

Segmented Backed Bladelets

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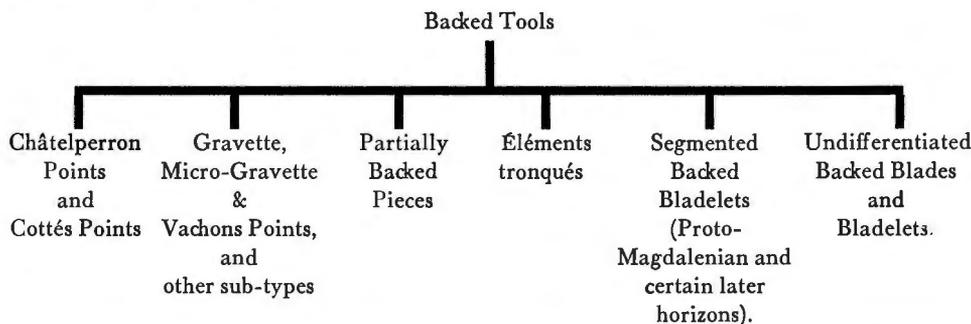
During the course of six seasons of excavations by the joint Franco-American Expedition at the Abri Pataud, Les Eyzies (Dordogne)¹, between 1958 and 1964 a considerable number of backed tools of various types were found. Although not all the levels of the French Upper Palaeolithic in which the range of forms listed below are represented at this very large and extensive site, the following groups are included within this broad category of tools: Châtelperron Points, Cottés Points, Gravette Points (including Micro-Gravette and Les Vachons Points), the Truncated Elements (*Éléments tronqués*) of the Périgordian Vb, the special Segmented Backed Bladelets and their by-products of the Proto-Magdalenian (Couche 2 at the Abri Pataud) and other levels, and miscellaneous sorts of backed or partially backed blades (*lames*) and bladelets (*lamelles*). Only the Segmented Backed Bladelets are considered in the present paper. The present study is based in the main on detailed research conducted by R. Berle Clay on the Couche 2 assemblage from the Abri Pataud.

Insofar as our own research has disclosed, the primary blanks on which most Gravette and Micro-Gravette Points, on the one hand, and Segmented Backed Bladelets, on the other, have been manufactured are very similar, but it seems apparent that a very real and fundamental technological difference does indeed exist between these two categories on the secondary level of production. The latter refers to the method of producing the actual backing of the blade or bladelet. Now at the Abri Pataud the evidence from the large Upper Périgordian samples indicates that in the overwhelming majority of instances Gravette and Micro-Gravette Points were manufactured by beginning the process of backing (or abrupt retouching) at either one or both extremities of the blank and working along the length of the piece until it was either totally or partially backed. On the other hand, the backing technique employed in the production of the Couche 2 (Proto-Magdalenian) backed bladelet assemblage, which is occasionally represented also in Couche 3 (Périgordian VI), was to begin the backing in the central portion of the blank and proceed with the abrupt retouching outward from there toward each of the extremities in turn. Only in a few rare instances was either one or both of the actual extremities backed, and normally this feature is represented only

¹ These excavations, under the direction of the writer, were conducted on a full-scale basis during the 1958–1961 and the 1963–1964 seasons; the periods 1962 (summer) and 1965 to date have been devoted to the laboratory study and analysis of the very considerable collections – compare *Movius*, 1960; 1961; 1963; 1965-a; 1965-b; 1965-c; 1966-a; 1966-b; 1968; with Vallois, 1960. Throughout, this project has been generously supported by a series of much-appreciated grants from the National Science Foundation.

along the distal portion of the piece. Insofar as the Abri Pataud is concerned, only the Couche 2 (Proto-Magdalenian) assemblage yielded a substantial number of backed bladelets, and in it a series of pieces of the types shown in Fig. 2 was found. On the other hand, in all the Upper Périgordian horizons – Couches 3, 4 and 5 (Périgordian VI, Vc and IV, respectively) – gibbous pieces (Fig. 1) occur in direct association with true Gravette Points². In studying a given series of assemblages, such as those now under consideration, and basing culture-historical deductions thereon, it is of paramount importance to keep this basic and fundamental distinction clear at all times.

All tools in these two categories (i. e. Gravette/Micro-Gravette Points and backed bladelets) are comparably modified blanks, and therefore they are of the same technological nature as end-scrapers and burins. In other words the backed tool universe may be represented as follows:



But they are considered as two separate and distinct artifact groups due to the manner in which the backing process was effected. In point of fact, all tools in the universe diagrammed above belong to one or another special category of abruptly retouched blades or bladelets with the retouching almost exclusively restricted to one side of the blank. This feature has served to blunt one edge completely; furthermore, it has modified the original outline of the blank, very considerably in certain instances. With respect to the two categories under consideration, the backing has been employed, almost without exception in one instance, to produce a pointed tool (a Gravette or a Micro-Gravette Point), and in the other a Segmented Backed Bladelet. Both groups include objects with one edge either completely or partially blunted; the opposite edge has either been left intact or else it has been subjected to a varying degree of retouch. In making an analysis of the central segment of broken tools, particularly, the technological spectrum is continuous, no determinable and clearly defined cut-off point can be established that will permit an objective determination of tool class. For certain fundamental features

² A gibbous piece – Type No. 53 in the de Sonneville-Bordes/Perrot lexicon of Upper Palaeolithic typology (de Sonneville-Bordes et Perrot, 1956-b, p. 547) – exhibits a steeply retouched back produced by abrupt removals and presents a gibbosity. In most cases objects in this category are considered to be incomplete Gravette Points. The gibbosity results from the fact that the backing process was effected from the extremities of the piece towards the central section of the blank, but for one reason or another the final removals were never completed.

are common to both groups of tools, including the original size of the blanks employed for tool manufacture in a large majority of instances³. Other features which are comparable on all Gravette/Micro-Gravette Points and Segmented Backed Bladelets have been discussed elsewhere (compare Movius, David, et al., 1968), including the nature and extent of the backing (cross-section category and backing direction) and the dimensions of the tool (length, width and thickness). The purpose of this paper is to define the Segmented Backed Bladelets first recognized in the Couche 2 (Proto-Magdalenian) assemblage at the Abri Pataud.

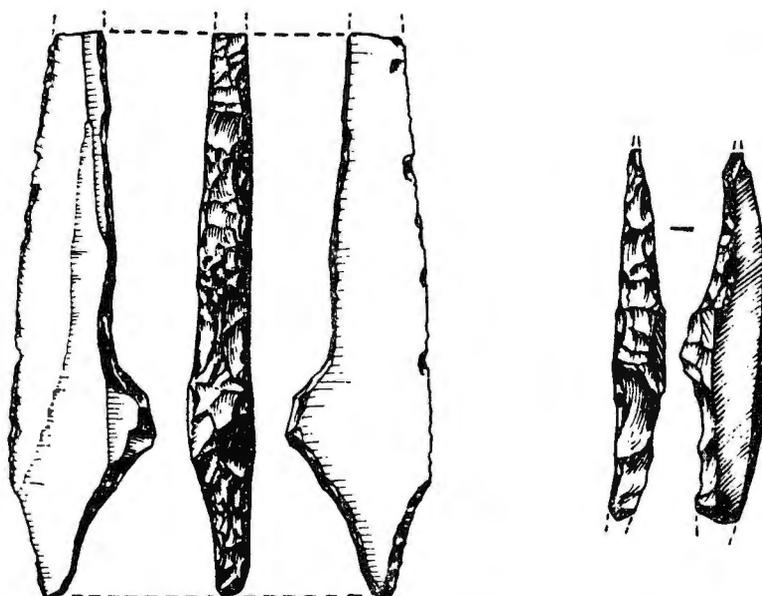


Fig. 1. Gravette Points (Broken) with a Gibbosity. $\frac{1}{1}$.

By way of an introduction to their description, the problem of the possible function of segmented backed bladelets will be briefly considered. Often they have been very aptly compared to pen-knife blades with one sharp and one blunted edge. In any case, the general view is that segmented backed bladelets are presumably cutting tools of some sort with one functional edge and the opposite edge purposely fashioned to render it non-functional for cutting. However, the small size of these tools suggests that in themselves they are not cutting implements, but rather that they are elements of composite tools. This has in fact already been suggested by M. Denis Peyrony (1933, pp. 355-356; 1934, p. 87; with Capitan, 1920, p. 542), Dr. Cheynier (1953, p. 85) and other authors, who consider that they were indeed hafted, perhaps to fashion some sort of a multi-piece spear-

³ Gravette Points up to over 12 cm long have been recorded in a few instances, but for the most part these tools average between 4 cm and 5.6 cm in the length component. On the other hand, backed blades and bladelets rarely exceed 6 cm in maximum length.

head for hunting. Nevertheless, there are difficulties with this somewhat overly simplistic conception of the segmented backed bladelet as a tool; in short with respect to the Proto-Magdalenian assemblage from the Abri Pataud, how and in what were they hafted? No suitable bone or antler mounts are known to exist prior to the Late Magdalenian – possibly wooden ones were employed, but if so none of them have ever been preserved. Therefore, one can only speculate on the basis of available evidence, and consequently a satisfactory answer to the question of how more than one of these objects was combined into a single tool cannot be formulated. Many answers have been suggested, but not one of them has been proved to date.

Another problem arises in dealing with segmented backed bladelets which is not encountered in a consideration of end-scrapers, burins or Gravette Points, for instance. This concerns an exact definition of the element with which one is dealing. On the basis of a detailed examination of the tools of this class in the present sample⁴, it is at once apparent that the majority of them represent broken rather than complete specimens. Therefore, except in a limited number of instances, it is impossible to know whether or not one is dealing with a broken discard of a once complete tool, or with the complete object itself in its original functional condition. Thus it is apparent that for an adequate discussion of this class as a whole, as well as for a clear understanding of the entire range of the technology involved, some definite conceptualization of the morphology of the tools themselves must be developed. The urgent need for achieving this becomes even greater when comparisons between the segmented backed bladelet products of various assemblages from different sites are attempted. For in such a case, it will become immediately apparent that one must know precisely what one is comparing if valid results are to be achieved. On the basis of the available data, however, it is impossible to provide a realistic definition of the fundamentally important problem of the total range of tool morphology. Certainly it is felt that unless one understands the segmented backed bladelet components in a given series of assemblages, the cultural-historical placements of the latter on the basis of these particular tools will be completely meaningless. For in conducting such a study, it is not simply a question of comparing numerical counts of conceptually undistinguished, broken and unbroken pieces, expressed in terms of percentages of the total, level by level, on a subjective basis, but rather of carrying analysis to the very core of the problem. If one breaks a Gravette/Micro-Gravette Point, a Vachons Point, or almost any particular variety of backed blade tool that has been recognized to date for that matter, a considerable number of the broken parts look very much alike – a disturbing reality which could easily produce a spurious appearance of stylistic similarity, hence genetic relationship. To obviate that eventuality, a descriptive approach has been developed with the objective of distinguishing tool forms. The results of this procedure lead to a statement of technology and style, which may in turn be used in the comparison of segmented backed bladelet components from two or more assemblages.

⁴ A few sporadic examples came to light in the underlying Couche 3 (Périgordian VI) stratum.

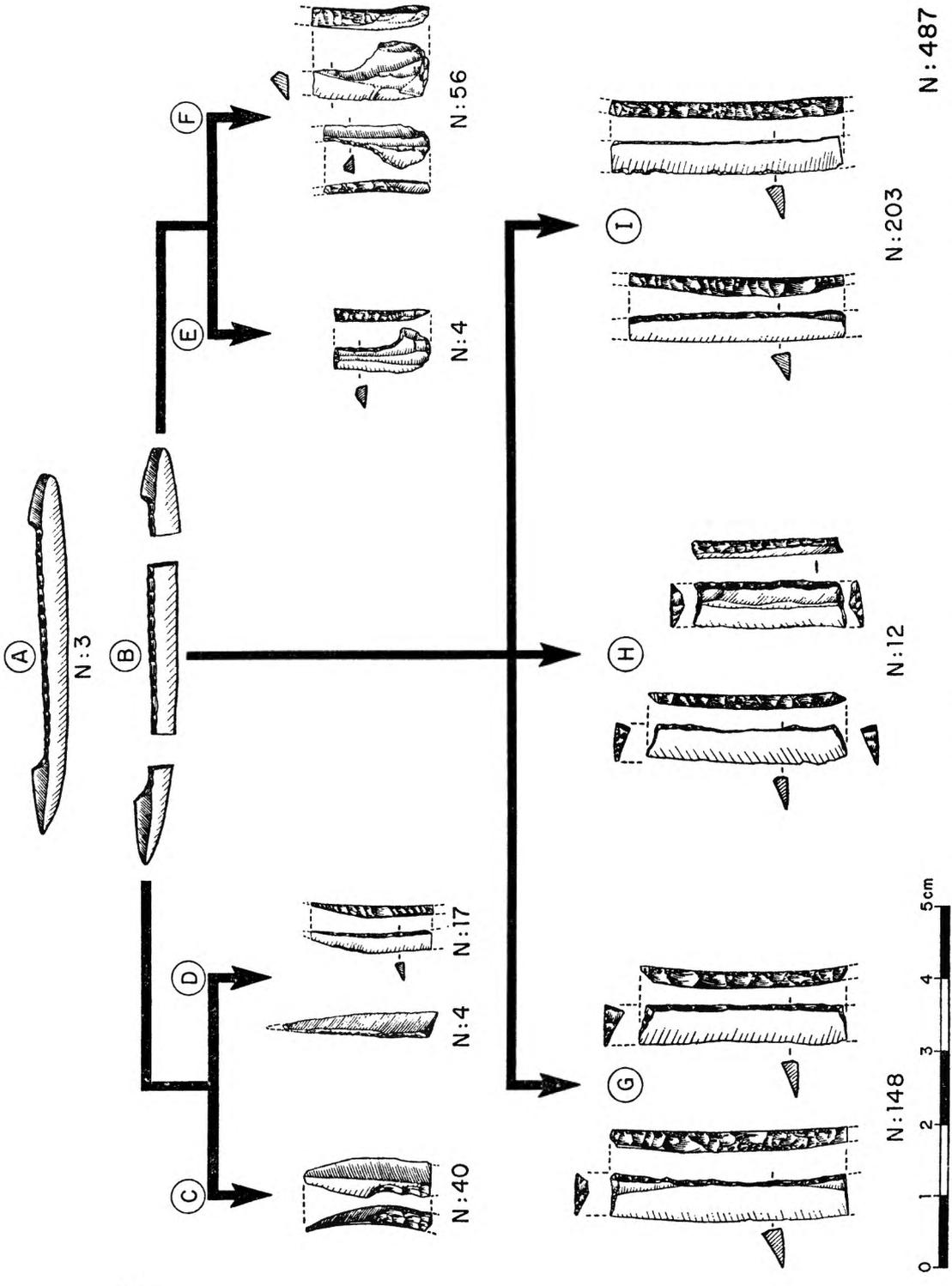


Fig. 2. Production Chart showing Technological Stages in the Manufacture of Segmented Backed Bladelets - Reconstruction Based on the Evidence of the Couche 2 (Proto-Magdalenian) Sample from the Abri Pataud (N: 487).

- C: Distal Discard.
- D: Point - the Piece on the Left is Truncated; that on the Right is broken.
- E: Truncated, Partially Backed Butt.
- F: Proximal Discards.
- G: Segments Terminating in Truncation + Break.
- H: Segments Terminating in Truncation + Truncation.
- I: Segments Terminating in Break + Break.
- N: Total of each Category in Sample.

The Three Examples of Category A Objects are all Crude, Irregular Rejects.

T o o l M o r p h o l o g y

The fundamental technique employed in the manufacture of segmented backed bladelets and a definition of the specific forms of tools, together with by-products resulting from the manipulation of the backed and partially backed blanks resulting from this technique, will be described in this section. Now backing, albeit the most important single attribute of the finished tool, only represents one step in the manufacturing process, although it is the one which typifies the category as a whole. Admittedly, it is very important for descriptive, interpretative and comparative purposes, but it is apparent that one must also have some idea of the tools themselves. Indeed, in the final analysis, it is on the basis of the detailed morphology of the latter that conclusions arrived at by comparative studies must rest. The production scheme presented in the form of a diagram (Fig. 2), on which selected pieces from the Proto-Magdalenian assemblage at the Abri Pataud are reproduced, should be useful in understanding the interrelationships of the various categories of products in segmented backed bladelet manufacture. The eight sub-classes of objects shown in this illustration, together with the total number of pieces represented in the Abri Pataud sample in each case⁵, comprise the categories which have been recognized for this tool class as a whole. These may be defined on the basis of two technological levels, or stages, in the process of production, as follows:

- A – **FIRST LEVEL OF PRODUCTION** – The initial process, which involves the actual achievement of the backing itself from the central portion outward in both directions (Fig. 2, A), is a fundamental criterion for differentiating between Gravette/Micro-Gravette Points and segmented backed bladelets on the secondary technological level, as previously stated on p. 239. The blank, which is backed, is always small and slender; very rarely is it over 7.5 cm long in overall dimensions. This process is begun in the central area of the blade and the working is directed outwards toward the two extremities (distal and proximal) of the piece. One or two centimeters at either extremity of the blank are normally left in an unmodified condition.
- B – **SECOND LEVEL OF PRODUCTION** – Once the backing operation has been completed in accordance with the process described above, the piece is apparently purposely segmented, or broken, into at least three sub-units (Fig. 2, B), which have been given the following designations:
- (a) **DISTAL DISCARD** (N: 40) – This extremity of the blank (Fig. 2, C), which has been designated by Dr. Cheynier (1957, pp. 657 and 663) as the “distal cran”, is always unworked on the basis of our experience at the Abri Pataud. Therefore, it is regarded as a discard and technically recorded as a partially backed distal extremity which is unworked.
- (b) **POINT** (N: 21) – An alternative production process involves the distal extremity of the blank (Fig. 2, D) and it results in the production of a point. The proximal end of the objects in this sub-group may consist of either a retouched truncation or an un-

⁵ The frequency occurrence (N) is listed for each sub-class and the final tabulation gives the total number of objects which can definitely be identified as belonging to this class.

modified break. In the majority of instances the point has been formed by the intersection of the backing with the natural edge of the blank, but the following two production methods were also employed:

- (1) The actual shape of the point has been achieved partly through backing, as above, and partly through retouch of the natural blank edge at the point in order to regularize it (Fig. 2, D: right). This has normally been accomplished either by removals from the dorsal or ones from the ventral surface, but occasionally they are bi-directional. A total of seventeen (17) points of this sub-class occurred in the Couche 2 assemblage. The fact of the occurrence of these pieces in a given segmented backed bladelet assemblage is indeed indicative of the fact that the difference between the latter and true Gravette/Micro-Gravette Points is not as absolute as has been claimed.
 - (2) Although a point occurs that is entirely comparable with those on which the backing is complete, the backing in the case of four (4) examples does not extend to the tip of the blank (Fig. 2, D: left). In this instance retouch on the natural edge of the blank is lacking, and the broken proximal extremity has been truncated. Apparently these examples have been manufactured on blanks that were originally admirably suited for the production of tools of this sub-group. In any case, it is clear that at least some of the points – either those opposite breaks or retouched truncations – represent only very slight modification of the thin distal extremity of the original blank. As an alternative, therefore, this end could be and apparently was tapered down to a point, then detached from the original blank, after which the break opposite the point was presumably truncated.
- (c) **Segmented Backed Bladelets (N: 363)** – The segmented backed bladelet component, on the basis of both complete and fragmentary examples, seems to have been the most common type of tool represented in the Proto-Magdalenian assemblage from Couche 2 at the Abri Pataud (Fig. 2, G, H and I). These tools may be collectively sub-divided as follows:
- (1) **Retouched Truncation at Both Extremities (N: 12)** – All but one of the truncations on the complete examples (Fig. 2, H) has been produced by removals from the ventral surface upwards. The following three varieties, or forms, of truncation have been observed:
 - (i) **Straight** – greater than 80° to the long axis of the piece;
 - (ii) **Oblique** – at an angle of between 60° and 80° to the long axis of the piece; and
 - (iii) **Rounded** – a very rare form.
 Normally the retouched truncation is of the same morphology at both extremities of the piece, but it is different in several cases.
 - (2) **Retouched Truncation at One Extremity and Break at the Opposite Extremity (N: 148)** – Although the two illustrated specimens (Fig. 2, G) are of approximately the same length, this is not true in the group as a whole. In this sub-group length is a very variable factor.
 - (3) **Breaks at Both Extremities (N: 203)** – In the case of these objects (Fig. 2, I) length is even more variable than it is with reference to the group discussed above.

With respect to groups (1) and (2) the character of the truncation retouch may or may not be the same as the retouch removals forming the actual backing of the tools themselves. Fine ventral retouch occurs on the edge opposite the backing adjacent to one of the truncations and/or breaks in a few rare instances; possibly this represents an

attempt to regularize this edge of the piece following completion of the truncation procedure. Whether the objects in groups (2) and (3) should or should not be considered to represent complete tools is further discussed below.

- (d) *Proximal Discard* (N: 56) – This category of by-product in the manufacture of segmented backed bladelets constitutes an important increment in the total sample (Fig. 2, F), just as in the case of the distal discard. All these pieces, which Dr. Cheynier (1957, pp. 657 and 663) refers to as “proximal crans”, exhibit the bulb on the extremity of the ventral surface. In terms of an objectively oriented terminology, the writer suggests that these pieces should be referred to as partially backed, proximal extremities without retouched truncations.
- (e) *Truncated, Partially Backed Butt* (N: 4) – These tools (Fig. 2, E), which are very rare, average somewhat longer than the normal length of the partially backed discard (both distal and proximal), a by-product in the process of manufacturing segmented backed bladelets. In all cases the retouched truncation is straight. Accordingly, it is suggested that the proximal end, after having been detached from the backed central portion of the blank, was truncated at the broken extremity, and that the resulting object was presumably employed as a tool of some sort. Since these tools are neither common nor sufficiently standardized, it is felt that they do not merit extended comment at this time. This problem can only be solved during the course of further research and study.

The overwhelming majority of the backed tool component in the Proto-Magdalenian sample from the Abri Pataud exhibit an unmodified break at either one or both ends. These fall into the following four categories:

- (a) Point at one end, break at the other;
- (b) Unworked extremity (distal or proximal) at one end, break at the other;
- (c) Retouched truncation at one end, break at the other; and
- (d) Break at both ends.

One assumes that the segmented backed bladelet with a retouched truncation at both ends is a complete tool – a completed element which was the goal of the artificer. In view of the fact of the low frequency in which these bi-truncated forms occur, however, it is distinctly possible, and indeed probable, that some at least of the forms terminating in a break, or breaks, might also have been complete tools⁶. Even if this is true, the great heterogeneity of pieces with breaks indicates that some, or perhaps many, of them are really broken tools. Therefore, the problem is to distinguish pieces exhibiting breaks which in point of fact are complete examples of the intended tool from broken objects which represent fragmentary examples of the latter. On the basis of a detailed study of the limited sample from the Abri Pataud Couche 2 assemblage, it has proved to be im-

⁶ It should be pointed out in this connection that not one single very short truncated extremity of a segmented backed bladelet which could be considered to have been broken off a piece with retouched truncations at either one or both ends was found in the Couche 2 horizon at the Abri Pataud. This is an interesting and admittedly somewhat perplexing fact, which, when one considers that every single fragment of flint (including numerous tiny scales and chips) was saved, must be of significance in relation to this problem.

possible to make such a distinction. Accordingly, only the following, in addition to the bi-truncated backed segments, are considered to be complete backed bladelet tools:

- (a) Pieces with a retouched point at one end and a retouched truncation at the other. Since both extremities of the piece have been modified by retouch, this case seems to be quite clear.
- (b) Those pieces described above as Truncated, Partially Backed Butts.

In an overall sense it is clear that the segmented backed bladelet is a small tool, that in all probability its life expectancy was not great, and that incidence of breakage was exceedingly high. Certainly the high frequency occurrence of the sub-class of tools and fragmentary tools made on segments demonstrates beyond all cavil that this portion of the original blade was not only more commonly used in tool production than any other form, but also that its broken extremity at either one or both ends was modified by retouch in many cases. However, the problem of establishing the dividing line between complete and fragmentary tools, on the one hand, and by-products in their manufacture, on the other, is apparently insoluble for the present. For this reason one cannot be absolutely precise as yet with regard to providing an answer to the problem of exactly what constitutes the element or the finished product with respect to the sample under consideration.

General Comments

The present writer does not doubt the fact that the statistical approach to the solution of certain problems in Upper Palaeolithic archaeology, developed by Mme. de Sonneville-Bordes (1958-1959; 1960) and by her and M. Jean Perrot (1953; 1954; 1955; 1956-a; 1956-b), has produced and will continue to produce significant results. This approach is based in large measure on the assumption that each piece in a given assemblage, whether broken or complete, is of equal typological value. The present study of backed bladelets that have been manufactured by the process of segmenting, however, makes it patently obvious that a more "refined" taxonomy of backed tools as a group would be very helpful in future investigations of culture change through time and space. Certainly if raw percentage frequencies for backed bladelet (*lamelle á dos*) "types" are to be compared in an effort to derive some substantive statement of cultural similarities or differences therefrom, the whole problem of the recognition and understanding of the nature of the element itself is in urgent need of further analysis. Since the latter are represented by both complete and fragmentary pieces, a far more realistic consideration of a given assemblage in its entirety should proceed from a careful isolation of the forms of tools that could be present. Only then will it be possible to understand such a study on an intelligent and controlled basis.

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