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Report on RECENT ARCHAEOLOGICAL AND PALEOENVIRONMENTAL RESEARCH AT LES TAMBOURETS, contributed to the symposium at the SAA meetings in Tucson, May 1978, by H. M. Bricker, Tulane University.

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Since my report on Les Tambourets to the Dallas symposium in 1975, additional data have become available about this early Upper Palaeolithic (Châtelperronian) open-air habitation site. The purpose of this report is to summarize some of the new information.

I. The 1975 Excavations

With the support of the NSF, excavations were conducted at Les Tambourets during a ten-week field season in the summer of 1975. An additional 32 m^2 of the archaeological level was exposed in the area of the 1973 sondage, and a new test trench (8 m^2) sampled what is probably a separate occupation locus ca. 50 m further west. These operations produced ca. 4300 artifacts, of which ca. 700 are retouched stone tools.

The major disappointment of the excavation season was that no traces of artificial habitation structures were found. The artifacts occur as a scatter of variable horizontal density in the base of a loess deposit; the tool scatter (archaeological level) varies in thickness from 4 to 8 cm. With hearths not encountered, there were no samples of charcoal suitable for radiocarbon dating. Faunal remains are not preserved in the slightly acidic sediment (av. pH = ca. 6).

During the course of the excavation, sediment samples were taken by Dr. Henri Laville from columns in both the main area

and the western test trench. Laville has done the sedimentological analysis, and Mlle M.-M. Pacquereau is still analyzing the pollen content. Additionally, Laville is engaged in an ongoing study of the Pleistocene geomorphology and stratigraphy of the environs of the site. The surface geology of the site was roughly surveyed and mapped by the archaeological crew in the summer of 1975.

II. The Archaeological Results

The 1975 excavations greatly increased the artifact sample available for the technological and typological analysis. After the 1973 test operation in the main area, 122 retouched tools from the archaeological level were available for study. The 92-type inventory and typological indices reported in Bricker and Laville (1977) were based on this sample, as was Frank Harrold's analysis of the Les Tambourets materials (as reported to this symposium in New Orleans last year). The tool sample from the archaeological level in the main area now stands at 512, and it is now clear that the earlier, smaller sample was not representative of the larger one. Tool-class localization in the 8 m^2 excavated in 1973 produced biases, most importantly an over-representation of burins (Chi-square test, $.025 > P > .010$). The new typological indices show burins (15.23%) at near parity with scrapers (18.55%), not almost twice as frequent. The frequency of Châtelperron points remains very low (4.10% in the larger sample), not significantly changed by the more recent excavations (Chi-square test, $.90 > P > .75$). The scarcity of characteristically

Mousterian tools reported earlier remains true; typologically and technologically, Les Tambourets can not be considered an early Châtelperronian assemblage.

What is probably a separate Châtelperronian occupation locus, sampled in the western test trench in 1975, produced very few retouched tools. There is no reason so far to believe that this occupation differs significantly in age or functional range from that sampled in the main area. Nor can Laville's sedimentological analysis differentiate geochronologically between the two occupation loci.

The hilltop on which the site is located is a large one (ca. 5 hectares), and it is probable that a palimsest-like pattern of occupation loci originally covered much of this area. Our work so far has concerned only a small part of the southern flank of this hill. The preliminary survey of surface geology suggests, however, that much of the original area of occupation, especially on the top of the hill, has been destroyed or disturbed by post-Würm III erosion and recent agricultural activities. Now that a significant part of the remaining portion of one occupation locus has been excavated, further work will be directed toward sampling other areas where the relevant loess sheet is still present.

III. Geochronological and Paleoenvironmental Results

During the 1975 excavation season, a geological sondage was dug to a depth of ca. 2.5 m below the modern surface in the main area, permitting us to describe and sample more of the stratigraphic

sequence than in 1973. The sequence may be briefly summarized as follows, from the base of excavation upwards:

Couches M through D: These are a 2.00-meter-thick series of clays, silty clays, and gravel lenses, at least one of which is probably a solifluction nappe. In several of the levels there are dense concentrations of ferromanganese concretions. No archaeological materials were found in any of these deposits. Although their sedimentological study has been completed, Laville does not yet have comparative data that permit interpretation, nor are the pollen data yet available. It seems likely that at least some of these sediments date to the early Würm, and if so, they may eventually provide the overlap between the Pleistocene sequences at Les Tambourets and the Lower and Middle Palaeolithic site of Mauran, ca. 20 km southwest of Les Tambourets. A major excavation at Mauran was begun in 1975 by a French archaeologist, Mme Girard, and the sediments and pollen are being studied by M and Mme Miskovsky at Paris. The possibility of combining data from the two sites to produce a Pyrenean piedmont paleoclimatic sequence extending from the Middle Pleistocene to the late Upper Pleistocene is an exciting, if serendipitous, prospect.

Couche C: As more clearly defined in the 1975 excavations, this is a 45-cm-thick clayey deposit with abundant ferromanganese concretions. The sediment analysis suggests an episode of weathering, possibly strong enough to speak of pedogenesis, that occurred before the occupation of the site by the Châtelperronian tool-makers (artifacts are extremely rare, and most occur in filled animal burrows). It is reasonable to suppose that, in very

broad terms, we are dealing here with the Würm II/III interstadial and the beginnings of the Würm III, but comparative data from the region are still too few to permit any precision.

Preliminary results of the pollen analysis of the 1973 samples give some information about the climate at the time of deposition of those sediments. Near the base of what is now called Couche C, the climate was cool and humid (AP = 22%, dominated by Norway pine; sedges and other hygrophilic plants are well represented in the NAP). The next phase was humid again but more temperate; AP increase to 40%, and broadleaf trees, especially hazel, are numerous. While remaining humid, the next phase is colder, with AP reduced to 16%, dominated once again by Norway pine. In the top 15 cm of Couche C, the pollen record another mild and humid interval (AP = 28%, with abundant hazel).

Couche B: This is a sandy-clayey silt deposited primarily by aeolian action--more specifically, a periglacial loess. The archaeological level occurs in the base of this loess, directly above its contact with Couche C. Pollen from the occupation horizon indicate a cold and rather dry climate. According to Mlle Pacquereau (in litt.), "...a sharp decline in tree cover is indicated by frequencies of arboreal pollen of 13 to 12%. They represent principally Norway pine, with some birch and willow. ... At the beginning of this phase, some sedges are present, but they disappear in later samples. This assemblage indicates a progressive intensification of dry conditions." Ten to 15 cm above the top of the tool scatter, there is evidence of an episode of minor weathering, and this is registered by the pollen as a

different phase, somewhat less cold and more humid. Between this slight weathering horizon and the base of the plough zone, the pollen show a return of cold, dry conditions.

Couche A: This is the plough zone.

Mlle Pacquereau's comments (in litt.) on her preliminary results are instructive: "In this sequence, the first four phases show no climatic episode that is either very cold or very dry. A certain degree of humidity continues constantly... The last three phases indicate the inauguration of a cold that was more marked and more dry. It is possible that these different episodes indicate the start of a climatic change that came about very gradually. Perhaps we have here the first stages of the Würm III gracial."

Although Laville has quite properly refrained from premature precision, the climatic fluctuation seen in Couche C is apparently quite similar to his Phase I of the Würm III as established in the Périgord. The generally cold dry climate of Couche B, implied by the formation of periglacial loess and corroborated by the pollen analysis, suggests strongly the first major cold snap that is his Phase II in the Périgord. Taking on my own head the onus of what may be premature correlation, I suggest that the Châtelperronian occupation at Les Tambourets is, tentatively, best assigned to a time contemporary with Laville's Périgord Phase II of the Würm III. The radiocarbon dating framework from the Abri Pataud, combined with Farrand's sedimentological study, indicates that Phase II centers on the period from ca. 34,000-33,000 B.P. This, I suspect, is the age of the Tambourets occupation.

IV. Implications of the Tentative Geochronologic Placement

A survey of the geochronologic placement of other Châtelperronian occupations in southwestern France shows that most have been assigned (sometimes very approximately) to the Würm II/III interstadial (e.g., Quina, Gargas, and perhaps Le Basté) or, more often, to Phase I of the Würm III (e.g., Roc de Combe, Le Piage, Grotte du Renne, La Côte). If Les Tambourets dates indeed to Phase II, it is a late Châtelperronian, a conclusion consistent with the typology and technology. It may be of approximately the same age as the late Châtelperronian occupation at Les Cottés, north of the Périgord in Vienne (radiocarbon dated to ca. 33,000 B.P.). Substantial typological differences between the Tambourets and Cottés assemblages would indicate, however, great regional diversity within the Châtelperronian at a date that becomes extremely relevant to the question of Châtelperronian-to-Gravettian continuity.

V. Continuing Research

Continuing research on the Les Tambourets project will include:

a) further geomorphological and stratigraphic study of the vicinity of the site, needed particularly to determine where the archaeological horizon is still in place;

b) distributional and typological study of a large surface collection made some decades ago from Les Tambourets, a collection that includes materials from occupational loci other than those we have excavated;

c) subsurface sampling of other areas of the site, as directed

by the geologic and surface-collection data;

d) comparative study of other Châtelperronian assemblages, supplementing Harrold's work, and

e) continued field investigation of sources of flint of the kinds used by the Tambourets artificers, attempting to understand better the interaction area of the prehistoric inhabitants.