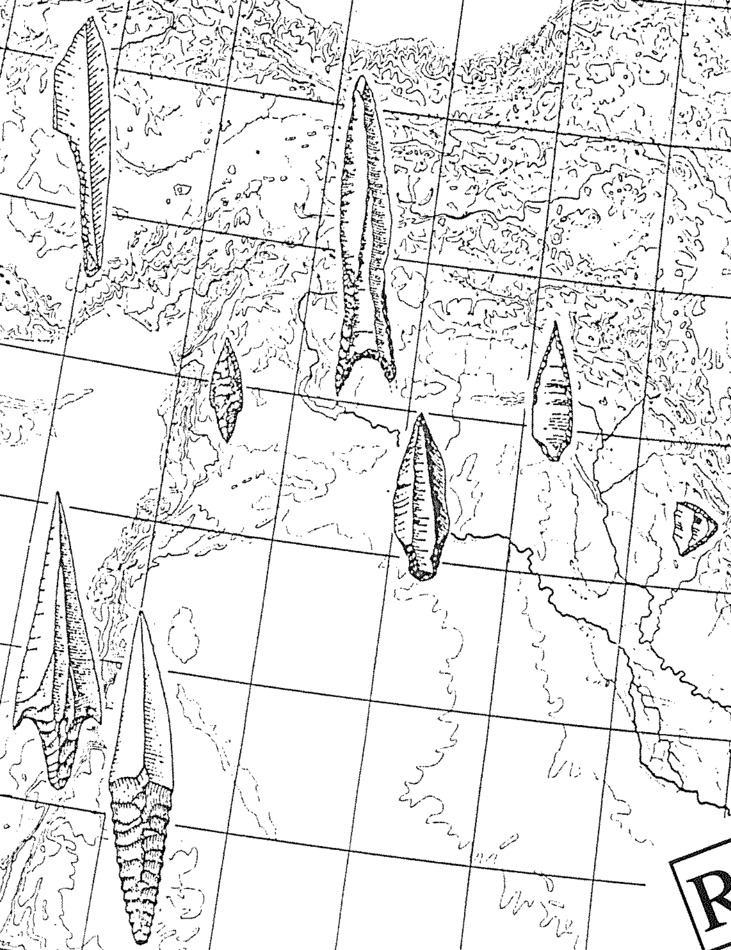

Reprint








Address

NEO-LITHICS
c/o Gary O. Rollefson
'Ain Ghazal Research Institute
Pragelatostr. 20
D - 64372 Ober-Ramstadt
tel./fax 0049 6154 53642


# NEO- LITHICS 2/94

## A Newsletter of Southwest Asian Lithics Research

map by the *Tübingen Atlas of the Near East*

Quibell 1904 and 1905: Nos 14277-14289; Curelly 1913: Nos. 64817-64828, 64830, 64832-64839). In southern Palestine such knives have been called the Beth Pelet type (Noy 1970: 9, Fig. 3-1). IL-IP relationship is observable among the group of Egyptian ripple-flaked knives (beveled edge, rippled flakes, and ground face, tip and handle), forming a close parallel to the blade knives of the Hemamija type. This distinctive IL-IP relationship is also present among most bifacial knives. The steep retouch that forms the handle is on a different surface of the knife from the steep retouch that resharpens the working edge of the tool: e.g., direct hafting retouch left proximal versus steep retouch right distal. This observation makes it possible to determine IL-IP relationships even on fragments of such knives.

Klaus Schmidt
Institut für Ur- und Frühgeschichte
Universität Heidelberg
D- 69117 Heidelberg

**Bibliography**

Baumgartel E.
1960 *The Cultures of Prehistoric Egypt.* II.

Caton-Thompson G.
1928 The Predynastic Settlement: North Spur Hemamieh, in G. Brunton and G. Caton-Thompson (eds.), *The Badarian Civilization and Predynastic Remains Near Badari.* Bristish School of Archaeology in Egypt 46. II: 69-116.

Curelly C.
1913 *Stone Implements.* Cataloque Général des Antiquités Égyptiennes du Musée du Caire 69.

Holmes D.
1988 The Predynastic Lithic Industries of Badari, Middle Egypt: New Perspectives and Inter-Regional Relationships. *World Archaeology* 20: 70-86.
1989 *The Predynastic Industries of Upper Egypt: A Comparative Study of the Lithic Traditions of Badari, Nagada and Hierakonpolis.* British Archaeological Reports - International Series 469. Oxford, B.A.R.

Noy T.
1970 Prehistoric Sites in the Halutza Dunes. *Mitekufat Haeven* 10: 1-10.

Quibell J.
1904 *Archaic Objects I.* ataloque Général des Antiquités Égyptiennes du Musée du Caire 23-24.

Redlich A.
1982 *Studien zum Neolithikum Mittelasiens.* Antiquitas Reihe 3: 25.

Schmidt, K.
1988 Nevali Çori. Zum Typenspektrum der Sielexindustrie und der übrigen Kleinfunde. *Anatolica* 15: 161-202.
1989 Die lithischen Kleinfunde: In: E. van den Brink (ed.), *A Transitional Late Predynastic-Early Dynastic Settlement Site in the Northeastern Nile Delta, Egypt.* Mitteilungen des Deutschen Archäologischen Instituts Kairo 45: 82-94.
n.d. Norşuntepe*: Die Kleinfunde. 1. Die lithischen Kleinfunde.* Archaeologica Euphratica 1 (in press).

## Proposal on Minimum Standards of Flint Raw Material Description

by Hans Georg Gebel

No doubt raw material selection by established workshops producing on an industrial scale in permanent Neolithic villages provides a basic resource for the understanding of specialized processes of both primary and secondary production (core technologies and tool blank modification), and thus contributes to the understanding of the social environments and related developments. Even for small-scale lithic production with a high degree of improvisation, a restricted tool-kit, and different modes of exploitation (such as in industries connected with mobile economic activities), recognizable specialization aspects would offer a considerable contribution to the understanding of the technological processes and its social implications.

However, even though raw material evaluation would be an important source of information, this complex is ill-regarded at best if not neglected altogether in preliminary reports and poorly considered even in final reports. One important and general reason might be that raw material descriptions appear to be useless because they are expected not to be independently veryfiable and comparable on the publication level.

It is the opinion expressed here that chances do exist to evaluate the raw material classes and groups, even on the level of in-field recording, if a standard checklist of parameters is followed: raw material classes (RMCs) can be identified and described by a macroscopic approach on the basis of the checklist proposed in Table 1. Experience has shown that a parameters list provokes a fine subdivision of visually different raw materials by the non-minerologist, although the degree of "fine divisions" is often the result of a analytical insecurity. It cannot be expected to reflect any understanding of raw material separations made by the Neolithic craftsmen. In this pragmatic approach, rare raw materials receive attention as separate classes (important for trade questions) that create quite extensive lists (e.g. 19 for PPNB Basta, without the obsidian, limestone, quartzite, quartz etc. classes). Subjective use of the parameters is to be expected, but it remains independently veryfiable on a rather high level, especially if the classes recognized are later regrouped together in raw material groups (RMGs). This regrouping should be subject to mineralogical consultation and must regard the results of a site-oriented flint resource survey as well as the geological setting of the site. These groups then should reflect the resource situation of the site as well as quality and other selection aspects to be reconstructed for the Neolithic knapper preferences. The regrouping brings together materials which technologically served similar purposes, but the improvisation aspect remains an imponderable argument for any workshop producing at a non-industrial level.

**A) Characteristics of pebble/ nodular and tabular bodies**
1. dimensions *(pebble/ nodule dimensions, range of thicknesses of tabular raw material).*
2. shapes of pebble/ nodule/ tabular flint shapes *(e.g. with tabular flint: parallel-sided slabs, lenticular/ spherical bodies with hollows).*
3. marginal (= near cortex) areas *(e.g. coral-like parts).*

**B) Natural surfaces**
1. cortical and cleft surfaces of bedrock material *(e.g. formed in geologic source: chemical weathered cortex formed in bedrock/ bedrock-fresh cortex, partly silicified/ silicified cortex, hard/ scratchable/ easily worn cortex etc.).*
2. eroded chalky cortex *(thin (below 1mm) / medium thick (2-4mm) / thick larger (4mm) / irregular thick cortex).*
3. rolled (transport) surfaces *(e.g. cobble cortex from abrasive wadi processes, smoothed chalky cortex, only silicfied cortex parts left by abrasion, transport batterings and chippings, removals in flake sizes, etc.).*
4. characteristic patination of raw material etc.*(heavy/ light patination, patination colour(s), evidence of in- soil/ surface patination types, desert varnish, etc.).*
5. character of contact area between cortex and silicified core *(e.g. clear separation, gradual transition, indistinct contact area, etc.).*

**C) Matrix/ texture and homogenity (characterized by chipped surfaces)**
1) matrix/ texture *(very fine grained, fine grained, slightly fine grained, sligthly coarse grained, coarse grained, very coarse grained).*
2. homogeneity *(non-homogeneous, homogeneous, indeterminate).*

**D) Inclusions, clefts/ pores, flaking ability**
1. macroscopically recognizable inclusions and fossils *(e.g. lime inclusions)*
2. clefts/ hollows etc. *(e.g. "breccious" material, quartz veins, very small hollows (below 0.2mm)).*
3. status of silification of inclusions *(not silicified, partly silicified, mostly silicified, completely silicified).*
4. distribution of inclusions *(e.g. irregular, discontinous, parallel condensed with cortex, regular (density), etc.).*
5. flaking ability *(problematic/ parameters to be discussed: barely manageable, manageable, very manageable (e.g. parallel- sided blade manufacture).*

**E) Translucency (characterized at edges of blade-flakes)**
*completely opaque, opaque with slight translucency at very thin edges, slightly translucent, milky translucent, vitreous/ highly translucent*

**F) Colour variation of main matrix (without coloured patterns; Munsell Soil Colour Chart notation(s))**
1. notation.
2. variation *(e.g. considerable, little variation, not considerable)*

**G) Coloured patterns (Munsell Soil Colour Chart notations)**
1. character of pattern *(e.g. without evidence/ homogeneous, fine dotted, fine speckled, coarse speckled, cloudy, "marble veins", streaky, laminated, etc.).*
2. distribution of pattern *(e.g. irregular, discontinous, concentric, isolated, etc.).*

**H) Lustre (characterized on fresh chipped surfaces, but sickle/ tempering sheen not considered)**
*highly lustrous, silky/ slightly high lustre, faintly lustrous, without lustre or dull*

**I) Geological context/ Allocated resource (areas)**

**J) Other characteristics, comments**

Table 1. Proposed scheme for standard description of raw material classes (parameters in italics are proposed terms).

Raw material recording belongs to the primary classification level of flint analysis on which core, core trimming, debitage, and tool classes are listed by count and wheight for each raw material class. To reduce raw material recording to e.g. only core classes for reasons of analysis economy might appear legitimate but introduces limits for interpretations (not to be discussed here).

The regrouping of the classes with minerological assistance into groups requires interdisciplinary cooperation. Flaking ability and other flint knapping aspects (e.g. the dimension range of a tabular flint class) are not minerological categories, but minerological categories of course ignore the technological meanings of flint knapping. Such problems of minerological character and technological qualities can only be resolved through interactive discussions between the prehistorian and the minerologist in order to achieve useful raw material regroupings. We found no problems in the Basta analysis to regroup the detailed statistics of our original raw material classes. In rare cases, a misunderstood class could be assigned to two raw material groups.

As an example, in Table 2 one of the raw material class descriptions of Basta is presented.

| |
|---|
| A) cobbles of minimum sizes of 8 cm, sizes may range up to 20 cm; origin as nodular, lenticular, and/or tabular forms. |
| B) abraded cortex surfaces: cortex preservation ranges from completely abraded (chalky) cortex to scratchable multi-layered chalky cortex with uneven surface; mostly "cloudy" but distinct transition into lower silicified cortex layer; in some cases sharp separation of the lowermost silicified cortex layer from the flint parts: when preserved, thin flint layers (below 0.5 mm) are interbedded into the cortex layers (status of silification reduces towards outer parts). |
| C) fine grained to slightly fine grained; homogeneous. |
| D) no inclusions, quartz hollows possible, occasionally non- silicified clefts; tough/ resistant against removal energy, good flaking quality. |
| E) opaque with slight transluscence at thin edges; translucent parts: 5YR 7/2-4, 8/2-4 ("pinkish gray - pink", "pinkish white - pink"). |
| F) 7.5 YR 5/0, 6/0-2, 7/0-2, 8/0-2 ("gray", "gray - pinkish gray", "light gray - pinkish gray", "white- pinkish white"). |
| G) irregularly distributed whitish "clouds", occasionally roughly parallel or concentric whitish bands. |
| H) faintly lustrous. |
| I) Bender c3-5 wadi catchments; Basta area: surrounding heights and wadis. |
| J) no. |

Table 2. Description of the Basta Raw Material Class 3a (Example).

This proposal is meant to be a basis for discussion of this subject as part of the planned "Dictionary of PPN Chipped Lithics".

Hans Georg Gebel
Seminar für Vorderasiat. Altertumskunde
Bitterstr. 8-12
D- 14195 Berlin

## Non-Formal Tool (NFT) Working Group Report

by Gary O. Rollefson

Four members of the Non-Formal Tool (NFT) Working Group (referred to as the Non-Hollywood Tool Group in NEO-LITHICS 1/94) met in Wembach for three days in May 1994 to discuss the development of a system for the technological and typological description of NFTs (Douglas Baird, Hans Georg Gebel, Gary O. Rollefson, and Klaus Schmidt; Bernd Müller-Neuhof as a guest). The aim of the session was to eliminate as much as possible the use of terms that have preset functional connotations. The following protocols are suggested as an initial foundation for such a system.

### Definitions

**Formal Tools** Tools that have consistent and distinctive shapes (planforms) effected by their retouch.

**Non-Formal Tools (NFTs)** Tools without consistent patterns of planforms. The shapes of NFTs are governed principally by blank morphology.
Standardized features (retouch attributes, such as retouch location, angle, etc.) set apart classes and subclasses of NFTs. Among these attributes, the working group distinguished between edge angle and retouch angle:

**Retouch angle** is the angle formed between a retouched surface and the opposing surface (which, in the case of bifacial retouch, may also be retouched). Angle often modified by crushing through use or post-depositional damage.

**Edge Angle** is the actual angle between the ventral and dorsal surfaces at the retouched edge. Angle often modified by crushing through use or post-depositional damage.

***Tools with Regular Retouch Areas or Edges***

Regular retouch is defined as a continuous distribution of adjacent retouch scars with consistent size, shape and depth. The following definitions apply to each retouched area separately. Clactonian notches (see below) are special examples of isolated scars that constitute regular retouch.

**Burin Edge** = the presence of at least one burin facet. For non-simple burins, the spall platform preparation area is a retouch area. A chamfered edge is included as a distinct retouch pattern in this category.

**Truncation** = Proximal or distal retouch on a break, or which truncates the distal or proximal end.

**Endscraper** = A specific convex truncation, or convex-ended piece, that has retouch at the end between 45° and less than 90°.

**Steep Angle Retouch (SAR)** = Pieces with continuous retouch between 45° and 90°. Retouched edges with denticulate delineation in this angle range are Denticulate SARs. Retouched edges with a notch in this angle range are Notch SARs.

**Denticulate** = A set of three or more adjacent retouch notches on an area whose retouch angle is less than 45°.

**Notch** = Concave retouch areas as 1) Clactonian or 2) retouched notches (see Inizan, Tixier and Roche).

**Backed pieces** = Pieces with continuous abrupt (ca. 90) retouch.

**Acute Angle Retouch (AAR)** areas or edges = pieces with continuous retouch with angles less than 45° In general, these are retouched pieces in the conventional typelists. A notch with a retouch angle in this range is a Notch-AAR; a denticulated area of continous retouch less than 45° is a Denticulate-AAR.

**Transverse Parallel Retouch (TPR) pieces**= Flakes or blades with adjacent transverse parallel retouch scars. Includes TPF-SARs and TPF-AARs.

**Pièces Esquillées** = pieces with opposed, crushed bifacial scars resulting from battering. They could have a status as cores or tools, depending on the interpretation of the nature of the assemblage. Explicit clarification should be made if they are viewed as bipolar cores (and thus included in the core counts) or wedge-like implements (in tool counts).

**Irregular Retouched Areas (IRA)** = isolated scars or a continuous distribution of scars with very disparate sizes, shapes and depth on tools or otherwise unretouched flakes/blades.

***Tools With Irregular Retouch Only***

**Irregular Retouched Pieces (IRP)** = tools with only irregular retouch areas and no regular retouch areas.

Tools with two or more retouched areas are classified according to the combinations of the above definitions. E.g., Burin + Denticulate, Triple Burin + SAR, Double SAR, Quadruple SAR, Double SAR + Denticulate, etc.

### Indexing Sorted Tools

Once NFTs have been sorted according to the above definitions, samples are to be analyzed and described according to some fea-tures in Inizan et al. in order to identify the retouch character of the assemblage. Each of the retouched edges or areas is to be described according to the indices listed below. It is presumed that the bulk of the assemblages will be AARs and IRPs, and the samples of these categories should be adequately large to reflect both the variability and possible recurrent patterns of retouch attributes.
The following indices should be determined for each retouch type described above:

**Lateral Index (IL)**. Counts of retouch features on left edges and right edges, including the notation of proximal, medial, and distal location for all tool classes. (Left proximal, vs. right distal vs. left medial, etc.).

**Index of Retouch Position (IP)**. For this index, tool classes with 1) single areas are set apart from tool classes with 2) multiple retouch areas.