Chapter II

AN HISTORICAL OUTLINE OF THE Solutrean

"A third principle was that no historical problem should be studied without studying what I called its second-order history; that is, the history of historical thought about it."
(R. G. Collingwood 1944:89)

An examination of the literature indicates that questions involving the Solutrean occupied an unusually large place in the 19th century and part of the 20th. This was not so much because the Solutrean itself was considered particularly important or difficult, but rather because of the larger conceptual and philosophical issues to which the Solutrean happened to be linked, e.g., the Hiatus, unilinear evolution, diversity or uniformity of contemporaneous populations, etc. In other words, the Solutrean itself should be considered as the cork bouncing on the waves of these larger disputes.

What kinds of problems has the Solutrean presented during its lifetime, and how have the approaches to these problems influenced our present understanding of it? In general they have been of two kinds, reflecting of course the interests and emphasis of the day. From about 1864 until 1912 the greatest interest centred around the question of its relative position in the archaeological sequence.
Breuil's classic paper presented in 1912 marked the end of that battle. After the early years of this century the problems revolving around the finding of an origin for the Solutrean took up most space and of course has continued, little diminished, to this day. But it seems to me that in recent years, from the 1930's on, a parallel interest has grown in the nature of the Solutrean as a culture in itself and its relationships, if any, with the other cultures in the Upper Palaeolithic setting.

This chapter cannot attempt to touch on all the trends and fashions in the history of Palaeolithic archaeology in France -- a history which, in any case, has yet to be written. But even such a narrow topic as the Solutrean must take into account certain groundswells and movements whose vitality determined the course of the discipline's ideas: one must think of the Solutrean as riding out a series of larger controversies and opposing concepts in which often enough (as Boule remarked during the cave art controversy in the nineties) "les raisons n'étaient pas des raisons scientifiques".

As it happens, a framework for the present treatment is given by what seems to be three alternating periods of vitality and lassitude in French prehistoric studies (it must be emphasized here that Solutrean history has been almost entirely forged in France). The description which
follows must be seen against this fluctuating background, for it was conditioned by it.

The first great period began in the early 1860's after the final acceptance of Boucher de Perthes's discoveries, but more especially after the forays of Lartet and Christy into the Southwest, the founding of Matériaux and the International Congresses, and the pioneer work of de Vibraye, Cartailhac and others. But by about 1880 the first wave of enthusiasm had played itself out. This interregnum, little better than a decline into antiquarianism, lasted until about the time of Gabriel de Mortillet's death in 1893; field exploration had not ceased in the meantime, but now a fresh wave of energy and fervor set in with people like Breuil, D. Peyrony, Déchelette, Commont and Obermaier, encouraged by older heads such as Capitan, Boule and Cartailhac and impatient with the rigid doctrines of the de Mortilllets and their followers. With the new Institut de Paléontologie Humaine as a symbol of incentive, this group seemed to be leading French prehistory into a new period of splendour when the work was truncated by the war of 1914. The momentum was halted and in spite of the tremendous amount of research done between the two wars by Peyrony, Breuil, Vaufrey and others, I think it is not unfair to say that until shortly after 1945 there was another period of decline. Since the last war the vigorous young group of such people as the Bordes, Escalon de Fonton,
Combier, Leroi-Gourhan, has seemed to be beginning a new cycle of energy and interpretation. Each of the other periods of renascence lasted about fifteen years; but, judging from the productivity of the new group recently there seems no danger of another imminent decline.

(A) Until World War I.

Strictly speaking, the History of the Solutrean dates from 1834 when Jouannet published his observations at "Badegol". He offered no illustrations, but his "longues pointes de javeline d'un joli silex blanc" are almost certainly the first reference to Solutrean laurel-leaves. The Abbé Audierne also visited Badegoule and seems to have figured a type of pointe à face plane (Audierne, 1863, Pl. I, fig. 2). But 1863 and 1864 saw the Solutrean first identified as a distinctive industry when Christy, Lartet and de Vibraye did their classic work in the Les Eyzies region.

It is only a minor point as to which of the two parties first began work in Les Eyzies. De Vibraye may have arrived first and even have made the first excavation at Laugerie-Haute (Cartailhac and Breuil, 1907:6), but he seems to have retired gracefully in favor of Lartet from whom, he stated gratefully, he had learned everything he knew (de Vibraye, 1864). The section at Laugerie-Haute recently published by Kelley (1955, fig. 2) shows that de Vibraye and his assistant Franchet clearly distinguished the strati-
graphic and typological distinctions between what later became the Solutrean and the Magdalenian.\(^1\) Lartet's and Christy's excavations at Laugerie-Haute, Gorge d'Enfer, the Grotte des Eyzies and Badegoule brought to light archaeological layers of the Age du Renne characterized by long lanceolate points. Even though Lartet's famous first classification was based on faunal criteria, their first publications show that he was fully aware of the value of industrial distinctions for establishing chronological divisions between the Quaternary sites. Their 1864 article in the *Revue Archéologique*, in which they link Le Moustier with Abbeville and St. Acheul on the basis of the bifaces, clearly shows this. For Lartet these were types of industries rather than periods, though as will be shown later he was not always entirely consistent in this respect. He was never willing to separate Laugerie-Haute, Laugerie-Basse and La Madeleine as separate periods, since he held that the fauna was essentially the same for all three; but he recognized three kinds of sites — or facies — in this Reindeer Age: the type of Aurignac and Gorge d'Enfer, the Laugerie-Haute type, and the type of La Madeleine. The relative antiquity of each was

\(^1\)The date of this drawing is unknown, but Kelley (ibid., p. 48) suggests that it dates from the time of de Vivraye's excavations, i.e. 1863. This is impossible, since the explanation of the stratigraphy accompanying the sketch describes Couche C as being "l'analogue du Solutréen." Solutré was not discovered until 1866, and the term "Solutréen" did not come into use until about 1872.
based on the fauna associated with the artifacts.

Meanwhile, de Vibraye had gone from Les Eyzies to Charente in 1863 to dig with his friends the Tremeau de Rochebrunes at Combe-À-Rolland and Montgaudier, and the following year he excavated at Fourneau du Diable (de Vibraye, 1864). No doubt it was de Vibraye's familiarity with the Laugerie-Haute material which enabled Alphonse Tremeau de Rochebrune to state of the Combe-À-Rolland industry that "il offre une similitude complète avec celui d'une seule localité du Périgord, la station de l'Augerie haute" (A. Tremeau de Rochebrune, 1866:97). This seems to be the first attempt to correlate one Solutrean site with another, but he did not suggest that the two were chronologically equivalent. Incidentally, Alphonse Tremeau de Rochebrune seems to have coined the term "feuille de laurier" and used it for the first time in this publication (ibid., p. 97). This was the beginning of the famous or infamous Solutrean botanical terminology; G. de Mortillet used the expression in his Promenades préhistoriques À l'Exposition Universelle the following year and may have thought up the term "feuille de saule" used in that publication (G. de Mortillet, 1867:195).

In September of 1866 Arzel discovered the Cros du Gharrier at Solutré and began excavations with de Ferry. They appealed to Edouard Lartet for help in classifying their materials, and he sent them a collection of flints
from Laugerie-Haute which enabled them to recognize that "ces armes (têtes de lances et de flèches) ont les plus grands rapports avec celles de Laugerie (Dordogne) trouvées par M. Lartet" (de Ferry 1867:116). This quotation, from a letter written by de Ferry in February in 1867, antedates Gabriel de Mortillet’s pronouncement of this correlation by over a year.

A tremendous boost was given to French prehistory when the Congrès International d’Anthropologie et d’Archéologie préhistoriques met in Paris in 1867, coinciding with the exposition. An exhibition of prehistoric artifacts brought into the open the need for a classification of the recent discoveries, and Gabriel de Mortillet was placed in charge of such a classification under Lartet’s general direction. Lartet’s discussions in the proceedings of the Congrès show that he tended to regard the difference in artifacts as representing chronological sequences, but he continued to base his sequences on zoological and paleontological criteria and to remain dubious about the value of subdividing the "époques" at all: "Peut-être serait-il possible d'établir dans les deux premiers groupes quelques subdivisions; mais M. Lartet ne croit pas devoir entretenir le Congrès de ces subdivisions trop peu étudiées" (E. Lartet 1868a:133). De Mortillet had no such qualms; for him periods should be defined on the basis of the industrial products found, and arranged in se-
quences like geological epochs.¹ The guide-book he put out (G. de Mortillet, 1867) shows that he considered the Laugerie-Haute period to be intermediate between Laugerie-Basse and the First Cave or Great Bear period (which was later identified with Aurignac). In other words, the correct sequence for the cave deposits: Le Moustier - Aurignac - Laugerie-Haute - Laugerie-Basse - was already established at the first try. And so was the stereotype for the Solutrean: he described briefly the laurel and willow leaves found at Laugerie-Haute, as well as the stemmed and shouldered points, and declared that except for a few pieces of worked bone "à Laugerie-Haute... on trouve presque exclusivement des silex" (ibid., p. 195). Although de Mortillet was clearly under the influence of the great Larret in this classification, his own inclinations and methodology show through. His use of the expression "époque" in referring to Laugerie-Haute and Laugerie-Basse reveals that he saw these assemblages as equivalent to periods in the geological sense used by d'Orbigny.

Two great controversies were hatched at this Paris Congress. The first, revolving around the existence of Tertiary Man, does not concern us here. But the second, the problem of the Hiatus between the Palaeolithic and Neolithic

¹But was it apple-polishing or indecision on this debatable point which led de Mortillet to state, at this same Congrès, "pour fixer l'âge d'un silex, il faut faire plus attention à la faune qui l'accompagne qu'à la forme même de l'objet"? (see p. 108 of the Proceedings of the 1867 Congrès).
(as Lubbock had just named these divisions of prehistory) was the storm which was to toss the Solutrean for the next thirty years. Did the flints of Laugerie-Haute, so similar to those of the Danish middens and those of the Polished Stone Age in France, really represent a transition from the Reindeer Age? In the first issue of Reliquiae Aquitanicae in December 1865, Lartet had stated his belief in the complete separation of the two: "This is a striking contrast, involving the supposition of there having been a great lapse of time between the two periods" (Lartet and Christy 1865-75:7).

But at the 1867 Congress he hesitated when faced with de Vibray's flints from Laugerie-Haute and with the burials from Solutré, and decided,

Le tout est de l'époque de Laugerie-Haute, époque qui peut-être a été faite trop ancienne dans les vitrines de l'exposition. Nous considérons cette époque comme antérieure à celle où commencent les premières manifestations artistiques. Avec le renne, en effet, sont rencontrés l'éléphant et le grand cerf d'Irlande. Mais nous nous sommes depuis lors demandé, M. Franks et moi-même, si cette station n'appartiendrait pas à une époque de décadence artistique et de progrès industriel, peut-être à la transition du premier âge de la pierre au second. Les têtes de flèches qui sont ici représentées ont beaucoup de ressemblance avec celles de la pierre polie.... L'âge du renne n'est peut-être pas aussi ancien qu'on le croyait d'abord.... Je vois dans les instruments figurés par M. de Ferry une grande analogue avec certaines pierres du Danemark. Nous assistons peut-être ici à la fin de l'âge de la pierre simplement taillée. Il n'y a rien dans ces sépultures qui puisse rappeler une date récente" (E. Lartet, 1868:360–61).

This viewpoint, backed by Lartet's prestige, must have been a hard blow to de Mortillet's new classification.
It came under considerable criticism at this time, and perhaps the author's prickly personality and extreme rationalism had already won him enemies who were happy to help pull down the new scheme. But there is no sign that he recanted. His evangelical faith in the Laws of Universal Progress told him that the Laugerie-Haute period, since it was poor in worked bone and art, must come before the Laugerie-Basse/La Madeleine period if the universe was to remain explicable.

It may seem odd that so little attention was paid to de Vibraye's and Franchet's stratigraphy at Laugerie-Haute in discussing this question, since they had demonstrated that the Magdalenian lay over the Solutrean and thus separated it from the Neolithic. Part of the reason for this neglect lies, I think, in de Vibraye's declining interest in prehistory at this time; although present at the Congress he seems to have made no reference to his own work. A more weighty reason probably was the suspicion with which their excavation methods were regarded by other prehistorians. John Evans, for example, speculated that the enormous block overlying the deposits may have "disturbed and mixed two sets of deposits" (Evans 1872:435) although on the whole he seemed inclined to accept their stratigraphy. But Pilet years later (1894a:129) claimed that Franchet had told him that in their excavating they were interested only in engravings and sculptures, and paid no more attention to stratigraphy than would a gold
miner hunting nuggets. This is an exaggeration, but it indicates the hesitation in accepting the Laugerie-Haute stratigraphy at its face value.

Meanwhile, Dupont had been working in the Lesse valley in Belgium, and late in 1867 he wrote de Mortillet to support his classification. Dupont identified (erroneously, as it turned out) his site of Pont-à-Lesse (sometimes called Trou Magrite) with Laugerie-Haute and placed it under Chateaux and Furooz, which corresponded to Laugerie-Basse and La Madeleine. Thus,

L'âge de Laugerie-Haute n'est donc pas une transition directe vers l'âge de la pierre polie; il a été suivi d'une véritable décadence dans l'art de tailler le silex, lequel a repris ses progrès postérieurement à l'âge du renne, pour atteindre bientôt son apogée. Mes preuves sont stratigraphiques et paléontologiques, les unes et les autres incontestables. (Dupont 1867: 469).

He followed up this short note with a longer article in January 1868 to the Belgian Academy, where he tried to give the proofs for his position. It must have given dubious comfort to de Mortillet, for Dupont followed Lartet in favoring paleontological criteria of classification and in viewing artifactual classifications with some suspicion. He linked Pont-à-Lesse with Laugerie-Haute on purely paleontological grounds and nowhere stated expressly that the flints were the same. His argument was that Lartet and Christy were originally right because their diagnosis of the age of the flints of Laugerie-Haute was dictated by paleontology, whereas
Augustus Franks (of the British Museum, who had been at the 1867 Congress with Lartet) based himself on the typological resemblances of the flints with the Neolithic. Dupont's attitude here is a beautiful illustration of one philosophical point of view at this time: he sees that Franks' theory implies a belief in a principle of continuous progress in human works which he (Dupont) was prepared to admit might be valid for prehistoric periods in general but which was not demonstrated for each particular age "malgré ce que peut avoir de séduisant la loi du progrès continu" (Dupont 1868:40). This last seditious crack at one of the cherished principles which de Mortillet had expressed in capital letters at the end of his Promenades préhistoriques à l'Exposition Universelle, together with weakness of Dupont's stratigraphic arguments, must have decided the editor of Matériaux that a few lines outlining Dupont's support without going into embarrassing details were enough for publication in his review (see Matériaux, IV, 1868:48).

More effective aid came from Solutré. De Ferry had already sent de Mortillet a gift of flints and bones from this site.¹ In February, 1868, the latter reviewed in  

¹This small collection is now in the Peabody Museum of Harvard University. When de Mortillet was appointed Assistant at the Saint-Germain museum in 1868 he decided to avoid possible conflicts of interest by selling his personal specimens, and advertised them in Matériaux (G. de Mortillet 1868a). See Fig. 21 no. 7 in the present paper for illustration of one of these artifacts.
Matériaux (G. de Mortillet 1868d) an article Arcelin had written for the Revue du Lyonnais the previous month (Arcelin 1868b). This review is a very important document in the history of the Solutrean; not so much because de Mortillet tied the new site to Laugerie-Haute (this had already been done by de Ferry the year before) or because it allowed him, armed with Arcelin’s new ammunition, to castigate the views of the transitionalists, who favored a Solutrean-Neolithic evolution,1 but rather because de Mortillet now stated unhesitatingly that "les pointes de silex en feuille de laurier finiment travaillées, que nous designerons sous le simple nom de type de Laugerie-Haute, sont donc bien caractéristique d’une époque distincte, d’une civilisation particulière", and that the flint working was closer generically to Le Moustier than to the Neolithic,


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1 In a letter to de Mortillet shortly after, Arcelin indignantly denied that he agreed with de Ferry and Franks in supporting the transitionalists, and maintained his firm belief in a hiatus after the Palaeolithic as well as in the derivation of the Solutrean from the Mousterian. Like de Mortillet, but for different reasons, he favored a transition at one end of the Solutrean but not at the other (Arcelin, 1868a). But in the earlier article in January which de Mortillet had reviewed, Arcelin had implied that the people of Solutré were driven out or exterminated by the invading Neolithic pastoralists from the East. And, for whatever it may be worth as evidence, he stated the same belief in rather more imaginative terms in the celebrated science-fiction novel about prehistoric Solutré which he wrote under a pseudonym (Granile, 1872).
When de Ferry and Arcelin presented a paper at the Third session of the International Congress in Norwich and London in August of 1868, they fully identified their views of Solutré and Laugerie-Haute with de Mortillet's and placed it sequentially before the sites of La Madeleine, Grotte des Eyzies and Bruniquel. Their paper, incidentally offered the first classification of Solutrean foliate points—a three-fold geometric one of symmetrical laurel leaves, convex-based points and losangular points (de Ferry and Arcelin 1869).

Augustus Franks, the authority in prehistoric archaeology at the British Museum, had influenced E. Lartet in Paris in 1867, but at the Norwich-London Congress he expressed no opinion on the transition problem. Nevertheless, in his Guide to the Christy Collection, written in August 1868 in preparation for the Congress, he grouped the artifacts into four classes: (a) Le Moustier, (b) Gorge d'Enfer, and Aurignac, (c) Les Eyzies, La Madeleine and Bruniquel, and (d) Laugerie-Haute and Badegoule. The latter class he described as having chipped lance-heads "closely resembling in type the flint spear-heads of Denmark and England" (Franks 1868:6). It is not clear from the text whether he meant these groups as chronological divisions or merely as assemblages of types, but probably he had the former view in mind.1

Meanwhile, de Mortillet was busy classifying the

1A remark by Evans (1872:434-35) suggests that Franks changed his opinion on this topic sometime later.
collections at the new Musée National at St.-Germain-en-Laye, and it afforded him an excellent opportunity to put his evolutionary and classificatory ideas across. His friction with Bertrand, the Conservateur, over the choice of "type" or "époque" for the labels in the cases has often been pointed out (G. and A. de Mortillet 1900:240). De Mortillet lost out to his superior in the museum, but in his own journal he could publish what he liked. Accordingly, in his classic essay Promenades au Musée de Saint-Germain, published in Matériaux late in 1868, he classified the cave deposits in the sequence he had been advocating:

1ère époque des cavernes ou époque du Moustiers.
2e époque ou époque de Solutré.
3e époque ou époque d'Aurignac.
4e époque ou époque de la Madeleine.

It will be noted that he had now changed his mind about the relative position of the Solutrean and placed it before the "époque d'Aurignac" which he was shortly to suppress totally. The definition of the Solutrean was essentially the same as in his Promenades préhistoriques à l'Exposition Universelle of 1867 -- "les pointes de Solutré sont le perfectionnement et le complément des pointes du Moustier" and "les instruments en os sont rares, très-rares" (G. de Mortillet 1868:457), but there is one important innovation: he had abandoned the expression "époque (or type) de Laugerie-
Haute" in favor of "époque de Solutré". Curiously enough, this change in the type-site aroused no opposition in spite of Laugerie-Haute's clear priority (or even more exactly, the priority of Eadegoule) and de Mortillet's professed belief in the geological approach to prehistory. Reinach (1889:197) is almost alone in regretting that Solutré prevailed over the original site. I believe it has never been pointed out that the change, which de Mortillet explained was made to avoid confusion between Laugerie-Haute and the nearby site of Laugerie-Basse, was in reality the result of a blunder. De Mortillet was under the misconception that Laugerie-Haute and Laugerie-Basse were the upper and lower sections of the same site situated on a slope like Solutré. The plan he presented at the Congress of Brussels in 1872 (see fig. 8 of G. de Mortillet 1873, reproduced in the present paper as fig. 26) shows indisputably that he did not realize they were separated by nearly a kilometer. So Laugerie-Haute, which has contributed more to our knowledge of the Upper Palaeolithic and especially of the Solutrean than any other site in France, was deprived of its chance for terminological fame in favor of the wholly atypical site of Solutré. Evidently de Mortillet had never visited Laugerie-Haute, up to 1872 at least.

De Mortillet's famous communication to the Académie des Sciences on March 1, 1869 (Essai d'une classification des
sävernes et des stations sous abri, fondée sur les produits de l'industrie humaine) was no more than the formal and concise recapitulation of his methodology and classification of the 1868 Promenade au Musée de St.-Germain. Cartailhac reproduced it in his newly-acquired Matériaux, and it was read (by Cazalis de Fondouce) at the International Congress in Copenhagen in the same year. By now almost all the European prehistorians were familiar with his scheme.

The Franco-Prussian war of 1870-71 temporarily check- ed French prehistoric research. Edouard Lartet died, the scientific journals were not published and de Mortillet himself was busy keeping the occupying army out of the St.-Germain museum. It is clear from the few notes published that he was not entirely happy with his newest classification, for the Aurignac period disturbed him. Probably out of respect for Lartet he retained the Aurignac period until the latter's death; a letter to Marlet, the Swiss prehistori- an, dated June 2, 1870 indicates that he was still using the term at that time (Marlet 1873). But with Lartet's disapp- earance in 1871 de Mortillet decided to suppress the Aurignacian, and at the Brussels International Congress in 1872 the scheme which was to have so great an effect on prehist- orians all over the world was given its final rub. It was also the first use of the word Solutrésen, since de Mortillet had decided to form adjectives and nouns based on the type-
sites instead of using the terms époques or types. His definition of the Solutrean had now taken the form it was to keep, with few changes, until his death: it occurred at a time when the climate was dry and cold; the human type was modern, brachycephalic and "mesatiquephale"; there were no instruments in bone or antler; the fauna was still largely Quaternary; the crude Mousterian stone work had been transformed into finer technique, side-scarpers had given way to true end-scarpers, and sculptures (in stone) were making a timid appearance. Interestingly enough, he here used the superposition of the Magdalenian over the Solutrean at Laugerie-Haute as proof of the impossibility of a transition from the Solutrean to the Neolithic -- this at a time when many prehistorians were denying the validity of this stratigraphy.

It should be kept in mind of course that even now the Solutrean was represented by only six sites: Laugerie-Haute, Solutré, Badegoule, Fourneau de Diable, Combe-à-Rolland and, after the Parrot brothers' excavations of 1870-71, the Grotte de l'Eglise at Exoudeuil (Dordogne). In the Brussels paper of 1872 (p.447) de Mortillet had explicitly stated that while he made no claims for the universal validity of his scheme, he was certain it held for France, Switzerland, the Rhine region, Belgium and even England. In 1872 John Evans made the first suggestion that finds in England (at Kent's Cavern, the implements since called "Proto-Solutrean")
-- see Evans 1872, figs. 390, 391, p. 452) could be related to Lauterie-Haute. In 1877, at the A.F.A.S. meeting in Le Havre the Reverend Mello stated that he had found Solutrean-like tools in Robin Hood's Cave and Wookey Hole in the Creswell region (Mello 1878:705).

The new classification of de Mortillet was published not only in the Proceedings of the 1872 Congress, but also in the new Revue d'Anthropologie (1872), presented at the first meeting of the Association Française pour l'Avancement de Science in Bordeaux in the same year, and reproduced in Matériaux. With such lines of communication, the small world of prehistorians were quickly informed and most of them eventually fell in line with the new scheme.

But not all did by any means. In his Précis de Paléontologie Humaine of 1870 Hamy had modified Lartet's and de Mortillet's schemes so that Aurignac followed Le Moustier as a transition, and -- as Lartet had originally believed -- Lauterie-Haute and La Madeleine were contemporary and perhaps only local technical specializations or different neighbouring tribes. He agreed that Solutré, Lauterie-Haute and Pont-à-Lesse were of the same type, yet he could not make up his mind where Solutré fitted chronologically and was inclined to place it (on the basis of the stone sculpture at Solutré and the laurel leaves) after La Madeleine and in transition to the Neolithic (Hamy 1870:340). But Hamy's most valuable
suggestion was that both the Solutrean and the Magdalenian might be further subdivided, with, in the case of the Solutrean, Laugerie-Haute, Solutré and Pont-à-Lesse representing an earlier stage and Excideuil a later one (see Hamy 1870, Tableau I). It was nearly a decade before de Mortillet adopted this idea.

Cartailhac, in his review of Hamy's book in Matériaux (1872:201-14) was highly critical of Hamy's chronology, knowing as he did that de Vibraye's section at Laugerie-Haute, Massenat's at Badegoule and the excavations at Bourdelles and Excideuil had all revealed the Solutrean under the Magdalenian (ibid., p. 213) and (as he then thought) directly over the Mousterian. It is indeed odd that Hamy was unaware of these stratigraphies. Probably, like de Mortillet, he had never visited the sites. Another reason may be that he shared the doubts expressed a little later (1872) by John Evans concerning the validity of the Laugerie-Haute sequence. Evans knew of Franchet's and de Vibraye's stratigraphy but thought the deposits were somehow disturbed, concluding

I am not quite satisfied that the arrangement proposed by M. de Mortillet will eventually prove to be correct but think it possible that his second division (i.e., the Solutrean) may, on the production of further evidence, be transferred to the end of the sequence (Evans 1872:434).

Similarly, he was dubious about placing Aurignac after Solutré and never fully accepted the notion; in 1880
he was unregenerate enough to write Raoul Tremeau de Rochebrune, after the excavations at Les Cottès (Vienne), that

... cette découverte pourrait bien avoir tendence à prouver qu'après tout La Laugerie-Haute est postérieur à Aurignac. (R. Tremeau de Rochebrune 1881:37).

It would be tedious to go into the Hiatus versus Transition controversy at length here. Sides were sometimes changed, but the position taken on this question was what determined each individual's attitude towards the Solutrean in the 1870's. E. Lartet (apart from his hesitations of 1867), G. de Mortillet, Bertrand, Evans (with reservations), Arcellin, Dupont and of course Cartailhac were in favor of a hiatus, the exact nature of which, however, varied with each individual. Broca, Gazalis de Fondouca, Franks (at first), Louis Lartet, Chaplain-Duparc, Piette, Salmon, Ducroft, Reinach, de Quatrefages, de Ferry and Hamy all believed in some kind of transition from the Solutrean to the Neolithic. The extent to which this alignment was based on personal rivalries and dislikes is occasionally hinted at in the discussions and publications of the day, but this fascinating topic cannot be taken up here. The controversy reached its peak at the Lyon meeting of the A.F.A.S. in 1873, and although tempers ran high nothing was settled even after an excursion to Solutré. In 1872 the Abbé Ducroft and Lartet had expressed the view that the Solutrean at Solutré was transitional to the Neolithic, as demonstrated
especially by the winged and stemmed points found in both
(Ducrost and Lartet 1872:29). Since their book also criti-
cized Arceuí's methods of digging, the latter replied hot-
ly in an open letter to Ducrost and to the Académie de Mâcon,
concerning the Solutrean,

J'y vois au contraire une époque avec des caractères
parfaitement tranchés et radicalement distincts de
caux des époques antérieures ou suivantes" (Arceuí
1872:16).

Ducrost offered the transition theory again at the Lyon
A.P.A.S., and again Arceuí rejected it.

Meanwhile, in a review of the Parrot brothers' work
at the Grotte de l'Eglise at Excideuil (Dordogne), Hamy (1872:
561) had claimed — although the excavators had not — that the
close resemblance of the foliates with Danish stone work
proved that this site provided the proof of the often-denied
transition between Palaeolithic and Neolithic. The Parrots,
as it happened, had paid little attention to stratigraphy
but had excavated the site as a single period though several
levels were certainly represented there.

Gazalí de Fondouce was less clear-cut in his opin-
ion, and at times his vacillations seem to reflect a certain
perversity. He criticized Ducrost in his review (in Matéria-
ux, VIII, 1873:81) of Ducrost's and Lartet's 1872 publica-
tion, whereas as the Lyon A.P.A.S. meetings in 1873 he was
inclined to believe that a Solutrean-Neolithic transition
might be found in the Gard region (see Matériaux, VIII,1873:
Shortly after he suggested that a single flint-working technique could be traced from the Acheulian to the Neolithic via the fine Solutrean points (1874:119). The explanation for these contradictory stands lies in the emergence of a new classification by the Belgian Dupont, who gained a number of followers who objected to the rigidity of de Mortillet's scheme.

Dupont had never been enthusiastic about the implications of de Mortillet's classification, and rightly criticized it; but the one he proposed was based on too narrow a view of data, most of it Belgian. In brief, he proposed two parallel phyla in prehistoric Europe instead of the linear classification of de Mortillet: there were two regional independent groups, the trogloydites in the caves and mountains, who showed a continuity from the Mousterian to the Magdalenian; and the podlounomites of the plains and valleys, who could be traced through the Acheulian-Solutrean-Neolithic sequence and who eventually (as the Neolithics) triumphed over the Magdalenians. This suggested a very slow change instead of a sharp hiatus, with various groups living contemporaneously and one part of them (the Solutreans) elaborating their industry into a Neolithic type while the climate gradually became milder and in turn more advanced people moved in. In other words, there was a gradual mingling of peoples, with the old groups slowly absorbed (Dupont 1874).
Individuals such as Cazalis de Fondouce were attracted towards this kind of thinking. For one thing, as the latter explained at the Stockholm Congress in 1874, it did away with the embarrassing obstacle presented by the stratigraphy of such sites as Laugerie-Haute where the Magdalenian was found over the Solutrean; in Dupont's scheme, this merely meant that the Solutreans had moved off elsewhere in the district while the Magdalenians occupied the site, and that they (the Solutreans) returned shortly as Neolithics. But it was too much for most prehistorians to swallow, and Dupont's scheme never really caught on although it survived with people like Salmon into the 1890's. Nevertheless, the use of a parallel phyla concept at this early date is historically interesting, and Dupont's ideas are rather reminiscent of those adopted today by some Central Europe prehistorians to account for the Szeletian.

At about this time, too, another critic, this time in England, was denouncing de Mortillet. Boyd Dawkins was not happy about dividing the Palaeolithic into periods on the basis of fauna, but he utterly rejected any scheme based on the classification of artifacts. He insisted, in his famous phrase, that "there is no greater difference in the implements of any two of the palaeolithic caves, than is to be observed between those of two different tribes of Eskimos, while the general resemblance is most striking." (Dawkins
1874:352). His point that the principle of classification by the relative rudeness of artifacts is wrong, was a good one; unfortunately Dawkins' criticisms were over-cautious and negative, and he offered no suggestions himself for subdividing the Stone Age.

From as early as 1875, Piette had opposed the hiatus but his earliest arguments against it were based wholly on typological resemblances between the Neolithic and the earlier stages. He decided that the closest links were with the Solutrean, on the basis of the arrowheads, javelins and lance-heads found at Solutré, Languerie-Haute, Excideuil and Barregoule; but he hedged by asserting that the actual transition had not necessarily taken place in France (Piette 1876).

In the preceding year, in reporting on his excavation at Dourdan, he noted that the Solutrean was by no means as deficient in worked bone and antler as most people thought:

"Dans l'état actuel de la science, l'industrie solutréenne semble avoir tout entière, en France, évolué vers l'industrie magdalénienne avant l'avènement de l'ère néolithique. Presque partout la partie supérieure des gisements à pointe de lance en feuille de laurier présente quelques outils et quelques armes en bois de renne" (Piette 1875:295).

Riout de Neuville's suggestion (1877) that undoubtedly the Solutrean did appear before the Magdalenian but that it may equally well have survived beyond it, was not particularly original; but there is a note of ingenuity in his statement that the Solutrean village life (such as was
presumed at that time to have existed at Solutré) provided a better transition to the Neolithic than did the nomadic Magdalenian existence.

Ducrost and Arzelin (1876) supported de Mortillet "au moins en ce qui touche la superposition du moustérien et du solutréen" and referred to the stratigraphy of Solutré where the lower hearths yielded bifaces and Mousterian points.\(^1\) Apparently they found de Mortillet's classification more palatable than Dupont's, in spite of Ducrost's views on the hiatus.

The end of this controversy came in 1878, when A. de Maret in Charente provided de Mortillet with the indisputable vindication of his views. In that year de Maret published the first results of his work at Le Placard which seemed to prove not only that nothing intervened between the Mousterian and the Solutrean, but also that,

... Le Placard nous fournit une preuve évidente que le Magdalénien ou époque de la Madeleine, caractérisée par le mélange des instruments en pierre et de ceux en os et en bois de cervidés, repose directement sur le solutréen ou époque de Solutré, et que cette dernière époque n'est point une période de transition entre la pierre taillée et de la pierre polie, comme quelques personnes l'avaient admis, mais qu'elle constitue bien une période essentiellement distincte" (de Maret 1878:47).

The following year at the Congrès Archéologique de

\(^1\)Combier (1955a:1202) suggests that these lower hearths are an atypical Lower Perigordian, possibly with some Mousterian or Acheulian tradition.
France in Vienne he reported his finds in detail, identifying Le Placard with Excideuil and urging the validity of the classification of periods by industry rather than by fauna. He pointed out two important facts which de Mortillet soon recognized: that the stratigraphy at Le Placard provided proof that the Solutrean could legitimately be subdivided into a Lower Solutrean (with laurel leaves) and an Upper Solutrean (with shouldered points); and that the "Upper" Solutrean was by no means lacking in worked bone and antler (de Mortillet 1880). 1

For de Mortillet the triumph was complete, especially since Massenat had now excavated at Laugerie-Haute and Badegoule and had uncovered the same Solutrean – Magdalenian stratigraphy. He lost no time in pointing this out, at the International Congress of Anthropological Sciences in 1878 and in various journal articles (J. de Mortillet 1878). With the publication of the first editions of Musée Préhistorique (1881) and Le Préhistorique in 1883, the Solutrean -- and indeed the whole Palaeolithic -- passed into a state of suspended animation for about twenty years as far as official prehistory was concerned. The Solutrean's status may be summarized as follows: like the Magdalenian, it occurred during the post-glacial period though the climate was milder than

1In the 3rd edition of Le Préhistorique (1900:27) the Upper Solutrean with shouldered points was given the name Éyzien, after the Grotte des Éyzies; but the term never caught on and soon disappeared.
in the Magdalenian; it was a period of climatic transformation which, according to de Mortillet, perhaps explained the great industrial changes; it was the shortest of the four quaternary periods (11,000 years was its estimated duration) and the most restricted spatially, being found only in France, Belgium, England, northern Italy (Menton) and Algeria; end-scrapers originated and developed widely in the Solutrean, and bone work appeared at the end; no skeletal remains of Solutrean Man were known.

The 1860's are dull times for historians of the Palaeolithic in France. Whether the original enthusiasm had waned when the initial battle for the existence of prehistoric man was over, or whether the opinions and dictates of a few masters, set out in magistral books like Le Préhistoire, had induced hardening of the categories, is hard to say. Certainly Gabriel de Mortillet's peculiar character must be taken into account here, for it crops up in the debates recorded in the minutes of the séances of various societies and in literary exchanges. Less bellicose men might be pardoned for not caring to tangle with him publicly. His abiding faith in the "law" of human progress and of similar development had a stultifying effect on efforts to work out regional variations and non-evolutionary classifications. As his old colleague Cartailhac said in his obituary notice, "M. G. de Mortillet avait un grand souci de l'ordre et de la
métode" but also "l'éminent paléothnologue semblait considérer dangereux l'emploi des points d'interrogation" (Cartailhac 1898:609). And of course there were no International Congresses of Prehistoric Anthropology and Archaeology between 1880 and 1889.

These doldrums are a reality, experienced by the prehistorians who lived in that decade and not something conjured up by students eighty years after. The criticisms by Cartailhac (?) in Matériaux (see Anonymous 1882-83, 1886a) point out the increasing sterility of Paenolithic research since the death of Lartet, a sterility which not even the fight for Tertiary Man could overcome, and warn of the dangers of stagnation. Boule (1888:131) said:

Il faut bien le dire, les préhistoriens qui étaient, il y a vingt ans, d'habiles naturalistes, se confinent aujourd'hui dans l'Archéologie pure et paraissent considérer comme résolues les questions d'Anthropologie quaternaire.

The de Mortillet and their followers, considering the battle won, were directing their energies against those they suspected of wishing to destroy their work -- the clerical and anti-evolutionary forces. Dr. Fauvelle, one of the contributors to their new journal L'Homme, raged against the "bataillon sacré" who were set to confuse the issues by introducing "arbitrary classifications" which would put the Mousterian in the middle of the Solutrean and Magdalenian, and the Chellean in the Solutrean and Robenhausian (Fauvelle,
1884:361). Yet this is one of the few references to the Solutrean in the years immediately after the publication of Le Préhistorique. Cartailhac, in his 1889 synthesis, added nothing to de Mortillet's treatment except for suggesting that Solutré and Menton might be retarded regional variants, contemporary with the Magdalenian in the Southwest (Cartailhac 1889:57).

D'Ault de Mesnil in the north of France had been struck by the presence of what Commont was later to call the Warm Mousterian; he proposed to link it with the Solutrean and call it the Manchecourtien. He published almost nothing, but at the exhibit of the Société d'Anthropologie de Paris at the Exposition Universelle in 1889 he characterized it as part of the Middle Quaternary, between the Mousterian and the Magdalenian, with a dry, milder climate, an industry with many points, end-scrapers, knives and blades -- all apparently indicating a transition between the Mousterian and the Magdalenian (Anonymous 1889:168). But D'Ault de Mesnil never pushed the theory to any extent, and it never caught on.

Salomon Reinach, whose sense in later years was not always good, gave some sensible advice in his Antiquités Nationales - Description raisonnée du Musée de Saint-Germain-en-Laye of 1889. He pointed out that the geological methods, when applied to prehistoric problems, could end in fallacious solutions, and that parallelism in artifact forms in widely
separated regions was only to be expected. While admitting that the Solutrean was topped by the Magdalenian in certain areas, he insisted that this was only a local fact and nothing more. He found Dupont's classification more satisfactory than de Mortillet's.

About this time Philippe Salmon was setting up an ambitious new classification which is much too complex and unlikely to discuss here; but it suppressed the Solutrean as a period (a popular game at this time) and made it a local, sporadic manifestation whose only worth was as a passage between the Mousterian and the Magdalenian (Salmon 1891-92; 120, 175). At the A.F.A.S. meetings in Marseilles in 1891, C. de Mortillet reacted vigorously against this suppression and maintained the integrity of the Solutrean. Chantre and Chauvet, in the discussion period, sided with de Mortillet (Chauvet 1892a) and the incipient revolt seems to have died, although in 1894 Salmon again repeated his views that the Solutrean was too localized and rare to qualify as a true period. But the party line was followed faithfully by such disciples of the established system as Massenat and Girod, who in 1893, after their researches along the Vézère, announced that at Laugerie-Haute they had found an indubitable Mousterian-Solutrean transition, and at Gorge d'Enfer an equally sound passage from the Solutrean to the Magdalenian (Girod, 1894; Massenat and Girod 1894; 746). 1

1 They claimed to have found a Solutrean level where large bifaces and side-scrapers, discs, etc., were associated
Attacks such as Reinach's and Salmon's were to a large part based on ignorance of stratigraphy and distributions, and could make little headway against those who knew the field conditions. Equally, they were sterile as a method of stirring up new concepts and classifications. This had to await new and more informed field work. Perhaps the beginning of this movement can be seen in the new excavations of Arceolin at Solutré and of Piette in the Pyrenees. In his 1890 synthesis of excavations at Solutré, Arceolin seemed disturbed about the apparent contradictions between de Mortillet's sequence and the stratigraphy which showed worked bone under the Solutrean levels.

Piette's treatment of the Solutrean question shows all the exasperating shifts of opinion and coinage of bizarre nomenclature which make his schemes so difficult to follow. In 1880 he had proposed that the Magdalenian and the "Sulis-trienne" (i.e., the Solutrean) periods be accepted as subdivisions of the Leptolithe or "period of light stone". In 1894 he stated that the Solutrean was, in part at least, the "époque éléphantienne" and interpreted the differences between the industries of Solutré and Erassempouy in terms of climate with laurel leaves; this situation, however, can be found in most Solutrean deposits. At Gorge d'Enfer they found "feuilles de laurier en os" (actually, Aurignacian cleft-base bone points), which they placed in the lower Magdalenian, and which neatly supplied the transitional stage missing at Laugarie-Haute.
(continental vs. maritime) and again hinted that some of these tribes had persisted into the Neolithic (Piette 1894a: 134). Around 1895 he abolished the Solutrean entirely when it failed to fit into his evolutionary scheme according to which sculpture developed before engraving and belonged in a single period — although as Breuil (1909b:398-99) pointed out, this is contradicted by his own stratigraphy at Gourdan and Brassempouy. In 1898, writing about Brassempouy, the Solutrean is seen caught in the contradictions involved in confusing the Perigordian and the Magdalienian:

Le solutréen n’est pas un étage; il n’est, dans la plupart des cas, sinon dans tous, qu’une assise de la partie supérieure du magdaléniennes; et s’il est exact qu’il affleure encore à sa base, à plus forte raison peut-on dire qu’il n’est qu’un facies particulier des assises magdaléniennes. Il apparaît tantôt avec les débris de la faune éteinte, comme à Brassempouy, tantôt avec ceux de la faune émigrée, comme à Saint-Martin-d’Excideuil, et à Solutré. On le voit même, dans le bassin du Rhône, avec des vestiges de la faune actuelle, sauvage ou domestique; mais alors il est un facies du néolithique. En somme, c’est une manière particulière d’employer le silex, ce sont des armes d’une forme spéciale qui donnent son caractère à des assises diverses, surtout à l’une des assises supérieures de la nomenclature. Mais on peut conserver ceux de silex solutréens; ils expriment une idée exacte, puisque l’on a trouvé à Solutré des silex d’une forme particulière (Piette and de la Porterie 1898:554-55).

This seems to be one of the first suggestions, not that the Solutrean did not represent a period, but that it merely represented a new way of working flint. The idea was to be a tenacious one.

In 1904 Piette again changed his mind and replaced
the Solutrean by the Papalieu. Obviously it was rough weather for the Solutrean. In one of his last publications, the year before his death, Gabriel de Mortillet reaffirmed his belief in the validity of the Solutrean as a period and in the origin of the Solutrean industry.

Comme évolution de la pierre, l'industrie solutréenne est purement et simplement une transformation normale de l'industrie moustérienne due à l'invention d'un nouveau procédé de taille. Ce procédé a permis d'amincir la pointe moustérienne en la taillant sur les deux faces et de lui donner une forme élegante (1897:22).

But by now even some of those who had formerly gone along with de Mortillet were turning against the scheme. In 1890 Arcelin had accepted it without many doubts; in 1900 he was opposing it vigorously, especially as he reconsidered the evidence from Solutré. As it happened, he was more wrong than de Mortillet was, for he confused the Perigordian with the Magdalennian and denied that the Solutrean preceded the Magdalennian here:

M. de Mortillet a pris cette station comme type d'une époque archéologique qu'il appelle l'époque solutréenne et qui aurait précédé l'époque quaternaire la plus récente ou magdalennienne. Je déclare qu'il m'est impossible de trouver à Solutré les caractères sur lesquels s'est appuyé M. de Mortillet pour lui assigner cette position stratigraphique et chronologique. Les belles pointes de lances et de flèches retrouvées en si grand nombre dans ce gisement ne sont pas particulières à un horizon déterminé...... Solutré fait échec aux classifications dogmatiques et intransigeantes, qui ont eu peut-être leur excuse au début de nos études, mais qui sont inconciliables avec les progrès de l'archéologie préhistorique (Arcelin 1900:5).
But the tone of the criticism reflects the widespread dissatisfaction at this time with the old régime. It was clear that new stars were rising. The third edition of Le Préhistorique, brought out by Adrien de Mortillet in 1900, was if anything even more rigid and dogmatic than its predecessors, and some of the reviews given it show that this was realized keenly by many of the leading prehistorians. It expressed itself indignantly against the regional nomenclatures which had sprung up — e.g., in Belgium. Rutot (1898) had equated the Neubayen with the Solutrean, and Schiattarella had found the Italian equivalent in the Vintimigliese period (G. and A. de Mortillet, 1900:242). But both the Belgian and the Italian were wrong, as it turned out, for both creations had no archaeological reality; but their thinking was basically correct and the criticisms by the authors of Le Préhistorique were based on a reactionary unwillingness to see innovations of any kind put forward if they conflicted with the dogma of the de Mortillet school.

1 In the table on p. 242 the de Mortilllets claim that John Evans had equated Cro-Magnon with the Upper Solutrean (the Eyzien of J. de Mortillet). This seems to be an error. Evans (1872, 1897) had attributed both laurel-leaves and shouldered points to the "Age of Laugerie-Haute" but attempted no subdivisions of the Solutrean.

2 This seems to have been the beginning of a long series of Italian misinterpretations of the French sequence. In 1902 Pighinili blithely assigned the Solutrean to the Campignian and placed it in the Neolithic! As recently as 1923 Battaglia could write that "a profound study of the Campignian still holds surprises for us, such as, first of all, that the French Solutrean is merely a regional and perhaps chronological facies of the Campignian, as I shall demonstrate on another occasion."
By now the elder de Mortillet had gone. Cartailhac and Capitan, faced with the contradictions revealed at Baoussé-Roussé and in the Pyrenees, were slowly marshalling the new men against the "tribu de Mortillet", as Breuil was later to call them. The *bataille aurignacienne* was fought out at the Congresses of Périgueux and Monaco and in the literary duel between Breuil and A. de Mortillet. The result not only reinstated the old Aurignacian but also inserted a whole period between the Mousterian and the Solutrean. Obviously new thinking about the nature and origins of the latter was not only permitted but required. For Breuil at this time there was no great problem: the Solutrean had evolved from the *Upper Aurignacian* (where its timid birth was evident in the Font-Robert horizon) and had evolved into the *Magdalenian* (Breuil, 1907a:346).

One of the casualties of Breuil’s onslaughts was Paul Girod, Massenat’s disciple, whose forgery of the CroMagnon section and misrepresentation of the Gorge d’Enfer materials were exposed in this battle. But his one valuable contribution to the Palaeolithic which should not be forgotten was the three-stage division of the Solutrean into periods characterized by *pointes à face plane* (Lower Solutrean), laurel leaves (Middle Solutrean) and shouldered points (Upper Solutrean). This division was based mainly on the *Laugerie-Haute* materials and has persisted to the present time with
little change; indeed, the present paper is in some respects an elaboration of this scheme.1

In the meantime, with the new interest in excavations a wider Solutrean distribution was being reported. It had been known in Cantabria since the first excavations at Altamira by de Sauvotola (Marlé, 1881: 279), but its full extent in Spain became known only with the explorations of Obermaier and Breuil in Cantabria and the Mediterranean provinces. The old idea that the Solutrean was merely a parochial culture or a highly localized variant of the Magdalenian was replaced by another extreme -- that, after all, the Solutrean was a widely distributed industry which could have extended into Africa and Asia. The new discoveries in Central and Eastern Europe seemed to substantiate this; perhaps Palaeolithic prehistorians had been influenced by the ex Orient

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1D. Peyrony (D. and E. Peyrony, 1938: 36-37) is probably correct in claiming priority for discovery of the pure pointe à face plane level at Le Ruth in 1908 and of recognizing it as part of the Solutrean. The implements had been found at Laugerie-Haute, and attributed to the Mousterian-Solutrean transition, long before in the 1880's by Marty (see A. de Mortillet, 1888: 1535) and by Massenat later (Girod and Massenat, 1892: 166). Girod (1906: 5-6) found the pointes à face plane at Laugerie-Haute only associated with laurel leaves, with no "pure" level; he therefore postulated that the pure levels were to be found only outside France and were brought in by invading Lower Solutreans from Central Europe just as they were developing laurel leaves. Peyrony (1908: 100), in his Baségoule publication, acknowledged that Girod had set out the three Solutrean levels and added "j'aurai l'occasion de prouver que sa classification est exacte en étudiant prochainement un nouveau gisement" (i.e., Le Ruth). So, although the original concept was Girod's, to Peyrony belongs the credit for establishing these Solutrean subdivisions stratigraphically. Parat (1900: 68) was probably the first to use the term Protosolutréen, at Le Trilobite, and Breuil used it in his 1912 paper (1913: 188).
The hypothesis of Montelius. The Polish prehistorian Zawisza had exhibited some of the peculiar leaf-shaped points from Eastern Europe in France as early as 1885, and had attributed them to the Solutrean (Anonymous, 1886b) but the idea seems to have been lost. Hœnès, in 1903, had described at some length the Solutrean of Central Europe; when he changed his mind some years later and reverted to the old idea that the Solutrean was, after all, a local industry and not found outside Western Europe, Obermaier and Maska (1911) criticized him sharply and insisted that the Solutrean was entitled to consideration as a widespread civilization. Comment's finding of "Proto-Solutrean" in the loess of the Somme valley seemed to confirm the belief in a widely-distributed Solutrean culture (Comment, 1911: 539-606).

Breuil's celebrated paper of 1912 had discussed the Solutrean distribution and had pointed out that it was not found east of the Rhône, nor in Iberia, Sicily, Africa or Phoenicia. He derived the fully developed laurel leaves from Eastern Europe, possibly from the Hungarian caves (1913: 193). Mayet and Pissot (1915) followed Breuil in supposing an origin somewhere in Eastern Europe, but were still unwilling to admit the Solutrean to full status as a civilization; rather, it was an industry but not a period, "en quelque sorte une industrie collatérale" which somehow had evolved parallel to the Final Aurignacian and the Early Magdalenian. They did not
deny that the Solutrean represented a stage in the progressive perfecting displayed by the development of prehistoric man, but for them the Solutrean lay somewhere outside the normal Aurignacian-Magdalenian continuity though the two civilisations may have influenced each other (1915:179-81). There is both an old-fashioned and a modern note about the suppositions of Mayet and Pissot, and their interpretation has always had sympathizers.

II Since World War I.

I have tried to show that until shortly before the First World War, the problems considered pertinent to the Solutrean were polarized around its validity as a period, on the one hand, and on its precise place in the Palaeolithic sequence on the other. But following the Aurignacian battle and the expanding horizons of the Solutrean, the locus of the problem shifted to that of its ultimate origins and, to a lesser extent, to its impact on the other Upper Palaeolithic cultures. Since there has been no real change in attitude towards the Solutrean since that time, I propose to concentrate the history of attitudes towards the Solutrean in the post-1918 period around the fluctuating positions taken by prehistorians to the problems of its genesis.

As described earlier, once the Aurignacian had been suppressed G. de Mortillet and his strictest followers never wavered in seeing the Solutrean as a natural transformation
of the Mousterian, and I can find no suggestion in de Mortillet’s writings that he ever considered that this evolution took place outside France. Dupont and Reinsch, it is true, would have derived the Solutrean by circuitous paths from the Acheulian without passing through the Mousterian; but for them, too, it was a development centred in France and Belgium. Perhaps Piette was the first to suggest that the Solutrean had originated wholly outside France, during the French Magdalenian:

L’industrie du Moustier et celle du Solutré ont pu s’y perfectionner quelque part pendant que notre pays était en pleine floraison magdalénienne. Ces industries nous sont revenues de l’une de ces contrées avec la meule et la poterie... (Piette, 1876: 294).

At this time, of course, he considered the Solutrean as transitional to the Neolithic and, in France, post-Magdalenian in age. But clearly he still saw it as derived from a Mousterian, and so did the botanist-prehistorian the Marquis de Vauporta (1833), d’Ault de Mesnil, Salmon (1891-92, 1894), and of course the de Mortilllets to the bitter end (G. de Mortillet, 1897: G. and A. de Mortillet, 1900).

The perspective opened up by the discoveries in Central and Eastern Europe, and interpreted by Hoernes, Obermaier, Girod and others, has already been outlined. It would be wrong to suppose that the older idea of local evolution from a Mousterian in Western Europe was killed; it became less popular but is still with us. But for the last forty years
the most influential thesis for the origin of the Solutrean has been that of an eastern origin, more often than not from an "evolved Mousterian". And this support has held ground even in the face of increasing popularity of a North African-Spanish origin. It is perhaps paradoxical that, before the pointe à face plane level was identified as Lower Solutrean and when the present Middle Solutrean was considered to be the oldest manifestation, there was no real argument that the sudden appearance of fully-developed laurel leaves pointed to a foreign origin; whereas, after the real Lower Solutrean had been discovered at Laugerie-Haute and Le Ruth, the weight of opinion favored such an origin outside France. The explanation seems to lie in the absence of agreement that the "Lower Solutrean" might represent the ancestor of the fully developed Solutrean — a controversy which has recently cropped up again in the writings of Jordá Cerdá (1955) and of Escalon de Fonton (1958).

Mayet and Pissot, as we have seen, followed Breuil in seeing an origin somewhere in Eastern Europe. While Sollas, in the first edition of his Ancient Hunters (1911), had implied a development from the Mousterian, in the second edition he placed its home "somewhere in the East" and represented the Solutreans as a warlike race who conquered the Aurignacians in Western Europe (probably as an after-effect of climatic change) until in turn sundered by the Magdalen-
ians (Sollas 1915:436-37). This is the familiar hypothesis of Osborn (1916), Burkitt (1921) (who saw the Solutrean as the result of an Aurignacian-Mousterian merger in Eastern Europe) and Macalister (1921:581-82). Breuil’s famous visit to Central and Eastern Europe in 1922, and his subsequent publications, seemed first-hand proof of the origins of the Solutrean from the Mousterian in the Hungarian caves, and the spread westward of the Hungarian Upper Solutrean, by way of such sites as Předmost, to become in France and Spain the Lower Solutrean of Western Europe (Breuil, 1923). MacCurdy (1924) adopted the views of Breuil and Obermaier that the Solutrean had originated in the East where the Early Solutrean was probably contemporary with the advanced Aurignacian in the west and had entered Western Europe as short-lived invaders whose clash with the Aurignacians eventually produced the Magdalenian. And Obermaier, in his Fossil Man in Spain, categorically stated that “thanks to the fortunate discoveries made by R. Hillebrand in Hungary, there can be no doubt that the Solutrean originated in eastern Europe” (1925:117).

This eastern theme has, quite understandably, never lost its popularity among professional prehistorians and interpreters of prehistory. Peake and Fleure (1927) and Henri Martin (1927-28) favored an Asiatic origin via Eastern Europe; Soury (1927), Obermaier (1928), Hoernes and Menghin (1925) and Kühn (1929) shared more or less in this viewpoint.
Garrod (1923), following Breuil, saw it as the result of the foliates from the Hungarian caves mixing with the Upper Aurignacian in Western Europe; but she termed the origin of the Hungarian laurel leaves "one of the most puzzling enigmas in Palaeolithic archaeology" (p. 265). D. Peyrony, who in 1924 had believed that the Solutrean of Laugerie-Haute had evolved in place from a Mousterian via the Proto-Solutrean which he had just discovered (D. Peyrony 1926:294-96), adopted the eastern origin by 1932 in his monograph on the Fourdrilles sites. In later papers neither Burkitt (1933) nor Garrod (1938) changed their views substantially. Peyrony (1948a, b) also retained a belief in the origin of at least some Solutrean elements in Eastern and Central Europe until the end, and in the past decade this has been suggested as at least one possible birthplace of the Solutrean by Zott (1951), McBurney (1950), Rust (1952), Freund (1952), Furon (1958) and Okladnikov (see Childe 1956).

But in the early 1920's the blossoming field work in Spain and North Africa brought new hypotheses. In 1922 Reygasse suggested that the Solutrean had originated in North Africa from an Evolved Acheulian without passing through the Mousterian and Aurignacian stages (this closely resembles Dupont's old hypothesis) (Reygasse 1922:1531). In 1937 Breuil, in a revision of his classic paper of 1912, wavered between a Hungarian and a Spanish origin (in the Manzanarès sites) and concluded that "il nous faut donc avouer que l'origine
du Solutréen, qui nous est peut-être venu de l'Est, demeure aussi mystérieuse que celle de l'Aurignacien" (p. 34). In 1951, with Lantier, Breuil proposed a third possible cover with the addition of the "Protosolutréen" sites of the Gard-Ardèche region of France.

The discovery by Pericot of Solutrean tanged and stemmed points at Parpalló in indiscutable stratigraphic position has made the stock of this school rise. Pérez de Barradas in 1935 had argued for such an origin on the basis of the resemblances between North African and Eastern Spanish art (Fletcher Valls, 1956). In 1939 Fletcher Valls claimed that the stemmed points had gone from Africa to Spain and thence to France, and opposed the former idea of a north-south movement of Pont-Robert points into Spain. Although he still favored the idea of a Solutrean origin in Western Europe, he held for other Solutrean-like centers in North Africa with foliates; it was a late wave of this culture into Spain which brought the stemmed and winged points to the Gancia district. But it was Pericot's publication of the Parpalló findings in 1942 which popularized and seemed to substantiate the hypothesis of an origin across the Straits of Gibraltar, a popularity which was highest in the 1940's and early 1950's and has since been accepted with more doubts. Caton-Thompson found that this fitted in very closely with the Aterian and established chronological correlations.
for North Africa and Spain (Caton-Thompson 1946). However, Breuil disagreed strongly with this notion, pointing out the great differences in technique between the Aterian and the Solutrean (1950). Santa-Clara, who sought a Spanish origin for the Solutrean in the Manzanarès valley, Ruhlmann, Balout and Antoine have all opposed Pericot's views (see Pericot 1955). In 1949 Cheynier sided with Pericot, but in 1954 adopted a more ambiguous approach: "le Solutréen semble être une synthèse des industries précédentes acheuléo-moustériennes et aurignaciennes. Il n'est pas certain qu'il se soit élaboré hors de France (Hongrie, La Szeleta; Espagne, Manzanarès; Afrique du Nord)" (p.54). Childe (1950) also voted for the ultimate African origin of the Solutrean.

In spite of Pericot's continuing faith in at least some connection between the Western Solutrean and the North African S'lhalkian (Pericot 1950, 1952, 1955) an increasingly large number of people have rejected it. Freund (1952, 1954) is eclectic and believes in a French origin for the French and Spanish Solutrean and a Central European origin for the "Western Solutrean", a polycentric hypothesis shared also by Breuil, Mchurney and Peyrony. Jordá Cerdá (1955) has also repudiated the North African idea and favors a French origin. Vaufrey is inclined to think that any Iberian Solutrean - S'lhalkian exchanges proceeded in a north-south direction rather than the reverse (Vaufrey 1953a). Fletcher Valls, how-
ever, still upholds an African source (1956).

It will be noted that in the last decade or so the idea of a French origin for the Western Solutrean has become more popular. Between Jacques de Morgan's 1924 belief in a French origin (he believed there was no real relationship or contemporaneity between the "Solutreans" of western and eastern Europe) and the statements of Peyrony (1948a, b) and Maurice Martin (1949), there are practically no claimants for finding the roots of the Solutrean in France, although Andree (1939) was rather inclined to favor a French or Spanish source. But, as already mentioned, both Freund and Jordá Cardá have inclined in this direction since 1952, although the arguments of neither are very convincing. One of the most recent to discuss this problem, Laplace-Jauretche (1957) sees the Solutrean as an evolution from the Final Perigordian, presumably in Périgord -- an hypothesis which, as we have seen, goes back through Peyrony (1948a) to Breuil and the bataille aurignacienne.

(C) The Nature of the Solutrean: Historical Views.

So much for the opinions revolving around the origin of the Solutrean. What have been the principal views regarding the nature of the Solutrean in the Upper Palaeolithic context? From the time of G. de Mortillet's 1868 observation that there was a close resemblance between the points of Le Moustier and Laugerie-Baute, the de Mortillet school consid-

ered the Solutrean as a natural step in the Upper Palaeolithic development, with no violent break involved and to a large extent sharing the common traditions. When, in the first decade of this century, the old Aurignacian was reinstated and inserted between the Mousterian and the Solutrean, this view had to be modified; Breuil and others in France came to believe that the Solutrean had developed gradually from the Upper Aurignacian (where flat retouch was seen timidly appearing in the Font-Robert levels) and that it had evolved painlessly into the Magdalenian. But the discovery of "Solutrean" in Eastern and Central Europe, especially after Kadić's publication of the Szeleta Cave finds in 1909, tended to undermine this belief. The Aurignacian-Solutrean evolution became unfashionable, and more and more the Solutrean came to be regarded as something foreign and exotic, an intrusive bloc thrust into the homogeneous Aurignacian-Magdalenian sequence. Mayet and Pissot expressed this view in 1915, namely, that the Solutrean was a kind of collateral industry with no chronological value in itself. In 1925 Hoernes and Menghin adopted the view that the Solutrean, probably a culture wave originally out of Asia, had cut short the Aurignacian in Eastern and Western Europe and that the Magdalenian was a successful return to the Aurignacian tradition (Hoernes and Menghin 1925:658).

Déchelette, without sharing the belief in an Eastern
origin, had believed also that the Solutrean was some kind of an interruption in/orderey Aurignacian-Magdalenian passage; although suggesting that the laurel leaf was derived from the Aurignacian retouched blade and indirectly from the Mousterian, he considered that

la retouche solutréenne demeura ignorée d'un certain nombre de tribus quaternaires dont l'industrie passa sans doute directement de l'aurignacien au magdalénien" (1908:147).

The notion that the Solutrean in France and Spain reflected "warlike invaders" from the east became a very popular one in the next few decades. Sollas subscribed to this view in the second edition of Ancient Hunters (in the first edition in 1911 he had shared the orthodox view of development out of the Mousterian, with the addition of pressure flaking), attributing the incursion to a climatic change (Sollas 1915:436-37). Burkitt adopted this opinion in 1921, suggesting that the Solutrean invaders resulted in Eastern Europe from a Mousterian influencing an Aurignacian; this view persists in the 1953 edition of his book, where he interprets the Solutrean episode as the domination of the earlier peoples by a "powerful caste" rather than by any substantial population replacement (Burkitt 1953:153). Peake and Fleure (1927), MacCurdy (1924), Macalister (1921) all shared this idea in some form or other, although some (such as Macalister and Sollas) thought the Solutreans were in turn ousted by the Magdalenians while others (e.g., MacCurdy)
thought the Magdalenian resulted from the "clash" of Aurignacian and Solutrean. One writer, not a professional, gave the interpretation a new twist by suggesting that the Solutrean flaking might be "the work of slaves who were forced to labor for an alien people" (Cleland 1928:30). Obermaier did not go in for this kind of fanciful speculation, but such statements as,

It should here be emphasized that even in the region of the typical Solutrean industry in France its aspect of an alien origin is so striking that there can be no doubt why the natural evolution of the Late Aurignacian is interrupted (Obermaier 1925:120)

leave no doubt as to where he stood.

Kühn (1929:15), who also saw it originating in Eastern Europe, considered it a foreign culture in Western Europe which had pushed its way between the Aurignacian and the Magdalenian. D. Peyrony never quite abandoned the idea of the Solutreans as an invading force, though towards the end of his life he modified this to some extent. His views on the essential uniqueness of the Solutrean in the context of the French Upper Palaeolithic are well expressed in the memoir on Laugerie-Haute:

Il apparaît, en effet, maintenant que le Périgordien, l'Aurignacien, le Proto-Magdalénien et le Magdalénien forment un seul bloc, dans lequel est venu s'intercaler, durant un certain temps, en Périgord, le Solutréen qui disparaît, par la suite, en tant que culture" (D. and É. Peyrony 1938:81).

Garrod seems to have adopted the less spectacular hypothesis of the Solutrean as an "influence" in Western
Europe rather than as a group of migrant invaders:

The Solutrean of the West must therefore be regarded merely as an influence which comes in contact with the more normal Upper Palaeolithic culture over a very limited area and for a comparatively short time, without affecting the main lines of its development (1928:265), but she still derived it from the Hungarian caves. She has followed this line of thought since, and in 1953 infers that while the Aurignacian might be due to actual folk-movements, the dispersal of bifacial foliate points in Central Europe, the Franco-Cantabrian area and in North Africa is "more like to have spread by copying from one neighbouring people to another of particularly striking and effective forms" (1953:16), i.e., by secondary or stimulus diffusion.

Movius (1953) has stated that most workers are now prepared to accept the Solutrean as the effect of specialized ideas rather than as the results of invading groups, and it is true that this interpretation has gained in favor in recent years. Leroi-Gourhan (1957), while not denying the possibility of invasion, has left the question open and suggests that the two hypotheses (i.e., of invasion vs. the diffusion of a technical current spreading with intertribal contact) are not mutually exclusive, since an initial invasion into Saône-et-Loire and in the Southwest may have given rise to later copying by tribes with different traditions. Graziosi (1960:13) thinks that "the Solutrean represents a sort of typological intrusion or superimposition in the evolution
of French blade industries..."

The concept of invasion has by no means died out, though; in the most recent edition (1958) of his Manuel de Préhistoire Général, Furon claims that there is no doubt the Solutrean was brought in (from Hungary or Poland) by invaders; and recently Jacquetta Hawkes suggests that the movement of the Solutreans into Western Europe may represent "a movement with as much social solidarity as that of the peoples of the folk migrations during the European Dark Ages" (J. Hawkes 1958:486-87). Rust has stated that the Solutrean was a foreign wave of population in Western Europe, probably coming from Hungary (Rust 1952:293). And Childe (1954:756) has stated bluntly that "it really looks as if the Solutrean were introduced by well-armed invaders".

Of course, the various variations of the North African-Spanish origins for the Solutrean have to some extent merely repeated the old "Eastern" interpretations as far as the nature of the Solutrean is concerned; some have hedged cautiously, speaking merely of "waves" or "influences", while others (e.g., Pericot 1950:115-16) speak boldly of bands of invaders, distinct from the indigenous peoples of the Peninsula, arriving from North Africa armed with superior weapons and subjecting, or at least coexisting with, the indigenous population until exterminated or swamped by a recrudescence of the latter.
Childe has several times emphasized his belief that the Solutrean played a very minor rôle in the development of the Palaeolithic cultures:

The cultures that dominated Europe during the last Ice Age owe little or nothing to the Solutrean (Childe 1950:21)

and has even suggested that the expression "Solutrean Period" be suppressed and the term "Upper Palaeolithic II" be substituted for it (1956).

It has already been intimated here that attacks on the integrity of the Solutrean as a culture or as a period are nothing new. Thus, we have seen that Battaglia (1923) claimed that the French Solutrean was nothing more than a regional and perhaps chronological facies of the Campignian -- a claim which was based on typology rather than on stratigraphic or palaeontological data.¹ This view was modified later, but Battaglia still refused to see the Solutrean as part of the "blade cultures" of the Upper Palaeolithic and denied it a fixed chronological horizon at all. This reluctance to grant the Solutrean a fixed place in the sequence has also been expressed by Mayet and Pissot (1915), Mayet (1920), H. Martin (1927-28), and by R. de Saint-Périer who

¹In his Weltgeschichte der Steinzeit (1931) Menghin also classified the Proto-Solutrean and Old Campignian together among the Coup-de-Poing cultures of his Mio lithic, while the Upper Solutrean and Campignian proper, together with the Magdalenian, Capsian, Azilian, etc., were placed in the Epipalaeolithic.
thought of the Solutrean as "un simple faciès industriel" rather than as a distinct period (1929:61).

In recent years several suggestions have been made that the Solutrean assemblages offer nothing new or distinct apart from its typical foliates and points; deprived of these, it is claimed, the Solutrean is indistinguishable from the other Upper Palaeolithnic assemblages. Thus, the de Saint-Périers have emphasized that the non-typical Solutrean lithic artifacts at Istirutz and other sites could as well be attributed to the preceding and succeeding levels (R. and S. de Saint-Périer 1950:13). Pradel has stated much the same belief.

Si l'on faisait abstraction au Solutréen, des feuilles de laurier, feuilles de saule et pointes à crans, le reste de l'outillage de cette culture et sa faune ressembleraient à d'autres cultures antérieures ou postérieures de l'âge du Renne, desquelles il ne serait vraiment pas facile de les distinguer (Pradel 1950:32).

And G. Lepage-Jauretche has suggested to the writer, in conversation, that in his opinion the Solutrean in France is little more than the Perigordian with laurel-leaves, shouldered points and willow leaves added.

Something new has been added to the perennial dissections of the Solutrean in the last decade, however; there have been several attempts to split off the earliest Solutrean stage (the Lower Solutrean and, where it is recognized, the Proto-Solutrean in Peyrony's sense of the word) from the later (Middle and Upper) Solutrean and to disclaim any connection, or at least any direct connection, between them. This treatment, analog-
gous to Peyrony's separation of the Perigordian from the Aurignacian in France, is however not as well founded and the arguments offered by Escalon de Fonton (Escalon de Fonton and Bonifay 1958) and Jordá (1955) are not convincing when evidence other than that in their own local regions is considered. Part of the present paper will be devoted to demonstrating that the Solutrean is a continuum whose unity should not be arbitrarily ruptured.

This somewhat lengthy review of the main lines of thought regarding the Solutrean in the past century has tried to show the principal patterns and the extent of the extremes in interpretation which have been committed, against the background of the day. It is obvious that there is not now, nor has there been for a long time, any general agreement on what the Solutrean really is. It is also striking that, in spite of so many efforts at explanation, so little really comprehensive data have been presented to back up any particular interpretation. The main aim of this chapter has been to clear the air somewhat concerning past and present theories, before plunging into the mass of data which constitutes the bulk of this paper.