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CHRONOSTRATIGRAPHY OF "ABRIC ROMANI"

by

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I. HISTORY

The River Anoia passing through Capellades is the axis of a prehistoric ensemble called "Cingles del Capello". The places of known occupation are the "Abric Romani" and the "Abric Agut". The investigations were begun at the beginning of the century.

In this way in this initial period archaeological, geological and paleontological strata were documented, including in the last few all those that did not present a clear antropic activity.

In the initial period, that lasted about twenty years (1911-1932), the sedimentary potential was lowered about 4 metres from the total covering; also, two wells were excavated (wells 1 & 2), the second of which has a depth of 12,40 metres and its sequence will be analysed in this discussion.

From 1956-1962 work was started again under the direction of Eduard Ripoll. This corresponded to the time of the first synthesis of the Middle Paleolithic in Catalonia (RIPOLL, LUMLEY, 1965).

In this phase the stratigraphic documentation runs parallel to the archaeological documentation, including for the first time the stratigraphic sequences of all the places of occupation known of in Catalonia.

Twenty years passed before work was started again on these places of occupation. The results obtained after four years by the present team are presented in this paper.

II. GEOMORPHOLOGICAL CHARACTER OF THE AREA

The Anoia river, near Capellades, crosses three very different tectonic structures, the Prelitoral mountain range, the Ebro Basin and that of Penedes graben. Because of these factors the area of the Cingles of Capello has a very interesting geological history.

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During the Quaternary the area presents different morphologies, among which three types are recognized:

a) Travertine formations occupy a wide area in the form of a triangle, limited by the localities of Capellades, Pobla de Claramunt and the Torre de Claramunt. The paleontological remains that have appeared allow us to date this formation as belonging to the Pleistocene age.

b) GARCIA RODRIGO (1957) has identified a Quaternary terrace on the River Anoia in the area we are analysing. It is about twenty metres above the river.

c) Recent alluvium composed of paleozoic and miocene clasts.

III. GENERAL TECTONICS

The prelitoral mountain range presents a "transversal dislocation" in a NNW-SSE direction, which is the one that the River Anoia takes advantage of for its course. The zone is divided into two areas:

1) The East with paleozoic materials (slates);
2) The West with triassic materials.

The zone of Capellades had residual movements during the Quaternary along a satelite fault which broke the consolidated travertine provoking its collapse and originating a depression which was later filled in. From this moment and from the stabilizing of the area the travertine began to form which provided the shelters and caves in this area.

IV. PROCESS OF TRAVERTINIZATION

A data that surprises us is the altimetric regularity of the great travertine platform of this zone, oscillating about 300 metres above sea-level. Interpreting this as an old lake terrace, the satellite fault would produce its emptyng and the process of the formation of the "Cingles del Capello" would begin.

The process of travertinization requires water rich in calcium carbonate and a great accumulation of vegetal remains, elements that are found not only in the paleolacustrian formation but also today in the springs of Capellades.

The travertine, with a spongy appearance, is formed through an increasing calcareous deposit, giving the morphological characeristic of the Capello in the form of a hat.

Three very strong pulsations have been documented, giving rise to three fossil cornices, as seen in Fig. 2.

The cornices I and II are now fossil, while III is now forming.

Man used these natural structures (shelters and caves): between cornice I and II is the Romani shelter, between II and III is the Shelter of the Consagració and Agut.

While the sedimentary filling in of the places of occupation is closely related to spring activity it is evident that the structure of the cornices I, II and III was already practically formed by the beginning of the Quaternary, varying only its morphology with the process of time.

V. STRATIGRAPHIC UNITS IN THE "ABRIC ROMANI"

This place of occupation is characterized by a dynamic alternation of autochthonous and allochthonous fillings. We shall take as a base for the analysis the work of RIPOLL and LUMLEY (1965) in which three important units are distinguished corresponding to:

1. Surface red muddy sand: deposited by sedimentation in small depressions (Wurm III).

2. Level of tufa or tobas: with a thickness of 4 metres consisting of interstratification of travertines with grains of sand (Wurm II-III).

3. Cryoclastic fragments: unkown lower contact, attribued to Wurm II.

It is interpreted as an alternation of a very cold climate and a cold and humid climate. In the work carried out between 1956-1962, they were unaware of the existence of a well that reaches 12,40 metres, and for this reason only the upper part of the sedimentary potential of the shelter was described, that is situated on top of point 0 (see Figure 3) and which corresponds with the ensemble II, III of the graph. On carrying out the classic sedimentology work, we were faced with the invalidity of the results, as on eliminating the organic material of these they disappeared in their entirety; its high percentage of carbonate makes the sedimentary parcel a homogeneous whole without any possibility of discerning the fluctuations or changes undergone in this period.

We had to resort to micro-morphological analysis, creating a nomenclature in order to distinguish the different facies that the travertines present, like the rest of the stuctures of the sequence.

Along all its potential, we distinguished important units that we name and that are numbered from II to X. Its individualization has been carried out based on ruptures or changes in the sedimentation, understanding by this important blocks looking for observable ruptures along the sequence.

Contrastable in extension, along all the surface of the shelter, in these moments, they have only been carried out in ensemble III, in which it has been possible to study in the sections that are shown in the ground plan of the shelter (Figures 3, 4).

The chronological control we have limit this unit , on the top at 1,40 metres at 48,5 (+ 3,1; -2,1) ka U/Th (J. BISCHOFF) and its inferior part at 56 (+3, -2,7) ka at about 4 metres.

The palinological analysis is being brought to an end at the moment and we do not have the results.

In this ensemble we have distinguished the following rules that are repeated systematically in all the sections.

1. Displaced levels of sand and fragments of the walls of the shelter and the travertine; its thickness varies in function of the zone of the shelter.

2. The platform of the travertine that presents three facies and systematically appears in all the sections of the figure.
   a) Travertine of filiform structure with ramifications.
   b) Travertine of longitudinal structure.
   c) Travertine of filiform structure with ramifications.

It is situated at 2,20-3,40 of the stratigraphic sequence.

Its lower limit limits a big parcel of fragments the walls of the shelter that correspond to the parcel of clasts of the sequences of RIPOLL-LUMLEY (1965), which we have proved correspond to erosive processes and not climatic alternatives as they expounded.

Synchronically with the formation of the second platform, a fall of blocks can be documented, the superior in our sequence and not documented in the column that is localized at 4 metres of depth, approximately.

A larger amount of data, as well as the results of the palinological analysis, will help us to interpret the sequence that we possess of the Upper Pleistocene in Catalonia.

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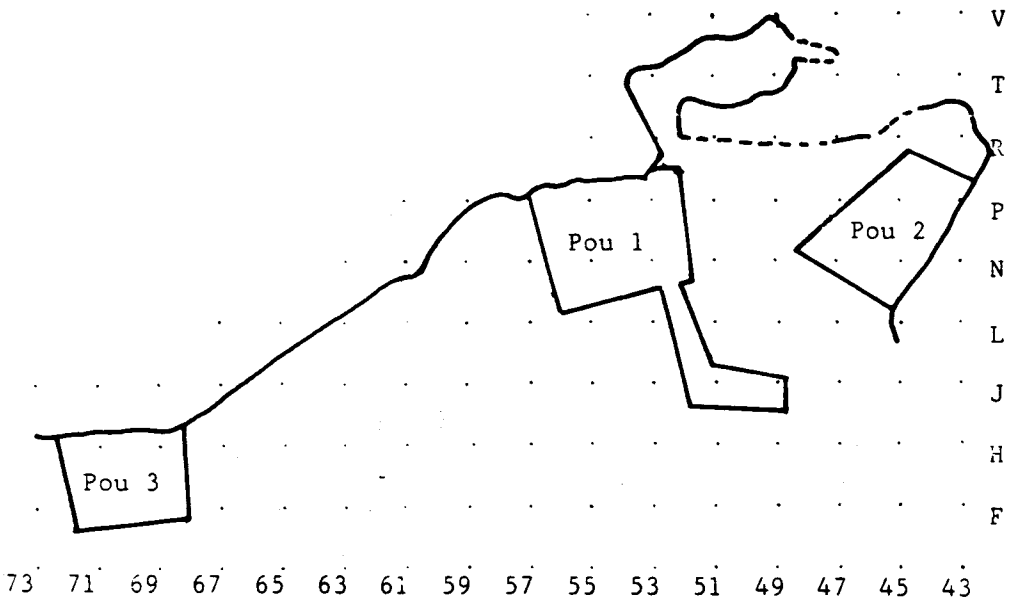

FIGURE 1

Excavation of Abric Romani (Capellades, Anoia)

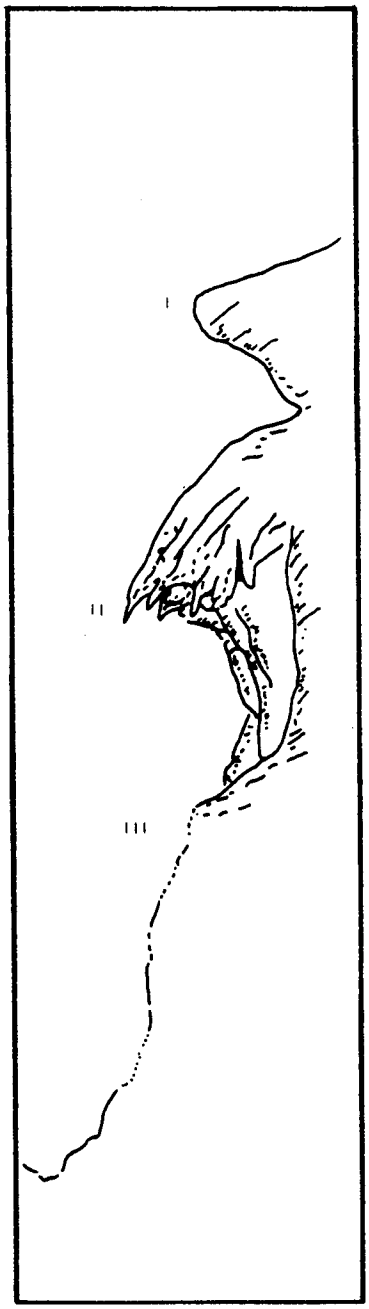

FIGURE 2

Evoluiive dynamic Cingles del Capelló

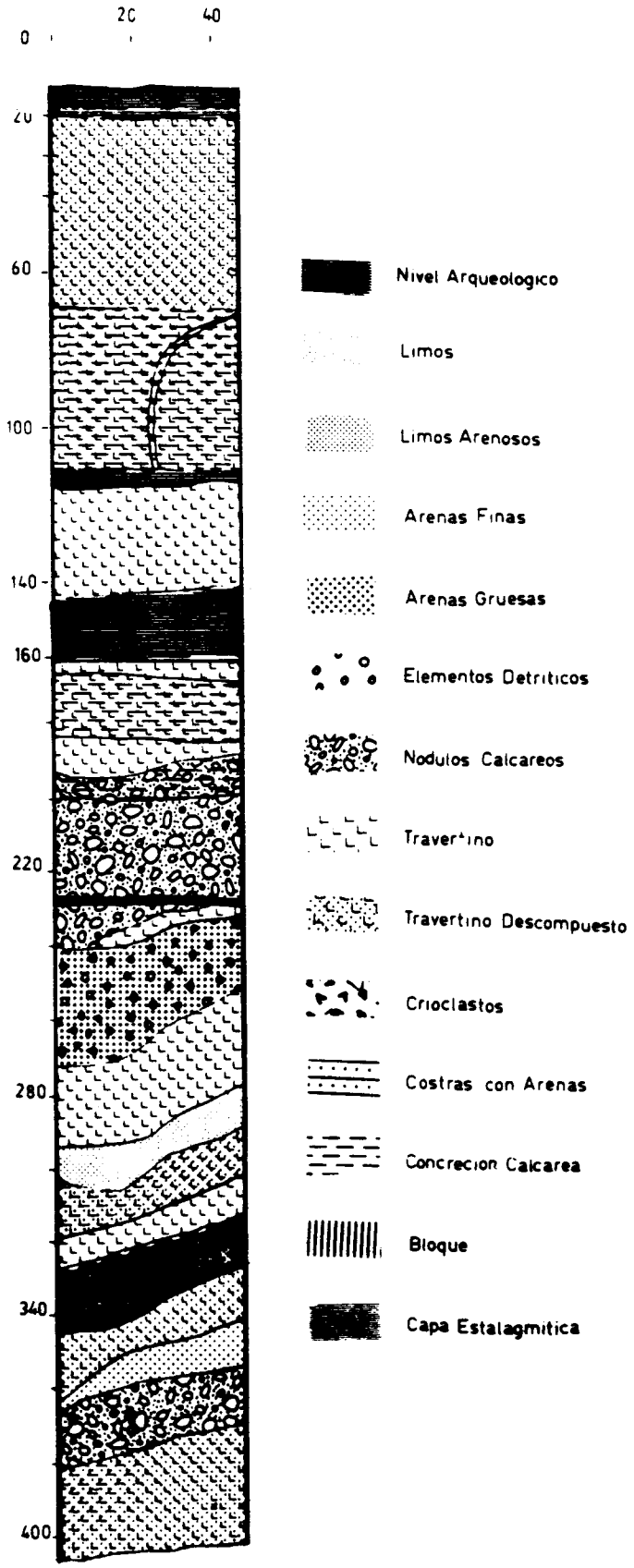

FIGURE 3

Stratigraphic sequence, Abric Romani

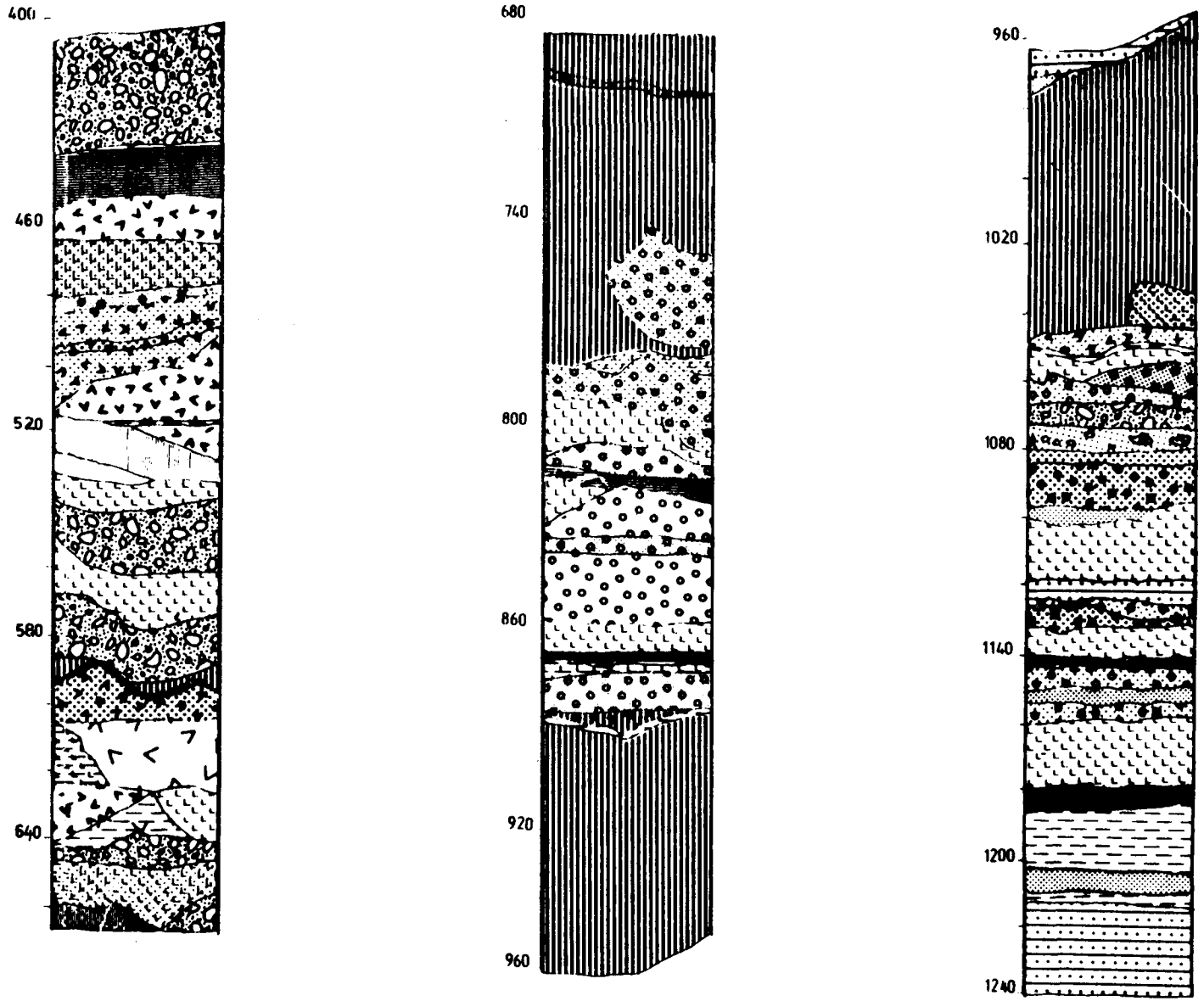

FIGURE 4

Stratigraphic sequence, Abric Romani