means of comparison with other known and dated examples (Coe, 1964:121).

The Carolina sequence is complemented by that of the St. Alban's site in West Virginia (Broyles, 1971). Here Big Sandy related Kessel side-notched points date at 7900±500 B.C. followed by Amos and Charleston points (Palmer-like) which are seen to develop into Kirk corner-notched points, dated at 6980±160 B.C. and Kirk stemmed examples dated at 6850±320 B.C. (Broyles, 1971:49). Continuities can be seen in the accompanying assemblages as well, with the Big Sandy complexes characterized by the same unifacial scrapers, side scrapers, and unifacial and bifacial knives as are found with the Dalton complexes (Tuck, 1974:75), and Kirk assemblages including similar uniface scrapers and bifacial knives, with the addition of large choppers and digging tools as well as drills (ibid.:78). Bringing this succession well into the Archaic are the various bifurcate base point forms dated at around 6000 B.C. (Broyles, 1971:49) and, in scattered numbers, found as far north as Maine and New Hampshire (Dincauze, 1974:45).

Concomitant with these changes in projectile point style are alterations, albeit gradual, of subsistence and settlement patterns and, inferrentially, social organization. At the Alabama Stanfield-Worley site, one of the very few sites with preserved organic remains, white tailed deer was commonly found, supplemented by gray squirrel, racoon, rabbit, gray fox, fox squirrel, chipmunk, wood rat, porcupine, striped skunk, turkey, bobwhite, box turtle, and other birds and reptiles (Tuck, 1974:74). As Tuck has suggested, it can be supposed that similar game was

available to the earliest Indians as well. Although large Pleistocene fauna would have been present at that time, there is no evidence to indicate them as a dietary staple.

To exploit these different resources some sort of seasonal round might be inferred, no doubt accompanied by some form of territoriality. Following Dalton times, there is little evidence of subsistence and settlement strategies, as is the case for the Paleo-Indian period. However, as local varieties of projectile points and whole complexes begin to manifest themselves one can logically assume a complementary trend towards more regionalized and intensive exploitations of local resources with decreasing communication and possibly a stronger sense of territoriality on the part of these small groups of hunters and gatherers.

In the Great Lakes area many Clovis related points have been recovered from surface finds and excavated sites, confined in distribution to Southern and Central Lower Michigan and Southern and Central Wisconsin, correlating with the northern limits of the Wisconsin ice (Mason, 1962:235). Sites include the Barnes site, Michigan (Wright and Roosa, 1966), the Lux and Dobbelar sites, Michigan (cf. Roosa, 1969), the Holcombe site, Michigan (Fitting, 1970), and the Hilo site, also in Michigan (Fitting, 1963).

It seems that a number of contemporary variants of a projectile point form are represented. However, at the last two mentioned sites projectile point style indicates that they are probably more recent than the former. From the Hilo site, which Fitting regards as early Paleo-Indian (Fitting, 1970:42), are found lanceolate points of various sizes, basally thinned or, as represented by a number of bases, fluted on both sides. As there are no radiocarbon dates from this site, dating has been provisional. As well as equivocal, for stylistically, following the "fluting to non-fluting" trend of development, these points fall into the late Paleo-Indian period, earlier than or contemporary with the late Paleo-Indian "plano" points. In support, Mason (1963:3) sees the Hilo component as a "cohesive variety of late Paleo-Indian artifacts with a wide Upper Great Lakes distribution." The Holcombe site, based upon its elevation above sea, is tentatively dated at just prior to 9000 B.C. (Fitting, 1970:46). However, as MacDonald suggests, the material from this site, represented by very thin, small, concave based lanceolate points which tend to be basally thinned rather than fluted, probably post dates the Debert site in Nova Scotia and the Bull Brook site in Massachusetts, that is, probably post dates 8600 B.C. (MacDonald, 1971:33). In fact, it would not be unreasonable to consider the site as younger than Debert by a fair margin. Fitting, nevertheless, feels that the geologically derived dates are valid and that this basal treatment might be a function of the thinness of the point

(Fitting, 1070:47). Interestingly, according to Fitting (1970:57) the late Paleo-Indian Brohm site contains some projectile points, preforms, and other tools similar to those from the Holcombe site which, since the Brohm site would have been under ice at the time of the supposed early occupation of Holcombe, leads him to suggest that the Brohm site was occupied by the descendants of the Holcombe people. Alternatively, this site may represent a contemporaneous or near contemporaneous occupation.

The late Paleo-Indian period in this area is characterized by complexes containing collaterally flaked stemmed and non-stemmed lanceolate points identified in the Southwest as Eden, Scottsbluff, Plainview, and Angostura (Mason, 1963:1). Variously referred to as "Aqua-Plano" (Quimby, 1960:34), "the Satchell Complex" (Fitting, 1970:34), and "plano" (MacDonald, 1971:37), this material ranges further north following the newly ice-freed areas of around 8000 to 6000 B.C. (ibid.). Lanceolate points have been found in Southern Ontario at the Sheguindah site (Lee, 1957), at the George Lake site, also in Southern Ontario (Greenman, 1943), the Brohm site, near Thunder Bay (MacNeish, 1952) and at the Renier Cremation site, in North-eastern Wisconsin (Mason and Irwin, 1961).

Based on correlation with carbon 14 dated peat samples, the Sheguindah site is dated between 7000 and 9000 B.C. (Fitting, 1970:62). It is suggested, then, that the "plano" material is contemporaneous with the Quad-Dalton sequence to the south (MacDonald, 1971:37).

What became of the Paleo-Indian in the Great Lakes region has yet to be demonstrated. No smooth sequence of development exists here as is the case for the Southeast. MacDonald (1971:38) suggests a displacement of plano industries by Archaic industries to the south, "displacement" meaning, rather than physical annihilation, adaptation "to a more suitable pattern developed in the deciduous forests to the south" at a time of apparent mixed pine-birch dominance around the Great Lakes. Or, alternatively and hypothetically, population around the Great Lakes remained, thinly spread, living near waterways and very lightly populating the low carrying capacity forest. This, as well as the later rise in the lake levels, might explain the hiatus in the archaeological data pertaining to this transitional period.

In the Northeast one again finds "Clovis-like" points representing the earliest inhabitants of the area. Surface finds are numerous, extending as far north as Cape Breton and Prince Edward Island. Excavated sites include the Bull Brook (Byers, 1954) and Wapanucket 8 (Bobbins and Agogino, 1964) sites in Massachusetts, the Plenge site in New Jersey (Kraft, 1973), the Shoop site in Pennsylvania (Witthoft, 1952), and West Athens Hill (Funk, 1967), the Potts site (Ritchie, 1965), Dutchess Quarry Cave (Funk, Walters and Ehlers, 1969), the Kings Road site (Funk, Weinman and Weinman, 1969), and the Davis site (Ritchie, 1965), all in New York.

Debert produced a series of radiocarbon dates which averaged 8635±47 B.C. (MacDonald, 1968) and the Bull Brook site gave a radiocarbon date of around 7000 B.C. (Byers, 1959), a date which is considered to be too recent. As the latter was based on scattered charcoal with no direct associations, the former date would seem the more accurate. Dutchess Quarry Cave dated at around 10,530±370 B.C. which is controversially early (MacDonald, 1971:32). As this date is possibly associated with a Cumberland point it would, if accurate, run counter to all previously acknowledged dates for this projectile point form. On the basis of geological evidence, the maximum possible date for the Potts site is thought to be 9000 B.C.; for the Davis site 8000 to 8500 B.C.; and for the West Athens Hill and Kings Road sites 10,500 B.C., this of course allowing a very loose margin (Funk, 1972:17).

The Debert site yielded the most varied assemblage. Along with numerous fluted points, distinctive with pronounced ears and deeply concave base, are abundant scrapers, perforators, gravers, drills, stone awls, pulping planes, and rough stone tools such as hammerstones, anvilstones and abrading stones, the last two items rare or absent in most sites (MacDonald, 1968:144). Following in complexity are Bull Brook, West Athens Hill, and Kings Road (Funk, 1972:17ff.).

Debert, West Athens Hill and Bull Brook also produced some data on settlement pattern. At the last mentioned site Byers noted the occurrence of "hotspots" of artefacts, sometimes including hearths and some calcinated bone fragments (Byers, 1954). As these were in a concentrated area, in a pattern suggestive of a camp circle, it was inferred that these spots indicated the past existence of wind breaks or some such structures (Mason, 1962:238). MacDonald (1968:131) interpreted each of the Debert living floors as a separate seasonal encampment, perhaps of several weeks duration. Three of these eleven areas, which depart from the usual pattern of artefacts and hearths, are thought to be specialty areas. Funk (1972:27), examining the pattern of the artefact aggregations at the West Athens Hill site, postulates that this was an area repeatedly used for seasonal camps, different spots used in different years. The Shoop, Potts, Davis, and Wapanucket 8 sites suggest small, briefly occupied hunting camps (Funk, 1972:27).

Aside from a few scattered surface finds of plano points, the late Paleo-Indians of the Northeast are represented by the material from the Reagen site, in Northwestern Vermont (Ritchie, 1953). This site, which Ritchie dates between 7500-8500 B.C. on the basis of correlation of the occupation with the strandlines of the Champlain Sea (Ritchie, 1969), yielded simple and stemmed end scrapers, side scrapers, combined

graver and spokeshave scrapers, flake knives, ovate and lanceolate bifaces, talc pendants and, importantly, a number of distinctive projectile points. These pentagonal, pentagonal-lanceolate, eared triangular, and simple triangular forms were basally thinned rather than fluted (Ritchie, 1953:254), thus stylistically placing themselves at the end of the fluted point tradition.

Such a simple triangular form might be unrecognized in many collections, perhaps mistaken for later triangular forms, accounting, in part, for the apparent restricted distribution of such points. However, a few points, generally similar to some of those found at Reagen, were recovered at the Williamson site, in Virginia (McCary, 1951), from a few Ohio collections (Funk, 1972:34), from the Plenge site in Northwestern New Jersey (Kraft, 1973) from the Lower Hudson Valley (Brennan, 1974) and from collections in Southern Labrador (Harp, 1951; 1964; McGhee and Tuck, 1975).

The transitional phase between the late Paleo-Indian and the Archaic is largely undocumented for the Northeast. As with the Great Lakes area, the existence of a pine dominated forest at this time (Funk, 1972:10) may have been instrumental in the apparent population scarcity, forcing people to scatter widely or to cluster around specialized resource areas such as waterways, both inland and coastal. However, this must be qualified by noting that evidence from palynology indicates that such a pine forest was not as sterile in flora and fauna

as their modern nothern latitude counterparts with which they are compared (Davis, 1969:330; Fitzhugh, 1972a:5).

There is some evidence of early Archaic populations in this area as demonstrated at the Neville site in New Hampshire (Dincauze, 1971). At the base of the long cultural sequence Neville points date between 5700 and 5000 B.C., followed by, and parent to, Stark points, dated between 5000 and 4000 B.C. (Dincauze, 1974:45). In the same succession, middle Archaic Narrow Stemmed points can be seen to issue from this (Dincauze, 1971:196). Similarly, in Southern Labrador, to be discussed in greater detail in the following pages, there is evidence to suggest a long and continuous occupation from late Paleo-Indian times into the Christian era (McGhee and Tuck, 1975).

The preoccupation with chronology and technology which is apparent in the above review is a reflection of most of the literature of the 50's and 60's. In the past years, however, there has been among Paleo-Indian researchers a growing interest in settlement and subsistence data and an increasing awareness of the interrelationships such patterns had with the complex and changing postglacial environment. A succession of vegetational and climatological alteration following the retreat of the Wisconsin ice has been postulated, as based on the rather oversimplistic model of the southward displacement of modern

biotic zones (cf. Butzer, 1971; Fitting, 1968; Funk, 1972) and some regional pollen analyses have been initiated, are be of more direct consequence for the research in the areas involved (cf. Cleland, 1966; Jordan, 1975).

To briefly mention settlement data, those sites in the East are seen to represent a varied range of activities as evidenced by quarry sites, campsites, and workshop-campsites, all of varying size. It is realized that such known sites are not fully representative of the settlement patterns of these groups. Quarry sites are relatively easily noticed, as are the larger encampments and central-based camps. Unrepresented are the assumed hunting and fishing camps occupied by one to five males for very short periods of perhaps one to five days, as well as the overnight camps used in transit (Campbell, 1968). Such a weakness is of course inherent in the nature of the data but can, to some extent, be compensated for by the use of ethnographic analogy. In fact, prehistorians base much of their inferences on social structure upon such analogy, using the band as the most likely unit of comparison. It is well, however, to remain aware of the greatly different types of organization which can exist within this nebulous and controversial unit of description (cf. Damas, 1968).

MacDonald (1968), for example, finds the community pattern of the Montagnais-Nascapi analogous to the Debert people;

Funk (1972:30) and Campbell (1971) suggest the Tulaqmuit band of the Nunamuit Eskimo as a useful comparison for many North-eastern Paleo-Indian groups; and Fitting (1970) compares the early Michigan Paleo-Indians to the Barren Ground Eskimos. Others (Beardsley et al., 1956) suggest that the earliest Paleo-Indians were representative of the band organization of the Free Wandering type which is differentiated from the Restricted Wandering type of the later Paleo-Indians by lack of territoriality. The widespread existence of such a form of organization has been questioned by Schwartz and Betteral (n.d.) who feel that the initial Paleo-Indian population probably represented a Restricted Wandering pattern, i.e. stable groups foraging and hunting within known and familiar territories. "Once adaptive, stable, systematic patterns of behaviour become established they tend to persist, even in the face of changing conditions where traditional patterns may be non-adaptive... For hunting and gathering populations there would be a real adaptive advantage in remaining in an area where one was familiar with the distribution and annual cycle of plants and animals... In addition...there are also strong sociological and cultural factors which would tend to give stability to human groupings." (Schwartz and Betteral, n.d.:7).

To conclude, in the above review of the basal cultural sequences of Eastern North America, it is clearly apparent from the overall scarcity of data and the nature of that recovered

from the usually small and thin sites, that we can only mildly approach an understanding of the Paleo-Indian within the wide and dynamic perspective of settlement and subsistence patterns and culture change. This last process is left outstanding. As we have seen in the Southeast, the transition from Paleo-Indian to Archaic is clearly and continuously demonstrated. For the Northeast, in an environment active with postglacial fluctuation, such a clear sequence is not possible. However, it is hoped that the present research in the Strait of Belle Isle will to some extent amplify the cultural development during this transitional period and beyond.

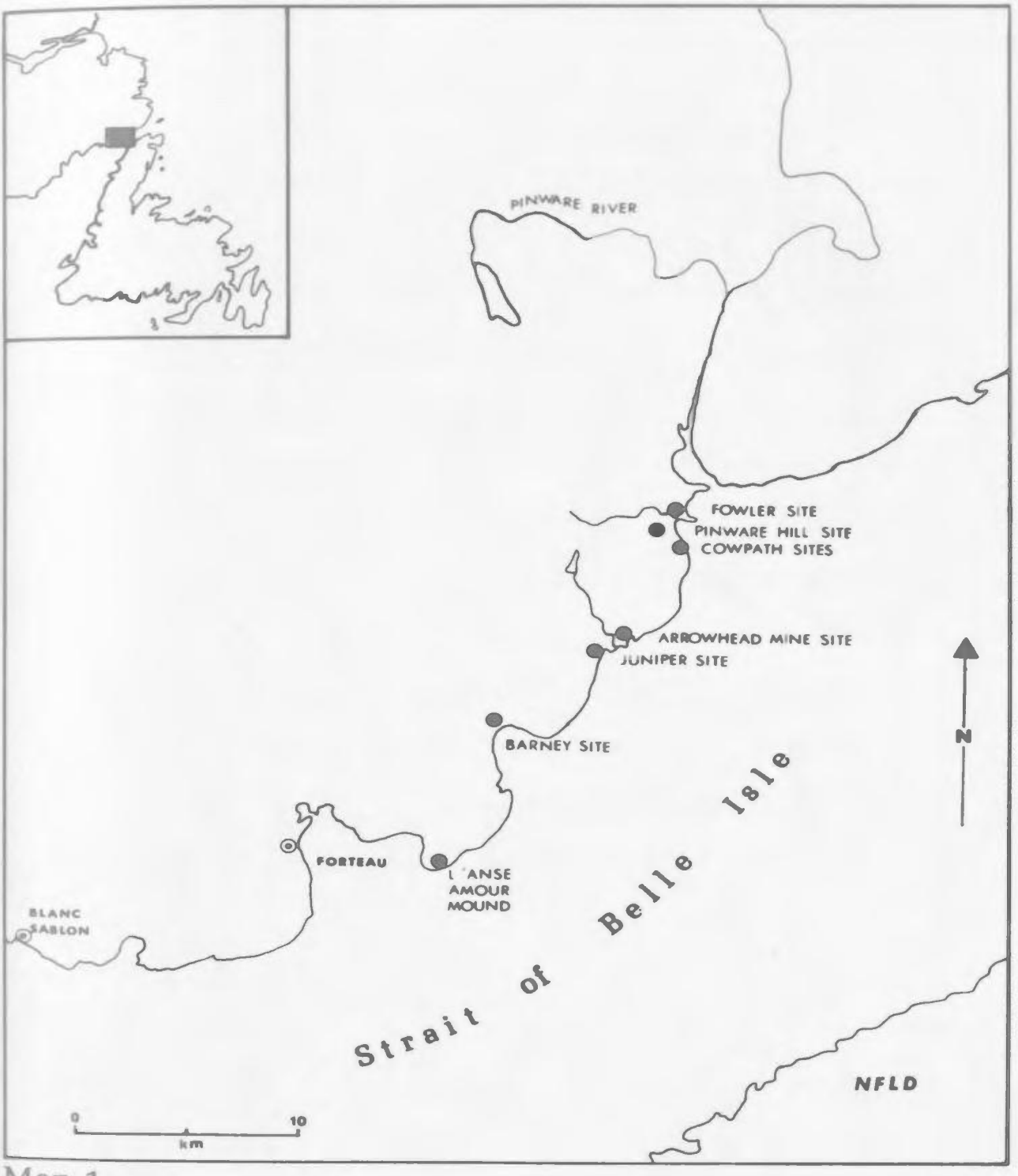
CHAPTER TWO

ENVIRONMENTAL HISTORY

The area under investigation is the southern coast of Labrador, extending from Bradore Bay to the Pinware River (see map no. 1), as included within the larger area of Hare's (1969:46) Southeastern Plateau Belt which is confined within the region south of Lake Melville and the Lake Plateau and east of the Romaine River, excluding the Mealy Mountains.

The physiography of this southern coastal strip is directly related to the underlying bedrock which is a granitic mass belonging to the Precambrian Grenville Series which in the Strait of Belle Isle is mostly granite, granite gneiss, and gneiss and is the southeastern most margin of the Canadian Shield. As such, the relief is low and rolling with elevations ranging from near sea level to 150 metres, excepting the small hill at the head of the L'anse au Loup and L'anse au Diable valleys which rises to roughly 310 metres (Fong, 1969:5ff.).

Headlands may subtly emerge from the sea, as at Point Amour or Forteau, with sandy beaches flanked by extensive sand dunes, or may boldly rise as forbidding cliffs as at Capstan Island and West St. Modeste.


PINWARE RIVER
FOWLER SITE
PINWARE HILL SITE
COWPATH SITES
ARROWHEAD MINE SITE
JUNIPER SITE
BARNEY SITE
N
FORTEAU
L'ANSE AMOUR MOUND
BLANC SABLON
Strait of Belle Isle
NFLD
0
10
km

Map 1

This coastal area is the southern extreme of the area of coastal tundra which runs from two to twenty miles inland along the whole of the Labrador coast, and may be considered a southern incursion of the sub-arctic zone. Distinguished as a sedge-shrub tundra supporting willow, sedges, various grasses and a wide variety of shrubs, with isolated clusters of stunted spruce and birch in protected spots and areas of bog (Jordan, 1975:94), it is bordered to the west by poor, yet closed crown, forest (Hare, 1969:40; Fitzhugh, 1972:12).

Transecting the heath-covered plateau and the numerous areas of sandy blowout which extend from shore to well inland are a number of rivers which flow into the Strait. The largest, originating from the interior, are Riviere St. Paul and the Pinware River, supplemented by the smaller Forteau Brook, and L'anse au Diable, L'anse au Loup and Blanc Sablon Rivers as well as by the many smaller rivers and brooks which run through the areas of sand dune and enter various bays (Fong, 1969:6).

Labrador's climate is directly related to the proximity of the cold Labrador Current (which, running along the coast, affords the strip of sub-arctic environment), as well as unstable atmospheric conditions and the duration and distribution of the winter pack ice (Fitzhugh, 1972:14), although this last factor is of greater consequence for Central and Northern Labrador as the fast moving Labrador and Gulf of St. Lawrence currents inhibit

the solid build-up of ice off the Strait of Belle Isle during the winter months (McGhee and Tuck, 1975:3). In the summer the Labrador Current allows a marked temperature difference between the coast and the interior, a margin averaging 11 degrees Fahrenheit, sometimes increasing to 50 degrees. Often accompanying the Current is a local low pressure system which encourages the cooler conditions of the coast. In the winter, however, the presence of the Current provides an ameliorating effect, shielding the coast from the extreme temperatures of the interior (Jordan, 1975:94). On the southern coast of Labrador the effect of the Current is somewhat weakened by its merging with the warmer Gulf of St. Lawrence. Nevertheless, sub-arctic conditions persist, with long, cold winters and short, cool summers.

The barren coast, the thinly forested interior, and the coastal waters provided prehistoric man the means by which he could subsist. In the terrestrial domain the Barren Ground caribou (Rangifer caribou caboti), adapted to life on the tundra as well as the sub-arctic forests (Loughey and Kelsall, 1970:275), would have been potentially a resource of major consequence to man. These migratory animals spend the summer months in small nomadic groups on the tundra and congregate in very large herds for the fall migration to the south and the spring migration to the north. Although their predictability and large numbers enhance their attraction for predators, they can suddenly, for a variety of reasons, alter their pattern (ibid.) thus possibly leaving the hunter in a dangerously precarious position.

Woodland caribou (Rangifer caribou sylvestris) tend to roam only in small groups and are usually restricted to the forest zones; however, they have been noticed on the tundra (Fitzhugh, 1972:172).

The smaller game of the tundra and forest regions include rabbit, porcupine, fox, arctic hare, otter, black bear, fish, and various migratory birds, all a potential supplementary source of nutriment.

These two terrestrial regions are relatively unstable, with little faunal diversity, severe climatic conditions, few food alternatives along the food chain and, as a direct result, the periodic occurrence of faunal population fluctuations, often drastic. In contrast, the marine environment, with species diversification, long and complex food chains presenting many food alternatives at the various levels, and a relatively stable environmental milieu, affords a situation which tends to enhance population stability and, by corollary, inhibit harsh population fluctuations (Fitzhugh, 1972:172).

The coastal waters present a large number of species which are useful to man, the most important of which are the seals. In the early spring the harp seals (Phoca groenlandicus) appear off the coast of Southern Labrador and Newfoundland on their southward migration, in prelude to their movements north. Gregarious animals, they migrate in large herds and whelp on the ice (the

Front breeding area) in late February and March. Later in the spring the adult males, followed by the immature seals and the females, present themselves as easy prey as they appear on the ice to moult (Mansfield, 1963:13). Associated with these at this time are the hooded seals (Cystophora cristata) as well as the few ringed seals (Phoca hispida) that might have strayed from their usual more northerly habitat, in areas of prolonged duration of land fast ice (McLaren, 1958:78).

The harbour (Phoca vitulina) and grey (Halichoerus grypus) seals are also very common in Labrador, with their heaviest concentrations found at Hamilton Inlet (Fitzhugh, 1972:173). These sedentary species are not usually associated with ice and are found in Southern Labrador in the summer and autumn (Mansfield, 1963:6ff.).

Although today herds of walrus (Odenbenus rosmarus) are rarely found south of the Hudson Strait, hauling out on rocky shores in summer and on ice floes near pack ice in winter, their distribution was probably more extensive in the past, extending to Southern Labrador and further south, where usual year round open water conditions would have encouraged their presence (Davies, 1958:102; Mansfield, 1959:4).

The minke whale (Balaenoptera acutorostrata) is an often solitary migratory animal which, reaching Southern Labrador by July, following the northern movement of the capelin (Sergeant, 1961:5), would have presented itself as fairly easy prey as it

approached the shore. The white whale, or beluga (Delphinapterus leucus), is a large porpoise which is presently found in the arctic, south as far as Northern Labrador (ibid.), and which may have been found further south during colder periods (Fitzhugh, 1972:177). Larger whales were common before the climax of the whaling industry, but would have been too formidable a prey for the aboriginal Labradorian, except possibly in the case of the right whale (Balaenidae balaena) which is known for its singular slowness and stupidity as well as its occurrence close to shore (Mörzer Bruyns, 1971:156).

In June the capelin (Mallotus villosus), in the largest concentrations found in Canadian waters, wash up on the shores of Newfoundland and Labrador in the millions in order to spawn upon the beaches (Jangaard, 1974:16). Rarely found in Northern Labrador, they provide the southern regions with an abundant resource, in themselves as well as in the feeding cod which are lured inshore (ibid.:12).

In the early summer Atlantic salmon (Salmo salar) and sea trout (Salmo trutta) begin their swim up the numerous rivers and brooks in the area.

Davies (1958:101) suggests that, according to his distributional analysis of northern seals and walrus, the relationship amongst the present species was long and stable, extending back at least as far as the late Pleistocene. Such a study lends credence to the provisional projection of the present

configuration of pinnipeds as found off the coast of Labrador to the past, certainly as far back as the initial occupation of that region by man. It may also be suggested that this projection be expanded to include the whale populations as well.

This, however, must be qualified by noting cyclically recurrent climatological alterations which would have directly affected both the marine and terrestrial faunal populations. Fitzhugh (n.d.) observes certain climatic modifications proposed for Labrador, operating in a pattern alternating between Atlantic and Continental phases of 1000 and 1200 years. Continental periods are cool, which in Labrador would result in rather stable conditions with early and solid freeze-ups, increased winter pack ice, late arrival of the ice with a longer duration to the south, cooler and more stable summers with little rain, and abundant marine and terrestrial fauna (Fitzhugh, n.d.:178). With the extension of the pack ice into Southern Labrador, Newfoundland, and the Gulf of St. Lawrence, marine faunal activity would be increased with the occurrence of some species, such as the walrus and ringed seal, which are usually found to the north (ibid.). In contrast, the warmer Atlantic periods are times of unstable conditions. Freeze-ups are late and poor with early break-up and southern movement of the ice. Conditions are unconducive to the thriving of terrestrial and marine fauna, breeding conditions for the harp seals are poor, and fewer of the northern species will venture south (ibid.). Such extreme conditions are likely to

have affected the human population of Labrador as well. In fact, Fitzhugh tentatively correlates these alternating conditions with movements and developments of the prehistoric Indian and Eskimo populations in Central and Northern Labrador (ibid.:43ff.). At the same time, however, it appears likely that these climatic fluctuations were not of drastic consequence to the seemingly more stable, albeit thin, aboriginal populations of Southern Labrador for, although stable, cold conditions would have affected this area positively, its geographical position would have buffered it from the extremes, allowing an adequate resource base during the Atlantic periods.

Extending the present pattern of terrestrial and marine fauna back in time, the annual cycle of the prehistoric populations of the coast of Southern Labrador may be viewed as maritime in emphasis with a supplementary, although not unimportant, interior economy. To briefly and provisionally sketch that annual round: in early and late spring the harp seal population would have been available as they mounted the loose ice, and the hooded and a few ringed seals would have been in the area as well. Walrus may have been important at this time and possibly year round. With the open water of late spring and early summer, the capelin would begin to run, along with the attendant league of cod. At this time, and during the late summer as well, the beluga and minke whale would have appeared, along with the harbour and grey seal in summer and early autumn. Early in the summer the salmon and trout would have begun their run, and sea birds would

have been available; in late summer and early fall migratory birds would have been fair prey. During the fall, with the decline in marine resources, the interior would support the annual fall caribou migration, the caribou contributing essentially to the economy by way of hides and fur as well as meat. During the winter months, with resources scarce, small game and the odd solitary caribou would sustain the population until the breaking up of the ice in the spring.

As the initial occupation of Labrador followed closely upon deglaciation of the coast, which occurred at an estimated 9000 years ago[1] (Fillon, n.d.:5; Jordan, 1975:108), these people found themselves in the midst of changing geological, climatological and vegetational conditions.

Following the retreat of the Laurentide ice sheet considerable load was relieved from the continents at the same time as huge amounts of glacial meltwater were returned to the sea. Thus, by means of slow adjustments glacio-isostatic recovery took place in the form of postglacial rebound concomitant with eustatic adjustments resulting in the overall rise in the level of the sea (Andrew, 1974:1ff.). This rise has been judged continuous for at least the past 7000 years,

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[1] previously accepted estimates were between 16,000 and 14,000 years ago (Prest, 1970).

decreasing through time from a rate of 8.9 cm. per century before 3000 B.P. to a subsequent rate of 3.6 cm. per century (Scholl et al. as cited in Fitzhugh, 1972:17). Relative to the rate of isostatic adjustment this sea level rise has meant the present and locally differential submergence of coastal areas once exposed, except in the case of small anomalous areas with local offsetting conditions, or in larger areas, such as Labrador and Northwestern Newfoundland, where postglacial uplift has far exceeded the eustatic rise thus affording the present exposure of the postglacial coastline (cf. Grant, 1972).

Fitzhugh (1972) has calculated rates of land emergence relative to rise of sea level for Hamilton Inlet, Central Labrador. These, however, cannot be applied to Southern Labrador which is geologically closer to the Northern Peninsula of Newfoundland. As no work has been done on the postglacial emergence of the Labrador side of the Strait of Belle Isle, the relation of postglacial rebound to eustatic change may be provisionally extrapolated from Grant's (1972) research on the Northern Peninsula where he has found that the rate of uplift has decreased exponentially from 430 cm. per century shortly after deglaciation to 14 cm. per century during the last 1000 years. Thus is indicated a generally smooth relative fall of sea level from a height of about 134-152 metres to present level.

In Southern Labrador one would then expect the height of a site above sea level to increase with its age, as seems generally to be the case (cf. McGhee and Tuck, 1975). However, it also appears that variation between Newfoundland and Labrador does exist, possibly as a result of a thicker, albeit undemonstrated, ice load on Labrador with subsequent initial rebound which was faster than that of the Northern Peninsula (Grant, personal communication), or perhaps as a result of the local retreat of the ice on the island. According to dates received from strandlines on the Northern Peninsula, at around 8500 years ago the level of the sea would have been at or above 30 metres above present high tide (ibid.). Yet two sites at 27 and one locus at 26 metres above sea level have yielded material which, stylistically and according to one of four radiocarbon dates, were occupied at around 8900 years ago. It is expected that this date will be substantiated by the carbon samples taken from two of these sites and presently undergoing analysis.

Of more direct consequence to the earliest populations of Southern Labrador were the vegetational changes which occurred subsequent to the initial postglacial exposure of barren ground. On the basis of a series of pollen cores from Central Labrador Jordan (1975) deduced a series of five pollen zones which illustrate the postglacial vegetational succession for the area. Beginning with bare ground, a sedge-shrub and lichen heath tundra subsequently invades the coast, proceeding inland. At around

7200 B.P. alder is found on the coast, forming widespread thickets (dense thickets at Lake Melville) between ca. 6500 and 6000 B.P. By about 6000 B.P. birch-fir is in evidence at Western Lake Melville and on the coast by about 5500 B.P. At ca. 5800 B.P. spruce forest becomes established at Western Lake Melville, and, in isolated spots, by about 5200-5300 B.P. on the coast (Jordan, 1975:109). Jordan also notes that similar stages of succession have been observed in areas in Northern and Central Labrador.

As no pollen analyses have been undertaken for Southern Labrador, it may prove useful to provisionally apply Jordan's interpretations to this area, given a time difference of perhaps 500-1000 years, assuming a south to north temporal gradient. This, however, must be qualified by the initial east to west rather than south to north retreat of the ice, as well as by the amelioration of climate which is apparent from about 6500 to 4000 B.P. and which seems to have been the cause for the very rapid series of vegetational changes which are seen to occur in Central Labrador at this time (Jordan, 1975:110). As it is likely that by 6500-7000 years ago spruce had already become established in the south (ibid.:113), it must be assumed that the preceding succession of vegetation would have been less concentrated events in time. Keeping in mind the limitations of the interpolation, this same succession of vegetational zones may be inferred for the Strait of Belle Isle, although the dating of such occurrences remains equivocal.

It appears then that the earliest occupants of Labrador existed in a fairly rude peri-glacial environment, on a narrow strip of coastal tundra with the continental ice margin to the west. Subsequent generations were to witness the immigration of alder, birch and spruce. However, to a population which is seen to have occupied the coastal areas of Southern Labrador from early postglacial times well past the onset of modern conditions, such vegetational modifications would have been of minimal consequence to them, for whom the coastal tundra remained essentially unchanged. Of course certain advantages were to be had with the spruce climax, for here, other than driftwood, was a source for all-important wood. Yet such changes remained unextreme, supporting the relative stability of occupation which is in evidence for the Labrador side of the Strait of Belle Isle.

CHAPTER THREE

SITE DESCRIPTIONS

COWPATH SITE

The Cowpath site (EjBe-7) is located on a flat bog-marked depression, nestled among a group of low lying hills, at approximately 800 metres north of the village of West St. Modeste (see map no. 1). The site, at 27 metres above sea level and roughly 300 metres from the coast is about two hectares in area, with open uncultivated ground covered with low herbage and, in sheltered spots, dwarf shrubs. Cutting across the site is a well trodden path which connects West St. Modeste with Pinware, a small settlement about five miles to the northeast. This footway transects a number of sandy areas and blowouts, exposing much cultural material which over the past years has been attractive to looters.

The locale was first discovered by Harp (1964) who, calling it Modeste 1, collected from it a number of distinctive quartz and quartzite triangular projectile points. Following upon this McGhee and Tuck tested the area briefly during the 1973 field season and more extensively in 1974. Encouraged by the potential of the site, they returned with a crew in the spring of 1975 in order to begin actual excavation. The site was delimited, a grid was set with a line and transit and, under the

COWPATH SITE

Map 2

direction of Stephen Davis of St. Mary's University, three areas were exposed. In the fall of the same year a crew of three, including and under the direction of the present writer, returned to Cowpath and opened up three more areas, thereby completing excavation of all the extensively occupied portions of the site.

Method of Excavation

From datum the positioned grid extended fifty metres north, east, and west, and one hundred metres south, with the whole of the excavated areas included within the eastern, western and northern arms and the southern branch encompassing those once-rich areas along the footcourse as well as a few test spots.

The first three localities chosen for excavation were divided into one-metre squares which were removed with no remaining baulks, resulting in the even exposure of an activity area. Ground cover and buried peat were removed with a shovel, and the culture bearing sand level was trowelled down. All artefacts were mapped and recorded with respect to their provenience from datum, all significant rock configurations were mapped and photographed, charcoal was collected wherever possible, and flakes were collected and counted.

Similar procedure was followed for the last three excavated areas. However, as these promised to be multicomponent, elevations above sea level were taken on all artefacts.

Stratigraphy

No cultural horizons were defined by stratigraphic differences in soil color or texture. Elevations taken on artefacts were later correlated into 5 cm. and 10 cm. levels, but no vertical clusterings or notable non-clusterings were observed. Artefacts appear to have been randomly distributed throughout the sand of the culture bearing stratum.

The natural stratigraphy of the site is as follows, with variation in certain loci (see Figure 1a):

Level 1: ground cover

Level 2: surface humus

Level 3: buried humus

Level 4: culture bearing sand

Level 5: darker, sterile sand.

Area Descriptions

Area One:

This first excavated area was approximately 40 square metres, 29 of which were exposed. The nature of the stratigraphy differed from that of the rest of the site as can be seen in Figure 1b where the culture bearing Level 4 consisted of coarse grey sand which overlay Level 5, an ancient cobble beach strewn with flakes, cores and some artefacts. Below this, Level 6 consisted of sterile near-consolidated gravel.

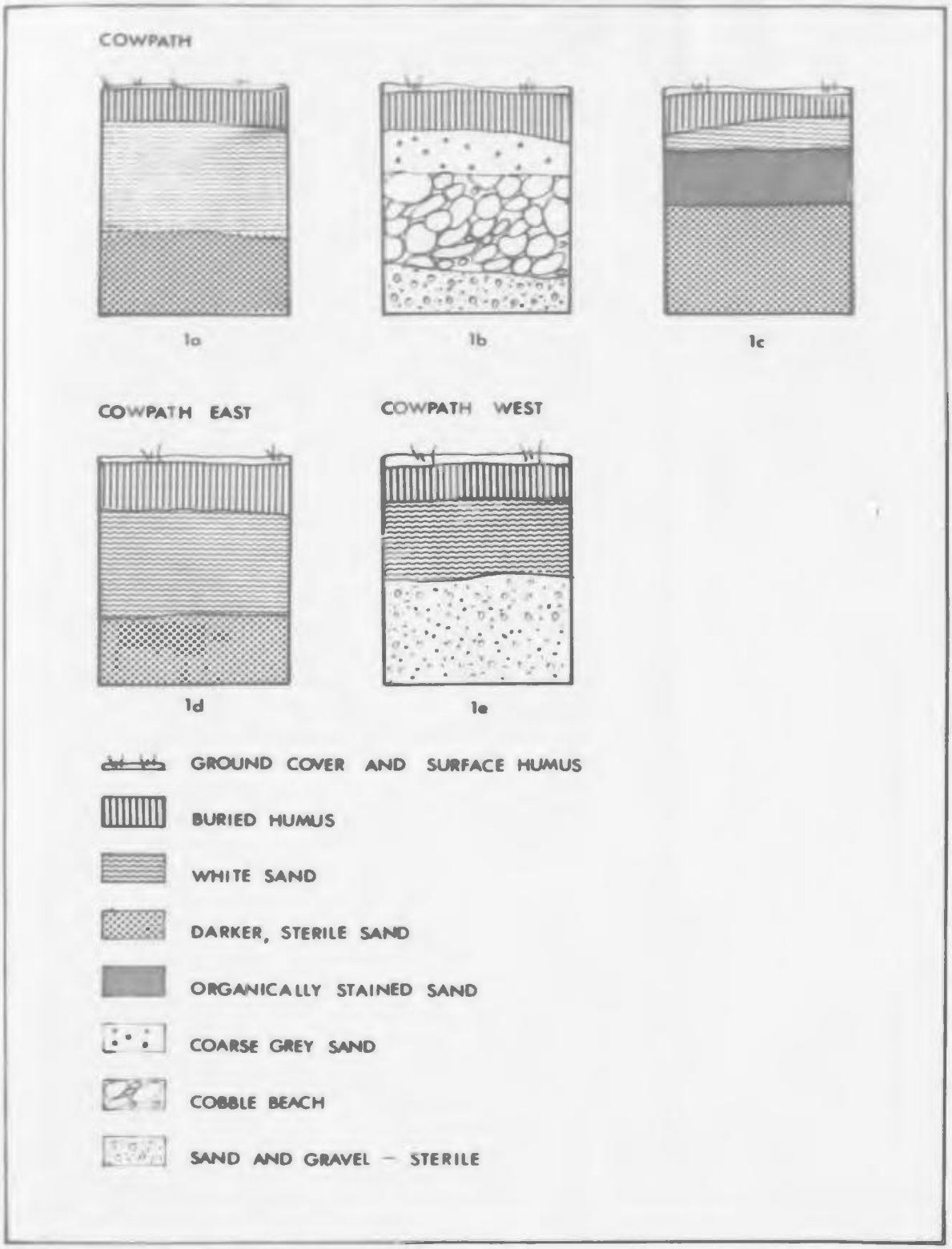


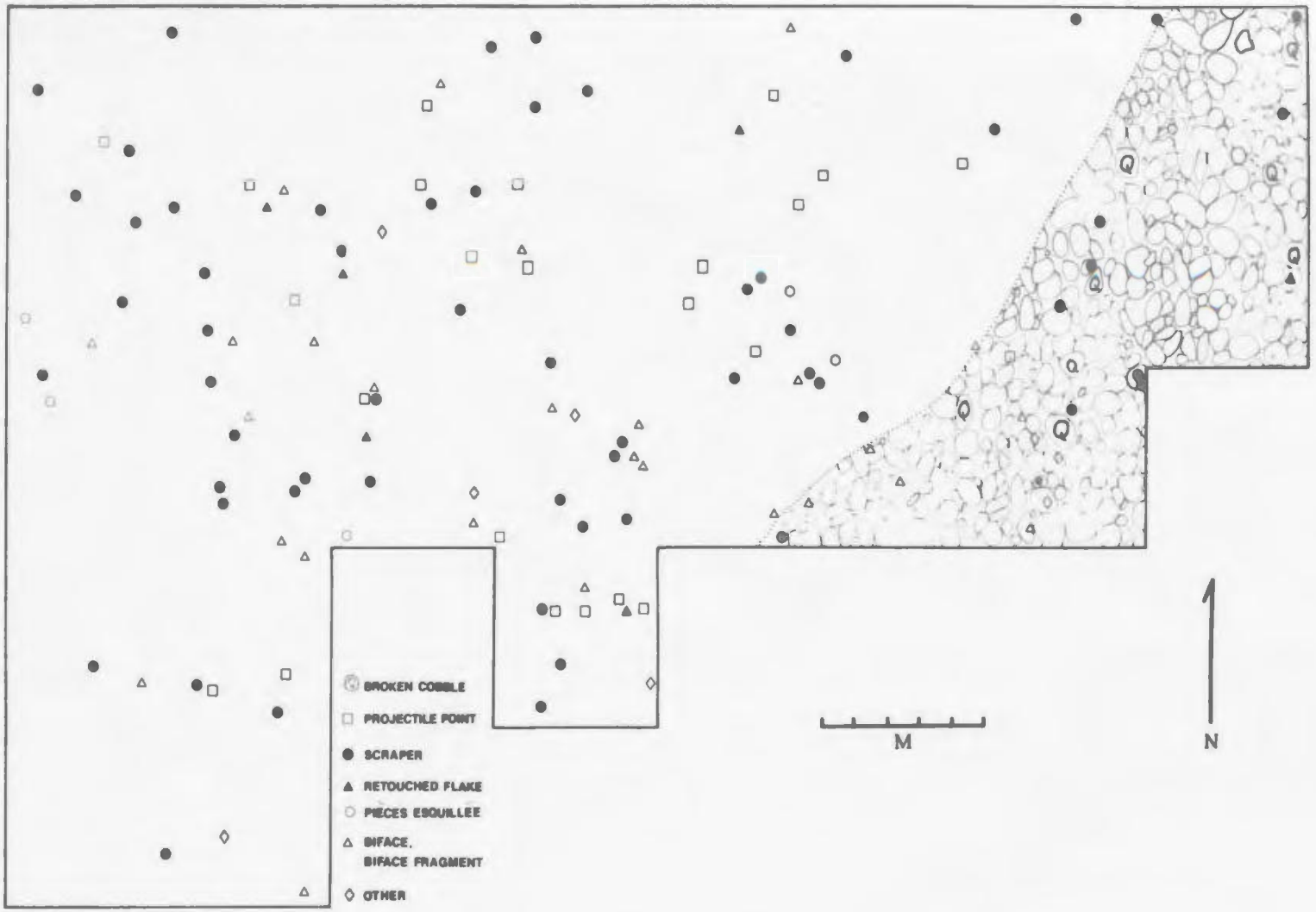
Figure 1: Stratigraphy

As indicated on map no. 3 a large, loose artefact cluster is perceivable in the western half of the area, with two smaller aggregations in the eastern portion. No charcoal, pit features or significant rock formations were in association.

Conspicuous in this area is the high frequency of cobble and irregular, blocky quartz and quartzite cores, most of them lying amidst the cobbles of the former beach. An average revealed at least 1.5 cores per square metre. This, together with a high flake to tool ratio of 58:1, a low artefact to square metre ratio of 6:1 (as compared with the ratio of 10:1 for living area six), and the absence of any features suggests this to be a workshop area, an ideal location, within arm's reach of potential hammerstones and raw material.

Of the total of 166 artefacts found scrapers comprise the largest single category (40%), followed in frequency by bifaces and biface fragments (21%), projectile points (13%), pièces esquillées (11%), a variety of retouched flakes (5%), and a number of miscellaneous tools such as one formed uniface, two celts, one full channelled gouge, three possible drill fragments, five hammerstones and five preforms. Anomalous to the interpretation of this as a special activity area is the small number of hammerstones (very probably a function of collection) and preforms, as well as the wide range of domestic refuse with a high percentage of scrapers and pièces esquillées, possibly signifying secondary, though not necessarily subsidiary, use as a living area.

COWPATH SITE AREA ONE



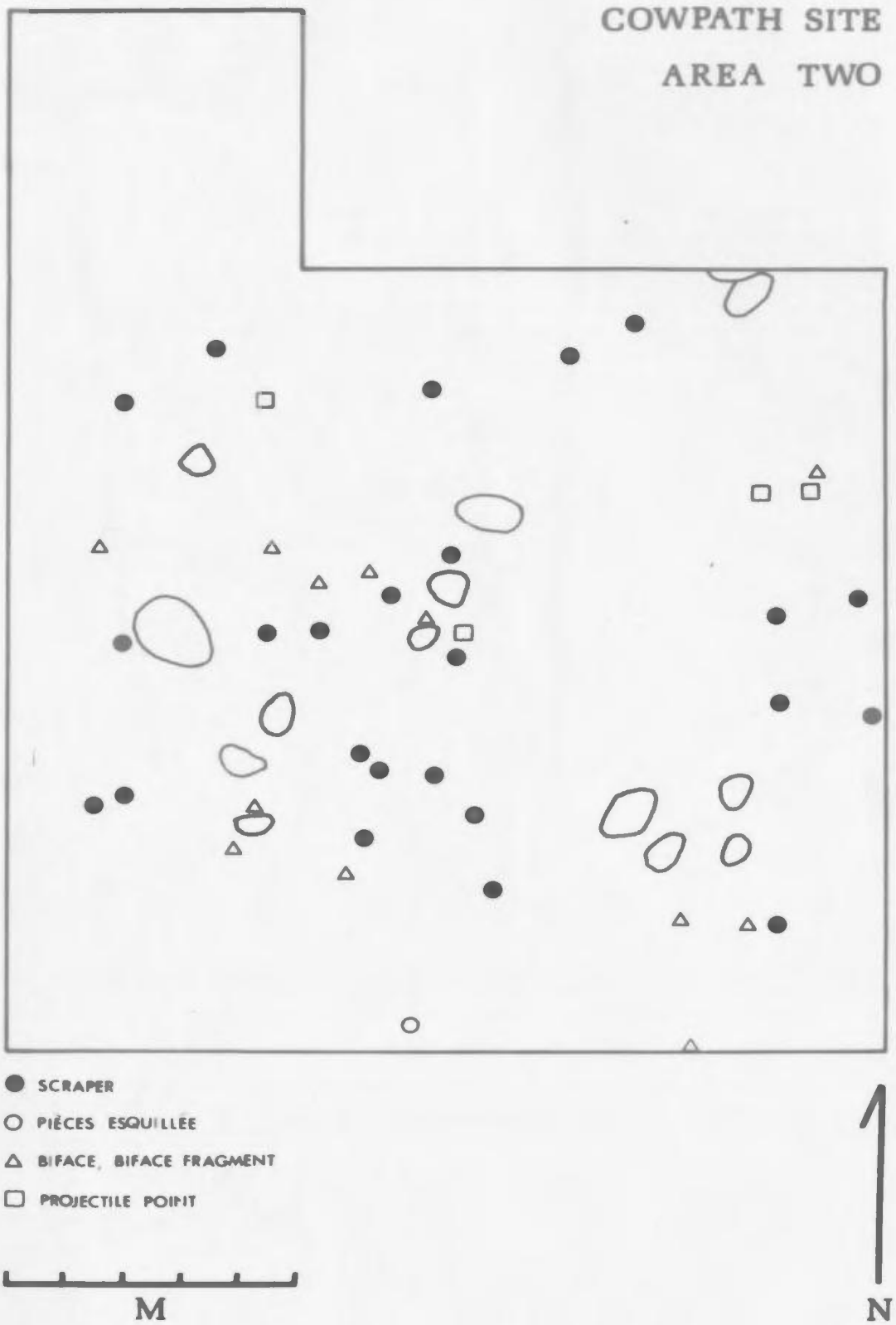
Map 3

Of the 23 projectile points, the highest number were quartz and quartzite triangles (16), supplemented by three forms of stemmed points, indicating that the area was occupied at least as many times. However, one stemmed form was represented by only a single example, possibly a fortuitous inclusion, and the high number of triangular points suggest that this area was occupied more than once by groups using this projectile point form or, more likely, that the temporally disparate occupations were varied in size and duration.

At the westernmost extreme of Area One there occurred a peat filled depression, descending toward the northwestern end of the area, following the line of the terrain. Consequently, one metre to the west a small area of a few square metres was exposed, incompletely so as the peat remained frozen. In the fall of the year excavation of this Area One A continued in the hope that it was a large feature of some sort. However, it was soon apparent that the depression was attributable to a locus of near-consolidated bog in which a small number of artefacts and flakes had either been lost or discarded.

Area Two:

This area encompassed 10 square metres, with stratigraphy as standard for the site (Figure 1a). As can be seen in map no. 4 two small, erratic artefact clusterings can be observed with, however, no charcoal or features in association. Of the 53 artefacts found, 55% are scrapers, 27% are bifaces and fragments


COWPATH SITE
AREA TWO
SCRAPER
PIÈCES ESQUILLÉE
BIFACE, BIFACE FRAGMENT
PROJECTILE POINT
M
N

Map 4

of the same, 13% are projectile points of two forms, and one preform, a pièce esquillée and an abrader fragment comprise the remainder of this scanty assemblage.

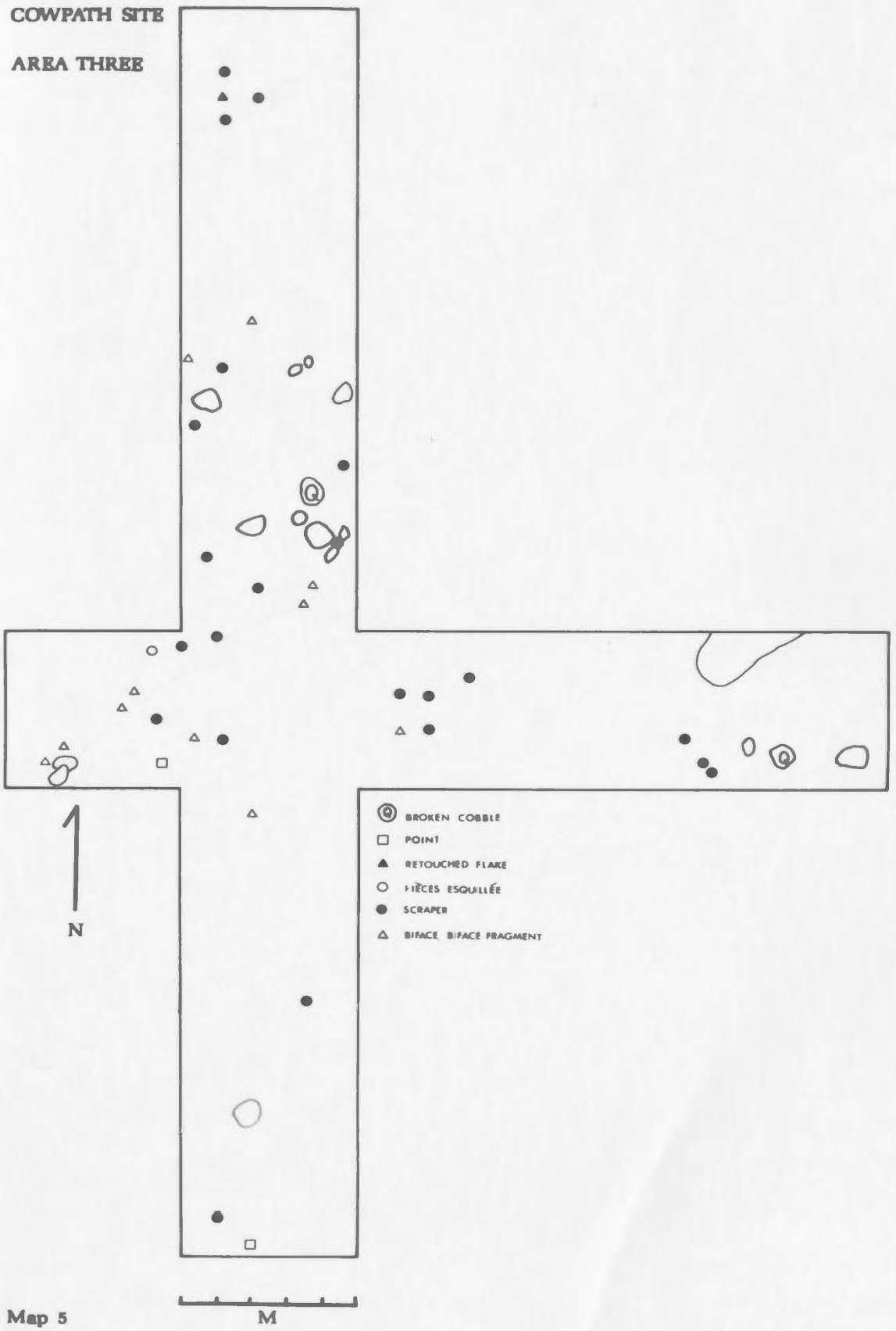
Based on later excavations it appears that Area Two was not itself living floor, but was peripheral to Area Six 5 metres to the west.

Area Three:

An eastern outlier of the site, this area is approximately 42 metres from the main locus of occupation. In order to test the area, two trenches were dug, cutting across one another to form a cross, one arm 8 metres north-south, the other 4 metres east-west. Stratigraphy was as in Figure 1a, conforming to that of the above area.

The locale proved to be unproductive, yielding a total of 34 artefacts: 20 scrapers, 8 biface fragments and 1 whole example, 2 triangular projectile points, 1 retouched flake, 1 pièce esquillée and 1 preform. The artefacts, meagre though they may be, appeared to cluster around the heart of the cross, as observable on map no. 5. No charcoal or features were noted.

The singular sparsity of the artefacts and the full range of cultural material indicates that this was the site of a single small and briefly occupied campsite. The presence of a small number of quartz cores and the sole preform suggests some workshop activities as well.


COWPATH SITE
AREA THREE
BROKEN COBBLE
POINT
RETOUCHED FLAKE
PIÈCES ESQUILLÉE
SCRAPER
BIFACE BIFACE FRAGMENT
N
M

Map 5

Areas Four and Five:

Barren test areas.

Area Six:

This area, excavated in the fall of 1975, proved to be most fruitful, its 42 square metres revealing two features and 390 artefacts, many of which formed two aggregations around the features, particularly Feature 1, as can be seen in map no. 6.

Stratigraphy is as in Figure 1a, the culture bearing level of fine white sand obviously the climax of the gradation which can be seen to extend southward from the ancient cobble beach of Area One.

Feature 1:
(Plate 1)

This hearth, extending 2.30 metres north-south and the same distance east-west, was defined by a large bed of loosely scattered rocks, including quartz and quartzite cores and amorphous chunks, and further delineated by an irregular outline of charcoal stained sand (see map no. 6) which also presents the outlying rocks as those scattered or kicked from the main hearth area. Within the eastern extreme of this seemingly random distribution of stones, a small, roughly circular nucleus of rock was observed, and was marked by particulatily abundant charcoal from which a sample was taken.

Plate 1

A total of 71 artefacts, 18% of that for the whole area, were found in and around the hearth. Of particular interest is a full channelled gouge, a stemmed point and two triangular points. It is expected that the radiocarbon date, upon return, will complement and support the dating of one of these two associated forms.

Feature 2:
(Plate 2)

This small shallow hearth was defined by a small number of rocks, including a broken quartzite cobble, loosely-arranged in a circle and supplemented by a few small stones. Further demarcated by charcoal and charcoal stained sand, its dimensions are approximately 78 cm. north-south and 80 cm. east-west (see map no. 6).

A total of 13 artefacts, 3% of the total for Area Six, were in direct association. Of note is the base of a probable preform for a triangular point.

A charcoal sample was taken which, when returned, will supplement the dating of this form of projectile point.

For the whole of Area Six, the living floor was on a single level, coursing downward following the slope of the topography. However, artefacts were found from 8 to 11 cm. below this, no doubt material that had been kicked or stamped into the fine sandy floor. As mentioned above, no pattern of vertical

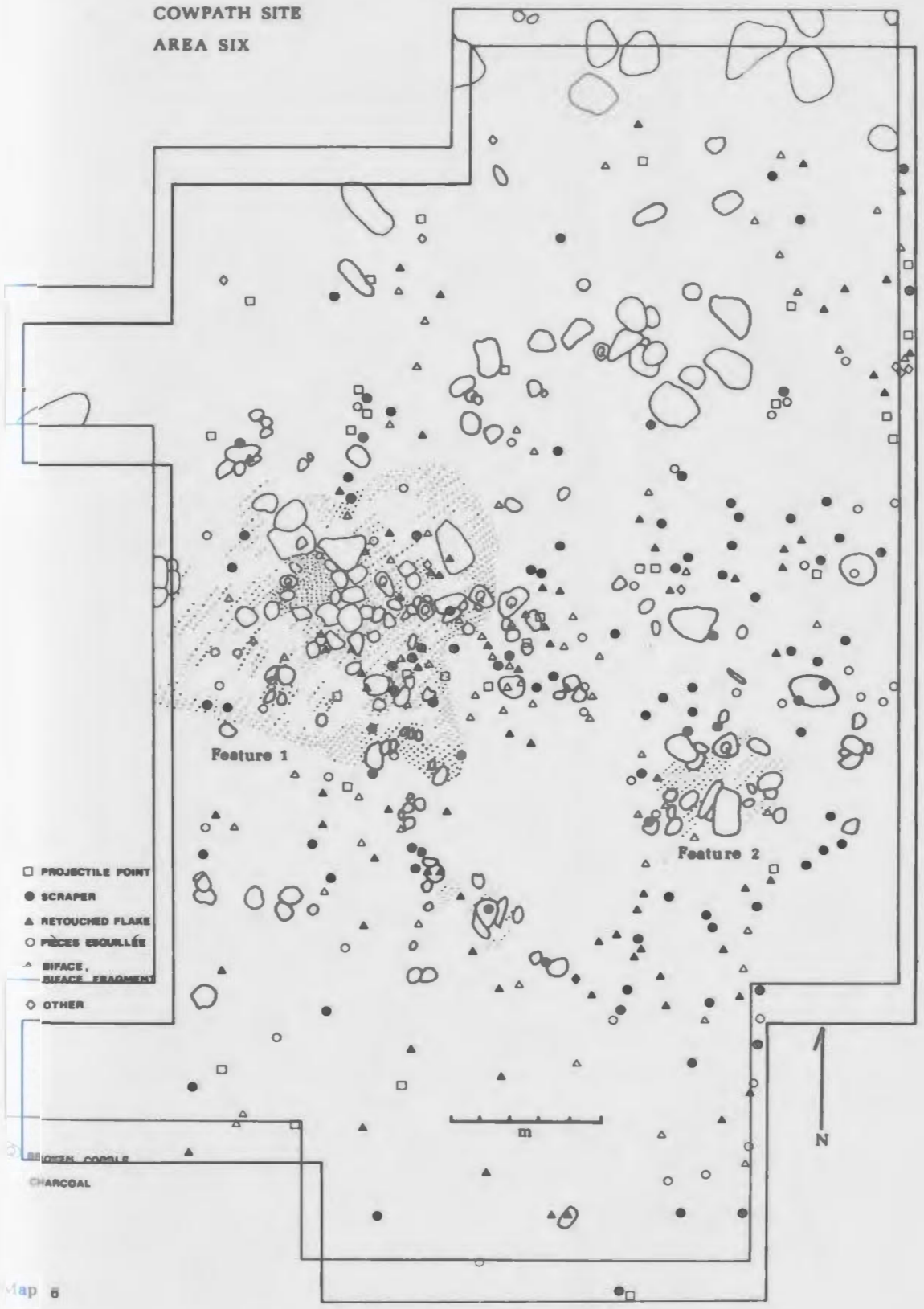
Plate 2

provenience was discernable, except that the heavier items, such as cores and chunky flakes, were consistently found at the greater depths.

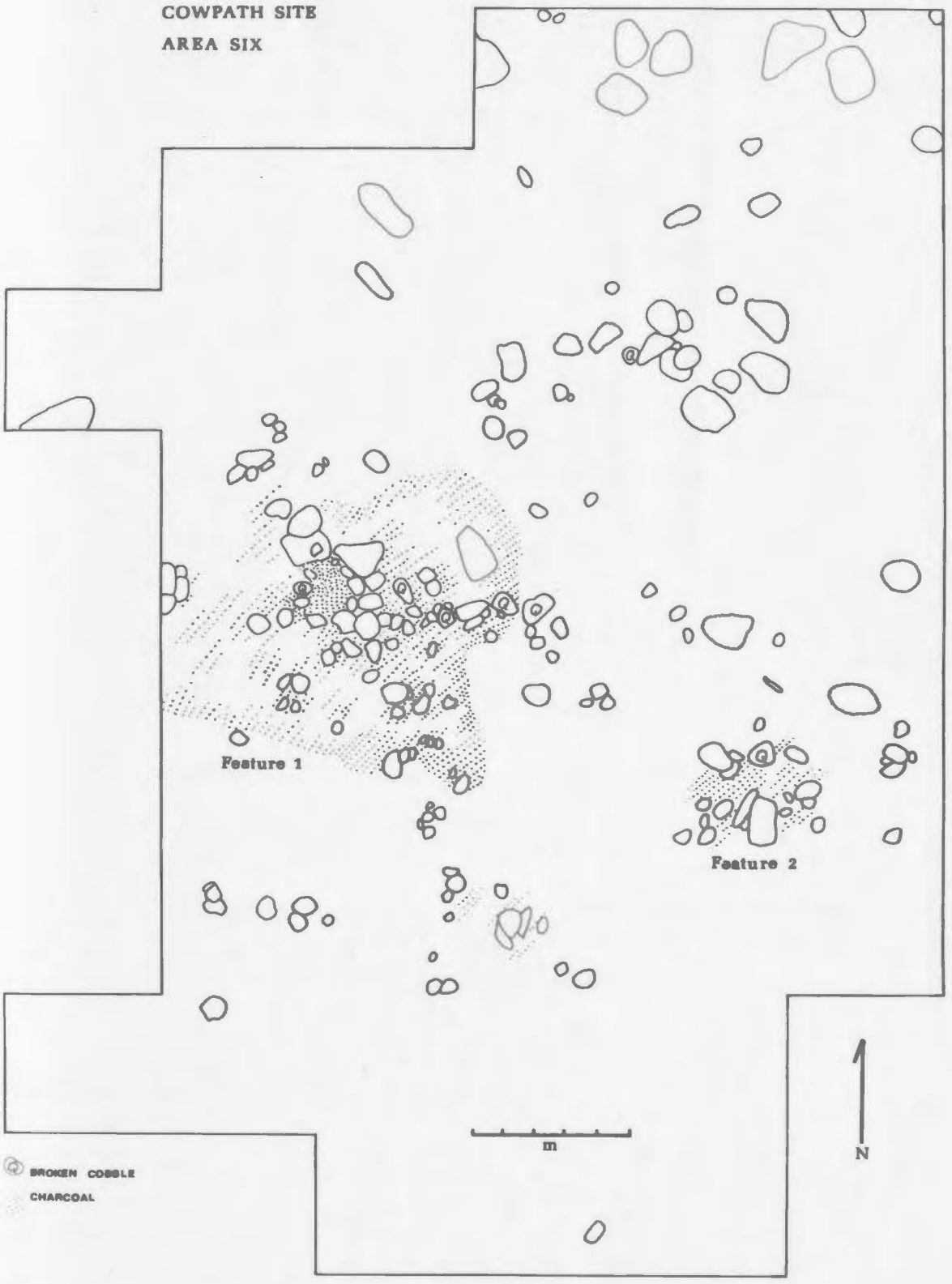
Of the 390 artefacts that were recovered, scrapers compose the largest group (30%), followed closely by retouched flakes (24%), with pièces esquillées comprising 18%, bifaces and biface fragments 17%, projectile points 7% and preforms, unifaces and celts 3% of the assemblage. A few tools were found singly, including one anvilstone, a full channelled gouge, and a hammerstone. A number of cores were also found, as well as two large quartz blocks taken from a quartz vien but further unreduced.

The presence of these cores, as well as a large number of large chunky flakes and the occurrence of the single anvilstone and hammerstone implies that tool manufacture and maintenance were of some importance. Of interest as well is the high percentage (51%) of scrapers and pièces esquillées which clustered in and around the hearth areas, indicating the working of hide and bone near the fire.

Three temporally distinctive forms of projectile points were present, triangular and stemmed, suggesting a span of intermittent occupation from the ninth to the seventh millenium B.P. (see projectile point discussion to follow) indicating probably no more than three discrete occupations, varying in size and


COWPATH SITE
AREA SIX
Feature 1
Feature 2
PROJECTILE POINT
SCRAPER
RETOUCHED FLAKE
PIÈCES ESQUILLÉE
BIFACE, BIFACE FRAGMENT
OTHER
BROKEN COBBLE
CHARCOAL
m
N

Map 6


COWPATH SITE
AREA SIX
Feature 1
Feature 2
m
N
BROKEN COBBLE
CHARCOAL

Map 6

duration, as denoted by the variance in the number of projectile points of each form, the quartz stemmed group representing the highest proportion by a goodly margin. An alternate interpretation, of course, is that this category is indicative of more than one occupation; however, the relatively small size of the total assemblage would seem to preclude the occurrence of more than three small campsites.

Area Seven:

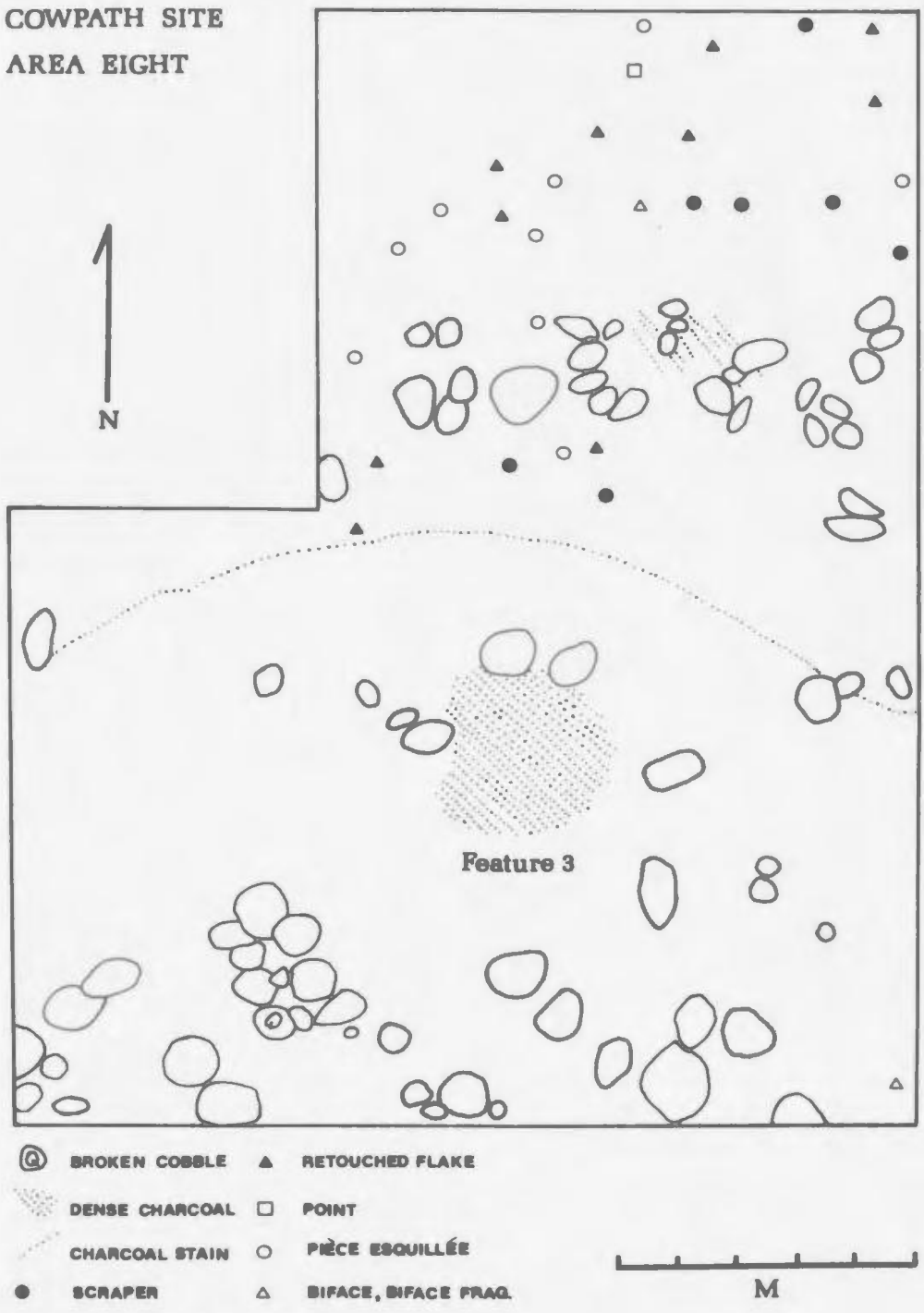
Unproductive test area.

Area Eight:

Six metres to the west of Area One, on the other side of the small bog, 8 metres of this 20 square metre area were excavated in the last two days of the field season. Differences from the stratigraphy so far encountered were in evidence, as illustrated in Figure 1d, the culture bearing level including a stratum of white sand overlying a darkly stained sandy floor, which, loosely strewn with large beach rocks associated with the ancient cobble beach nearby, contained one feature (see map no. 7). The dense stain of the sand appeared to have been caused by charcoal and an oily substance, not inconceivably whale or seal oil.

Feature 3:
(Plate 3)

This was a small hearth outlined by a small, roughly circular area of sand compactly and abundantly stained with oil and charcoal, from which a charcoal sample was taken, as yet unreturned. A few large and small rocks surrounded or were


COWPATH SITE
AREA EIGHT
N
Feature 3
BROKEN COBBLE
RETOUCHED FLAKE
DENSE CHARCOAL
POINT
CHARCOAL STAIN
PIÈCE ESQUILLÉE
SCRAPER
BIFACE, BIFACE FRAG.
M

Map 7

FEATURE 3

contained within the stained nucleus. Dimensions were 82 cm. east-west and 83 cm. north-south. A few flakes and no artefacts were in association.

A mere 34 artefacts were recovered from the exposed area: 14 retouched flakes, 9 pièces esquillées, 6 scrapers, 3 biface fragments, and 1 stemmed, 1 triangular projectile point. A second stemmed example was surface collected at the locale.

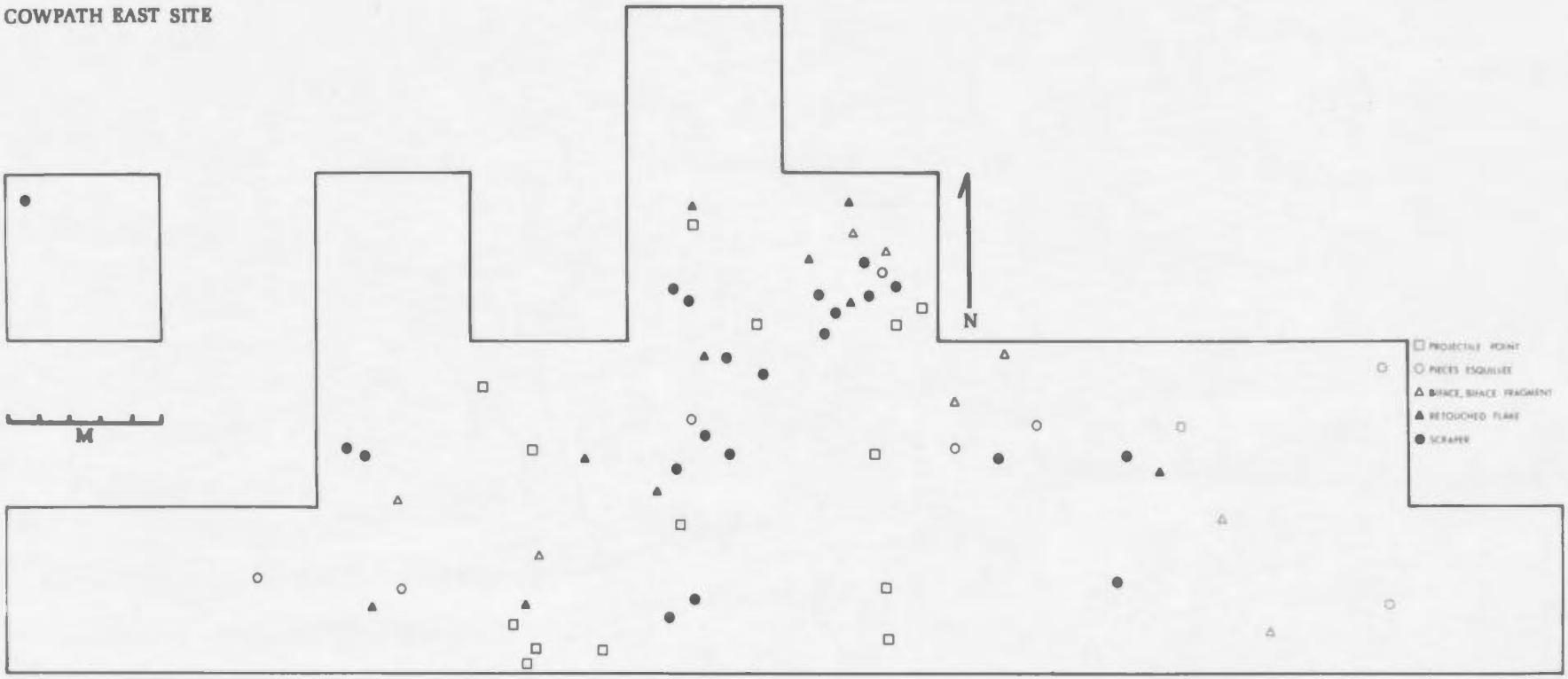
COWPATH EAST (EjBe-22)

As one walks over the eastern hills which enclose the Cowpath site (EjBe-7) and begins the gentle descent towards the bold cliffs of lands edge, one comes upon a level tract of land with heath cover, dwarf spruce in protected spots and crevices, and bog in the moister areas.

The area, 200 metres east of the Cowpath site and 21 metres above sea level, was tested by McGhee and Tuck during the spring of 1975 and deemed potential as a single component occupation associated with triangular projectile points. In the fall of the same year it was fully excavated in the hope of obtaining a carbon 14 date reliably associated with a feature.

Following delimitation of the site an independent grid was set, running 10 metres north and east. Checkerboard

COWPATH EAST SITE



Map 8

excavation quickly revealed the main locus of occupation to be within roughly 36 square metres of the southernmost portion of the gridded area, 22 of which were exposed, laying bare most, if not all, of the area most extensively occupied (see map no. 8).

A total of 82 artefacts were recovered, 26 of which were from test pits 1 and 2 of the spring testing. Scrapers comprise the single largest group (32%), followed by triangular projectile points (18%), bifaces and fragments of the same (15%), retouched flakes (12%) and pièces esquillées (12%). Also found was a single abrader, two preforms, and a stemmed point of uncertain provenience within test pit 1, possibly an accidental inclusion.

Stratigraphy was congruent with that for most of the Cowpath site, as evidenced in Figure 1e. No cultural stratification could be discerned, either naturally or by using imposed levels.

Unfortunately, no features were observed. However, scattered charcoal was collected.

The small but inclusive assemblage from this site suggests a single, short occupation. The high number of triangular projectile points, along with the two preforms and a number of quartz cores and blocky, irregular flakes indicates

some manufacturing activity at the area, or else these numerous projectile points just underscore the singular importance of hunting activities at this locale.

COWPATH WEST (EjBe-23)

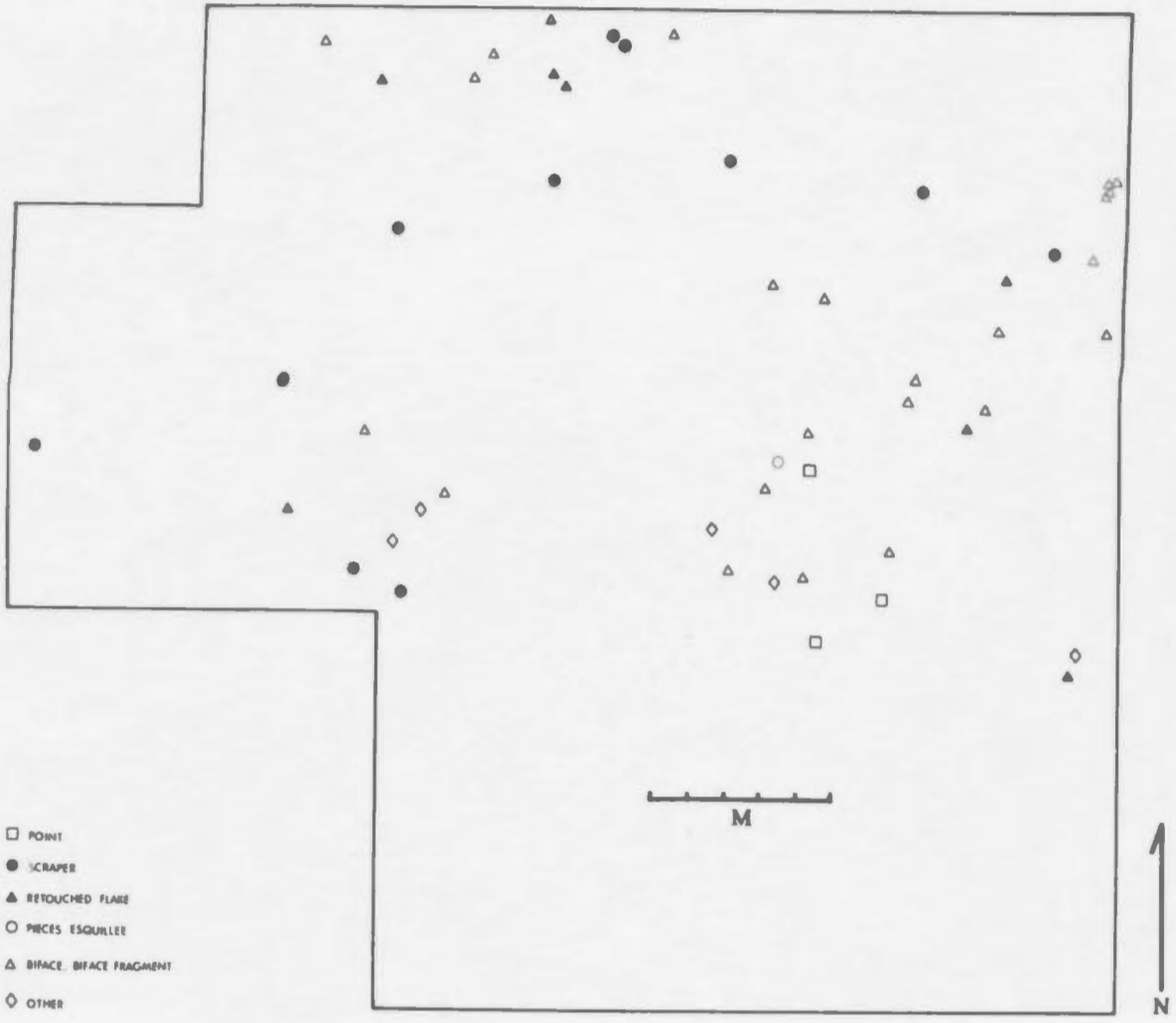
This site is located roughly 200 metres to the west of the Cowpath site on a small plateau 44.9 metres above sea level. In the spring of 1975 20 square metres were excavated by McGhee and Tuck, later to be supplemented by an additional 5 square metres (see map no. 9).

Stratigraphy for this small area varied from that considered standard for the Cowpath site, in that the culture bearing sand overlay a sterile, course gravel-like stratum, as can be seen in Figure 1b.

Fifty-nine artefacts were recovered from this area. Bifaces, 4 of which were found en cache, and biface fragments compose the largest group (49%), followed by scrapers (22%), retouched flakes (14%), stemmed projectile points (7%), 4 celts, a drill and a large preform. Striking is the high total of bifaces, fragments of same, and projectile points concomitant with relatively few scrapers, retouched flakes and pièces esquillées, suggesting a small and brief hunting camp.

Samples of scattered charcoal were collected from the cultural level and should support the chronological position

COWPATH WEST SITE



Map 9

ascribed on the basis of stylistic evidence to the projectile point form associated with this site.

SUMMARY

The excavations at the Cowpath site (EjBe-7) revealed four loci of intermittent and independent occupation, with the possible exception of Area One which, as a special activity area, may have been at some time used concurrently with other areas of the site. Four temporally discrete units are subsumed within these occupations, as indicated by as many forms of projectile points which, found and dated elsewhere in Southern Labrador, disclose themselves to be culturally related and temporally disparate. It may also be noted that the once prolific areas along the footpath in the southern periphery of the general area no doubt denote the past presence of other living areas at this locale.

Within the site it appears that Area Three was a single occupation, with the other areas supporting interrupted habitation for a time span of over 2000 years. It was possible to observe the priority of occupation within each locus, as illustrated by the projectile point forms, although between areas and within the same time unit no order of occupation was discernable. The Cowpath East (EjBe-22) and Cowpath West (EjBe-23) sites represent single occupations, refining and reinforcing the temporal span of the Cowpath site.

Living floors at all three sites appear to have supported briefly occupied campsites, of varied size and duration, probably with different emphases on function. Common to all is coastal provenience, suggesting a focus on the varied and abundant resources of the sea. Although the extent of this reliance can only be speculated for the earliest period represented, it is clearly manifest by 7530±40 B.P. at the L'anse Amour Mound (cf. McGhee and Tuck, 1975:85ff.).

Seasonality at this site may be inferred as early spring to late summer concomitant with the most prolific times for utilization of these resources. However, a much longer stay at the coast may have been the case, particularly during the period of the earliest occupation of Labrador at which time the interior would have been restricted and inhospitable, occupied by the retreating continental ice.

ABSOLUTE ARTEFACT FREQUENCIES

	EjBe-7 Area 1	EjBe-7 Area 2	EjBe-7 Area 3	EjBe-7 Area 6	EjBe-22	EjBe-23
Preforms	5	1	1	4	2	1
Scrapers	66	29	20	117	26	12
Pieces esquillees	18	1	1	70	10	1
Total points	23	7	2	28	16	4
Triangular form	16	5	2	8	15	-
Mound form	1	-	-	-	-	-
Arrowhead Mine form	2	-	-	3	-	-
Juniper-Fowler form	-	-	-	8	-	-
Indeterminate form	4	2	-	9	1	-
Cowpath West form	-	-	-	-	-	4
Bifaces	11	2	1	31	13	10
Biface fragments	23	12	8	35	4	17
Formed unifaces	1	-	-	4	-	-
Retouched flakes	8	-	1	94	10	8
Other	11	1	-	10	1	5
Total	166	53	34	8	82	59

TABLE 1

ARTEFACT PERCENTAGES

	EjBe-7 Area 1	EjBe-7 Area 2	EjBe-7 Area 3	EjBe-7 Area 6	EjBe-22	EjBe-23
Preforms	3%	2%	3%	1%	2%	2%
Scrapers	40%	55%	59%	30%	32%	20%
Pièces esquillées	11%	2%	3%	18%	12%	2%
Total points	13%	13%	6%	7%	20%	6%
Triangular form	9%	9%	6%	2%	19%	-
Mound form	0.6%	-	-	-	-	-
Arrowhead Mine form	1%	-	-	1%	-	-
Juniper-Fowler form	2.4%	-	-	2%	-	-
Indeterminate form	7%	4%	-	2%	1%	-
Cowpath West form	-	-	-	-	-	6%
Bifaces	7%	4%	3%	8%	15%	17%
Biface fragments	14%	22%	23%	9%	5%	30%
Formed unifaces	0.6%	-	-	1%	-	-
Retouched flakes	5%	-	3%	24%	12%	14%
Other	6.4%	2%	-	2%	1%	9%
Total	100%	100%	100%	100%	100%	100%

TABLE 2

CHAPTER FOUR

ARTEFACT DESCRIPTIONS

A total of 643 artefacts were recovered from the Cowpath site (EjBe-7) during the 1975 excavations. These, as well as the 82 specimens from the Cowpath East site (EjBe-22) and the 59 examples from the Cowpath West site (EjBe-23) will be described and discussed below.

BIFACIAL SERIES

Projectile Points

Introduction:

In a mixed, multicomponent site, such as the Cowpath site, it is difficult to define and delimit the individual units. Here we do not have a site, or areas or strata within that site, associated solely with one tool assemblage and, ideally, one projectile point form, clearly illustrative of the range of variation that exists within the assemblage as a whole and the category of projectile point form in particular.

However, as the observer peruses the range projectile points, certain clusters present themselves to that observer, and within each such aggregate, a "modal" or "typical" form (cf. McGhee and Tuck, 1975:21) can be intuitively discerned. Unfortunately, greater prey to that beast "intuitive inference" is the range of variation that exists within each cluster as

represented by its typical form, often resulting in the fortuitous inclusion of a projectile point or points peripheral to that form, which would truly belong with the preceding or proceeding cluster.

I use the terms "preceding" and "proceeding" with deliberation, in order to clearly present the temporal dimension involved. For it can be demonstrated that these projectile point groups possess such a dimension, thereby becoming markers for the different components which the Cowpath site supports. It is regrettable that the rest of the assemblage does not lend itself to such separation.

Of course, the value of such division may be questioned. Considering, as will be shown below, the overlapping range of variation that exists within each cluster, separation may serve only to obscure possible continuities through the creation of artificial boundaries. However, although the peripheries of the "typical forms" may indeed defy such boundary, the forms themselves, albeit intuitively deduced, more than probably correspond roughly with the true "mental template" of the manufacturer, thus affording them cultural, geographical and temporal importance. In fact, the overlapping ranges of variation existing among the clusters may in themselves be seen as illustrative of the continuities involved. As well, once one has discovered these temporal markers, one can clarify,

to a certain extent, the sequence of occupation at the site and the nature and the size of the occupations.

The method that I have used in order to demonstrate the stylistic aggregates is to follow McGhee and Tuck's (1975) formal classes, each typified by a single, ideal, intuitively derived form. The metric attributes of each such form were the means of the measurements of the metric attributes of the whole class. Thus, the members of the classes were also intuitively derived. It may be mentioned here that, in almost all instances, each class was recovered from a single component, lending credence to their cohesion as a group. The non-metric attributes were based upon an attribute list modified from a similar list composed for Maine and the Maritime Provinces (Sanger as cited in McGhee and Tuck, 1975:14). The range of variation which existed within each class was calculated by using a matching statistic (Sokal and Sneath, 1963:133): $S/M = M/M+U$ where M is the number of matching attributes and U the number of unmatching. This then, is a simple fractional presentation of the number of matching attributes as opposed to the whole number of attributes. For metric attributes, McGhee and Tuck considered them as matching if they were within one standard deviation of the class mean.

With the material from the Cowpath sites, I have used this same matching statistic in order to show the formal

"clusters" that exist within the whole group of projectile points. I am not trying to demonstrate the range of variation within each class, rather it is the classes themselves which I am trying to define. I propose to illustrate numerically the correspondences between the projectile points of the Cowpath sites and some of the classes of projectile points as described by McGhee and Tuck (1975). It must be mentioned here, however, that I follow this procedure for the stemmed forms only, as the triangular forms of McGhee and Tuck were, in the first instance, defined on the basis of the projectile points recovered from the Cowpath site in 1974 as well as from the nearby Pinware Hill site. Also, as the definition of the two triangular forms of McGhee and Tuck lies with only a few significant and easily identified characteristics, it is evident when the triangular projectile points from the 1975 excavations at the Cowpath sites correspond with either of these two forms. The stemmed projectile points, being the more elaborate, are the ones which present the difficulties.

McGhee and Tuck use 23 attributes for the description of their stemmed points (cf. McGhee and Tuck, 1975:143ff.). I propose to use only ten of these, omitting all attributes common to the classes that I will be using, on the basis that such attributes would be non-diagnostic for the purposes of comparison, and that, if used, they would produce a misleadingly

high proportion of matching attributes. I have also added two attributes, which describe some significant proportions. These are: shoulder width/neck width and total length/blade length. The other attributes upon which the comparisons are based are as follows:

edge serration...(absent, marked, slight)

base form...(concave, convex, straight)

stem form...(contracting, straight, expanding)

shoulder angle...(right, obtuse, acute)

blade grinding...(extensive, slight, absent)

basal thinning...(unifacial, bifacial, absent)

maximum thickness

blade length

blade index...(blade width/blade length)

neck width

material.

I follow McGhee and Tuck in assuming a metric attribute as matching if it is within one standard deviation of the mean as computed for the extant classes to which it is being compared. I also follow their example in making the calculations on a point only if 75% or more of the attributes are observable.

Descriptions

Pinware Hill Form: Site: Cowpath (EjBe-7)

This form is represented by 3 specimens recovered from the Pinware Hill site and 6 from the 1974 testing of the

Cowpath site (Plate 4) described by McGhee and Tuck (1975:24). Two specimens were also found at the locale by Harp (1951; 1964). Eleven examples were recovered during the 1975 excavations of the Cowpath site, 5 of white quartz and the remaining 6 of pink and grey quartzites.

This form is characterized by a triangular outline with a pointed to slightly rounded tip, convex lateral edges, and a mild to markedly concave base. Blade cross section is generally bi-convex, surface retouch is complete on both dorsal and ventral faces, shoulder angle is acute, with the shoulders themselves rounded, base, and often the lower portion of the lateral margins, are ground, and the base is thinned, unifacially or bifacially, by the removal of a small number of flakes. On a few specimens the central thinning flake predominates. In fact, the base of one specimen (Plate 5d) which is notably concave and which has shoulders approaching ears, exhibits a nipple reminiscent, perhaps vestigial, of the striking platform used in preparation for the removal of a flute (cf. Roosa, 1969).

It should be noted that one specimen in this group lacks complete edge and surface retouch, suggestive of a preform.

Dimensions:

	Min.	Max.	Mean
Length	22 mm.	37 mm.	30 mm.
Width	22 mm.	31 mm.	29 mm.
Thickness	4 mm.	7 mm.	5 mm.
Blade index	73	84	78

Blade index: the ratio of blade length to blade width.

Site: Cowpath East (EjBe-22)

Seven points from this site fall within the range of the Pinware Hill form, all exhibiting distinct basal thinning. One example is of particular interest: with a markedly concave base and shoulders approaching ears, the base is unifacially thinned by means of the removal of two small flakes, leaving a ground nipple in between (Plate 6a).

Dimensions:

	Min.	Max.	Mean
Length	30 mm.	41 mm.	35 mm.
Width	22 mm.	27 mm.	25 mm.
Thickness	6 mm.	7 mm.	6 mm.
Blade index	65	83	72

Cowpath Form: Site: Cowpath (EjBe-7)

McGhee and Tuck (1975:24) have described 4 projectile points from the Pinware Hill site, and 19 from the Cowpath site which compose this class (Plate 4). Four projectile points found in the area by Harp (1951; 1963) can also be subsumed within this form. Twenty examples of this form were recovered from the Cowpath site during the 1975 excavations. Thirteen are of milky quartz, and 7 are of pink or grey quartzite.

This form differs from the above in that the triangular outline is formed by straight to slightly convex lateral margins and a straight to slightly concave base. The base is unifacially, rarely bifacially, thinned, and such thinning is not a predominant as in the Pinware Hill form. Shoulders tend to be more acute and less rounded (Plate 5).

Dimensions:

	Min.	Max.	Mean
Length	18 mm.	48 mm.	35 mm.
Width	18 mm.	34 mm.	27 mm.
Thickness	5 mm.	9 mm.	6 mm.
Blade index	10	97	68

Site: Cowpath East (EjBe-22)

Eight examples can be included within this form (Plate 6). One specimen is notable for its diminutive proportions, each side measuring only 22 mm.

Dimensions:

	Min.	Max.	Mean
Length	22 mm.	37 mm.	35 mm.
Width	22 mm.	26 mm.	25 mm.
Thickness	5 mm.	8 mm.	7 mm.
Blade index	23	69	52

L'anse Amour Mound Form: Site: Cowpath (EjBe-7)

A single pink quartzite specimen was found which shows significant affinities to those projectile points recovered in 1974 from the L'anse Amour Burial Mound (McGhee and Tuck, 1975). This form is represented by the 2 small (50 mm. and 61 mm. in length) points, which excludes the 4 longer points (107-131 mm.) which they believe might possibly have been hafted knives or objects manufactured especially for inclusion in the grave (ibid.:89). This form is characterized by a pointed tip, convex lateral edges, markedly serrated, bi-convex blade cross section, complete bifacial surface retouch, slightly rounded shoulders forming a right or obtuse angle, a straight stem and a straight base, unifacially

thinned. The base and stem margins are ground, and the blade edges exhibit grinding to a slight degree. Material is quartzite (Plate 8).

The single specimen from the Cowpath site differs from the above description in that its tip is slightly rounded, surface retouch is not fully complete, and the base is bifacially thinned (Plate 7a).

Dimensions:

Length	50 mm.
Width	25 mm.
Thickness	75 mm.
Blade length	40 mm.
Neck width	17 mm.
Blade index	63
Shoulder width/neck width	1.5
Total length/blade length	1.25

Matching Statistic:

Specimen	a
Barney	.33
Mound	.75
Arrowhead Mine	.39
Juniper-Fowler	.39

Cowpath West Form: Site: Cowpath West (EjBe-23)

Four specimens were recovered from the Cowpath West site (EjBe-23)(Plate 9). Two white quartzite examples are missing the distal portion, 1 incomplete pink quartzite specimen is a midsection with part of shoulders and stem, and 1 pink quartzite example is whole.

Characteristic of this form, represented by only the projectile points from the Cowpath West site, is a straight stem which is short and wide in proportion to the blade. The lateral margins of the blade are straight to convex and markedly serrated and cross section varies from plano-convex in the unifacial specimen to bi-convex in 2 examples to concave-convex in the fourth. The base is straight to slightly convex, surface retouch is complete on 3 examples, shoulders are slightly rounded in 3 cases, forming a right or obtuse angle; the fourth example exhibits sharply pointed acute angled shoulders. Grinding occurs on the stem and lower margins of the blade.

Dimensions:

	No. of examples	Min.	Max.	Mean
Length	1			67 mm.
Width	4	26 mm.	32 mm.	29 mm.
Thickness	4	7 mm.	8 mm.	7.6 mm.
Blade length	1			58 mm.
Neck width	4	15 mm.	18 mm.	17 mm.
Blade index	1			55
Shoulder width/ neck width	4	1.6	1.8	1.75
Total length/ blade length	1			1.16

Matching Statistic:

Specimen	a	b	c	d
Barney	.54	.50	.30	.50
Mound	.62	.70	.60	.63
Arrowhead Mine	.62	.20	.60	.38
Juniper-Fowler	.38	.35	.55	.19

Note: Specimen d, with only 62% of the attributes observable, has been included because of the small number of specimens in this group. The result should be qualified accordingly.

As can be seen from the matching statistic, these 4 points show the greatest affinity to the Mound form. However, the margin is not great. With so few specimens, both from the Cowpath West site and the L'anse Amour Mound, numerical comparisons cannot reveal the nuances involved, only the striking similarities and dissimilarities. Obviously, here no such striking observations occur; more of a gradiant is involved. As mentioned above, when dealing with the temporal dimension, division of the gradiant might be necessary, while at the same time recognizing the continuities involved. Therefore, I will describe how the Cowpath West projectile points differ and how they are similar to the forms from the Mound, hypothetically presenting themselves as an intermediate form between the L'anse Amour Mound projectile points and later forms.

Like the Mound forms, these projectile points have a straight stem which is short and wide in proportion to the blade, which is markedly serrated. Grinding is present on the stem, and to a slight degree on the lower lateral margins. These margins are convex and form shoulders which are right or obtuse angled and slightly rounded, although not as well rounded as is the case for the Mound points. Significantly, although the overall proportion of the stem to the blade shows affinities with the Mound projectile points, these affinities are not metric correspondences. In the Cowpath West specimens, the proportion of the neck width to the shoulder width differs. While the necks of these specimens are all wider in proportion

to the shoulder width than Arrowhead Mine forms they are narrower in proportion to the width of the shoulder than are the Mound forms. This can be illustrated as follows:

Mean Ratios of Shoulder Width/Neck Width:

Barney	2.84
Mound	1.63
Cowpath West	1.75
Arrowhead Mine	2.13

With the Cowpath West points intermediate between the L'anse Amour Mound form and the Arrowhead Mine form, they bridge the gap between the well rounded shoulders of the Mound points and the more well defined, in cases quite sharply defined, shoulders of the Arrowhead Mine form.

I consider the 4 Cowpath samples as a group, although the one whole example and the midsection are more finely manufactured than the white quartzite specimens. All 4 points share the same basic characteristics and overall proportions, and were found as the only points from an apparently single component site so small that only 59 artefacts were found. Unless the points showed marked dissimilarities I would hesitate in breaking them up as two groups, creating more than one component at this thin site.

Note: It is most unfortunate that a photograph of the one full, and thereby representative, projectile point is not available, but it is missing from the collection.

Arrowhead Mine Form: Site: Cowpath (EjBe-7)

Five specimens from the Cowpath site are congruous with the Arrowhead Mine form as described by McGhee and Tuck (1975:37)(Plate 10). Only 2 specimens are complete, 1 of pink volcanic rock and 1 of clear quartz (Plate 7b,c). Of the remaining points, 1 is of pink quartzite, and 2 of grey quartzite.

Characteristic of these projectile points from the Cowpath site is an asymmetrical blade form with slightly serrated straight to convex lateral margins, a well defined pointed tip, a bi-convex blade cross section, complete ventral and dorsal surface retouch, shoulders which are sharp to slightly rounded forming a right angle, a slightly contracting stem with a straight base which is unifacially thinned by the removal of a single flake, and grinding of the margins of the stem. For the description of the Arrowhead Mine form as given by McGhee and Tuck see 1975:38.

As would be expected, there are deviations from this description. For example, the pink volcanic specimen displays a symmetrical blade outline, is bifacially thinned at the base, and shows extensive rather than slight grinding on the lower margins of the blade. Serration is present on 2 specimens only.

Dimensions:

	No. of examples	Min.	Max.	Mean
Length	2	58 mm.	65 mm.	61 mm.
Width	4	22 mm.	29 mm.	27 mm.
Thickness	4	6 mm.	9 mm.	7.75 mm.
Blade length	2	34 mm.	50 mm.	61 mm.
Neck width	4	14 mm.	16 mm.	15 mm.
Blade index	2	58	64	61
Shoulder width/ neck width	4	1.57	2.07	1.50
Total length/ blade length	2	1.13	1.16	

Matching Statistic:

Specimen	a	b	c	d	e
Barney	.42	.33	.50	.33	.46
Mound	.42	.22	.11	.22	.33
Arrowhead Mine	.85	.90	.80	.80	.62
Juniper-Fowler	.46	.70	.55	.70	.46

Juniper-Fowler Form:

The Juniper and the Fowler forms of McGhee and Tuck describe two groups of projectile points, each from a different single component site (Plates 11 and 12). The two forms, however, appear to be closely similar, if not congruent. McGhee and Tuck describe both forms as those displaying a "tip pointed or slightly rounded; irregular convex lateral edges; irregular bi-convex cross section; complete surface and edge retouch; and no edge serration. The haft element consists of sharp or slightly rounded shoulders forming a right or obtuse angle; a contracting stem with straight sides and convex base without any basal thinning.

The sides of the stem are ground but there is no grinding on the blade edges." (McGhee and Tuck, 1975:43, 51).

One difference is that the Juniper projectile points are made exclusively of clear quartz. Other differences are to be found in the metric means and standard deviations for each class. These, however, are merely slight and can probably be explained by the wide range of variation that is to be found within both groups. This variation might in turn be explained by the virtually exclusive use of clear and milky quartz, both apparently difficult to work with, and resulting in rather crude products. On this basis both Juniper and Fowler forms are treated as one.

Nine projectile points from the Cowpath site correspond well with the Juniper and Fowler form. Only 1 is complete, 5 are virtually whole, missing part of the base, and 3 are incomplete, missing the distal section. All are of either milky or clear quartz and display an overall crudity of form, resulting in marked asymmetrically convex, or in two instances, concave-convex sides and thick, asymetrically bi-convex cross section (Plate 7f-h).

Dimensions:

	No. of examples	Min.	Max.	Mean
Length	1			36 mm.
Width	9	19.5 mm.	29 mm.	26 mm.
Thickness	9	7 mm.	9 mm.	8.3 mm.
Blade length	6	27 mm.	44 mm.	38 mm.
Neck width	9	10 mm.	17 mm.	15 mm.
Blade index	6	44	94	66
Shoulder width/ neck width	9	1.53	2.59	1.85
Total length/ blade length	1			1.24

Matching Statistic:

Specimen	a	b	c	d	e	f	g	h	i
Barney	.40	.50	.30	.40	.50	.20	.18	.40	.42
Mound	.11	.44	.11	.22	.00	.00	.27	.11	.18
Arrowhead Mine	.50	.80	.50	.60	.60	.40	.64	.50	.46
Juniper-Fowler	.80	.85	.80	.75	.90	.75	.86	.80	.81

Note: Specimen b bearing a high numerical resemblance to both Juniper-Fowler and Arrowhead Mine was placed in the Juniper-Fowler group because of its rudeness in form and extremely asymmetrical blade outline.

Indeterminate:

In this category (Plate 7i-l) fall 3 complete projectile points of milky quartz as well as 2 incomplete pink quartzite points and 6 incomplete milky quartz points. All but 2 examples have enough observable attributes for numerical comparison with Tuck and McGhee's forms. One of these lacked the necessary 75% of the attributes because its stem was missing and the base had been modified by thinning to produce a somewhat elongated triangular point. Its blade form, however, corresponds unmistakably with the Juniper-Fowler blade form.

Matching Statistic:

Specimen	a	b	c	d	e	f	g	h	i	j
Barney	.50	.20	.54	.27	.60	.61	.60	.40	.20	.25
Mound	.30	.20	.42	.20	.30	.18	.33	.44	.33	.30
Arrowhead Mine	.60	.54	.46	.72	.60	.77	.70	.50	.58	.42
Juniper-Fowler	.65	.58	.50	.73	.65	.81	.80	.55	.69	.33

As can be seen from the above table, the projectile points do not vary considerably from the Arrowhead and Juniper-Fowler forms, or, in some cases, from these two forms and the Barney form.[2]

Based upon the material, i.e. milky quartz in all but two cases, and the prevailing crudeness and marked asymmetry of these specimens, it might not be too assumptive to place these specimens in the Juniper-Fowler category for the sake of the analysis of the number and duration of the occupations at the Cowpath site. Otherwise, it might be more to the point to regard these specimens which vacillate between two classes, and sometimes amongst three, as exemplifications of the inevitable variation which exists within each "real" attribute cluster, and which is instrumental, and indeed basic to, developmental change. These clusters then could be viewed as markers of "time unit segments" as are defined by a set of near corresponding attributes which are more alike within than without of that cluster

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[2]The Barney form is described by McGhee and Tuck as "A contracting stemmed point with triangular blade. Tip is pointed to slightly rounded; straight lateral edges; bi-convex blade section; completely bifacial surface and edge retouch; slight serration present on lateral edges. The haft element is a slightly contracting stem with straight sides and a convex base; shoulders are sharp or slightly rounded and form an acute angle; grinding present on the stem sides and slight grinding on the blade edges; material is quartzite." (1975:33).

(Clarke, 1968:146). This variable, "indeterminate", class could be viewed as illustrative of the continuous line of development which relates these "time unit segments."

Discussion:

The temporal framework for the projectile point groups as described above is provided by the sequence of development in projectile point form described by McGhee and Tuck for the Strait of Belle Isle (1975). It is expected that this sequence will be supported, certainly clarified, by the series of radiocarbon dates from the Cowpath sites, to be received at a future time.

The triangular point is considered as representative of the basal stratum of the cultural succession in Southern Labrador, out of which subsequent developments are seen to emerge (Plates 4-6). Of the two forms Pinware Hill is considered to be the older, with equivocation as the two forms have yet to be separated vertically or horizontally. Its primary position is based on its concave base with marked unifacial or bifacial thinning, reminiscent of the Paleo-Indian fluted point both in form and technique. The Cowpath form maintains its derivative position based on the non-predominance of these very features, thus stylistically being further removed from the fluted point. The relative temporal position of the two forms is a moot point;

however, the primacy of the triangular point itself is supported by a date of 8855±100 B.P. (SI-2309) from the Pinware Hill site. It must be noted that this date should be qualified by three previously obtained dates, also from scattered charcoal, reading 6985±60 B.P. (SI-1801B), 6850±120 B.P. (SI-1801B) and 6185±125 B.P. (I-7606). Based on point morphology alone these dates would appear to be far too recent; dates from the single component Cowpath East site should prove instrumental in refining the chronological position of this form.

Stylistically following the triangular point is a form noted in a number of collections in Southern Labrador and found *in situ* in Northern Quebec, and in Northern Labrador dated provisionally at pre-6000 B.P. (Fitzhugh, 1975:132). This is a nipple-based point which maintains the Cowpath-Pinware blade form with the addition of an incipient stem.

Next in the series is the Barney projectile point form (Plate 13). The broad blade of the preceding forms is sustained as well as the use of local quartz and quartzite; the stem is notably contracting. A carbon 14 date, based on scattered charcoal, yielded a date of 3960±120 B.P. (I-8100). This is considered to be much too young, because of the stylistic position of the Barney point and as a similar date was received from the Juniper site which is reliably dated to the seventh millenium B.P. Consequently, McGhee and Tuck consider these

anomalous dates as representative of a more recent forest fire in the area (1975:113). This appears to have been born out by another radiocarbon date received from the Barney site reading 7060±65 B.P. (SI-2310) with a re-run of 7440±70 B.P.

Next is the L'anse Amour Burial Mound form (Plate 8) as represented by a straight stemmed, serrated point, associated with two dates of 7530±140 B.P. (I-8099) and 7255±155 B.P. (SI-2306) making this contemporary if not a bit earlier than the Arrowhead Mine point form, represented by a contracting stemmed point with a slightly serrated, narrower blade (Plates 7b-d and 10). A radiocarbon date associated with a feature at this site reads 7255±85 B.P. (SI-1799). Two other dates, based on scattered charcoal, are 6900±140 B.P. (SI-1800A) and 6770±105 B.P. (SI-1800B). Placed provisionally between these two forms are the points from the Cowpath West site which morphologically might be considered intermediate, illustrating continuities in blade and stem form (Plate 9a-c).

The Juniper and Fowler forms, which are enough alike to be considered together, are characterized by an increase in the use of quartz accompanied by an increasing crudeness in form, with retention of overall shape (Plates 7f-1, 11, 12). The Juniper site produced a date of 6240±70 B.P. (SI-2314), as well as the more recent and unacceptable date of 3970±45 B.P. (I-7504) and the Fowler site yielded two feature-associated dates of

6855±115 B.P. (I-7505) and 6290±125 B.P. (I-7612), thus supporting the contemporaneity of the two forms. These points can be seen, stylistically and chronologically as supported by radiocarbon dates, to give rise to the later expanding stem and side notched forms which are found in the area and which are discussed in detail by Madden (n.d.).

Bifaces

Lanceolate: Site: Cowpath (EjBe-7)

McGhee and Tuck found 2 complete examples and 1 basal fragment of this form from their 1974 testing of the site (1975:26). 1975 excavations yielded 2 complete lanceolate bifaces of milky quartz (Plates 14c,d) as well as 7 fragments which could possibly be assigned to this category. These are characterized by an asymmetrically elongate outline with convex lateral margins, a rounded or straight base and, diagnostically, length greater than twice the width. Tip is rounded, cross section is bi-convex (1) or concave-convex (1), and surface retouch is complete on both surfaces.

Dimensions:

Length	48 mm.	64 mm.
Width	22 mm.	32 mm.
Thickness	8 mm.	10 mm.

Site: Cowpath West (EjBe-23)

Five complete and 4 incomplete lanceolate specimens were recovered from this site. Two grey quartzite examples fit the description of the lanceolate bifaces as given for those of the Cowpath site (Plate 15a,d) and a third is similar but lacks complete surface retouch on both faces. A single clear quartz specimen is symmetrical in its leaf shaped outline (Plate 9k) and a red quartzite specimen is notably long and thin, its length approaching three times its width. The base of this biface is well rounded and the lateral margins are asymmetrically concave-convex, converging to a pointed tip; edge retouch is relatively fine (Plate 15c). The remaining incomplete specimens are of this same red quartzite.

Dimensions:

	Min.	Max.	Mean
Length	70 mm.	89 mm.	79 mm.
Width	31 mm.	42 mm.	35 mm.
Thickness	10 mm.	16 mm.	12 mm.

Small Ovate: Site: Cowpath (EjBe-7)

Two complete and 2 incomplete ovate specimens were recovered during the 1974 testing of the locale (McGhee and Tuck, 1975:30). The later excavations yielded 10 complete and 10 fragmentary specimens assignable to this same group (Plates 14a,b and 16p-s). Material is quartz (18), quartzite (1) and sandstone (1). These bifaces, very crudely manufactured, are distinguished by their asymmetrically convex lateral margins which converge to

a rounded tip and, at the opposite end, form a rounded or slightly convex base. Length/width ratio is greater than 2:1, blade cross section ranges from bi-convex (5) to plano-convex (2) to concave-convex (2), surface retouch is complete and bifacial, and edge retouch is extremely crude. There is one exception to this prevailing crudity of form, a clear quartz specimen with a symmetrical outline, pointed tip, and well rounded base.

Four of the above examples are unfinished, lacking any edge retouch. Two are of very heavily faulted quartz and the third and smallest example suggests a preform for a projectile point (Plate 16s).

Dimensions:

	Min.	Max.	Mean
Length	32 mm.	52 mm.	47 mm.
Width	23 mm.	42 mm.	30 mm.
Thickness	6 mm.	18 mm.	8 mm.

Site: Cowpath West (EjBe-23)

Four complete and 2 incomplete ovate bifaces were recovered from this site. Three of the 4 sandstone specimens were found en cache with the quartz lanceolate biface described above (Plate 9h-k). All sandstone examples are marked in their crudeness in form which is heightened by weathering. Convex lateral margins are asymmetrical, bases are rounded and tips well rounded. Surface and edge retouch is minimal. Cross

section varies from bi-convex (2) to plano-convex (1) to concave-convex (1). The 2 incomplete bifaces, of quartzite, are less crude with a more regular outline and, in 1 specimen, what appears to be complete surface retouch on both faces. The other biface has complete unifacial surface retouch. Edge retouch is minimal in both cases.

Dimensions:

	Min.	Max.	Mean
Length	61 mm.	76 mm.	70 mm.
Width	38 mm.	48 mm.	44 mm.
Thickness	13 mm.	20 mm.	18 mm.

Site: Cowpath East (EjBe-22)

Five complete and 2 incomplete small ovate bifaces were found at this site (Plate 6p,r-s). Material is milky quartz (4) and quartzite (3). These specimens do not differ greatly from those described for the Cowpath site being, with the exception of one specimen, asymmetrical in form with convex lateral margins, rounded to straight bases, well rounded tips, complete bifacial surface retouch, and minimal edge retouch. Cross section ranges from concave-convex (2) to plano-convex (1) to bi-convex (4).

Three of these quartz bifaces lack edge retouch and exhibit incomplete surface retouch, suggestive of preforms. Two of these are possible blanks for triangular points (Plate 6p).

Dimensions:

	Min.	Max.	Mean
Length	41 mm.	54 mm.	49 mm.
Width	26 mm.	37 mm.	30 mm.
Thickness	7 mm.	11 mm.	9 mm.

Trianguloid: Site: Cowpath (EjBe-7)

One whole and 1 incomplete example of this form were found during McGhee and Tuck's 1974 testing (1975:30). Three complete specimens and part of a fourth were recovered in 1975. Material is milky quartz (3) and red quartzite (1). These are determined as trianguloid by their relatively straight lateral margins, well defined tips, and straight to slightly convex bases. Cross section is bi-convex (3) or concave-convex (1) and surface retouch is bifacial in most specimens. Two examples appear to be preforms, with incomplete surface retouch and no edge retouch (Plate 14f).

Dimensions:

	Min.	Max.	Mean
Length	28 mm.	47 mm.	40 mm.
Width	19 mm.	42 mm.	32 mm.
Thickness	6 mm.	16 mm.	9 mm.

Site: Cowpath East (EjBe-22)

One faulted clear quartz triangular biface was found at this locale. Unfinished, it appears to be a preform for a triangular point (Plate 6q). Dimensions are: 41 mm. in length, 32 mm. in width, 10 mm. in thickness.

Rectanguloid: Site: Cowpath (EjBe-7)

One large and 1 small red quartzite rectangular bifaces were found. Six incomplete but recognizable specimens were also recovered, of milky quartz. The larger of the complete bifaces has slightly convex lateral margins with broad, mildly convex "tip" and base. Surface retouch is unifacial and minimal, with fine bifacial edge retouch. Manufactured from a large flake rather than from a reduced core, this example retains a medial ridge on one surface with the bulb of percussion on the other (Plate 14g). Dimensions are: 51 mm. in length, 42 mm. in width, 16 mm. in thickness.

The other, smaller, complete biface has more markedly convex sides with convex base and tip. Surface and edge retouch is complete and bifacial; cross section is plano-convex (Plate 14h). Dimensions are: 49 mm. in length, 28 mm. in width, 10 mm. in thickness.

Site: Cowpath West (EjBe-23)

One large red quartzite specimen is incomplete but recognizable as rectanguloid. Marked by a broad and slightly rounded base, this example has convex lateral edges, a plano-convex cross section and minimal unifacial edge and surface retouch. Dimensions are: approximately 62 mm. in length, 56 mm. in width, 19 mm. in thickness.

Drills: Site: Cowpath (EjBe-7)

A single quartzite drill was recovered from this site (Plate 14i). The lateral margins form a long, thin bit and converge to a well defined point. The base is unifacially thinned by the removal of a number of small flakes, surface retouch is bifacial and marked on one face producing a slightly sinuous edge outline; cross section is bi-convex. Dimensions are: 48 mm. in length, 5 mm. in thickness; shoulder missing.

Site: Cowpath West (EjBe-23)

One quartzite drill was found, distinguished by slightly concave lateral margins on the bit, with edges well dulled from use. The tip is slightly rounded, and edge and surface retouch is bifacial. This specimen has a haft element which is equal in length to that of the bit itself. The sides of this element are straight and the base has been thinned by the removal of a single flake from each face, one scar running the length of the haft (Plate 9g). Dimensions are: 75 mm. in length, 31 mm. in width at the shoulders, 12 mm. in thickness.

Other: Site: Cowpath West (EjBe-23)

Recovered from this site is a large basaltic preform, for a celt or possibly a very large biface. With convex lateral margins converging at one end, the extreme of which is missing, and forming a wider convex margin at the opposite end, this specimen is very roughly bifacially flaked producing a plano-convex cross section. Dimensions are: 310 mm. in length, 104 mm. in width, 62 mm. in thickness.

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End Scrapers: Site: Cowpath (EjBe-7)

End scrapers comprise a high percentage of the artefact assemblage from this site (36%) totalling 232 specimens. Additionally, McGhee and Tuck recovered 28 end scrapers from the area in their 1974 testing (McGhee and Tuck, 1975:30). Their proliferation and crudeness suggest that they were "disposable"; quickly made on a quartz flake that had a suitably steep edge they were probably used only once or twice and then discarded.

As no end scrapers were found at the Juniper and Fowler sites, it has been assumed that they were not associated with these assemblages (McGhee and Tuck, 1975:102). However, their large numbers at the Cowpath site, particularly at Area Six where Juniper-Fowler projectile points were most numerous, indicate their inclusion within the Juniper-Fowler complex. Based on function rather than form, these end scrapers have been divided into three categories, not necessarily mutually exclusive.

Rounded Bit:

These, made on small quartz flakes with random rectangular, circular and trapezoidal form, comprise the majority of the end scrapers, numbering 157 (Plate 16f-j). The working edge is a steeply retouched convex margin which may be single (86%), or which may have one adjacent (6%), one opposite (6%) or

two adjacent working edges (2%). A single example is circular in outline with the full margin retouched. Ventral retouch is generally absent; dorsal retouch may be full or partial, in a few cases absent altogether, and non-working edges are usually unretouched. Of these specimens 29 may have been hafted. The rest were presumably hand held. Thirty-nine of these show evidence of wear predominating on either the right or the left side of the working edge, possibly a reflection of the prediction of the user (cf. Semenov, 1964:87).

Dimensions:

	Min.	Max.	Mean
Edge angle	20°	90°	63°
Edge index	1.0	28.0	5.1
Edge chord	6 mm.	20 mm.	14 mm.
Length	9 mm.	29 mm.	16 mm.
Width	12 mm.	30 mm.	16 mm.
Thickness	4 mm.	12 mm.	7 mm.

Edge index: the ratio of edge chord length/maximum chord to edge distance.

Site: Cowpath East (EjBe-22)

Nineteen examples of this form were recovered from this site (Plate 16i-k).

Dimensions:

	Min.	Max.	Mean
Edge angle	30°	90°	57°
Edge index	4.6	16.0	8.2
Edge chord	8 mm.	17 mm.	14 mm.
Length	11 mm.	19 mm.	15 mm.
Width	13 mm.	18 mm.	15 mm.
Thickness	4 mm.	8 mm.	6 mm.

Site: Cowpath West (EjBe-23)

Seven examples of this form were recovered (Plate 9e,f), 2 of which were possibly hafted.

Dimensions:

	Min.	Max.	Mean
Edge angle	40°	80°	51°
Edge index	5.6	11.0	7.6
Edge chord	11 mm.	15 mm.	14 mm.
Length	13 mm.	21 mm.	17 mm.
Width	14 mm.	20 mm.	17 mm.
Thickness	5 mm.	7 mm.	6 mm.

Spurred: Site: Cowpath (EjBe-7)

These 34 scrapers are distinguished by the possession of one or more graving spurs at the end of a working edge (Plate 16a-e). In some cases an actual flake was removed to form the sharp projection. In other specimens it would appear that the spur was fortuitous, based upon the original shape of the flake; signs of use are in evidence. In all other aspects these end scrapers are similar to those described above.

Dimensions:

	Min.	Max.	Mean
Edge angle	40°	90°	56°
Edge index	1.2	21.0	5.9
Edge chord	10 mm.	19 mm.	14 mm.
Length	10 mm.	26 mm.	15 mm.
Width	11 mm.	22 mm.	16 mm.
Thickness	4 mm.	8 mm.	6 mm.

Site: Cowpath East (EjBe-22)

Only one specimen of this form was found.

Dimensions:

Edge angle	40°
Edge index	8.0
Edge chord	16 mm.
Length	13 mm.
Width	16 mm.
Thickness	3 mm.

Scrapers with Crushed Edges: Site: Cowpath (EjBe-7)

Forty-one scrapers exhibit crushing on the edge opposite the main working face. Of these, 29 also show less marked crushing on the scraping face, suggesting a secondary function as a wedge. Of the remaining 12 not showing crushing on the scraping face, as this is opposite the face on the edge rather than on the ventral surface which would be the case if the crushing was the result of pressure reflected from an anvil during the manufacture of the scraping face, it is inferred that these scrapers were possibly made on pièces esquillées.

Dimensions:

	Min.	Max.	Mean
Edge angle	30°	90°	56°
Edge index	2.2	16.0	5.8
Edge chord	5 mm.	21 mm.	15 mm.
Length	11 mm.	24 mm.	16 mm.
Width	12 mm.	23 mm.	16 mm.
Thickness	4 mm.	9 mm.	6 mm.

Site: Cowpath East (EjBe-22)

Six examples of this form were found, 3 with secondary crushing on the scraping face, 3 without.

Dimensions:

	Min.	Max.	Mean
Edge angle	30°	80°	55°
Edge index	4.0	7.6	6.0
Edge chord	12 mm.	17 mm.	14 mm.
Length	11 mm.	17 mm.	15 mm.
Width	12 mm.	17 mm.	15 mm.
Thickness	5 mm.	8 mm.	7 mm.

Site: Cowpath West (EjBe-23)

Five specimens of this form were recovered, all with secondary crushing on the scraping face. One example is spurred.

Dimensions:

	Min.	Max.	Mean
Edge angle	40°	80°	60°
Edge index	3.0	8.0	5.0
Edge chord	13 mm.	20 mm.	17 mm.
Length	14 mm.	19 mm.	16 mm.
Width	17 mm.	20 mm.	18 mm.
Thickness	6 mm.	7 mm.	6 mm.

Side Scrapers: Site: Cowpath (EjBe-7)

There are 4 examples of side scrapers from this site, distinguished as such by their linear form with steep unifacial retouch on a lateral edge. On 3 specimens the scraping edge is single, on the fourth there is an additional scraping face at the distal end.

Dimensions:

	Min.	Max.	Mean
Edge angle	30°	40°	38°
Edge index	9.0	20.0	16.5
Edge chord	21 mm.	35 mm.	30 mm.
Length	29 mm.	40 mm.	36 mm.
Width	15 mm.	34 mm.	22 mm.
Thickness	5 mm.	8 mm.	7 mm.

Pieces Esquillées: Site: Cowpath (EjBe-7)

A total of 90 pièces esquillées occur in the Cowpath assemblage, all made on thick, blocky quartz flakes or possibly core fragments (Plate 16k-o). Their distinguishing trait is the paired, crushed edges, generally situated at each end of the long axis, one edge assumedly produced by direct percussion and the other from the reflected pressure of the anvil. Often the primary edge becomes concave with use. Generally the pièces esquillées are rectangular in form with a large size range, from 12-40 mm. Following MacDonald (1968:86), size is an undiagnostic trait, reflecting only the stage of exhaustion of the tool. As with the Debert specimens, the smaller pièces esquillées often exhibit columnar flaking with the larger varieties possessing wider, shorter scars.

The function of these tools is not well understood. MacDonald associates them with bone, antler and ivory suggesting their function as wedges or slotting tools (ibid.). However, they have yet to be found in association.

As with the end scrapers, as no pièces esquillées were found at the Juniper and Fowler sites, it has been assumed that they were not a part of these assemblages (McGhee and Tuck, 1975:102). However, the high number of pièces esquillées that were recovered from Area Six of the Cowpath site which also yielded a relatively large number of Juniper-Fowler projectile points supports the inclusion of pièces esquillées within the Juniper-Fowler complex.

Site: Cowpath East (EjBe-22)

Ten pièces esquillées were recovered from this site (Plate 6 1-m).

Site: Cowpath West (EjBe-23)

Three examples were found at Cowpath West (Plate 9d).

Retouched Flakes: Site: Cowpath (EjBe-7)

Of the 58 flakes which show retouch along one or more margins, 24 possess scraping edges, that is edges which have been unifacially retouched to produce a steep bevel. Of these, 2 exhibit graving spurs, 1 with three and the other with a single spur of 12 mm. in length. Eight flakes exhibit distinct cutting edges, defined as such by their thinness and the flatness of bevel. In 2 cases retouch is bifacial, in 1 it is unifacial, and in the remaining 5 specimens retouch is limited to the surface of the flake excluding the edge which is paper thin and razor sharp. Sixteen flakes show undefined retouch; in all cases but one material is milky or clear quartz.

Site: Cowpath East (EjBe-23)

Four milky quartz retouched flakes were recovered, 2 of which possess scraping edges and 2 of which show bifacially retouched cutting edges.

Site: Cowpath West (EjBe-23)

Five milky quartz flakes were found, all with undefined edge retouch.

Utilized Flakes: Site: Cowpath (EjBe-7)

The 50 specimens in this category are flakes which possess an edge suitably sharp for use. No edge is actually retouched, but wear pattern is perceivable in the form of crushing along the used edge or, if the quartz is of a less crude variety, minute scars along the edge.

Site: Cowpath East (EjBe-22)

Six quartz examples were recovered from this site.

Site: Cowpath West (EjBe-23)

Three specimens were recovered.

GROUND STONE

Projectile Points Site: Cowpath (EjBe-7)

A single specimen was recovered, of weathered basalt, with stem incomplete (Plate 7e). This has convex lateral margins converging to a well rounded tip, and asymmetrical and slightly rounded shoulders, one forming an obtuse and the other a right angle. The stem is straight and the remaining portion of the base indicates that it is straight and unthinned; cross section is plano-convex.

Dimensions:

Length	48 mm.
Width	22 mm.
Thickness	5 mm.
Blade length	36 mm.
Blade index	61
Shoulder width/ neck width	1.4
Total length/ blade length	1.33

Gouges: Site: Cowpath (EjBe-7)

Four full channelled gouges were recovered, 1 of sandstone and the rest of variously weathered basalts.

The smallest of these (Plate 17a) measures 75 mm. in length, 39 mm. maximum width at the deeply concave bit, and 14 mm. in thickness. A channel, 4 mm. at maximum depth, runs the full length of the specimen. The dorsal surface is evenly and strongly concave and material is sandstone.

A second example, badly weathered, is slightly longer, with maximum length 105 mm., maximum width at the slightly concave bit end 39 mm., and thickness 18 mm. (Plate 17d). Extending the full length of the specimen is a shallow trough, 2 mm. at its deepest. The dorsal surface is evenly convex.

The third, broken example is over 109 mm. in length, probably over 54 mm. at maximum width and 33 mm. in thickness. A very shallow channel runs the length of the specimen, 2 mm. at maximum depth. At the poll end of this gouge there is evidence of use as an adz (Plate 17c).

A fourth specimen is incomplete and also very badly weathered (Plate 17b). With length approximately 140 mm. and thickness 34 mm., the maximum width, 40 mm., is at the mid-portion of the gouge, the lateral margins tapering toward both ends. Only one edge, markedly convex, is discernable as a working edge; the

opposite margin is missing. On the ventral surface an extremely shallow trough is in evidence, less than 1 mm. in depth. Dorsal surface is strongly convex.

Celts: Site: Cowpath (EjBe-7)

These specimens are all of basaltic rock, in various stages of weathering.

The lateral margins of the largest specimen (Plate 18a) are mildly convex converging toward a slightly convex margin at the battered and steeply bevelled bit, and at the opposing end converging to a more rounded poll. Cross section is plano-convex, with a flat dorsal and a convex ventral surface. Dimensions are: length, 124 mm.; maximum width, near mid-specimen, 40 mm.; and thickness, 29 mm.

A second specimen, incomplete, has fairly straight lateral margins which converge toward a thinned and straight poll and flange out toward the bit, which is missing (Plate 18b). Total length is more than 105 mm., maximum width is 33 mm., and maximum thickness is greater than 21 mm.

A very small specimen, 81 mm. in length, 26 mm. in width, and 18 mm. in thickness, is badly weathered with fairly straight lateral margins converging towards a slightly convex bit and a convex poll end. Ventral surface is mildly convex, and the dorsal surface is flat (Plate 18d).

This ground and pecked example (Plate 18c) might possibly be a preform for a smaller celt or gouge. Seventy-five mm. in length, 35 mm. at maximum width and 29 mm. in thickness, a

well rounded poll and roughly convex, unbevelled bit can be discerned. Cross section is plano-convex, with the ventral surface markedly rounded and dorsal surface flat.

A fifth example was recovered but was too fragmentary to allow reconstruction.

Site: Cowpath West (EjBe-23)

Four celts were recovered from this site, all of weathered basalt.

A large specimen is 108 mm. in length, 40 mm. at maximum width, and 30 mm. in thickness. Lateral margins converge to a well rounded, almost pointed, poll, and the bit end is convex and slanted towards one side. The bevel of the bit is steep, forming a separate facet on the tool; cross section is rectangular.

An incomplete example is rectangular in outline, more than 95 mm. in length, 65 mm. in width, and more than 25 mm. in thickness (Plate 15g). The poll is missing and the bit partially so; however, a fairly oblique bevel is observable. Ventral surface is mildly convex and the original dorsal surface is missing.

This chipped and ground specimen is 117 mm. in length with one straight and one convex lateral margin converging at one end towards a narrow poll and at the other a bit, 45 mm. wide.

Of slightly convex outline, slanting towards one side, the bevel is oblique, and striations from use are visible. Maximum thickness is 25 mm. and cross section is plano-convex (Plate 15f).

This chipped and ground example is 108 mm. in length, with straight lateral margins converging toward a rounded poll and a convex bit which is obliquely bevelled on both sides, indicating its use as an axe. Maximum width, at the bit, is 44 mm. and maximum thickness is 24 mm.; cross section is plano-convex (Plate 15e).

Whetstone: Site: Cowpath East (EjBe-22)

Surface collected at the site, this item of banded shist is tabular in form, with straight lateral margins converging to a sharply narrow margin at one end and flanging out to a slightly convex margin at the opposite end. Striations along the surfaces are discernable, indicating its function. Dimensions are: length, 112 mm.; width, 28 mm.; thickness, 8 mm.

COBBLE TOOLS

Anvilstone: Site: Cowpath (EjBe-7)

This is a sandstone cobble with one surface ground (Plate 17e). Pits are visible on that surface, measuring approximately .09 mm. long.

Hammerstones: Site: Cowpath (EjBe-7)

Five quartzite and 1 basalt cobble show evidence of battering on one or both ends.

CHAPTER FIVE

COMPARISONS AND CONCLUSIONS

The late Paleo-Indian and the early and middle Archaic populations of Northeastern North America are, at best, poorly represented. Eroding shorelines, rising sea level, and inhibiting climatological conditions are amongst the factors proposed as contributive to the dearth of information pertaining to the prehistoric peoples at this time. Whatever the determining causes, it remains that much of the basal strata of cultural development in this area, in particular those related to postulated early coastal adaptations, are virtually undemonstrated.

The coast of Southern Labrador is an exception to the prevailing situation. An area ideal for archaeological research, its abundant marine resources have been a constant attraction for man, both in prehistoric times and the more recent past. Consequently, it is a region with the potential to have reconstructed for it an uninterrupted sequence of cultural development from the seventh millenium B.C. into the Christian era, as demonstrated by the temporally continuous and stylistically and technologically related material found by McGhee and Tuck (1975) in their 1973-74 surveys. The geological history of this area greatly facilitates recovery of this

information, for the area has been in a state of uplift since the retreat of the glacier thus affording the present exposure of very early coastal sites which would otherwise have been drowned by the rising sea.

The earliest inhabitants of this area, and indeed of the whole of Labrador, are presently represented at the Cowpath (EjBe-7), Cowpath East (EjBe-22) and Pinware Hill (EjBe-10) sites, as well as in a number of collections, both local and professional (Harp, 1951; 1961). These early occupations are characterized by quartz and quartzite triangular points of two forms, accompanied by small irregular quartz scrapers, some of which possess graving spurs, retouched flakes including flake knives, pièces esquillées, quartz and quartzite bifaces and one abrader which was recovered from the Cowpath East site. From the Cowpath site no heavy woodworking tools could be ascribed to this complex with any certainty, but the bit end of a ground adz was found at Pinware Hill (McGhee and Tuck, 1975:27).

A date of 6850±130 B.P. (I-8101) was received from the 1974 testing of the Cowpath site, as based on scattered charcoal. However, as this mixed site supported more than one occupation it seems likely that this date pertains to the youngest habitation of the locale. Other carbon samples were taken from feature areas at this site as well as from random charcoal at the single component Cowpath East site and will be available in the near

future. Meanwhile, the Pinware Hill site provided a series of four dates, also from scattered charcoal: 6985±60 B.P. (SI-1801-B), 6850±120 B.P. (SI-1801-A), 6185±125 B.P. (I-7606), and 8855±100 B.P. (SI-2309). The acceptability of this last and earliest date is supported by the stylistic comparison of the triangular projectile points with Paleo-Indian material to the south as well as by the primary position which they assume within the local sequence as determined by projectile point seriation, by assemblage comparisons, and by the comparison of site elevations, assuming such elevations to have increased with age as based on Grant's (1972) calculations of postglacial land emergence of the Northern Peninsula of Newfoundland.

Morphologically, these triangular points show a derivative relationship with Paleo-Indian manifestations of the Northeast. Their concave bases with marked basal thinning executed by means of the removal of a few flakes from one or both faces, sometimes with one scar predominant, are reminiscent of the fluting of the distinctive Paleo-Indian projectile point. Two examples, one from the Cowpath site and the other from the Cowpath East site, are of particular interest and significance, exhibiting a basal, and in one instance ground, nipple between the scars of what might be considered two "guide flakes" (cf. Roosa, 1969), thus implying technological as well as morphological affinities with the fluted point. Similarly, the assemblage accompanying the triangular points indicates a

relationship between it and the Paleo-Indian complexes further south. The small spurred and non-spurred end scrapers, the retouched flakes and flake knives, the pièces esquillées and the various bifaces which typify the less complex eastern Paleo-Indian assemblages find their counterparts amongst the Cowpath, Cowpath East and Pinware Hill material. Thus the cultural remains from this early period in Labrador illustrate technological similarities succeeding from an earlier Paleo-Indian horizon, denoting a late expression of this tradition which, importantly, establishes continuities with the later assemblages of Southern Labrador, thereby amplifying the concept of the late Paleo-Indian in the Northeast as well as, in the Atlantic regions, early and middle Archaic developments which may be seen to emerge from this.

At this time the late Paleo-Indian of the Northeast is represented, aside from the few scattered surface finds of plano points, by the material from the Heagen site in Northwestern Vermont (Ritchie, 1953) which yielded simple end and stemmed scrapers, side scrapers, spokeshaves, flake knives, ovate and lanceolate bifaces, talc pendants, and a number of distinctive projectile points of pentagonal, pentagonal-lanceolate, eared triangular, and simple triangular forms. By means of correlation of the site with the strandlines of the Champlain Sea, Ritchie has dated this complex to 9500-10,500 B.P. (Ritchie, 1969). Stylistically these points do not show direct resemblance to the Labrador forms (Ritchie, personal communication); yet they can be seen to share an overall affinity, illustrating the basic trend of

fluted point evolution in the Northeast. Other Northeastern triangular points occur at the Plenge site in New Jersey (Kraft, 1973), in a few Ohio collections (Funk, 1972), in the Lower Hudson Valley (Brennan, 1974) and, further south, at the Williamson site in Virginia (McCary, 1951).

That the Reagen and other Northeastern triangular points do not compare closely with the Southern Labrador examples may be a function of deteriorating communication and growing isolation through time resulting in the divergent development of related aspects of a common cultural development. The Labrador points, dated provisionally at 8900 B.P., fall within the late range of the Reagen site, quite possibly time enough for discrete regional expressions to have arisen. In fact, such regional manifestations, although slight, are in evidence by 10,500 B.P. as demonstrated by the distinctive ears and deeply indented base of the Debert fluted point from Nova Scotia (MacDonald, 1968).

As suggested by MacDonald, the users of the Debert site were caribou hunters of a peri-glacial environment (ibid.:14). It is likely, although undemonstrated and may remain so, that these early inhabitants of the Atlantic Provinces supplemented their terrestrial hunting activities, if only minimally, by taking advantage of the wide spectrum of resources available at the coast (Tuck, 1975:139). Upon deglaciation of the Labrador coast by about 9000 years ago (Jordan, 1975:92) there is attestation to a northward movement of people who probably

continued caribou hunting activities which, from the coastal proximity of these early sites, was evidently accompanied by a marine focus, although to what extent is presently conjectural.

Qualified by regional variations, the general direction of fluted point development in the Northeast can be seen, the Clovis-like fluted projectile point emerging as a smaller pentagonal and, probably later, triangular form with vestigial fluting in the form of strong basal thinning, accompanied by the traditional Paleo-Indian assemblage. This, then, complements and supports the widely accepted trend of full fluting through stages of partial fluting to non-fluting which is often used to construct provisional chronological orders where good dates or stratigraphy are lacking. That these late or transitional Paleo-Indian triangular points are so meagerly represented may be directly related to the marked resemblance that they bear with the late Woodland Levanna projectile points, thus, in many collections, being mistaken for the same.

In Southern Labrador a broad triangular bladed nipple-based point seems to be stylistically a derivative of the triangular form. In this region it is represented only in a few collections, but has been found in situ in Northern Quebec, associated with some ground slate (Levesque, n.d. in Fitzhugh, 1975:133), and in Northern Labrador dated provisionally at pre-6000 B.P. on the basis of their elevation well above the

pre-Dorset strandlines as well as on formal characteristics (ibid.:132). A further development of this incipient stem may be seen at the Barney site (McGhee and Tuck, 1975) which yielded the contracting stemmed Barney projectile points which retain the broad triangular blade as well as the use of local quartz and quartzite. Small amorphous quartz scrapers, quartzite and a couple of quartz bifaces, a few pièces esquillées, a large number of retouched flakes, 21 bipolar hammerstones, a possible paintstone, and a full channelled gouge comprised the attendant assemblage (ibid.:35). Scattered charcoal gave a date of 3960±120 B.P. (I-8100), but a feature returned the far more acceptable date of 7060±65 B.P. (SI-2310) with a re-run of 7440±70 B.P.

This complex displays some affinities with the earliest materials in Dena Dincauze's New Hampshire Neville sequence which contained at its lowest level broad triangular bladed tapering stemmed projectile points, with small quartz scrapers, bipolar pebble hammerstones and two gouge fragments (Dincauze, 1971:195), and which has been dated to 7700-7000 B.P. (Dincauze, 1974:45), thus being roughly contemporaneous with the Barney occupation. This Neville complex, out of which later developments in Southern New England may be seen to issue, is part of a broad early-middle Archaic horizon which can be seen to extend as far south as North Carolina. Jeoffre Coe's sequence from the Doerschuk and Hardaway sites in the Carolina Piedmont illustrates a series of changes in

projectile point morphology as well as in accompanying scrapers, knives and drills from the late Paleo-Indian or transitional Hardaway-Dalton complex to his Stanly stemmed complex, comparable to the Neville complex, which Coe dates to around 7000 B.P. as based on comparison of the projectile points with other known and dated examples (Coe, 1964:121). Bettye Broyles' Kanawha Valley succession supports and supplements Coe's sequence and dates. Hers is a more detailed version of the North Carolina developments, in which her Stanly stemmed, or Kanawha points, are seen to emerge from a bifurcate base projectile point which, it is suggested, developed in situ in this area (Broyles, 1971). A similar succession of developments is in evidence on Staten Island, but is lacking the discrete stratified levels of the North Carolina and West Virginia sites (Ritchie and Funk, 1971:45). Bifurcate based projectile points have also been found in Southern New England in most multi-component sites, although never in any significant numbers (Dincauze, 1974:44).

It may be that this broad horizon could be extended northward to include Southern Labrador. However, as evidence indicates that this early Archaic development occurred in situ in the south, later giving rise to regional cultural sequences, such as those seen in North Carolina and New Hampshire, this development could not at the same time be considered indigenous to the Strait of Belle Isle unless one considered a loosely parallel development consisting of divergent steps, in one

instance the Stanly stemmed projectile point developing out of a bifurcate base point, and in the other emerging from triangular and nipple-based points. However, looking closely at the Barney projectile points which form the basis of the comparison between that complex and the one represented at the Neville site by the Neville projectiles, it can be seen that, while sharing similarities in the configuration of the broad blade and in the tapering stem, they are far from identical, the Barney form possessing a stem which is more markedly contracting and which lacks the basal thinning by means of the removal a single flake which is found in the Neville forms and which clearly bespeaks of their bifurcate ancestry. It may also be mentioned that, although the two assemblages exhibit some correspondences, the Neville complex lacks the pièces esquillées which are found at the Barney site as well as in earlier and later sites in Southern Labrador. Thus, rather than entertaining the idea of a parallel development it seems more reasonable to suggest a regional sequence in Southern Labrador which was an in situ outgrowth of the late Paleo-Indian occupation which is in evidence for this area, and which maintained some form of contact with their southern neighbours, possibly foreshadowing the later avenues of communication and trade which are indicated by the sporadic occurrence of Northern Labrador's Ramah Chert at least as far south as Massachusetts during the third millenium B.C.

That local manifestations of this broad early-middle Archaic pattern of development persisted to 7000-6000 B.P. is witnessed by the apparent development of Stanly stemmed projectile points to Morrow Mountain projectile points in North Carolina (Tuck, 1975:140) and, in New Hampshire, the possible evolution of Neville points into later Stark points which, found in the Neville sequence, are considered comparable, although not identical, to the Morrow Mountain forms (Dincauze, 1971:195). Again, Southern Labrador displays some affinities with these southern configurations, with the Arrowhead Mine projectile point form, dated at 7255±85 B.P. (SI-1799), showing some overall and unspecific similarities to the comparably dated Stark point, while at the same time sustaining its position within the already established local sequence which, by this time, exhibits certain aspects which are independent of the southern developments, relating to the coastal focus of the former.

Attestation to coastal development at this time is found in the coastal provenience of the Southern Labrador sites as well as by the harpoon head, walrus tusk, and toggle which were fortuitously preserved at the L'anse Amour Mound which is dated at 7530±40 B.P. (I-8099) and 7255±155 B.P. (SI-2306). Along with a bone pendant, whistle, bone points and a possible antler pestle associated with paintstones, are six distinctive projectile points which are comparable to, but earlier than, the Arrowhead Mine projectile point form.

As a provisional liaison between these and the Arrowhead Mine projectile points is the Cowpath West projectile point form from the Cowpath West site, presently undated and displaying characteristics of both forms, with a development away from the short, wide, straight stem of the Mound form towards the longer, narrower, tapered stem of the Arrowhead Mine form, with retention of the serration of the blade margins and the narrowing of the blade which are characteristics observed at this stage. The remainder of the Cowpath West assemblage includes small quartz scrapers and pieces esquillées, retouched flakes, quartz and basaltic bifaces as well as a large preform.

The Arrowhead Mine projectile points are represented at the Arrowhead Mine site (McGhee and Tuck, 1975) and by the Arrowhead Mine component at the Cowpath site. A date pertaining to this occupation is expected upon receipt of the results of the charcoal samples. The associated assemblage includes small quartz scrapers, with a slightly shallower working edge than is the case for the previous examples, quartz pieces esquillées, full channelled gouges, retouched flakes, usually unifacial, and a small amount of ground slate.

Temporally and stylistically following this are the assemblages from the Juniper and the Fowler sites (McGhee and Tuck, 1975) and the Juniper-Fowler component at the Cowpath site, which have been dated, respectively, at 3970±45 B.P. (I-7504), 6240±75 B.P. (SI-2314) and 6855±115 B.P. (I-7505),

6290+125 B.P. (I-7612). The date of 6850±130 B.P. (I-8101) from the Cowpath site, as mentioned above, no doubt reflects this occupation. It is apparent that the first and youngest date is unacceptable for the Juniper and Fowler material are so similar, especially in projectile point style, as to be considered essentially contemporaneous, certainly representative of the same "stage" of development within the local sequence. These projectile points are marked by the increased and almost total use of vien quartz concomitant with a general crudeness of form but with the retention of overall shape. Absent from the Fowler and Juniper sites were the pièces esquillées and small quartz scrapers which were found in all the earlier complexes. However, evidence from the Cowpath site suggests that these artefacts could indeed be included within the Juniper-Fowler assemblage. Other accompanying artefacts are retouched quartz flakes, bifaces (mostly quartz), a fragment of a ground slate point, and chipped as well as gound semilunar knives or ulus, the former perhaps a preformative stage for the latter (McGhee and Tuck, 1975:45).

It is around this time that the first occupations are in evidence for the coastal and near coastal areas of Central Labrador, representing a northern expansion of the Southern Labrador population and seen as a subsequently divergent development. The Sandy Cove complex as manifested at the Sandy Cove sites and the Black Island 1 site and as defined by

Fitzhugh (1972; 1975) is distinguished by contracting stem points, those with the long tapering stems resembling the later Rattlers Bight phase of Central Labrador more closely than those projectile points with shorter stems and broader blades which might be seen as more favourably comparable to the Southern Labrador materials. A high proportion of the projectile points are made on Ramah chert, with a lesser proportion of other cherts and quartz. The rest of the assemblage includes large ovate and semilunar bifaces, often of quartzite, a low frequency of quartz wedges or pièces esquillées, some stemmed flake points, a high overall use of quartz, except for the projectile points, and ground stone celts, stemmed points, and single and double edged knives.

This, then, compares well with the Southern Labrador complexes in the use of quartz, quartzite, and the ground stone component, with the introduction of new materials. The Sandy Cove assemblages compare most closely with the Juniper-Fowler complex, which is also the closest in time. Both share contracting stemmed points which bear some likeness to each other, semilunar knives, pièces esquillées, and some ground stone. Although the bifaces from the Juniper and the Fowler sites were fragmentary in nature and did not allow reconstruction, the range of bifaces from the Cowpath site could well include some of the Sandy Cove specimens.

The earliest date for the Sandy Cove complex is 5995±80 B.P. (SI-1791), at the Black Island 1 site, thus establishing this population in Hamilton Inlet at a time of apparent increasing environmental stability and a few hundred years in advance of the spruce forest, or virtually modern conditions (Jordan, 1975:113). This favourable milieu may be a factor involved in the appearance of the Sandy Cove people at this time for, prior to 6000 years ago, while spruce forest conditions probably existed to the south, a narrow band of sedge-shrub tundra would have existed between the ocean and the continental ice margin concomitant with probable alterations in marine salinity, temperature and nutrients resulting from much glacial meltwater pouring into the Labrador Current. This, plus rapid and intricate eustatic and isostatic adjustments would have created a rather hostile environment with, importantly, unstable marine conditions (ibid.).

Following this early date for Sandy Cove, and perhaps the northern spread of forest conditions as well, a related development may be seen at Saglek Bay, with the appearance of crude quartzite stemmed flakes, some ground slate, a number of retouched flakes and some bifaces found in band 7A of Site Q, radiocarbon dated at 4530±105 B.P. (Tuck, 1975a:46).

The Sandy Cove and earliest known Saglek Bay assemblages probably do not represent the earliest occupations of the coast of Central and Northern Labrador, such occupations perhaps only

occasional in nature. Fitzhugh mentions that east of Nain, in Northern Labrador, a series of large sites were revealed, one of which yielded two basal fragments of nipple-based points. Associated was other material including stemmed projectile points together with which Fitzhugh terms the Natsatuk complex, provisionally dated at pre-6000 B.P. (Fitzhugh, 1975:132). This complex might indeed denote an occupation earlier than and directly related to Sandy Cove (ibid.), but the two nipple-based point fragments should probably be considered as temporally distinct, representing one of the probable sporadic forays to the north made by the resident populations of Southern Labrador.

In the earliest stages of development in Southern Labrador technological alterations through time are in evidence, particularly in the continuous stylistic development of the projectile point, along with a basic conformity of settlement and subsistence patterns emphasizing the coastal resources, perhaps only incipient during the earliest occupations but manifest by 7500 years ago, thus clearly demonstrating their cohesion as a cultural entity to be subsumed within and to logically extend the concept of the Maritime Archaic Tradition as defined by Tuck (1971) following its original introduction by Byers (1959), and later expanded to the notion of a Maritime Continuum (Tuck, 1975) implicit with the concept of unifying in situ cultural origins as well as shared Maritime adaptation, burial ceremonialism, and bone and lithic assemblages.

Until recently, the origins of the Maritime Archaic Tradition have been little known. Based on similarities displayed between the Laurentian Tradition (Ritchie, 1969), in particular the classic Vergennes phase, and the known expressions of the Maritime Archaic, which until lately did not predate 4500 B.P., it was considered that the ancestral Maritime Archaic would be an interior derived culture, genetically akin to the later Vergennes manifestations, and distinguished by stemmed points, a fledgling ground slate technology, and a fairly well developed bone industry. Later, upon gradual adaptation to seasonal marine exploitative patterns which became increasingly important, the culture spread eastward into the coastal regions. However, it appears that the Laurention tradition developed to the south and west of the Great Lakes area (Tuck, 1975:144), and has been suggested that the genesis of the Maritime Archaic occurred in the coastal areas of Maine and the Atlantic Provinces (ibid.). With the recent archaeological investigations in the Strait of Belle Isle such a proposal now approaches realization in the continuities which are observable from the late Paleo-Indian population to the later Archaic populations and into the Christian era.

That such formative coastal developments have not been documented for the rest of the Atlantic Provinces and coastal Maine may, in part, be a function of the postglacial rise in sea level which would have obscured such early coastal stations.

Emery and Edwards (1966) early suggested the possibility of Archaic sites existing on the Atlantic Continental Shelf, a proposition which has been supported by several artefacts which have been dredged up off the coast of Maine, and by the early material exposed in the Lower Hudson Valley where anomalous local conditions counter-balanced the rise in sea level (Brennan, 1974:90). Another factor involved in the scarcity of archaeological remains from this time may be the relatively inhospitable environment which appears to have existed at this crucial period (Funk, 1972:10), although to what degree remains uncertain, the concept of the low carrying capacity pine forest having been over-estimated in the past (cf. Fitting, 1968), as based on correlations with modern northern latitude examples. It is not unlikely, however, that with a deterioration of environmental conditions the interior would have supported only a relatively thin population, with the coast affording a relatively stable, and therefore attractive, resource base.

In conclusion, if one accepts the late Archaic expressions of the Atlantic Provinces and coastal Maine as manifestations of the Maritime Archaic Tradition (cf. Sanger, 1975 for an opposing view), it is a logical extension to assume a genetically related development. Thus, it may be suggested rather than stated that the cultural sequence for Southern Labrador has the potential of becoming a working model for the coastal areas of the Northeast, and a provisional illustration of cultural succession in the Atlantic Provinces.

At this time, however, only the broad, rude steps in this development can be sketched, the formative stages as described herein, with the later aspects of the continuum as explicated by Madden (n.d.) and McGhee and Tuck (1975). Refinement of this sequence remains to be accomplished; information on dwelling structures, settlement, and subsistence economics has yet to be elucidated, and secure chronological provenience by means of reliable carbon 14 dating of cultural features has in the future to be established. And, left as we are with but a paltry representation of a tradition steeped in the intangibles, the very essence of these aboriginal groups will continue to elude us.

BIBLIOGRAPHY

AGOGINO, George A. and Irwin Rovner

1964 "Paleo-Indian Traditions." Reprint from Archaeology Vol. 2, No. 4, pp. 237-243.

ANDREWS, John T.

1974 ed. Glacial Isostacy. Benchmark Papers in Geology No. 10. Dowden, Hutchinson and Ross, Inc. Pennsylvania.

BEARDSLEY, R. K., Preston Holder, Alex D. Kreiger, Betty J. Meggers, John B. Rinaldo, Paul Kietsche

1956 "Functional and Evolutionary Implications of Community Patterning." In Seminars in Archaeology 1955 ed. Robert Wauchope. Society for American Archaeology Memoir 11, pp. 130-157.

BORNS, H. W.

1966 "The Geography of Paleo-Indian Occupation in Nova Scotia." In Quaternaria Vol. 8, pp. 49-57.

BROYLES, Bettye J.

1971 Second Preliminary Report: The St. Albans Site, Kanawha County, West Virginia. West Virginia Geological and Economic Survey, Report of Archaeological Investigations No. 3.

BRYAN, Alan L.

1969 "Early Man in America and the Late Pleistocene Chronology of Western Canada and Alaska." Current Anthropology Vol. 10, No. 4, pp. 339-365.

BULLEN, Ripley P.

1962 "Suwanee Points in the Simpson Collection." Florida Anthropologist Vol. 15, pp. 83-88.

BUTZER, Karl W.

1971 Environment and Archaeology: An Ecological Approach to Prehistory. Second Ed. Aldine. Chicago.

BYERS, Douglas S.

1954 "Bull Brook - A Fluted Point Site in Ipswich, Massachusetts." American Antiquity Vol. 19, No. 4 pp. 343-357.

1959 "Radiocarbon dates for the Bull Brook Site, Massachusetts." American Antiquity Vol. 24, No. 4 pp. 427-429.

1966 "The Debert Archaeological Project: The Position of Debert with Respect to the Paleo-Indian Tradition." In Quaternaria Vol. 8, pp. 33-47.

CAMBRON, James W. and Spencer A. Walters

1959 "Flint Creek Rock Shelter." Tennessee Archaeologist Vol. 15, pp. 73-87.

CAMPBELL, John M.

1971 "Territoriality Among Ancient Hunters: Interpretations from Ethnography and Nature." In Anthropological Archaeology in the Americas, pp. 1-21. ed. Betty J. Meggers. Anthropological Society of Washington.

CARTER, George F.

1957 Pleistocene Man at San Diego. John Hopkins Press. Baltimore.

CLARKE, David L.

1968 Analytical Archaeology. Methuen & Co. Ltd. London.

CLELAND, Charles E.

1966 "The Prehistoric Animal Ecology and Ethnozoology of the Upper Great Lakes Region." Anthropological Papers, Museum of Anthropology, University of Michigan No. 29. Ann Arbor.

COE, J. L.

1952 "The Cultural Sequence of the Carolina Piedmont." In Archaeology of the Eastern United States. ed. James B. Griffin. University of Chicago Press. Chicago. pp. 301-311.

1964 The Formative Cultures of the Carolina Piedmont. Transactions of the American Philosophical Society, New Series, Vol. 54, Part 5.

DAMAS, David

1968 "Band Societies Contributions to Anthropology." National Museum of Canada, Bulletin 228, Anthropological Series No. 84. Ottawa.

DAVIES, J. L.

1958 "Pleistocene Geography and the Distribution of Northern Pinnipeds." Ecology Vol. 39, pp. 97-113.

DAVIS, Margaret B.

1965 "Phytogeography and Palynology of the Northeastern United States." In The Quaternary of the United States, pp. 377-402. A Review for the VII Congress of the International Association for Quaternary Research. ed. H. E. Wright and David B. Frey. Princeton University Press. New Jersey.

DE JARNETTE, D. L., E. B. Kurjack, and J. W. Cambron

1962 "Stanfield-Worley Bluff Shelter Excavations." Alabama Archaeologist Vol. 8.

1964 "Fluted Projectile Points in a Stratified Site in Marshall County, Alabama." The Eastern States Archaeological Federation, Bulletin 23.

DINCAUZE, Dena F.

1971 "An Archaic Sequence for Southern New England." American Antiquity Vol. 36, No. 2, pp. 194-198.

1974 "An Introduction to Archaeology in the Greater Boston Area." In Archaeology of East North America Vol. 2, No. 1, pp. 39-67.

DRAGOO, D. W.

1965 "Investigations at a Paleo-Indian Site in Stewart County, Tennessee." The Eastern States Archaeological Federation, Bulletin 24.

1967 "Early Man in East North America." In Eastern States Archaeology Federation, Bulletin 26, p. 11.

EMERY, K. O. and R. L. Edwards

1966 "Archaeological Potential of the Atlantic Continental Shelf." American Antiquity Vol. 31, No. 5, Part 1.

FILLON, Richard H.

n.d. "Paleoglaciology: Deglaciation of the Labrador Continental Shelf." Manuscript at the Bedford Institute of Oceanography. Dartmouth, Nova Scotia.

FITTING, James E.

1963 "The Hilo Site, A Late Paleo-Indian Site in Western Michigan." Reprint from The Wisconsin Archaeologist Vol. 44, No. 2.

1965 "Observations on Paleo-Indian Adaptive and Settlement Patterns." Michigan Archaeologist Vol. 7, No. 3, pp. 103-109.

1968 "Environmental Potential and the Post-Glacial Readaptation in Eastern North America." American Antiquity Vol. 33, No. 4, pp. 441-445.

1970 The Archaeology of Michigan: A Guide to the Prehistory of the Great Lakes Region. The Natural History Press. New York.

FITZHUGH, William A.

1972 Environmental Archaeology: Cultural Systems in Hamilton Inlet, Labrador. Smithsonian Contributions to Anthropology No. 16.

1972a "The Eastern Archaic: Commentary and Northern Perspective." Pennsylvania Archaeologist Vol. 42, No. 4, pp. 1-19.

1975 "A Maritime Archaic Sequence from Hamilton Inlet, Labrador." In Arctic Anthropology Vol. 12, No. 2, pp. 117-138.

n.d. "Climate and Environment." Draft of paper on file Memorial University of Newfoundland.

FONG, Christopher C. K.

1969 "Paleontology of the Lower Cambrion Archaeocytha-Bearing Forteau Formation in Southern Labrador." Unpublished Master's thesis, Memorial University of Newfoundland.

FUNK, Robert E.

1972 "Early Man in the Northeast and the Late-Glacial Environment." Man in the Northeast No. 4.

FUNK, Robert E., George R. Walters and William F. Ehlers

1969 "The Archaeology of Dutchess Quarry Cave, Orange County, New York." Pennsylvania Archaeologist Vol. 39, No. 1-4, pp. 7-22.

FUNK, Robert E., T. P. Weinman and P. L. Weinman

1969 "The Kings Road Site: A Recently Discovered Paleo-Indian Manifestation in Greene County, New York." New York State Archaeological Association Bulletin 45, pp. 1-23.

GORMAN, Frederick

"The Clovis Hunters: An Alternate View of their Environment and Ecology." In Contemporary Archaeology ed. Mark P. Leone. Southern Illinois Press. Illinois.

GRANT, Douglas R.

1969 "Surficial Deposits, Geomorphic Features, and Late Quaternary History of the Terminus of the Northern Peninsula of Newfoundland and Adjacent Quebec-Labrador." Maritime Sediments Vol. 5, No. 3, pp. 123-125.

1972 "Post-Glacial Emergence of Northern Newfoundland." Geological Survey of Canada Paper 72-1, Part B, pp. 101-102.

GREENMAN, Emerson

1943 "The Archaeology and Geology of Two Early Sites Near Killarney, Ontario." Papers of the Michigan Academy of Science, Arts and Letters Vol. 28, pp. 505-531.

HARE, Kenneth F.

1959 A photo-reconnaissance Survey of Labrador-Ungava. Department of Mines and Technical Surveys Memoir 6. Ottawa.

HARP, Elmer

1951 "An Archaeological Survey in the Strait of Belle Isle." Reprint from American Antiquity Vol. 16, No. 3, pp. 203-220.

1964 "Evidence of Boreal Archaic Culture in Southern Labrador and Newfoundland." National Museum of Canada Bulletin 193, pp. 184-261.

JANGAARD, P. M.

1974 The Capelin (Mallotus villosus): Biology, Distribution, Exploitation, Utilization and Composition. Fisheries Research Board of Canada, Bulletin 186. Ottawa.

JORDAN, Richard

1975 "Pollen Diagrams from Hamilton Inlet, Central Labrador, and their Environmental Implications for the Northern Maritime Arctic." In Arctic Anthropology Vol. 12, No. 2, pp. 92-116.

KRAFT, Herbert C.

1973 The Plenge Site: A Paleo-Indian Occupation Site in New Jersey. Seten Hall University Museum. New Jersey.

KREIGER, Alex D.

1964 "Early Man in the New World." In Prehistoric Man in the New World ed. Jesse D. Jennings and Edward Norbeck. University of Chicago Press.

LEE, Thomas E.

1957 "The Antiquity of the Sheguindah Site." Canadian Field Naturalist Vol. 71, No. 3, pp. 117-137. Ottawa.

LEWIS, T. M. N. and Madeline Kneberg

1958 "The Nuckolls Site." Tennessee Archaeologist Vol. 14, pp. 61-69.

LOUGHREY, A. G. and J. P. Kelsall

1970 "The Ecology and Population Dynamics of the Barren-ground Caribou in Canada." In Ecology of the Subarctic Regions UNESCO, pp. 275-280.

MACDONALD, George F.

1966 "The Technology and Settlement Patterns of a Paleo-Indian Site at Debert, Nova Scotia." In Quaternaria Vol. 8, pp. 59-73.

1968 Debert: A Paleo-Indian Site in Central Nova Scotia. Anthropological Papers No. 16, National Museum of Canada.

1971 "A Review of Research on Paleo-Indian in Eastern North America." In Arctic Anthropology Vol. 8, No. 2, pp. 32-41.

MACNIESH, R. S.

1952 "A Possible Early Site in Thunder Bay District, Ontario." National Museum of Canada, Bulletin 126, pp. 23-47.

MADDEN, Marcie M.

n.d. "A Late Archaic Sequence in Southern Labrador." Unpublished Master's thesis, Memorial University of Newfoundland.

MANSFIELD, A. W.

1959 The Walrus in the Canadian Arctic. Fisheries Research Board of Canada Circular No. 2. Ottawa.

1963 Seals of Arctic and Eastern Canada. Fisheries Research Board of Canada Bulletin 137. Ottawa.

MASON, Ronald J.

1958 "Late Pleistocene Geochronology of the Paleo-Indian Penetration into the Lower Michigan Peninsula." Museum of Anthropology, Anthropological Papers No. 11. University of Michigan.

1960 "Early Man and the Age of the Champlain Sea." Reprint from the Journal of Geology Vol. 68, No. 4, pp. 366-376.

1962 "The Paleo-Indian Tradition in Eastern North America." Current Anthropology Vol. 3, No. 3, pp. 227-252.

1963 "Two Late Paleo-Indian Complexes in Wisconsin." The Wisconsin Archaeologist Vol. 44, No. 4, pp. 19-211.

MASON, R. S. and Carol Irwin

1960 "An Eden-Scottsbluff Burial in Northeast Wisconsin." American Antiquity Vol. 26, pp. 43-57.

MCGHEE, Robert and James A. Tuck

1975 An Archaic Sequence from the Strait of Belle Isle, Labrador. National Museum of Man, Mercury Series No. 34. Ottawa.

MCLAREN, I. A.

1958 The Biology of the Ringed Seal (Phoca hispida shreber) in the Eastern Canadian Arctic. Fisheries Research Board of Canada Bulletin 118. Ottawa.

MEGGERS, Betty S.

1971 Ed. Anthropological Archaeology in the Americas. Anthropological Society of Washington.

MORZER BRUYNS, Cpt. W. F. J.

1971 Field Guide of Whales and Dolphins. Amsterdam.

PREST, V. K.

1970 "Quaternary Geology of Canada." In Geology and Economic Minerals of Canada, pp. 676-764. ed. R. J. W. Douglas. Geological Survey of Canada Economic Report No. 1. Department of Energy, Mines and Resources. Ottawa.

PRUFER, Olaf H.

1960 "Early Man East of the Mississippi." The Cleveland Museum of Natural History. Cleveland.

1963 "The McConnell Site, a Late Paleo-Indian Workshop in Coshocton County, Ohio." Scientific Publications of the Cleveland Museum of Natural History, New Series, Vol. 2, No. 1.

QUIMBY, George I.

1958 "Fluted Points and the Geochronology of the Lake Michigan Basin." American Antiquity Vol. 23, pp. 247-254.

1960 Indian Life in the Upper Great Lakes. University of Chicago Press. Chicago.

RITCHIE, William A.

1953 "A Probable Paleo-Indian Site in Vermont." American Antiquity Vol. 18, No. 3, pp. 249-258.

1957 Traces of Early Man in the Northeast. New York State Museum and Science Service Bulletin 358.

1969 The Archaeology of New York State. Natural History Press, Revised Edition. New York.

RITCHIE, William A. and Robert E. Funk

1971 "Evidence for Early Archaic Occupations on Staten Island." In Pennsylvania Archaeologist Vol. 41, No. 3, pp. 45-59.

1973 Aboriginal Settlement Patterns in the Northeast. New York State Museum: Science Service Memoir 20. Albany, New York.

ROBBINS, Maurice and George A. Agogino

1964 "The Wapanucket No. 8 Site: A Clovis-Archaic Site in Massachusetts." Reprint from American Antiquity Vol. 29, No. 4.

ROOSA, William B.

1965 "Some Great Lakes Fluted Point Types." Michigan Archaeologist Vol. 7, No. 3, pp. 89-102.

SANGER, David and Robert G. MacKay

1973 "The Hirundo Archaeological Project - A Preliminary Report." Man in the Northeast No. 6, pp. 21-30.

1975 "Culture Change as an Adaptive Process in the Maine-Maritimes Region." In Arctic Anthropology Vol. 12, No. 2, pp. 60-75.

SERGEANT, D. F.

1961 Whales and Dolphins of the Canadian East Coast. Fisheries Research Board of Canada, Arctic Unit, Circular No. 7. Ottawa.

SEMENOV, S. A.

1957 Prehistoric Technology. Cory, Adams and MacKay, 1964, First Published USSR. London.

SODAY, Frank J.

1954 "The Quad Site, a Paleo-Indian Village in Northern Alabama." Tennessee Archaeologist Vol. 10, pp. 1-20.

SOKAL, Robert R. and Peter H. Sneath

1973 Numerical Taxonomy: the Principles and Practice of Numerical Classification. W. H. Freeman. San Francisco.

TUCK, James A.

1971 "An Archaic Cemetary at Port au Choix, Newfoundland." American Antiquity Vol. 36, No. 3, pp. 344-358.

1974 "Early Archaic Horizons in East North America." In Archaeology of East North America Vol. 2, No. 1, pp. 72-80.

1975 "The Northeastern Maritime Continuum: 8000 Years of Cultural Development in the Far Northeast." Arctic Anthropology Vol. 12, No. 2, pp. 139-147.

1975a Prehistory of Saglek Bay, Labrador: Archaic and Paleo-Eskimo Occupations. National Museums of Canada, National Museum of Man, Mercury Series No. 32.

TUCK, James A. and Robert McGhee

1975 "Archaic Cultures in the Strait of Belle Isle Region, Labrador." In Arctic Anthropology Vol. 12, No. 2, pp. 76-91.

WILLIAMS, Stephen and James B. Stoltman

1965 "An Outline of Southeastern United States Prehistory with Particular Emphasis on the Paleo-Indian Era." In The Quaternary of the United States, pp. 669-684 ed. H. E. Wright and David G. Frey. Princeton University Press. New Jersey.

WILMSEN, Edwin N.

1971 "Paleo-Indian Site Utilization." In Anthropological Archaeology in the Americas. ed. Betty J. Meggers. Anthropological Society of Washington, pp. 27-40.

WITTHOFT, John

1952 "A Paleo-Indian Site in Eastern Pennsylvania: An Early Archaic Hunting Culture." Reprint from Proceedings of the American Philosophical Society Vol. 96, No. 4.

WILLEY, Gordon

1966 An Introduction to American Archaeology Vol. 1. Prentice Hall. Englewood Cliffs.

WRIGHT, H. T. and William B. Roosa

1966 "The Barnes Site: A Fluted Point Assemblage from the Great Lakes Region." American Antiquity Vol. 31, No. 6, pp. 850-860.

Plate 4

Cowpath Site

a - Cowpath form projectile point

b - Pinware Hill form projectile point

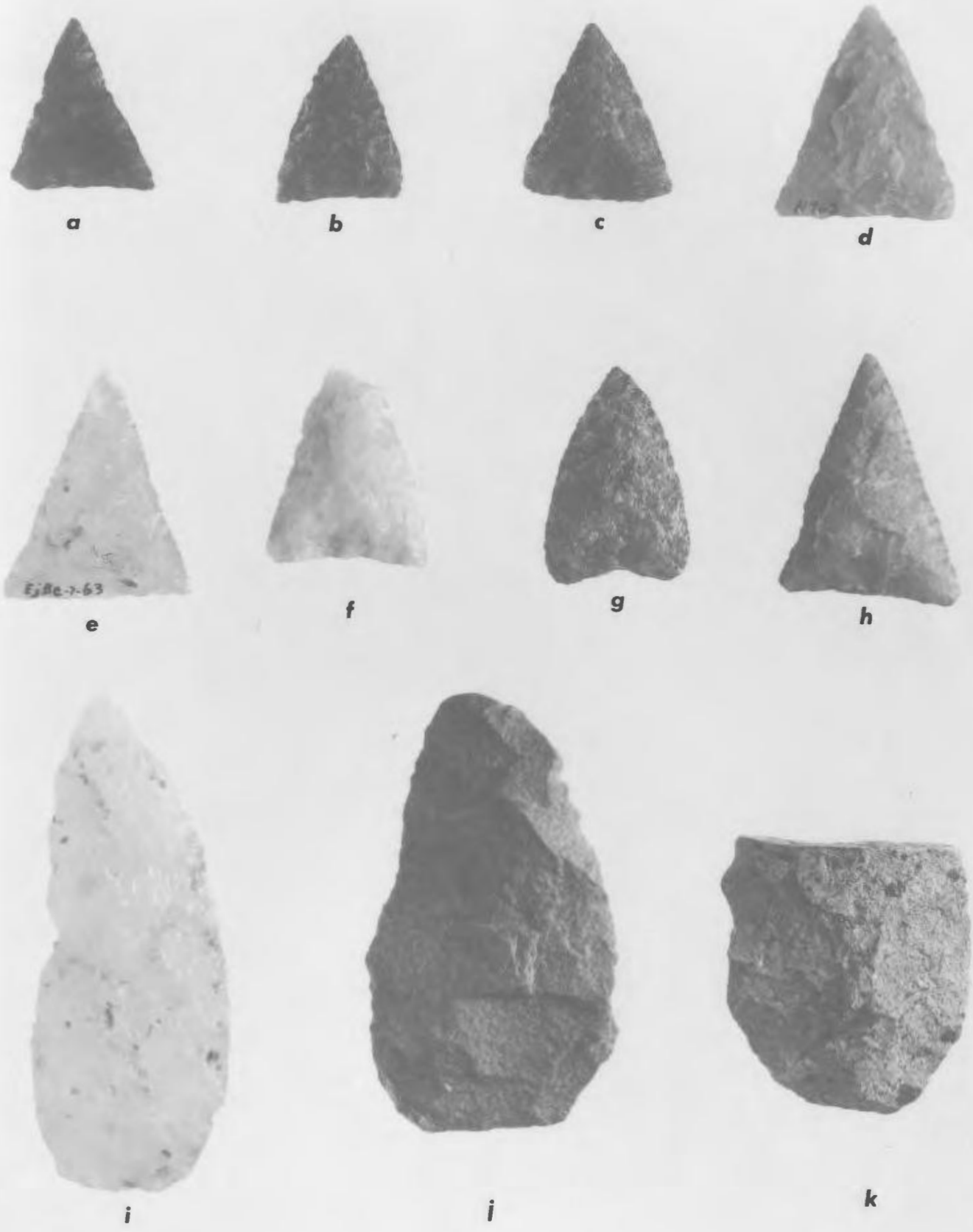
c-f Cowpath form project points

g - Pinware Hill form projectile point

h - Cowpath form projectile point

i-k Bifaces

Courtesy of James A. Tuck and Robert McGhee


a
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EjBe-7-63
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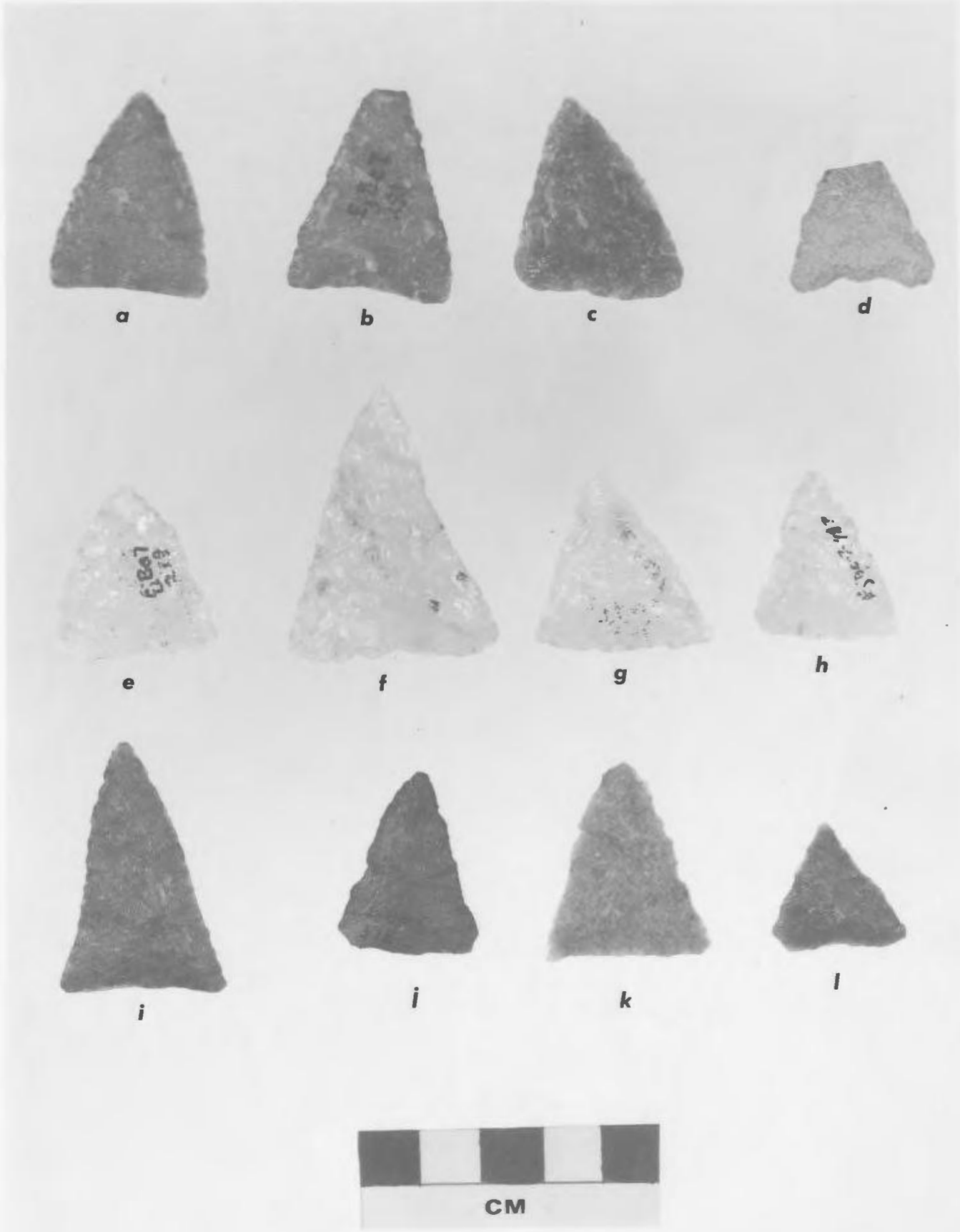
Plate 5

Cowpath Site

a-e Pinware Hill form projectile points

f-l Cowpath form projectile points


a
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k
l
CM

Plate 6

Cowpath East Site

a-d Pinware Hill form projectile points

e-h Cowpath form projectile points

i-k Scrapers

l-o Pièces esquillées

p-q Preforms

r-s Ovate bifaces

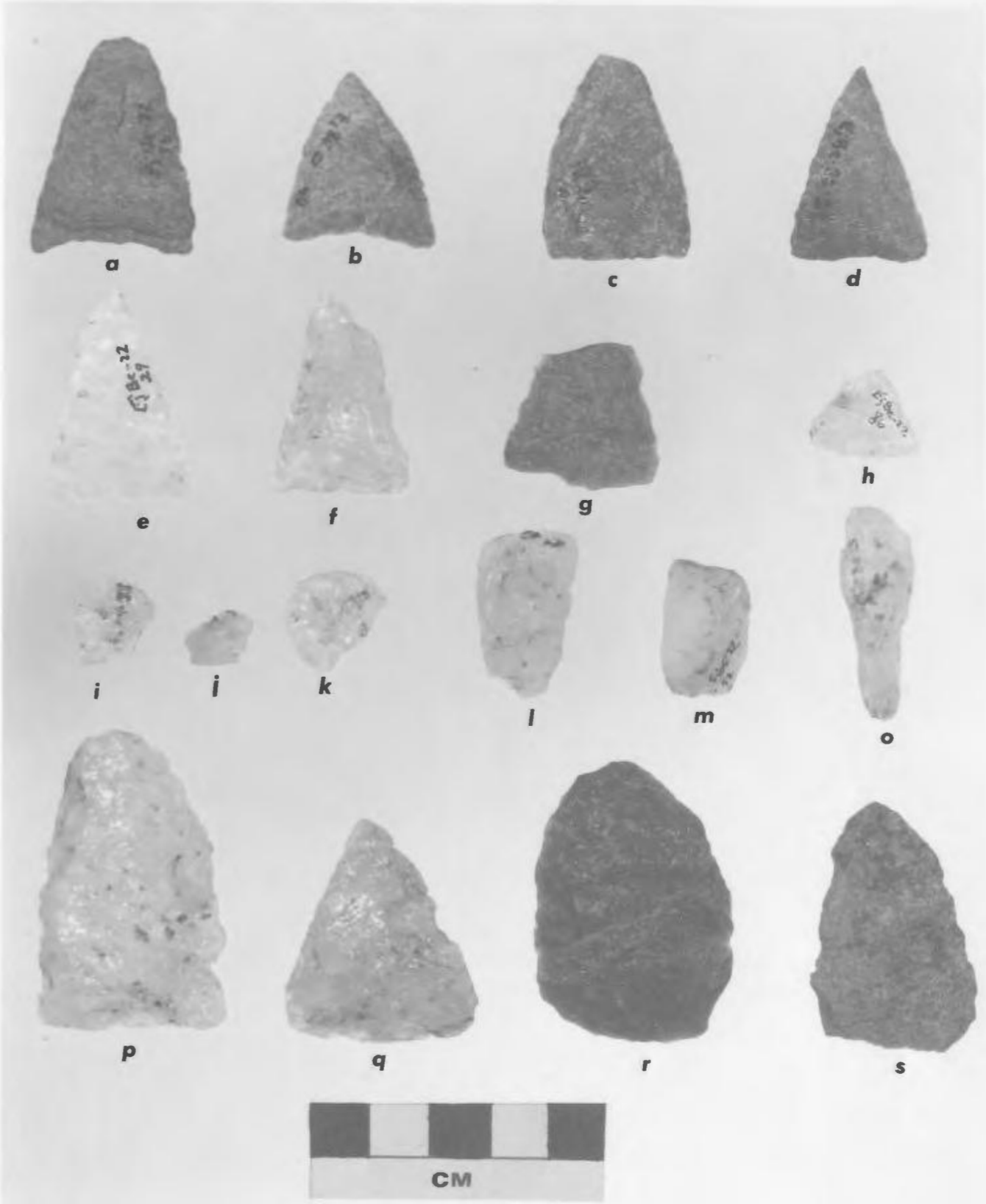
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Plate 7

Cowpath Site

a - L'anse Amour form projectile points

b-d - Arrowhead Mine form projectile points

e - Ground Stone projectile point

f-h - Juniper-Fowler form projectile points

i-j - Projectile points - Indeterminate form

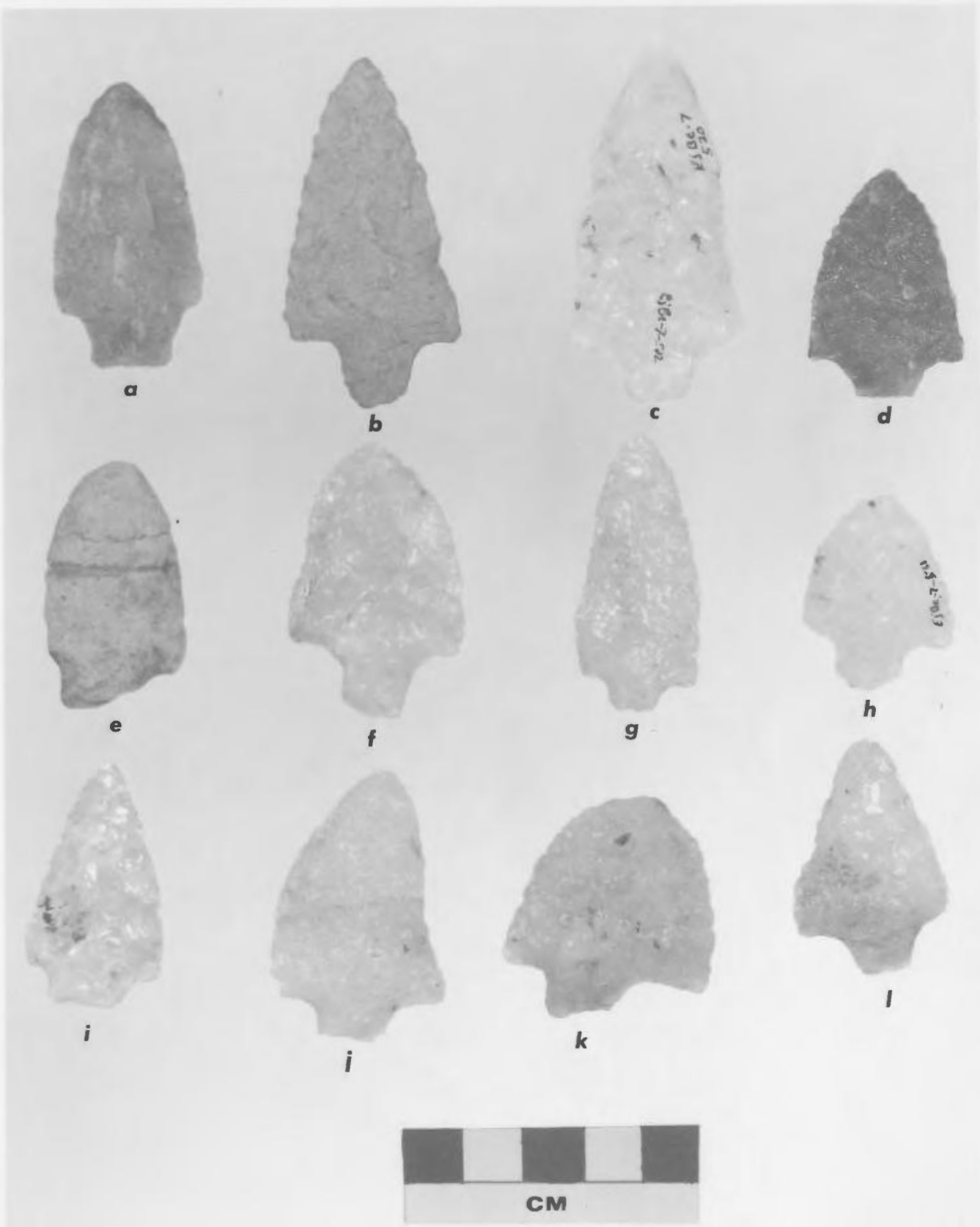
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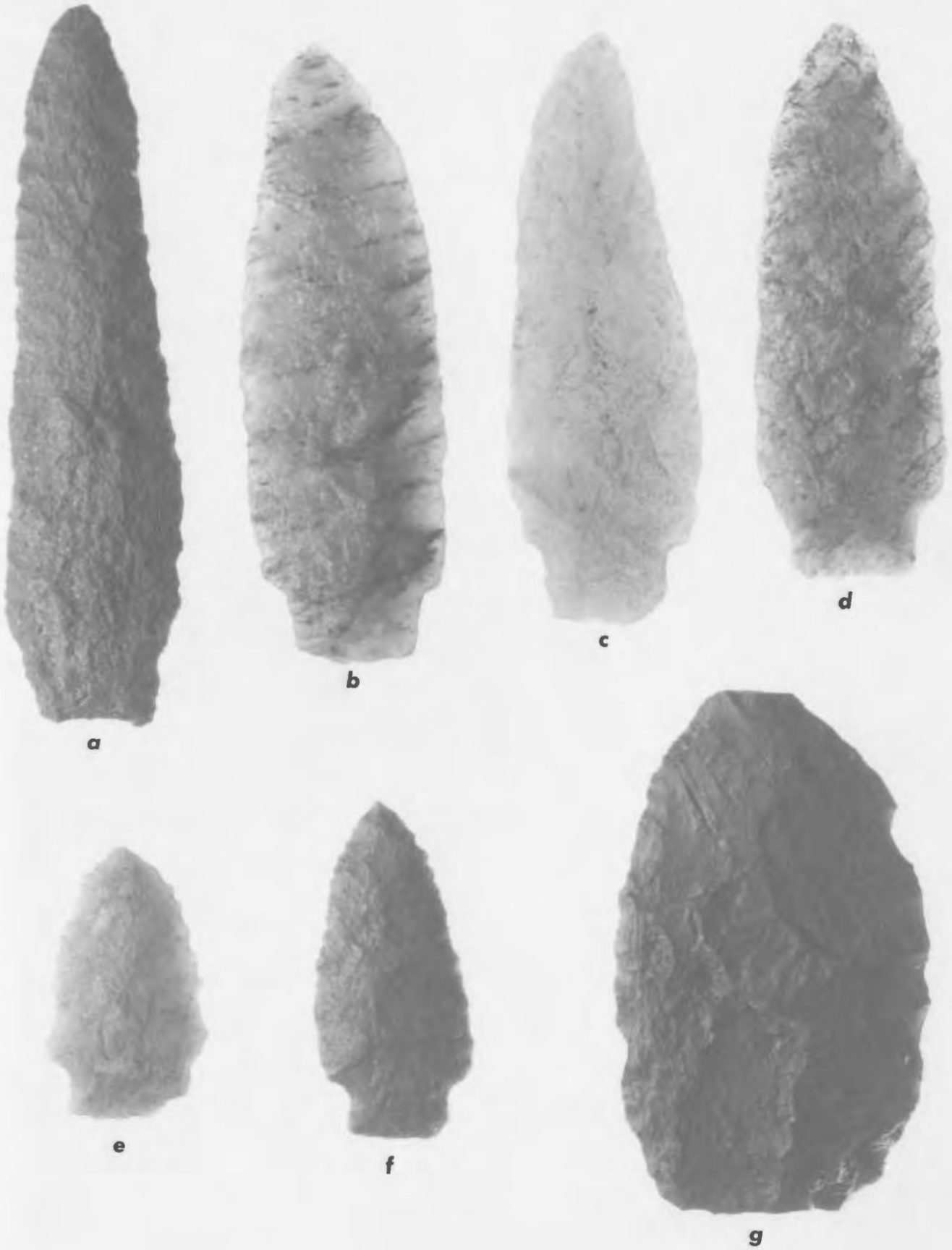
Plate 8

L'anse Amour Mound

a-f - L'anse Amour Mound form projectile points

g - Biface

Courtesy of James A. Tuck and Robert McGhee


a
b
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f
g

Plate 9

Cowpath West Site

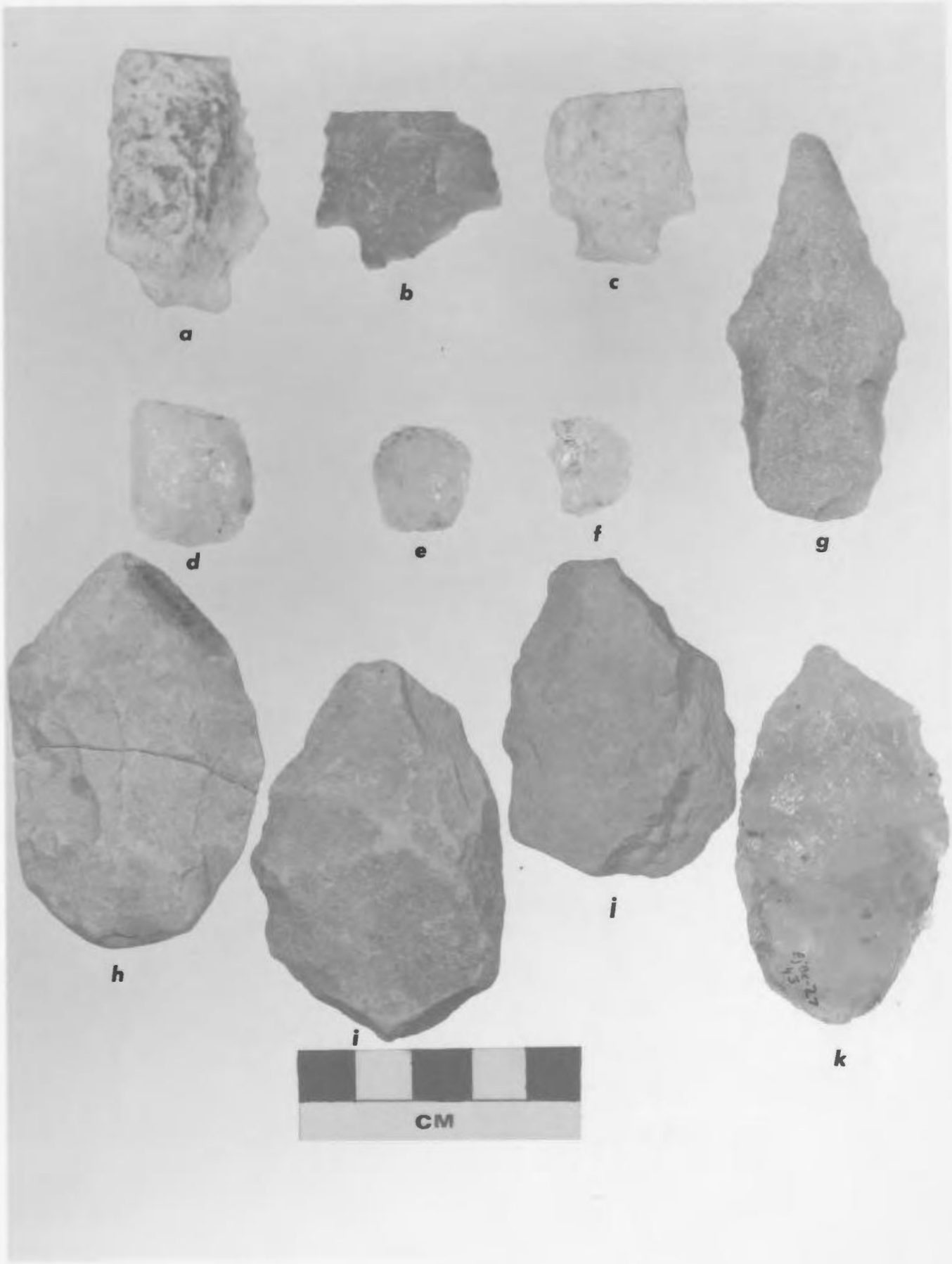
a-c - Cowpath West form projectile points

d - Pièces esquillée

e-f - Scrapers

g - Drill

h-k - Bifaces


a
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g
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i
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k
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Plate 10

Arrowhead Mine Site

a-f - Arrowhead Mine form projectile points

g - Incomplete ground stone knife

i - Drill

j - Hammerstone

Courtesy of James A. Tuck and Robert McGhee


a
b
c
d
e
f
g
h
i

Plate 11

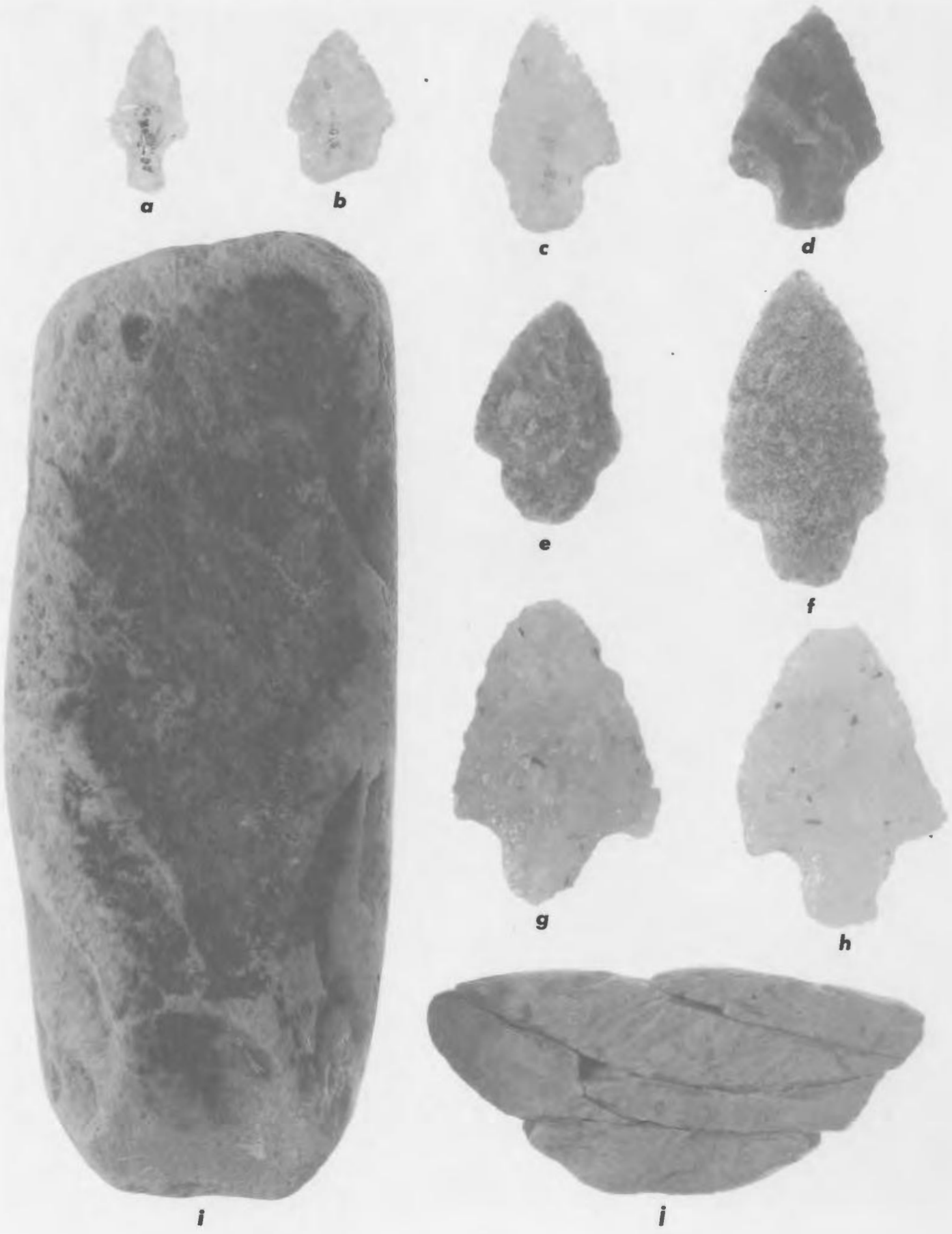
Juniper Site

a-h - Juniper-Fowler form projectile points

i - Celt

j - Ulu

Courtesy of James A. Tuck and Robert McGhee


a
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g
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Plate 12

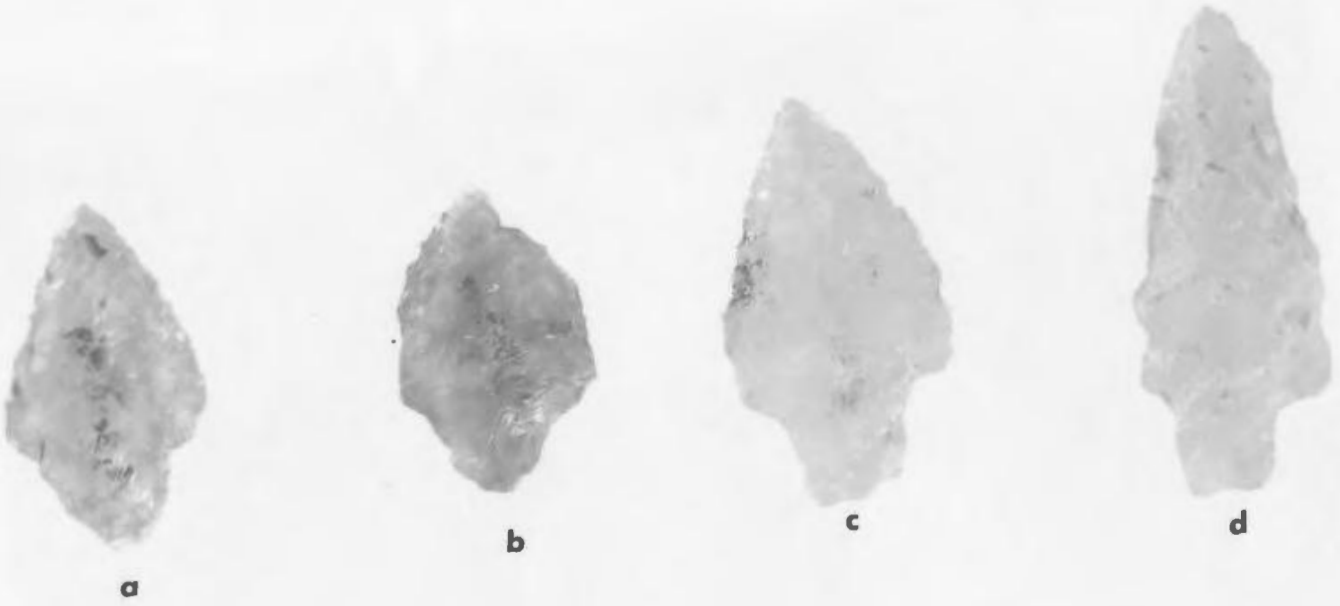
Fowler Site

a-d - Juniper-Fowler form projectile points

e - Celt

f - Ground stone projectile point or knife

Courtesy of James A. Tuck and Robert McGhee



a b c d

e f

a

b

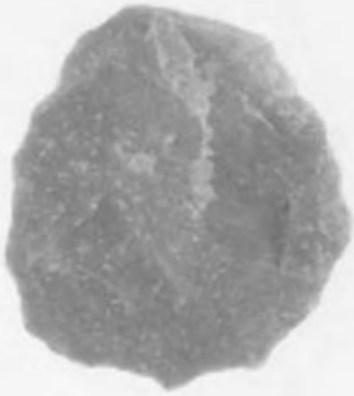
c

d

e

f

g



h

i

Plate 13

Barney Site

a-f - Barney form projectile points

g-i - Bifaces

Courtesy of James A. Tuck and Robert McGhee

Plate 14

Cowpath Site

a-b - Ovate bifaces

c-d - Lanceolate bifaces

e-f - Trianguloid bifaces

g-h - Rectanguloid bifaces

i - Drill

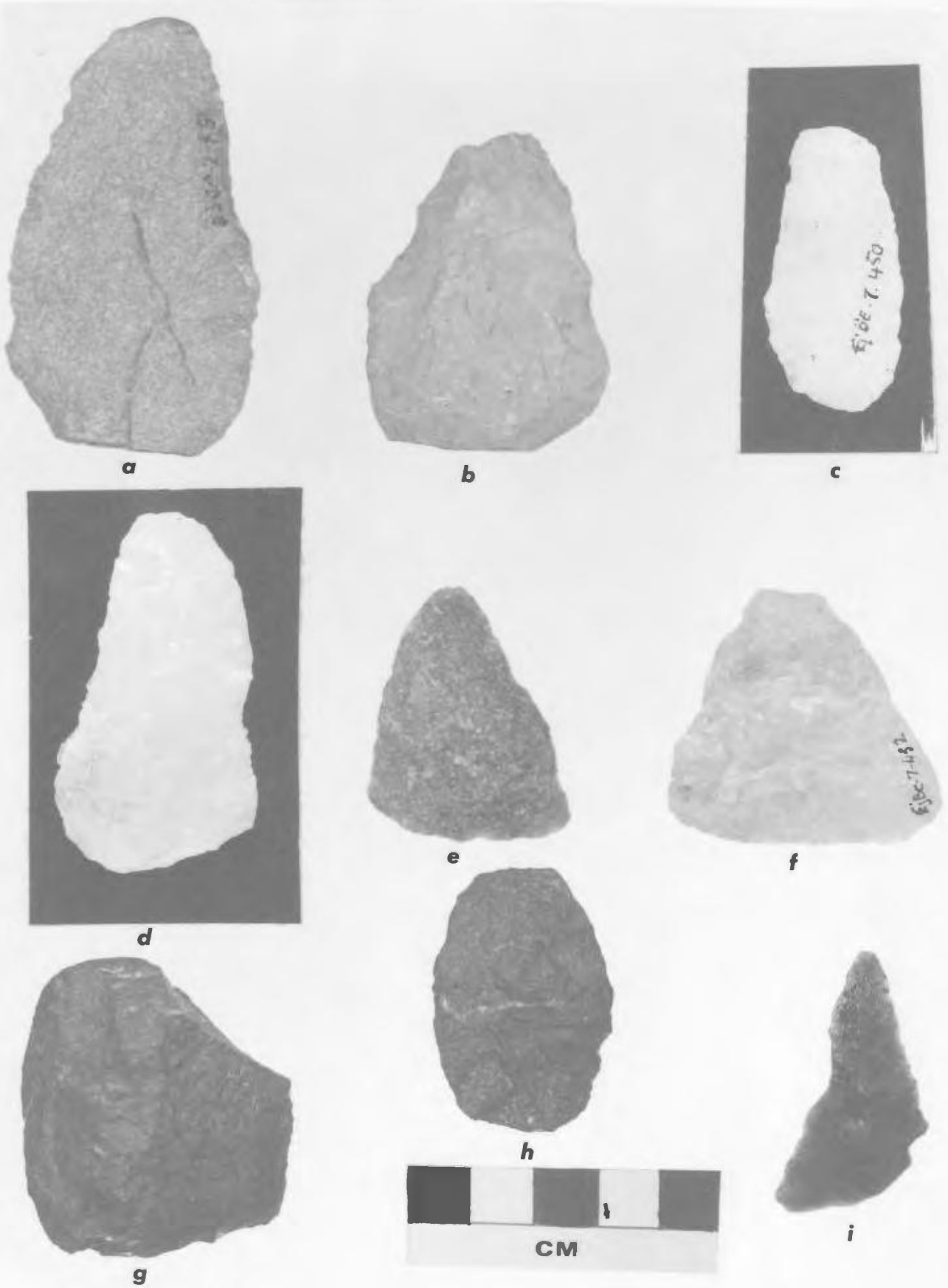

a
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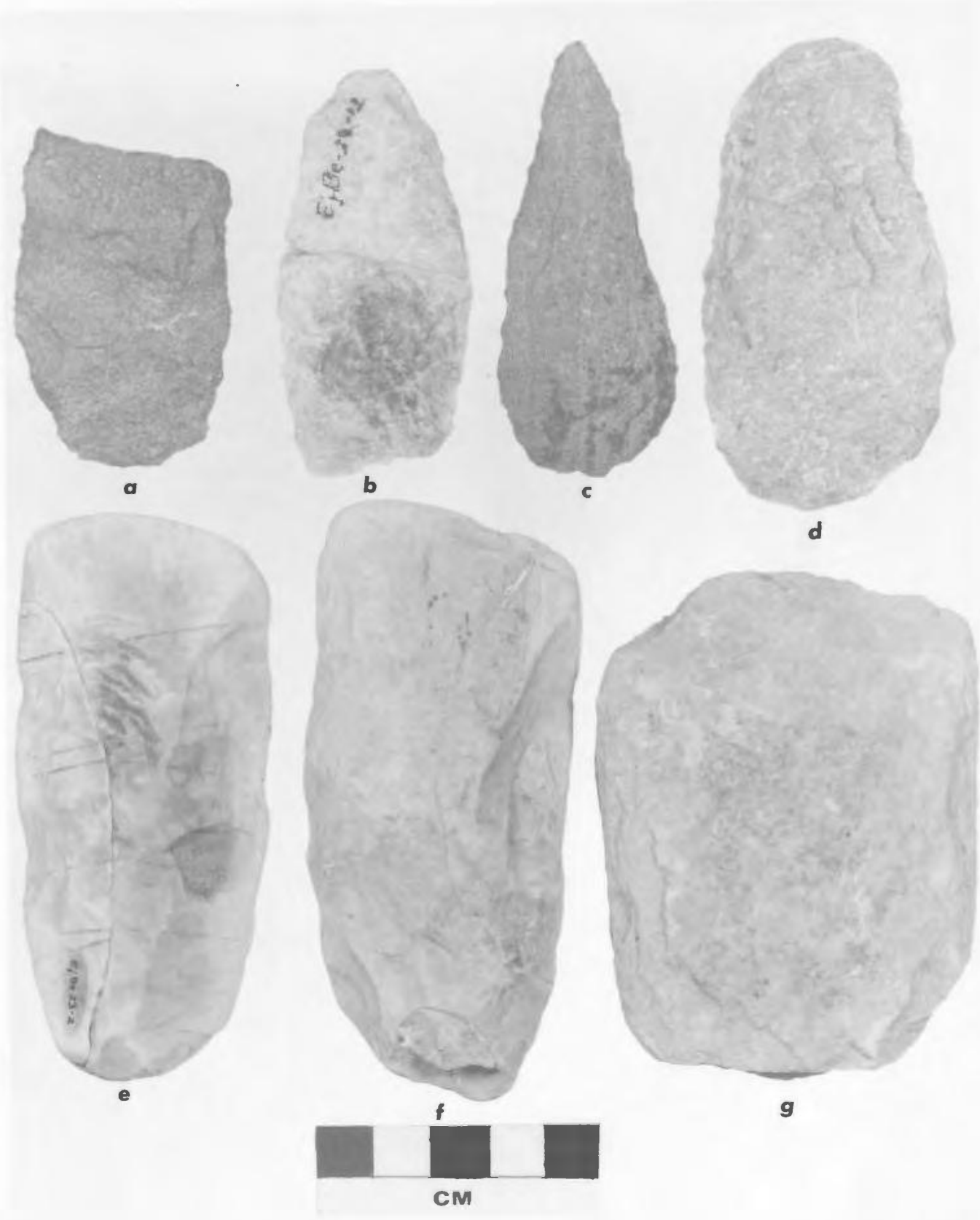
Plate 15

Cowpath West Site

a-d - Lanceolate bifaces

e-g - Celts


a
b
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g
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Plate 16

Cowpath Site

a-e - Spurred scrapers

f-i - Scrapers, rounded bit

k-o - Pièces esquillées

p-s - Bifaces


a
b
c
d
e
f
g
h
i
j
k
l
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q
r
s
CM

Plate 17

Cowpath Site

a-d - Gouges

e - Anvilstone


a
b
c
d
e
CM

Plate 18

Cowpath Site

a-d - Celts


a
b
c
d
CM