

## CHAPTER 2

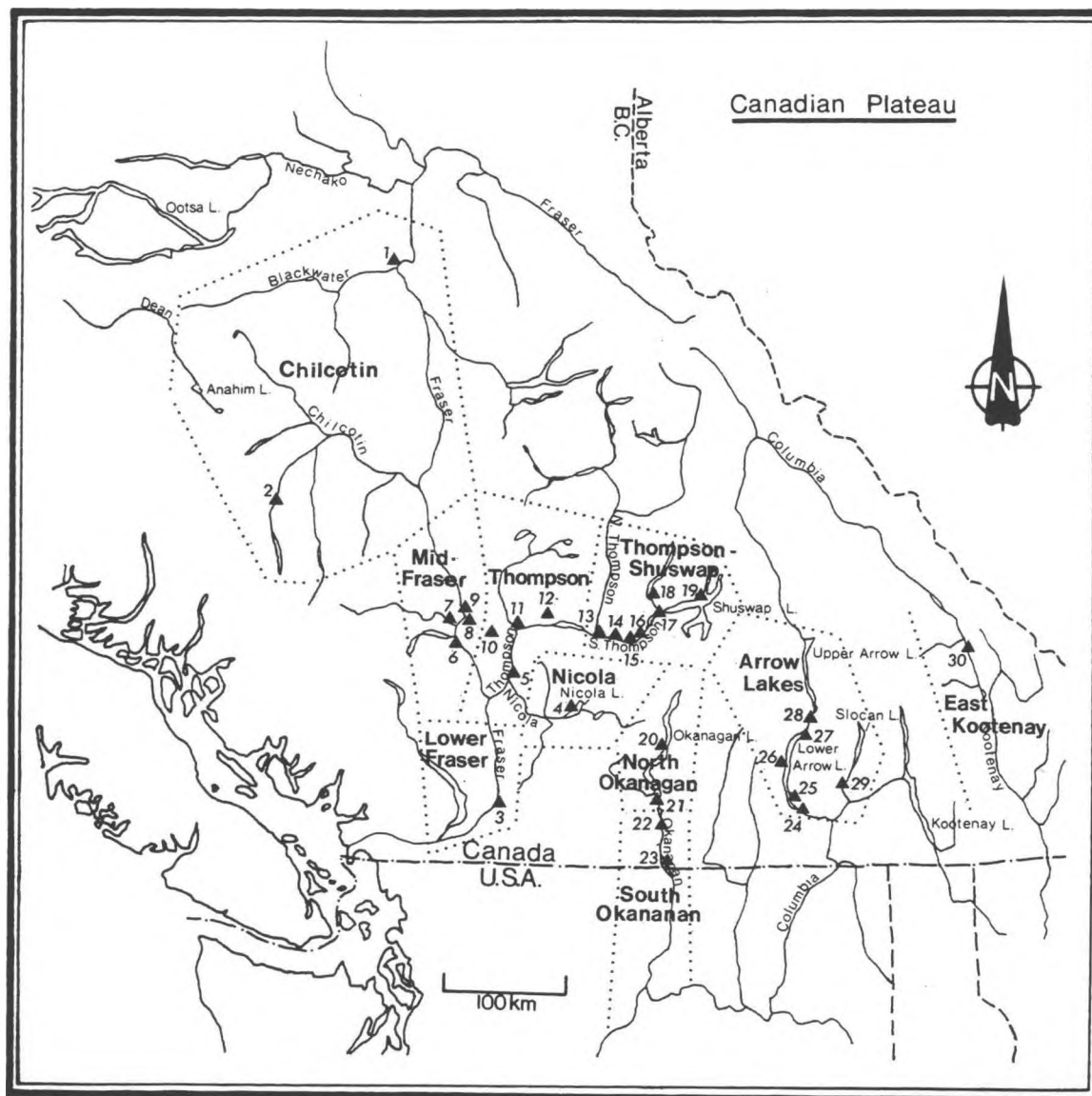
### DESCRIPTION OF KEY-SHAPED FORMED UNIFACES

#### 2.1 Study Sample Selection

A sample population of 129 prehistoric key-shaped formed unifaces was selected from excavated assemblages and surface collections recovered from ten archaeological regions in British Columbia (Appendices 1 to 3; Table 2; Figures 1 and 11 to 20). The frequency of items selected from each region is presented in Appendix 3. Eighty-eight (68.2%) of these are complete, and 41 (31.8%) are in various states of fragmentation. Fifty-eight (45%) are from excavated components of known absolute or relative age, and the remaining items are surface finds whose approximate provenience (i.e., site or nearest town) are known. Agencies that loaned the prehistoric study sample items include the Royal British Columbia Museum (Victoria), the Simon Fraser University Museum of Archaeology and Ethnology (Burnaby), the University of British Columbia Museum of Anthropology (Vancouver), the Secwepemc Museum (Kamloops), and the Westbank Indian Band (Westbank). Several items were also loaned by Dr. Knut Fladmark and Dr. Brian Hayden (S.F.U.).

The prehistoric study sample tools were judgementally selected using several morphological and technological criteria as general guidelines. In order to be selected and included in the study sample, each prospective item had to exhibit all or most of the traits falling within the following ranges of variation:

- (1) an overall "key-shaped", "comma-like", or assymetric "tear-shaped" outline produced by intensive unifacial retouch initiated predominantly from the ventral face along most margins (although some margins could bear slight bifacial retouch);
- (2) a maximum length between about 1.5 and 7 cm, width between about .5 and 4 cm, and thickness between about .3 and 1.8 cm;
- (3) a tapering, slightly curved distal projection exhibiting a steeply retouched, slight to moderately concave edge on one lateral margin of the distal projection (most often on the left side); and a steeply retouched, or "naturally backed" margin displaying a variety of formal outlines on the opposite side; and
- (4) either a trapezoidal, rhomboidal, squarish, triangular, V-shaped, or U-shaped proximal "butt" which may or may not exhibit retouch, and often bears the original flake-blank bulb of percussion on the proximal portion of the ventral face.



**Figure 1.** Archaeological regions (dotted lines) and archaeological sites (triangles) from which the 129 prehistoric key-shaped formed unifaces comprising the study sample were secured.

- |   |                                |
|---|--------------------------------|
| (1): FiRs 1                             | (16): EeQw 3, EeQw 6           |
| (2): EkSa 13                            | (17): EfQv 2, EfQv 10          |
| (3): DjRi 3, DjRi 5                     | (18): EfQw 1                   |
| (4): EbRd 3                             | (19): EfQu 3, EfQu 6           |
| (5): EcRh 12                            | (20): DIQv 37, DIQv 39         |
| (6): EdRl 13                            | (21): DiQv 5                   |
| (7): EeRl 91                            | (22): DhQv 48                  |
| (8): EeRk 4                             | (23): DgQu 16                  |
| (9): EeRl 7                             | (24): DiQm 4                   |
| (10): EeRj 63                           | (25): DiQm 6                   |
| (11): EeRh1                             | (26): DkQm 5                   |
| (12): EfRf 3                            | (27): DIQl 6                   |
| (13): EeRb 3, EeRb 10, EeRb 11, EeRb 70 | (28): EaQl 1, EaQl 10, EaQl 14 |
| (14): EdRa 9, EdRa 22                   | (29): DjQj 1                   |
| (15): EdQx 20                           | (30): EdQa 8                   |

A degree of flexibility in type definition was maintained to allow specimens possessing some degree of "atypical" trait variability to be accommodated. Also included are several incomplete tools that demonstrate sufficient traits to permit assumption of type membership. Most such items tend to lack a portion of the distal projection that appears to have been removed by a transverse bending flexure initiation.

Because these definitive attributes can be linked to a fairly restricted range of function(s) and isochrestic stylistic variation, it was reasoned that the resulting group of items should represent an etically conceived tool "type" having both functional specificity and meaningful culture-historical significance. Chapter 3.2 presents a more detailed discussion of typological considerations.

Names have been assigned to main morphological parts or features of these tools for descriptive and analytical convenience. Major referential morphological features include the distal projection, concave margin, "opposite" margin, proximal margin, ventral face, and dorsal face (Figures 2 and 8).

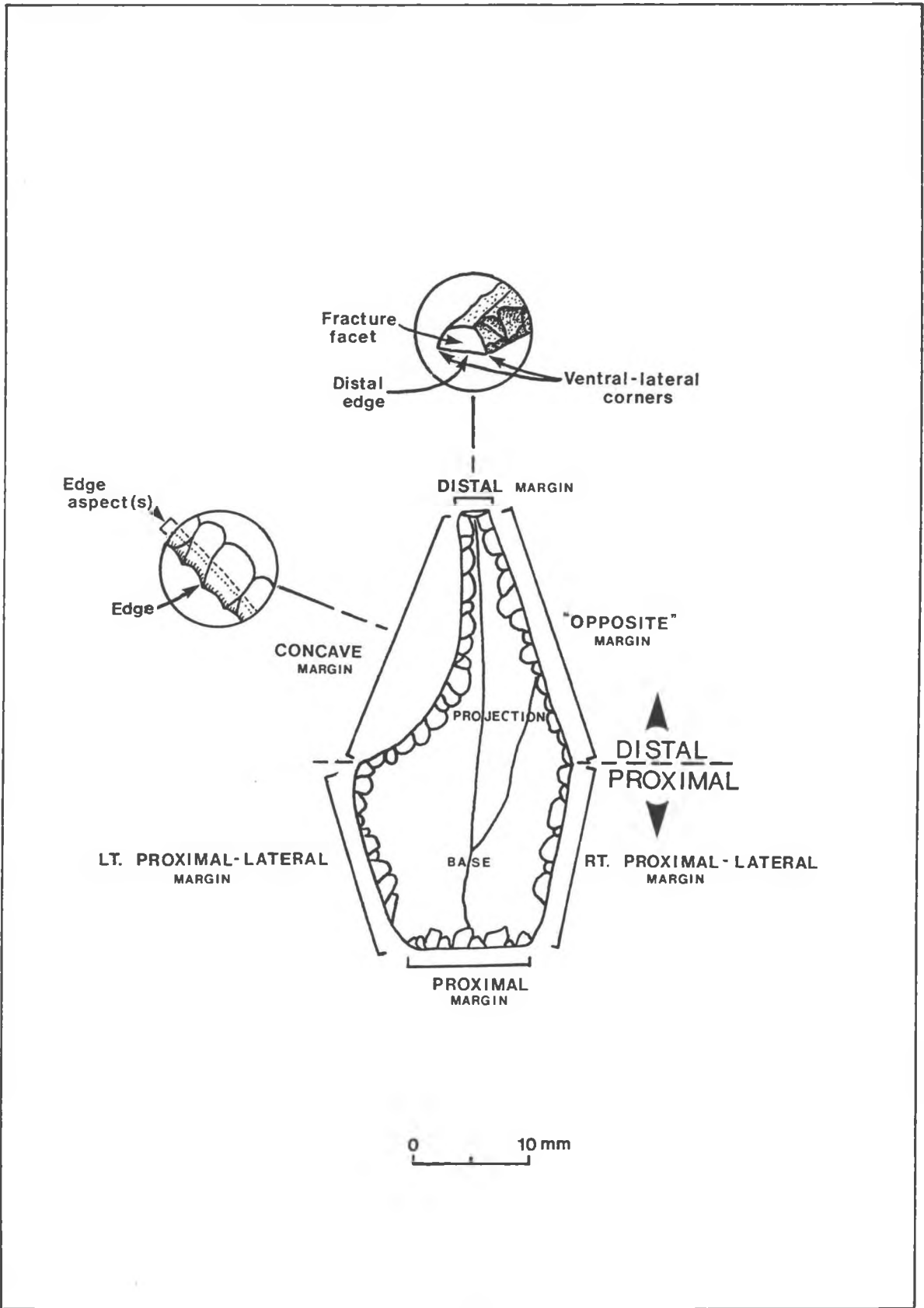
A total of 57 selected continuous and discrete variables were recorded for each of the 129 tools comprising the prehistoric study sample (Appendices 1 to 3; Figures 3 and 4; Table 1). These data were coded for analysis and loaded into the Michigan Terminal System (MTS) at Simon Fraser University. Descriptive and inferential statistics were calculated using the Michigan Interactive Data Analysis System (MIDAS) programs (Appendix 3; Tables 1 and 11; Chapter 9).

## 2.2 Study Sample General Characteristics

This section presents a generalized description of the physical, morphological, technological, and metric attributes of key-shaped formed unifaces. It was generated through observational and statistical analyses of the 129 study sample items. The nature, frequency, and relative percentages of discrete ordinal and nominal scale variables are listed in Appendices 2 and 3. The nature of continuous variables are presented in Figure 3, and their corresponding descriptive and inferential statistics are presented in Tables 1 and 11. Several salient and/or significant attributes mentioned below are discussed in further detail in Chapter 9.

Most key-shaped formed unifaces are made on elongate, medium-sized to large flakes that were struck from cores using direct freehand hard-hammer percussion technique. Seventy-eight items, constituting 60.5% of the sample assemblage, were manufactured from cryptocrystalline chalcedonies. Thirty-six items (27.9%) were made from cryptocrystalline or microcrystalline cherts, and only 15 items (11.6%) are basalt. A total of 35 items (27%) indicate having been made from thermally altered (heat treated) flakes (see Chapter 3.3).

A total of 88 items, constituting 68.2% of the sample assemblage, are considered to be complete. Another 18 (14.0%) are regarded to be "almost" complete (i.e., a very small portion of their distal tips are missing), 16 (12.4%) lack the distal half of their projections, four (3.2%) have a large portion of their basal margins missing, one (.8%) lacks its entire distal projection, another is an entire distal projection, and the last one is a medial section.



**Figure 2.** Morphological features and landmarks defined for key-shaped formed uniface to facilitate description and comparison in this study.

Tool forming was executed by initiating steep retouch (i.e., 40° to 100°) from the ventral face along two or more margins to produce the characteristic "key-shaped" outline. Occasionally, fortuitous flake blank features were accommodated into the tool design with little or no subsequent modification. Examples of this include using a "naturally backed" (i.e., acutely angled) flake margin as the "opposite" margin of the distal projection, or taking advantage of an appropriately shaped proximal outline of a flake to serve as the tool's proximal margin.

The mean maximum length of complete or almost complete tools based on the prehistoric study sample data is 37.1 mm, the mean maximum width is 20.8 mm, the mean maximum thickness is 6.1 mm, and the mean ventral curvature depth is .9 mm. The average mass (weight) of complete or relatively complete items is 6.2 g.

The mean length of the distal projection on complete or almost complete specimens is 21.4 mm, the average angle of the projection outline is 32°, the mean angle of the distal tip edge is 77°, and the mean distal tip spine-plane angle is 53° (Figure 3).

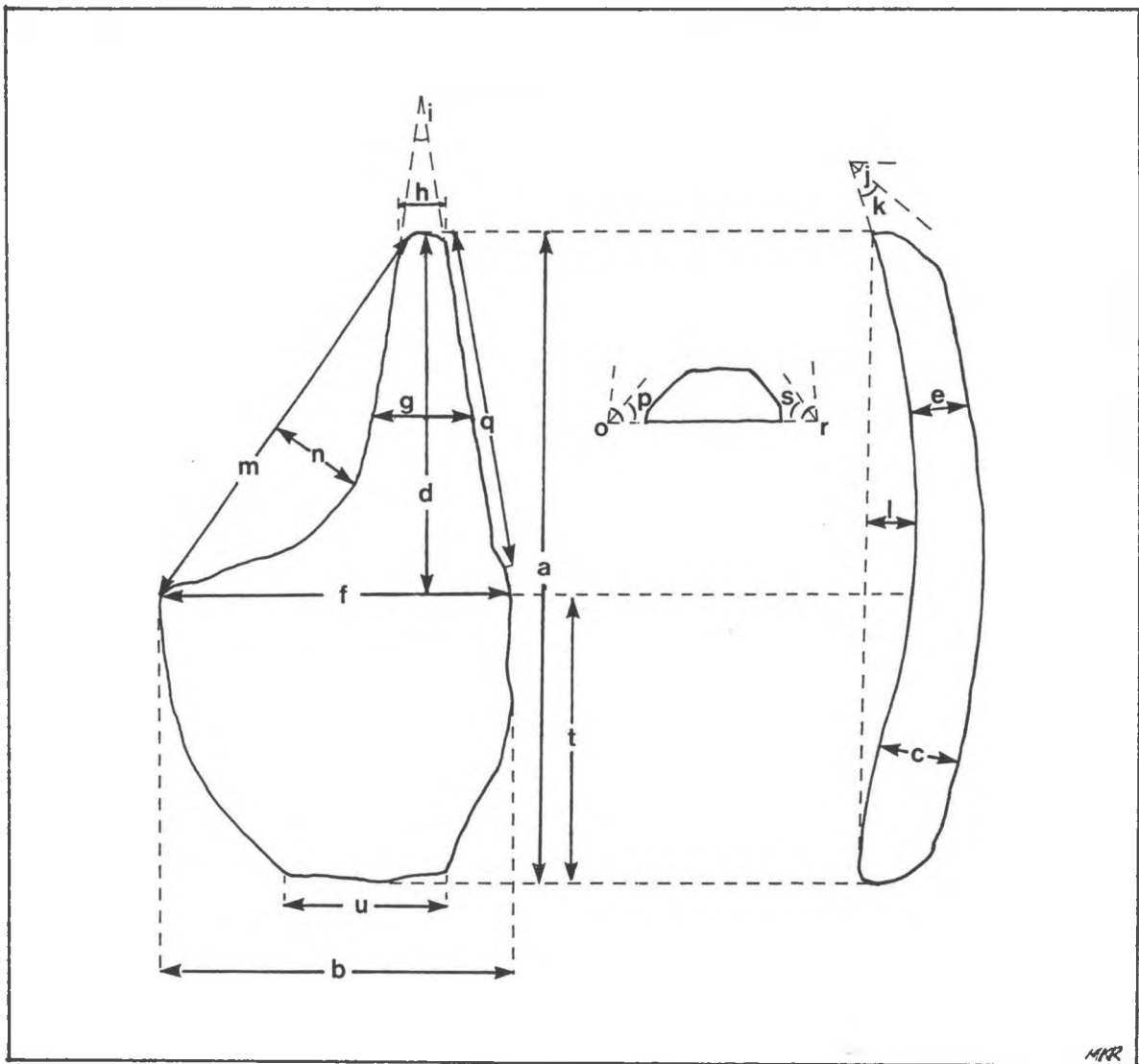
When placed ventral face down and projection oriented distally, the concave margin (Figure 2) appears on the left side of the projection on 115 tools (89.1%), and for 14 items (10.9%) it is present on the right. On 125 items (96.9%) the concave margin exhibits only normally initiated unifacial retouch, and the remaining four items (3.1%) bear bifacial retouch on this margin. The concave margin mean length is 23.3 mm, its mean curvature depth is 2.9 mm, the mean edge angle is about 73°, and the mean spine-plane angle is approximately 66°.

The "opposite" margin (Figure 2) has a mean length of 21.0 mm. The most common "opposite" margin outline form is straight (n=34), comprising 26.3% of the study sample. Twenty-seven items (20.0%) have slightly convex "opposite" margins, 24 (18.6%) are moderately convex, 14 (10.8%) are slightly concave, nine (7.0%) are moderately concave, ten (7.8%) are recurved, another ten are irregular, and for one item (.8%) this margin is absent.

Ninety-five items (73.4%) indicate normally initiated unifacial retouch along the "opposite" margin, 16 (12.5%) are unretouched, 15 (11.7%) have been bifacially retouched, and three (2.3%) bear inverse unifacial retouch. The mean "opposite" margin edge angle is 69°, and the mean spine-plane angle is 60°.

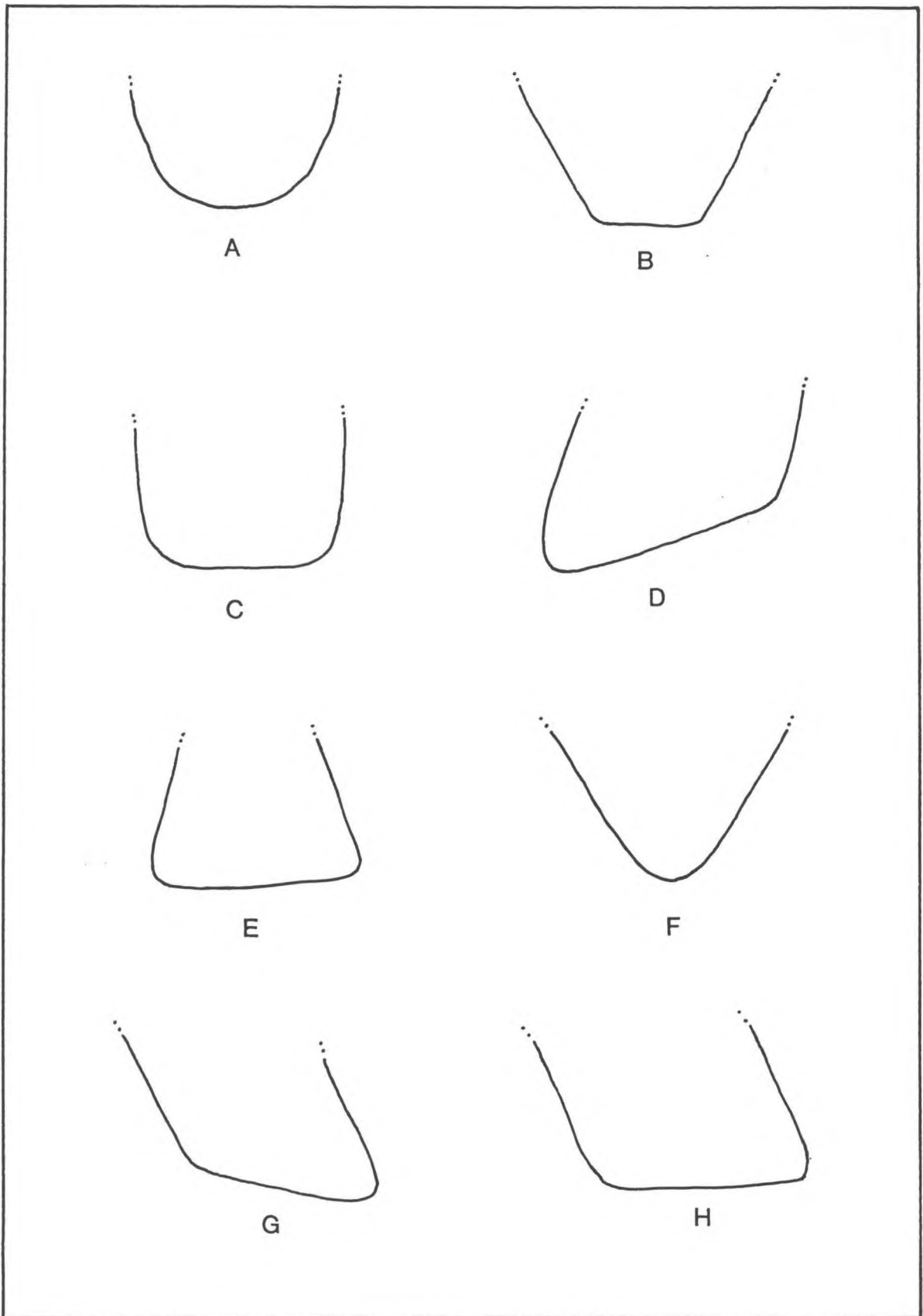
The most common proximal margin outline is categorized as type "B" (Figure 4), comprising 47.3% (n=61) of the sample items bearing this margin (outline types could not be determined for five items due to their absence). Type "A" was the next most frequent category, and included 23 items (17.8%). Twelve tools (9.3%) were assigned to type "D", 11 items (8.5%) belong to type "G", five (3.9%) to type "H", three (2.3%) to type "C", another three to type "F", and one (.8%) to type "E". The remaining ten items (7.8%) were assigned to "miscellaneous irregular" (type "I"). The mean proximal margin length is 16.2 mm, and the mean width is 12.3 mm.

Fifty-seven tools lack retouch along the proximal margin, comprising 47.1% of the sample items for which the general retouch pattern could be determined (it could not be identified for eight items). Forty-eight (33.9%) specimens bear normally initiated unifacial retouch on this margin, and 23 (19.0%) are bifacially retouched.



**Figure 3.** Continuous variables recorded for each of the 129 prehistoric key-shaped formed unifaces comprising the study sample.

- (a): Maximum tool length (mm)
- (b): Maximum tool width (mm)
- (c): Maximum tool thickness (mm)
- (d): Projection length (mm)
- (e): Projection average thickness (mm)
- (f): Projection basal width (mm)
- (g): Projection medial width (mm)
- (h): Projection distal width (mm)
- (i): Projection angle (degrees)
- (j): Projection tip mean edge angle (degrees)
- (k): Projection tip mean spine-plane angle (degrees)
- (l): Ventral curvature depth (mm)
- (m): Concave margin length (mm)
- (n): Concave margin maximum curvature depth (mm)
- (o): Concave margin mean edge angle (degrees)
- (p): Concave margin mean spine-plane angle (degrees)
- (q): "Opposite" margin maximum length (mm)
- (r): "Opposite" margin mean edge angle (degrees)
- (s): "Opposite" margin mean spine-plane angle (degrees)
- (t): Proximal margin length (mm)
- (u): Proximal margin width (mm)



**Figure 4.** Proximal margin outline categories defined in this study (Types A-H). Category "I" not shown.

Fifty-three (41.1%) of the prehistoric study sample tools exhibit overall slight intensity of various types of microwear trace patterns that can be clearly observed using a stereoscopic light microscope between magnifications of 6.4 X and 40 X (Chapter 6). Another 47 items (36.4%) bear moderate microwear trace intensity, and for 19 tools (14.7%) it is pronounced. The remaining ten items lacked any detectable indication of microwear using this range of magnification.

Pronounced intentional edge resharpening is indicated on 20 items, constituting 15.5% of the sample assemblage. It is restricted primarily to the concave margin and distal projection. Resharpening practices are discussed in detail in Chapter 3.3.2. Only one item appears to have been deliberately recycled into a tool whose intended function differed markedly from that indicated for the other tools (Figures 13a and 39). Ten items (7.7%) indicate having been subjected to post-depositional mechanical or chemical weathering processes, but the remaining 98 tools (75.9%) do not appear to have experienced any such modification.

Three specimens are worthy of special mention due to their uniqueness and/or coincidental formal similarity with the key-shaped formed uniface "type" defined in this study. Specimen EeQw 6:722 (Figure 16y) differs from the "classic" typological definition of key-shaped formed unifaces in that it possesses two opposing concave margins. A possible explanation for its unique morphology is that it was made and used by an ambidextrous person. Specimen EFQs 1:75 (Figure 20f) is somewhat formally similar to typical to key-shaped formed unifaces, however, it is made of ground nephrite and lacks a sharp concave margin edge. Specimen EbRj Y:872 (Figure 20g') is also formally similar, but it is made of ground steatite. The latter two specimens are mentioned here simply because of their general morphological similarity with chipped stone key-shaped formed unifaces, and it is highly doubtful that they served the same function(s). For this reason they were excluded from the prehistoric study sample and from further consideration.