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HSIAO-NAN-HAI: AN IMPORTANT HOPEI PLAIN CAMP SITE

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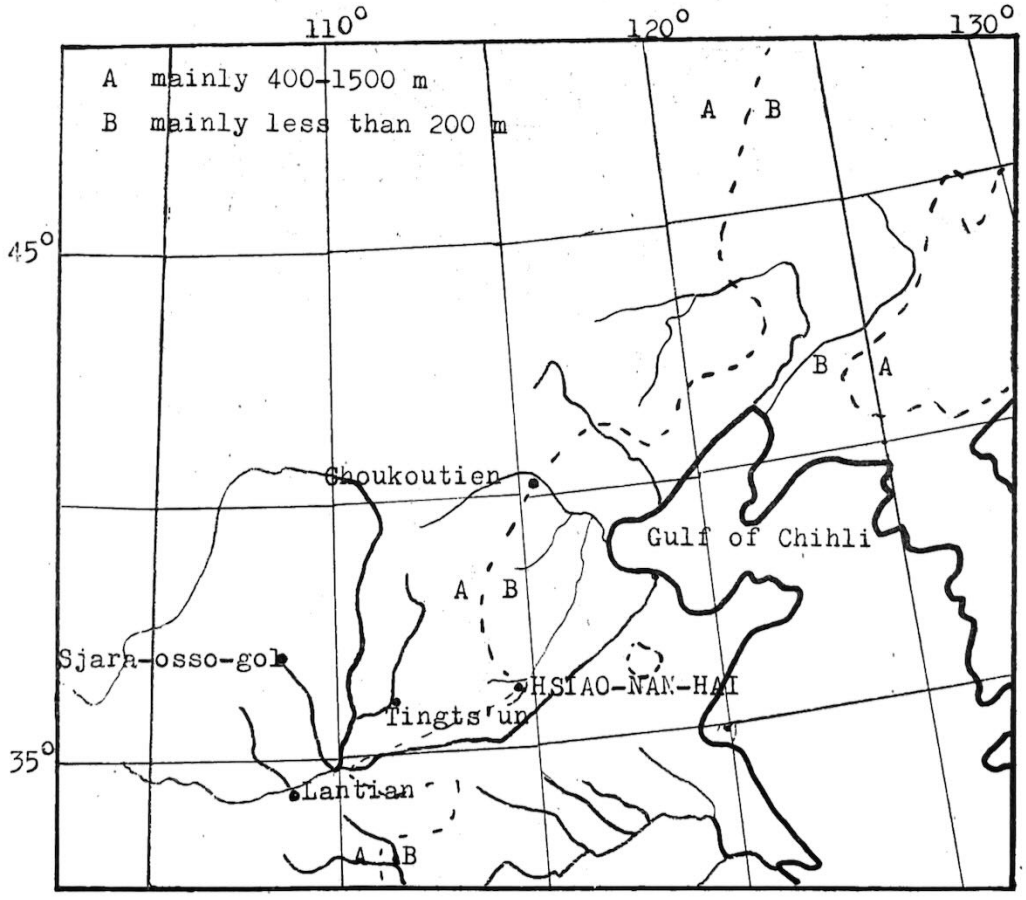
Since the resumption of archaeological work in China in 1949, the active agency has been the Institute of Vertebrate Palaeontology and Palaeoanthropology (the IVPP, formerly the Laboratory of Vertebrate Palaeontology and Institute of Vertebrate Palaeontology). Literally hundreds of palaeolithic stations have been discovered in the last two decades, principally along major waterways such as the Huangho and Fenho, but also in the Ordos, on the border of the Hopei Plain, and in the karst regions of south China. The new work has considerably expanded our information on the archaeology of Pleistocene China, formerly limited to Choukoutien and the Ordos.

Site reports indicate that the caliber of research is high. Illustrations are good and typically total assemblages are described and environmental context prominently investigated.

The important cave site of Hsiao-nan-hai (Fig. 1) was discovered in 1960. It is located in Anyang, some 30 km southwest of that city (A n, 1965; C h o u, 1965). The cave is 197 m above the Hsuan River and some 500 m from it; height above sea level is 257 m. Trial excavations were carried out during a six week period in which a ten square meter text pit was dug through several distinct levels to a depth of nearly 4 m (Fig. 2).

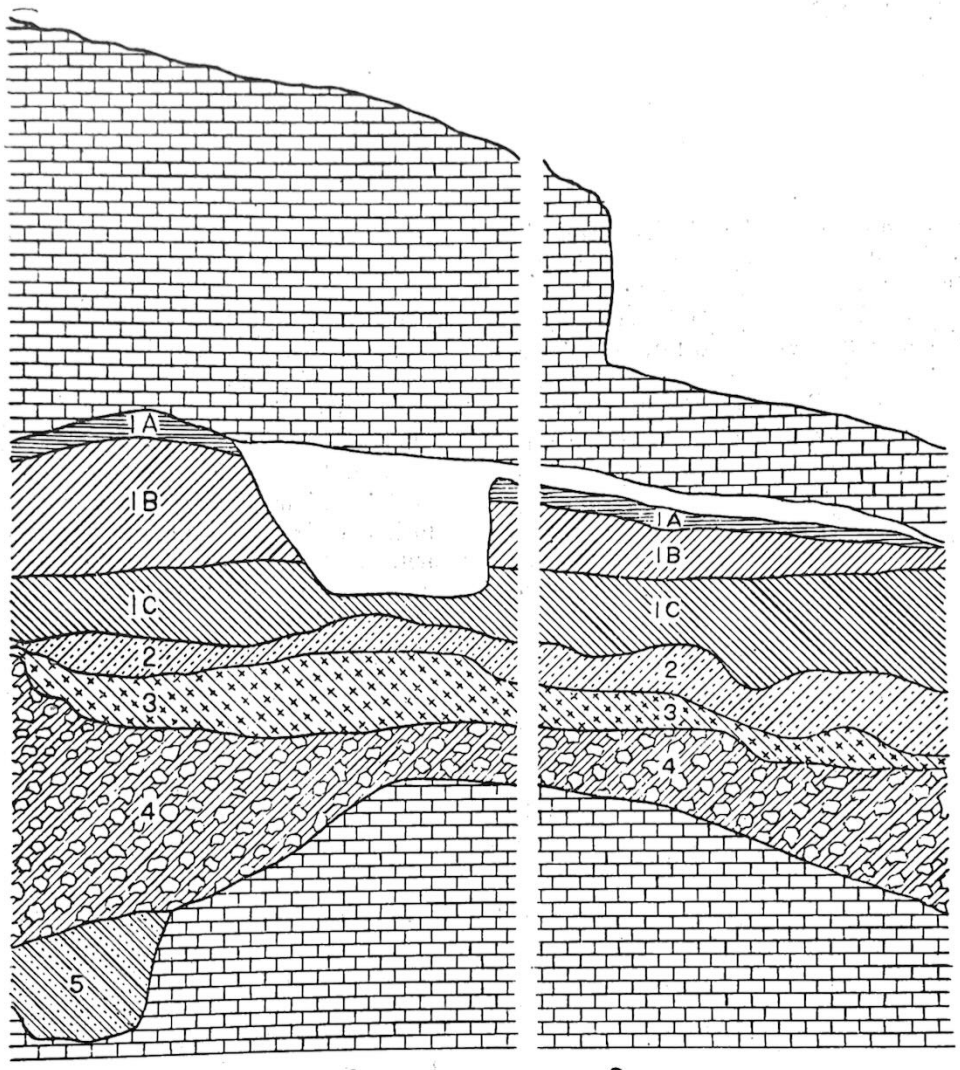
Site stratigraphy is clear and the recovery of



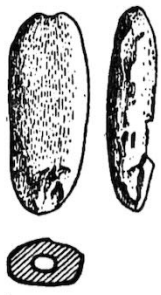
identifiable fauna aids in the interpretation and dating of the deposits. The roughly rectangular test pit is divided into the following levels:

1. Aeolian deposits with sublevels —
   A (0.07—0.25 m): sterile;
   B (0.15—0.95 m): yellowish-brown matrix with ten artifacts and mammalian remains;
   C (0.30—0.80 m): dark yellow deposit with three artifacts and mammalian remains;
2. A thin (0.20—0.65 m) zone of white-mottled

2 . Hsiao-nan-hai



(An 1965)



bone bead X1

yellowish-brown loess from which 469 artifacts and mammalian fossils were removed;

3. A thin (0.10—0.60m) layer of grayish yellow loess with numerous artifacts (425) and a diverse fauna;
4. Yellowish-brown loess (0.30—2.0 m) containing 6,080 (86 per cent) artifacts and numerous fauna remains;
5. The lowest level, formed on bedrock, consisting of 0.25—0.90 m of yellowish loess with grayish gravels; 90 artifacts and some mammal bones were recovered.

Faunal remains

The faunal remains though plentiful are largely fragmental so identification must be made on the mandibles and teeth. Identifiable pieces are not common; *Struthio* is represented by 180 identifiable specimens, *Equus* by some 40, *Coelodonta* by 20 or less, and the rest by less than a half dozen each. The distribution of the various forms throughout the excavation is given in Table I.

TABLE I.
Fauna from Hsiao-nan-hai

Faunal form	Level						
	1a	1b	1c	2	3	4	5
Struthio anderssoni Lowe						×	
Erinaceus sp			×				
Pongo sp					×	×	
Myospalax fontanieri (M–E)		×				×	
Rattus sp		×					
Ursus cf *arctos**							×
Meles leucurus Hodgson		×		×			
Crocuta crocuta ultima (Matsumoto)		×		×	×	×	
Canis cf *lupus* L				×			
Panthera pardus (L)		×					
Equus hemionus Pallas		×			×	×	×
Coelodonta antiquitatis (Blumenbach)		×			×	×	
Sus sp					×	×	
Capreolus cf *manchuricus* Lydekker		×					
Cervus (*Pseudaxis*) sp		×	×	×	×	×	
Bubalus sp		×			×	×	
Gazella przewalskyi Buchner		×		×		×	
Capricornis sp					×	×	

* *Ursus* was identified as *U.* cf *spelaeus* but Kurten (1968) doubts the identification in Chinese sites.

Four of the eighteen species (22 per cent) are extinct — *Crocuta, Equus, Coelondonta* and *Gazella;* nearly half are known from Upper Pleistocene north China (*Myospalax, Canis, Coelodonta, Struthio, Meles, Crocuta, Equus* and *Gazella*) and half from the Upper Cave at Coukoutien (*Canis, Struthio, Meles, Crocuta, Equus, Gazella, Panthera, Capreolus* and *Ursus*). The authors conclude from the faunal data that Hsiao-nan-hai is an Upper Pleistocene site later in time than the (controversial) Ordos sites and earlier than Upper Cave. It is worth emphasizing that the decidedly cool and grassland forms are somewhat older and clearly from a different climatic regime than the more northerly Upper Cave. A late cold Zyriankan-equivalent age (in excess of 30,000 B.P.) is reasonable (Aigner, 1969).

The authors regard *Pongo, Sus, Panthera* and *Cervus* as forest dwelling animals though the common *Pseudaxis ordosianus* of the Upper Pleistocene is hypsodontic and probably a grazer rather than a forest browser. *Sus* is not particular and *Equus, Coelodonta, Canis* and *Gazella* are representative of the grasslands. *Struthio* may be added here. The presence of *Bubalus* is taken to indicate that water in the area is sufficient to sustain that species. The location of the site on the edge of the Huangho Plain against the low hills and mountains recalls Choukoutien. Presumably the hills were wooded while the plain was a mosaic of woods and grasslands. The presence of *Pongo,* not formerly known north of 26° N, is interesting.

The large herbivorous animals present in the deposits are either very young or very old individuals and the bones are often fragmented and burned. It is likely they represent the remains of the hunt. The presence in the lowest level of the cave of hyena dung suggests an earlier carnivore occupation with the subsequent intrusion of man.

Stone artifacts

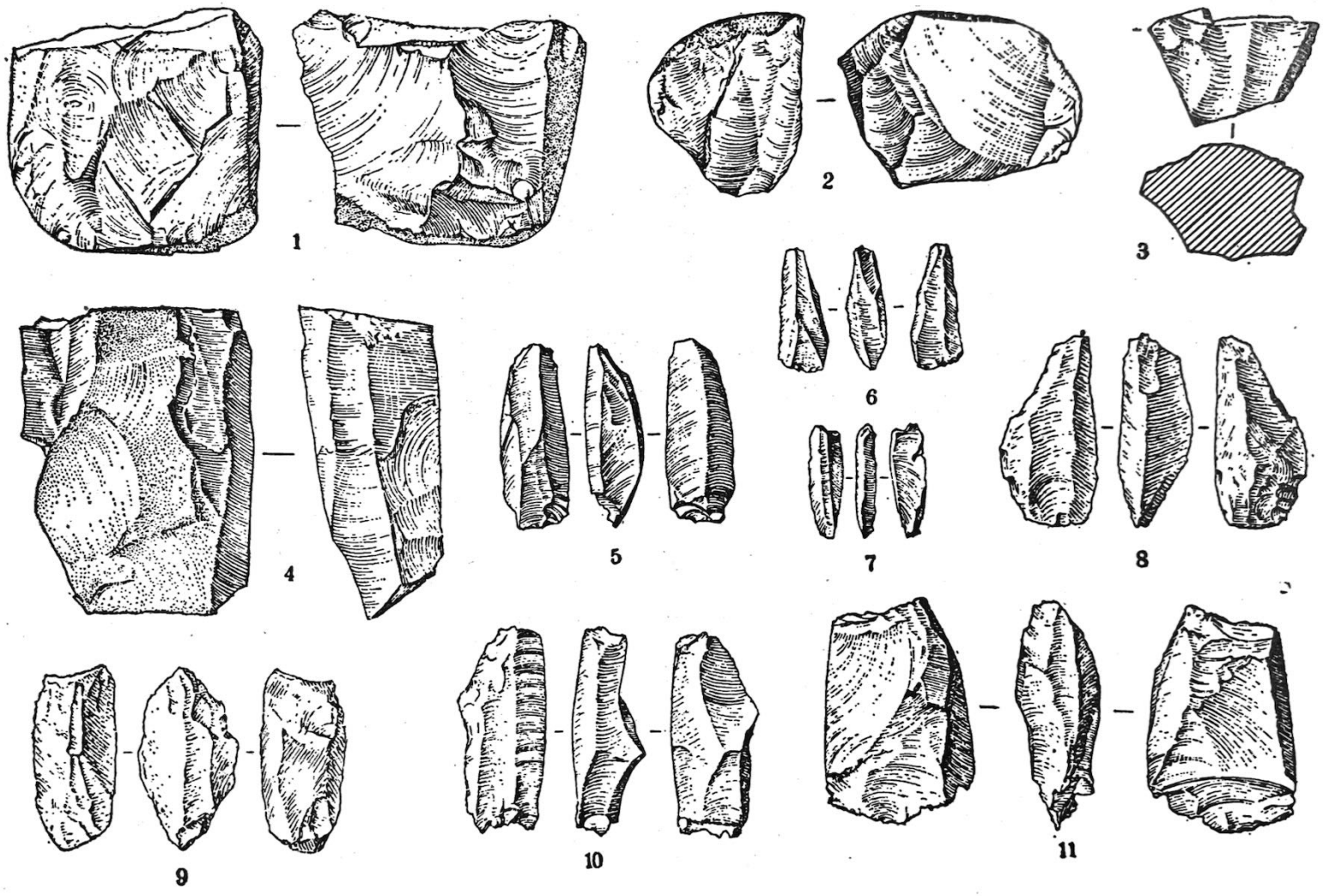
At Hsiao-nan-hai the primary lithic material in use is chert accounting for 90 per cent of the collection. There is some use of quartz but only rare flint, chalcedony and limestone. The breakdown of artifacts by material is given in Table II.

The tool typology and descriptions are summarized as they appeared in the original report and the line drawings are reproduced. Unfortunately it is not possible to enumerate tools within each category though gross counts are available. The number of cores in the collection is relatively large for Chinese collections but the primary tool blank remains the flake.

Cores and *pebble tools* include 397 specimens (four are described as "choppers"). The nuclei are roughly grouped into six shape classes which grade into one another. These include the "blocky" cores with approximately equal length and breadth dimensions (Fig. 3.1), cores which are „three-faced" and necessarily wedge-shaped at the back (Fig. 3.2), "tall" cores which are relatively narrow (Fig. 3.4) and small, tall and rather narrow "pillar-shaped" cores with longitudinal flake scars (Fig. 3.5—10). The "pillar-shaped" cores are uncommon (nine only) but of considerable interest since they seem to provide evidence of technological improvement which might logically lead to the production of "micro-flakes" and regular blade-like flakes of the sort reported in north China in the later Pleistocene and early Holocene. Other core shapes which are

*) Just prior to Denekamp or the Aurignacian Oscillations of Europe.

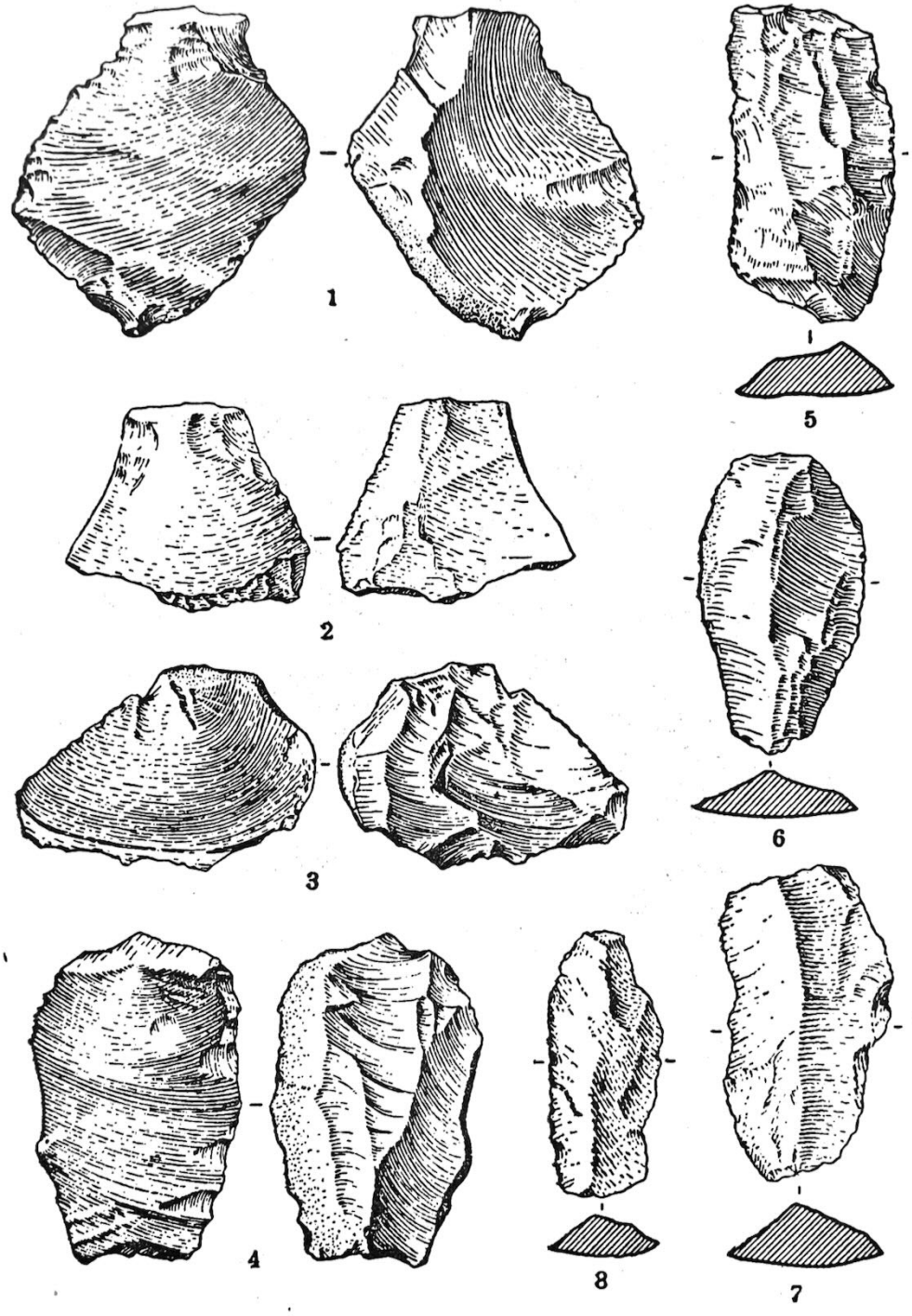
3. Nuclei from Hsiao-nan-hai



reported are "conical" (short with broad platforms — Fig. 3.3) and "tablet-shaped" (flat faced and narrower than broad — Fig. 3.11). The range of variation in core shape is suggested in the descriptive typology and clear from the illustrations.

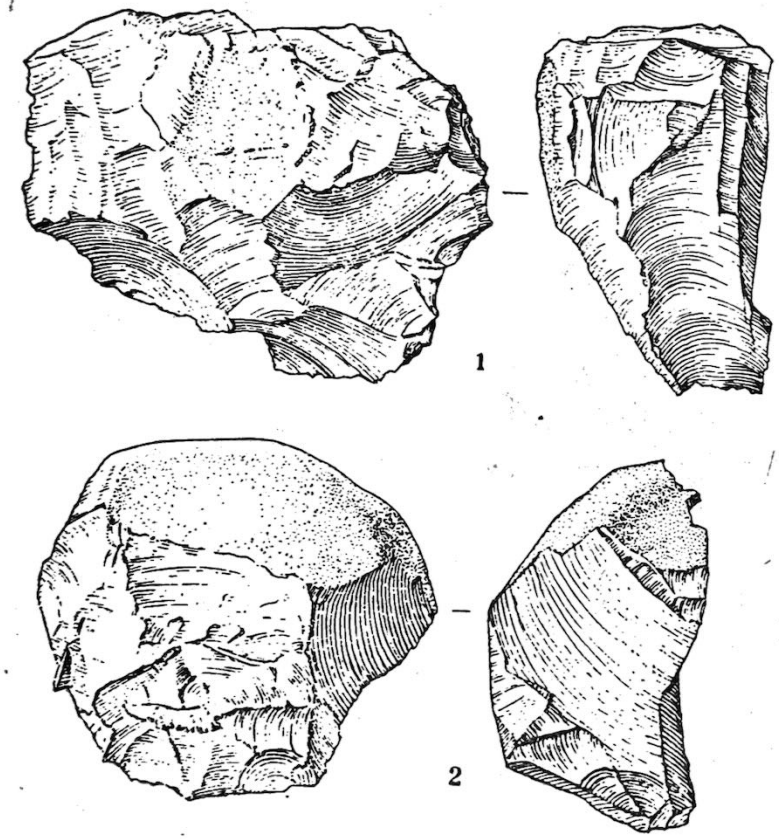
The artifacts referred to as "choppers" are in this writer's opinion irregularly shaped cores (Fig. 5a). They are made on pebbles and cortex is visible on the specimens illustrated. Evidence of use is not visible in the line drawings.

4. Unworked Flakes

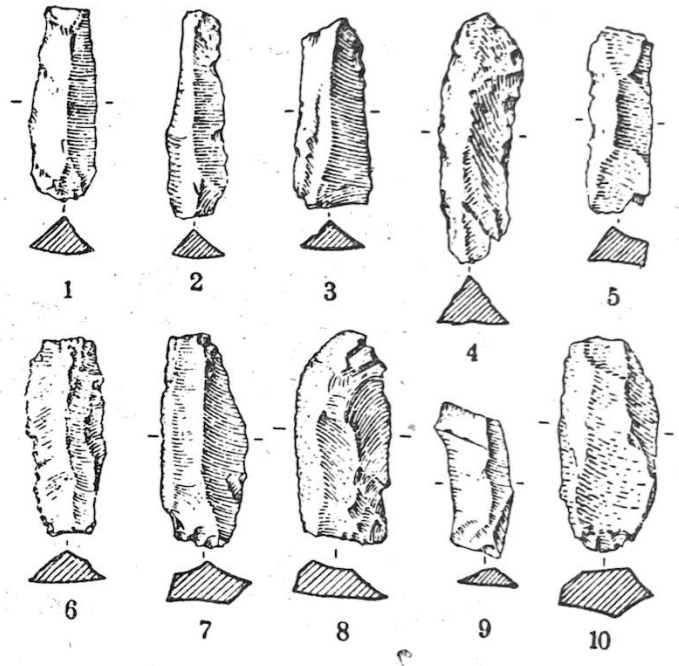


natural size(An 1965)

5.a. "Choppers"



5.b. Regular Flakes



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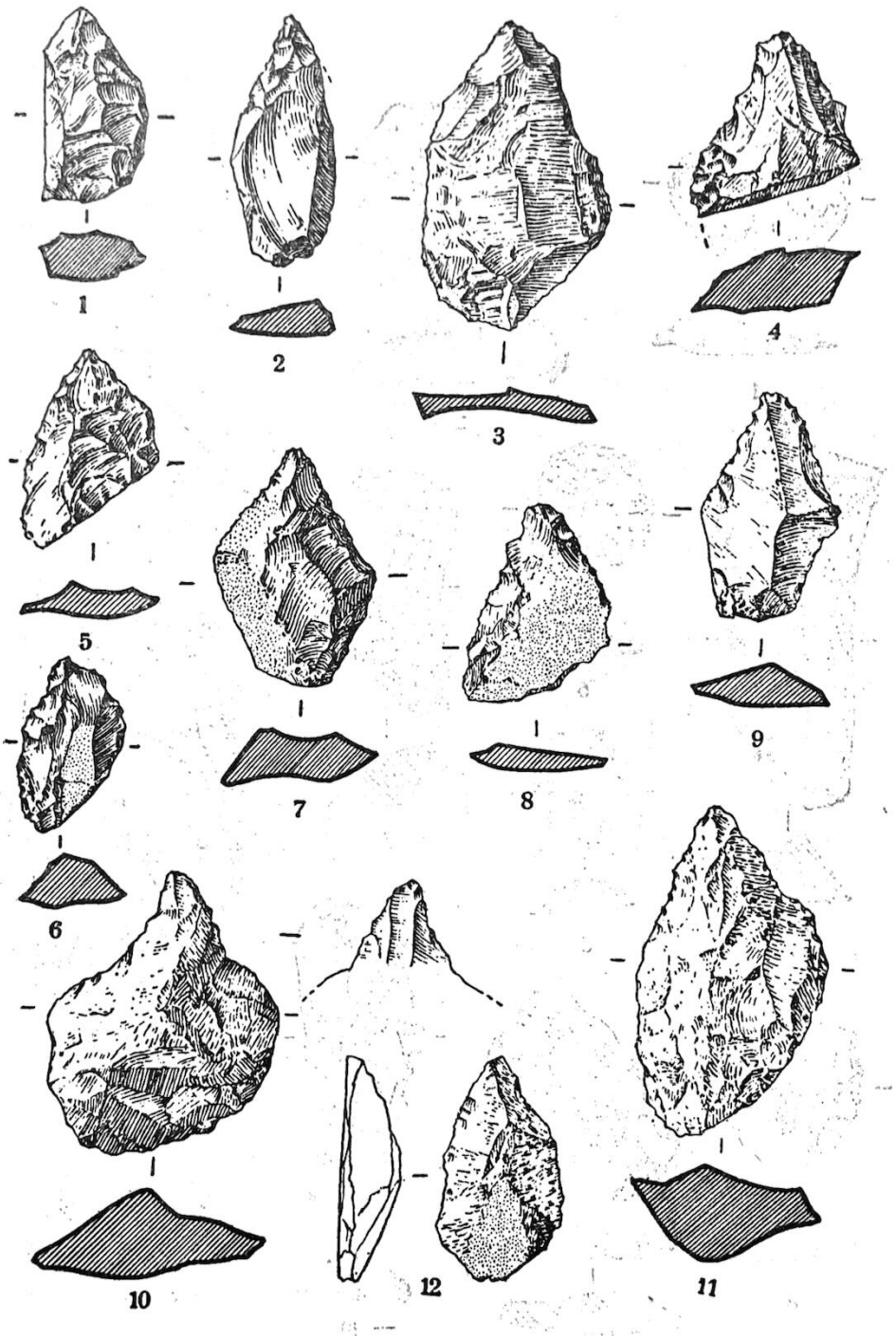
Flake artifacts consist of more than 6000 unutilized and unworked flakes. On the basis of shape there are three groups recognized: irregular flakes (Fig. 4.1—3), long regular flakes which are roughly parallel sided and may be considered "directed flakes" (Fig. 4.4—8) and small regular flakes struck off "pillar-shaped" cores (Fig. 5b). Judging from the cores in the collection, the first

6 . Pointed Tools



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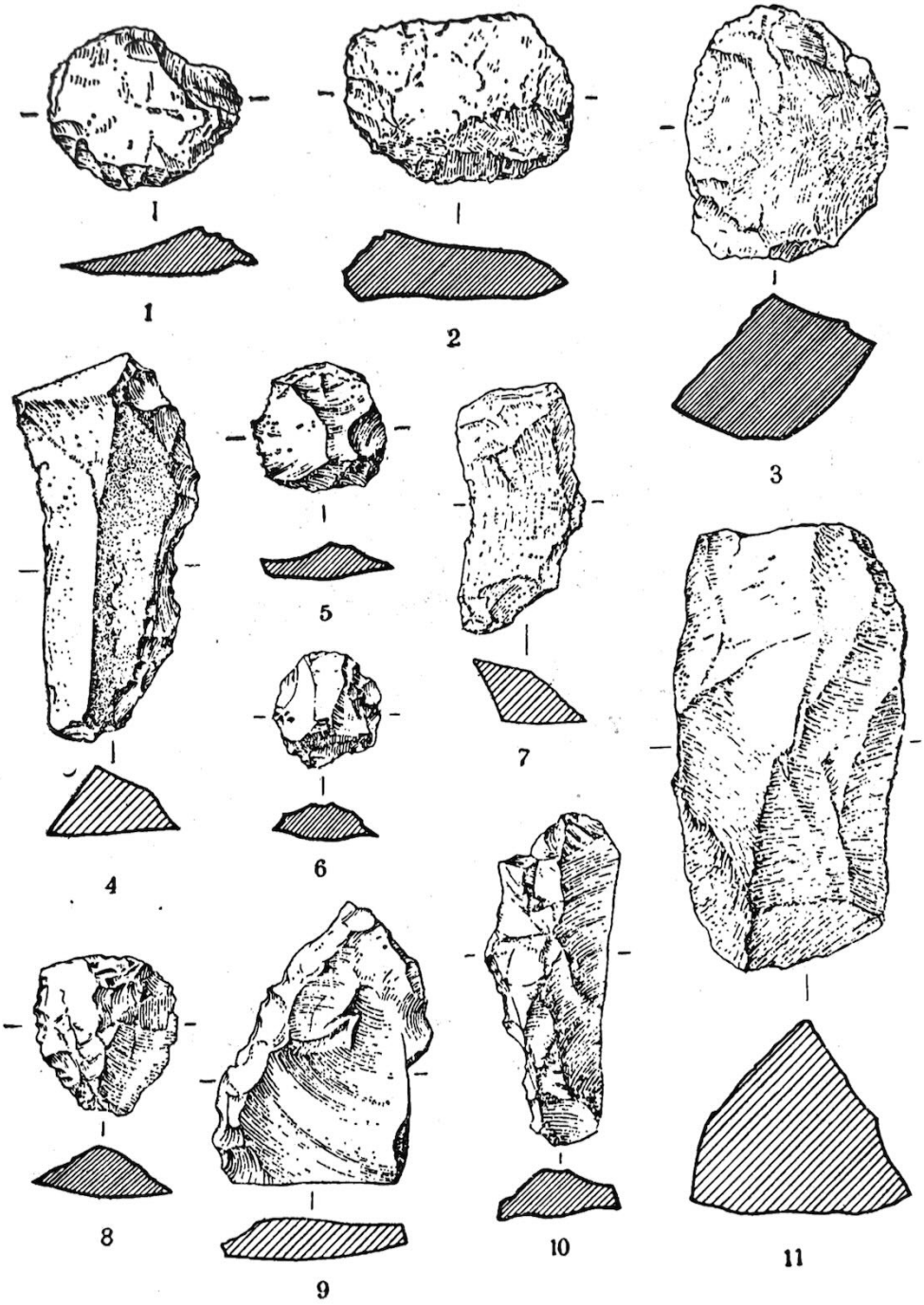
grouping of flakes is probably the most common and the last relatively rare. However, no quantification occurs in the text.

There are only 17 pointed flake tools in the collection. They are unifacial, generally small and little altered by retouch from the original shape of the flake blank. The authors group the tools into five shape categories which are of questionable va-

7. "Scrapers": Utilized and Retouched Flakes



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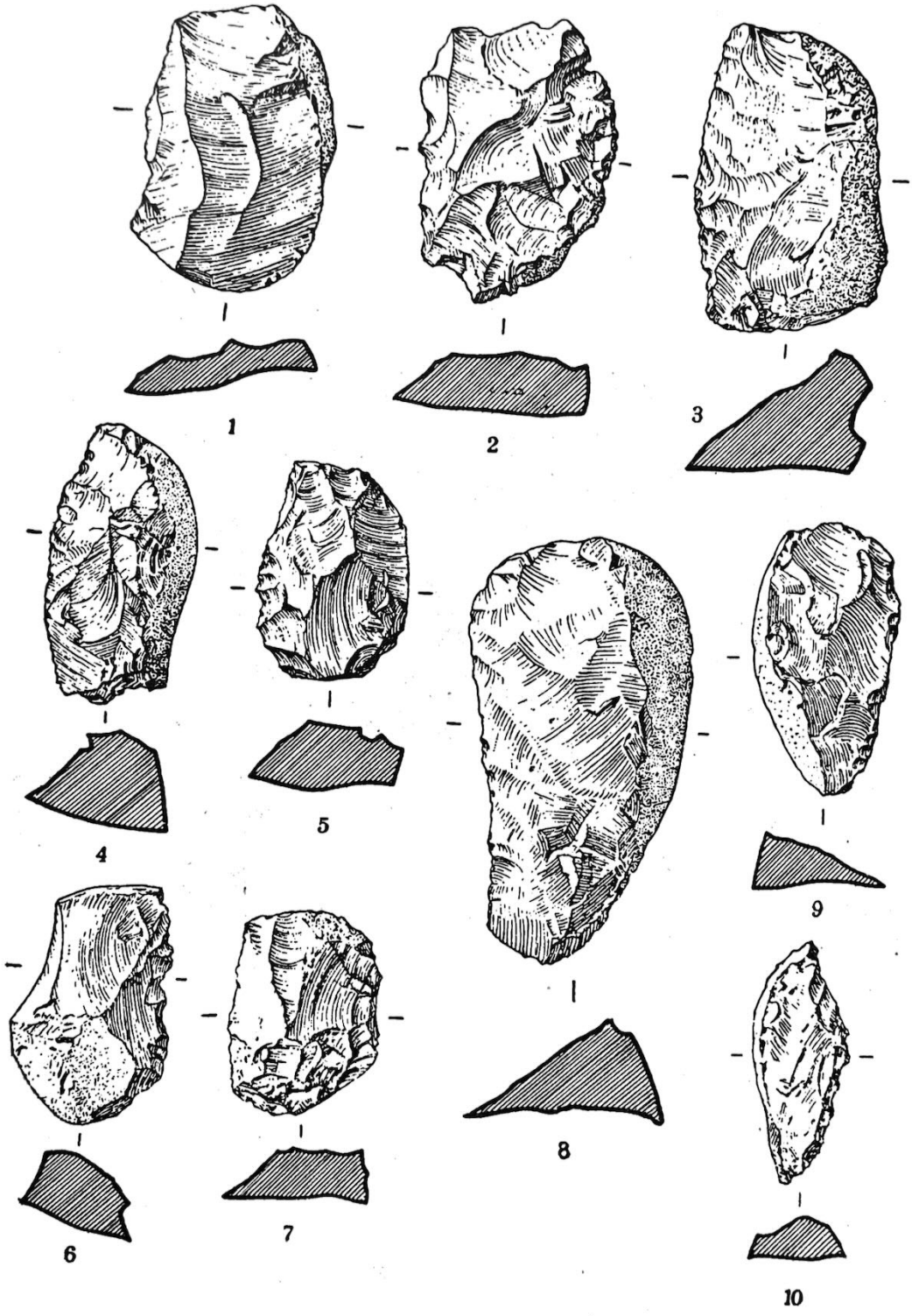
lidity. The "oval" exemples (Fig. 6.1—4) are in fact highly variable in perimeter form, especially at the base and point. "Chestnut" shaped pointed flakes (Fig. 6.7, 9) share perimeter form with greatest width in the middle and gentle narrowing to the point and abrupt constriction at the base. "Triangular" exemples (Fig. 6.5, 6) both have asymmetrical bases. "Irregular" tools include a drill-pointed spe-

8. "Scrapers": Utilized and Retouched Flakes



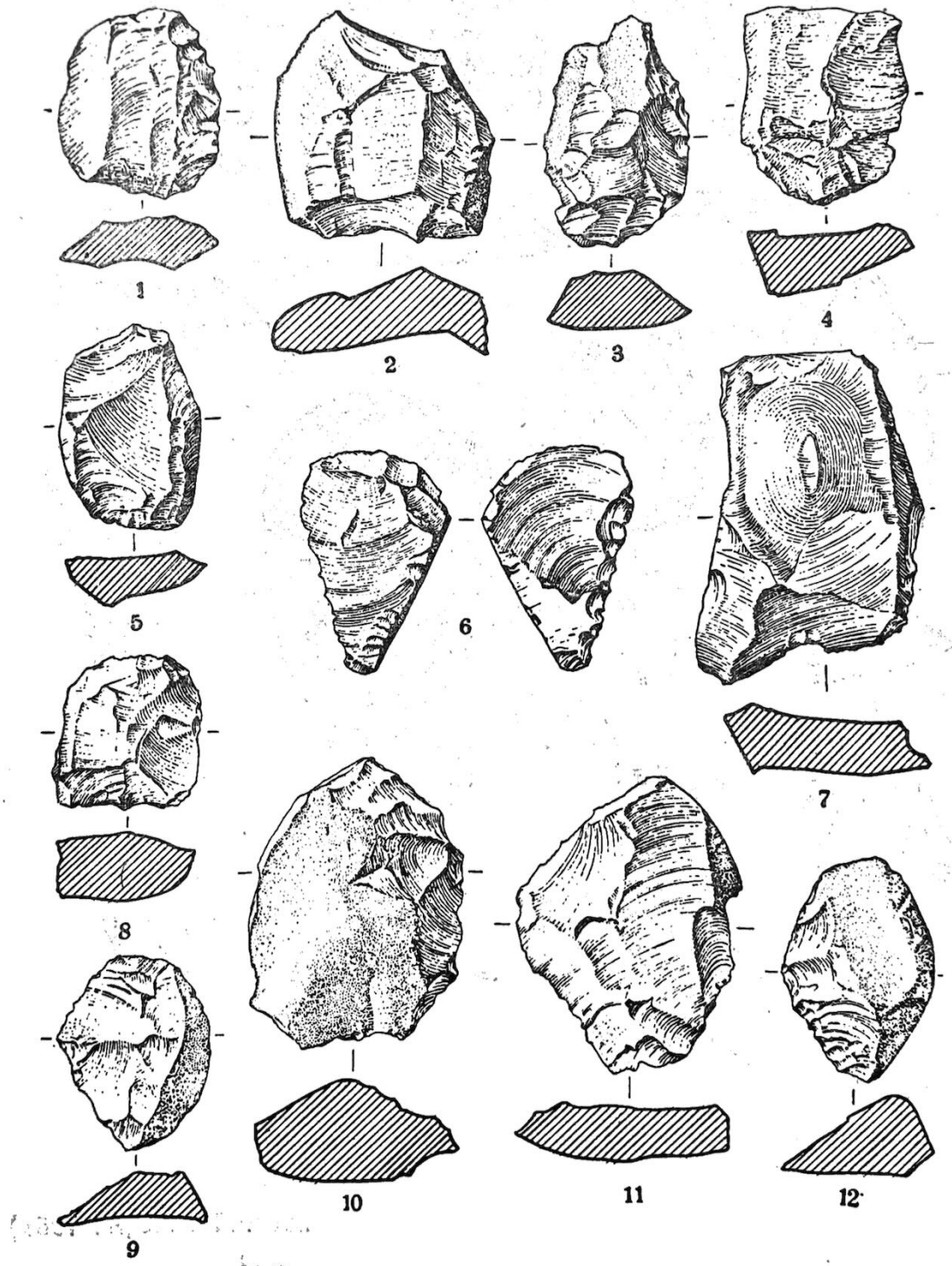
natural size(An 1965)

cimen (Fig. 6.10) and a fairly regular point with a rounded base (Fig. 6.12). Finally there is the grouping described as "oval with even blade" (Fig. 6.11) but the example illustrated is difficult to distinguish from members of the other groupings. Since the alteration of blank shape is minor or entirely lacking shape subdivisions seem to this author less useful than categories based on utilization pattern at the point.

The category of "scrapers" is inevitable, referring simply and primarily to retouched and utilized flakes. Ninety-six are recognized in the collection. No less than eight shape classes with internal subdivisions of these are recognized. To this author these do not seem particularly meaningful technologically since little attempt was made by the manufacturers to alter blanks.

Since no accurate counts for each type are given, it is possible to account for only 68 of the total 96 implements. Eight pieces are "round". The

9. "Scrapers": Utilized and Retouched Flakes



blanks lack a median ridge and are irregular rather than "directed" flakes. The specimens are generally small with marginal flaking around part of the edge (Fig. 7.1—3, 5, 6, 8). "Long" scraper are apparently made on fairly regular, medium to large flakes with straight sides. Use or retouch appears to occur along the long margin(s) (Fig. 7.4, 7, 9—11).

All of the examples shown on Fig. 8 belong to the next "scraper" shape class. These are called "long, bowed" tools made on irregular flakes. They possess one or more convex margins. The 31 tools (ten illustrated) are divided into "short, broad" (Fig. 8.1—7), "long, narrow" (Fig. 8.8—10) and "long, oval" subtypes. "Long, oval" tools are made on irregular flakes (Fig. 9.1, 3, 10).

Four "short" scrapers (Fig. 9.2, 4, 5, 8) have use of chipping on one short side of a (slightly) rectangular flake. The grouping of "complex or double edged" scrapers is subdivided into those of basically triangular shape (Fig. 9.9, 11, 12), those which are

10. "Scrapers": Utilized and Retouched Flakes

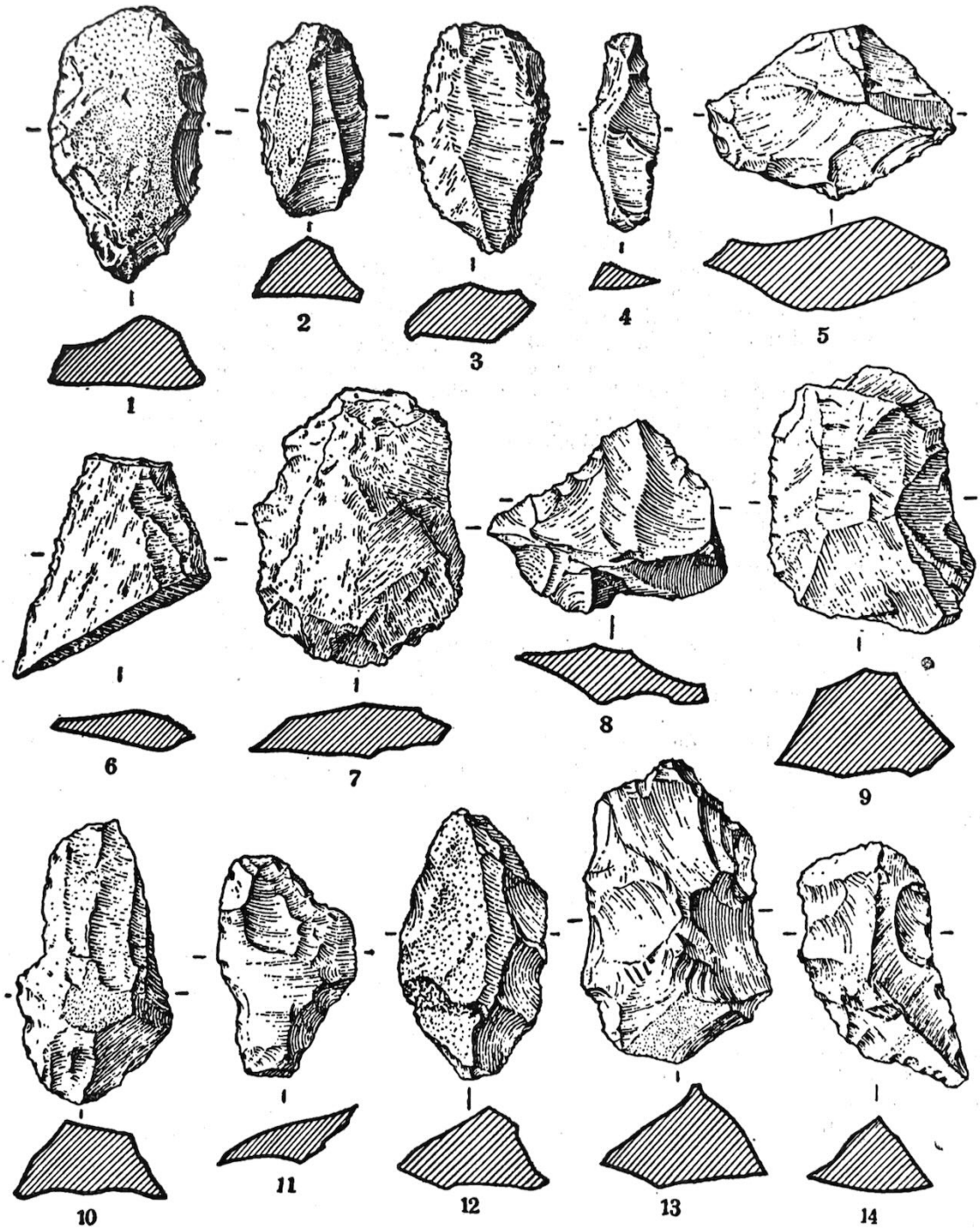


TABLE 2

Hsiao-nan-hai lithic remains

Level	"Chunks"	Nuclei	Flakes	Pointed tools	"Scrapers"	Choppers	Nuclei	Flakes	Pointed tools	"Scrapers"	Flakes	"Scrapers"	Flakes	"Scrapers"	Flakes	Total	Percent
1B	2	1	6	0	0	0	0	0	0	0	0	0	0	0	0	10	0.14
1C	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	3	0.04
2	14	6	433	1	9	0	0	1	0	1	2	2	0	0	0	469	6.62
3	10	28	357	2	13	0	0	13	0	1	1	0	0	0	0	425	6.00
4	32	346	4972	6	48	4	15	634	8	9	1	3	1	1	0	6080	85.89
5	6	0	75	0	6	0	0	2	0	1	0	0	0	0	1	91	1.28
Total	64	382	5844	9	77	4	15	650	8	13	4	5	1	1	1	7078	99.97
Grand total			6,360 Chert					686 Quartz			9 Flint		2 Chalcedony		1 Lime stone		

semilunar (Fig. 9.6) and those which are long and irregular (Fig. 9.7). This writer can find no common or basic traits shared by the tools, nor any basis for the grouping.

"Double-edged" scrapers are divided into those which are oval and made on regular flakes (Fig. 10.1—3, 12), those which are "stepped" (Fig. 10.6, 7, 9, 10) and seem to this author highly variable in shape and section, and those which are long and irregular "scrapers" (Fig. 10.4). Finally, a grouping of "many sided" scrapers is distinguished (Fig. 10.5, 8, 11, 13, 14); these appear to be irregular flakes and show scattered rather than extensive chipping and use.

The scrapers as identified by the original authors are on medium to small sized flake blanks, mainly irregular in shape and retouch. The blanks tend to be longer than broad, with angles between 90° and 120° but most near 110°. The angle on short, narrow flakes is nearer 100°. This author can only reiterate the impression that the typology is highly artificial and not subject to duplication. The illustrations suggest that core platform preparation is rare if present.

The only piece of worked bone found among the materials recovered is a bead of small size: 2.5 × × 1.1 × 0.6 cm. Unfortunately it was found in back dirt materials and cannot be tied to any level but apparently was originally *in situ* (Fig. 2).

Summary of the Hsiao-nan-hai site

Several tentative conclusions can be made about the cave site and its occupation. Age is Upper Pleistocene. Occupation of the cave was for warouth and meal preparation; and tools were manufactured as well. We may extend this to mean that the site was a seasonal hunting station or camp. Few of the tools at the site are broken. Technologically, the assemblage shows little typological variety largely because natural blank shapes are not altered and in this sense is closer to the Choukoutien sites than to those related to the Tingts'un complex. There are some characteristics shared with the Ordos but no real indentities.

The site is important because it represents the only *in situ* locality of substance from Upper Pleistocene times. The dating and stratigraphic history of the Ordos sites are controversial and Tingts'un remains are water transported (though for probably a short distance only). The Hsiao-nan-hai collection is large and will provide materials for a good and thorough technological analysis. The faunal preservation is fair and the forms suggest consistently a dating to a cool phase of the Pleistocene, probably pre-maximum. The cave site appears to be fairly extensive and clearly rich, since 7,000 artifacts were recovered from a small test cut. Stratigraphy is also good at the site. The actual site location on the edge of Hopei Plain should make possible an interesting study of the local conditions which prevailed during occupation of the site by man.

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