

Name: \_\_\_\_\_

## Lab Exercise 6                      Geology of Caves and Rockshelters

### Objectives

The objective of this lab is to reinforce the ways in which climatic change influences sedimentation in caves and rockshelters and how deposits in those contexts condition the archaeological records they contain.

### Grading

Constructing data graph	10 points
Questions	65 points

### Instructions

Examine the data from Tabun Cave, and after considering the following aspects of its basis, answer the questions. Recall again that Tabun Cave is situated at the edge of the coastal plain, and that sea level fluctuations in the Late Pleistocene led to cycles of beach encroachment toward the cave followed by retreat. Also recall that the chimney opened late in the sequence of filling the cave.

Data from Tabun deposits include:

- **Sediment texture** (sand-silt-clay) tells us about depositional processes. High energy wind deposition, associated with a nearby beach, would result in more sand being deposited. Low energy deposition would result in finer particles (silt, clay) being deposited in the cave.
- **Carbonates** ( $\text{CaCO}_3$ ) form as part of soil profiles, as described in your rift geology lab.
- **Phosphates** are derived from bone weathering and are among the best evidence for human occupation.
- **Organic Matter** (OM) is also derived from human occupation debris (mainly plants brought into the cave). Unlike phosphates, however, organic matter will decay and be gradually lost from older sediments.
- The minerals **epidote** and **hornblende** (Epi+Hb) weather over time, and disappear.

# ET-TABUN

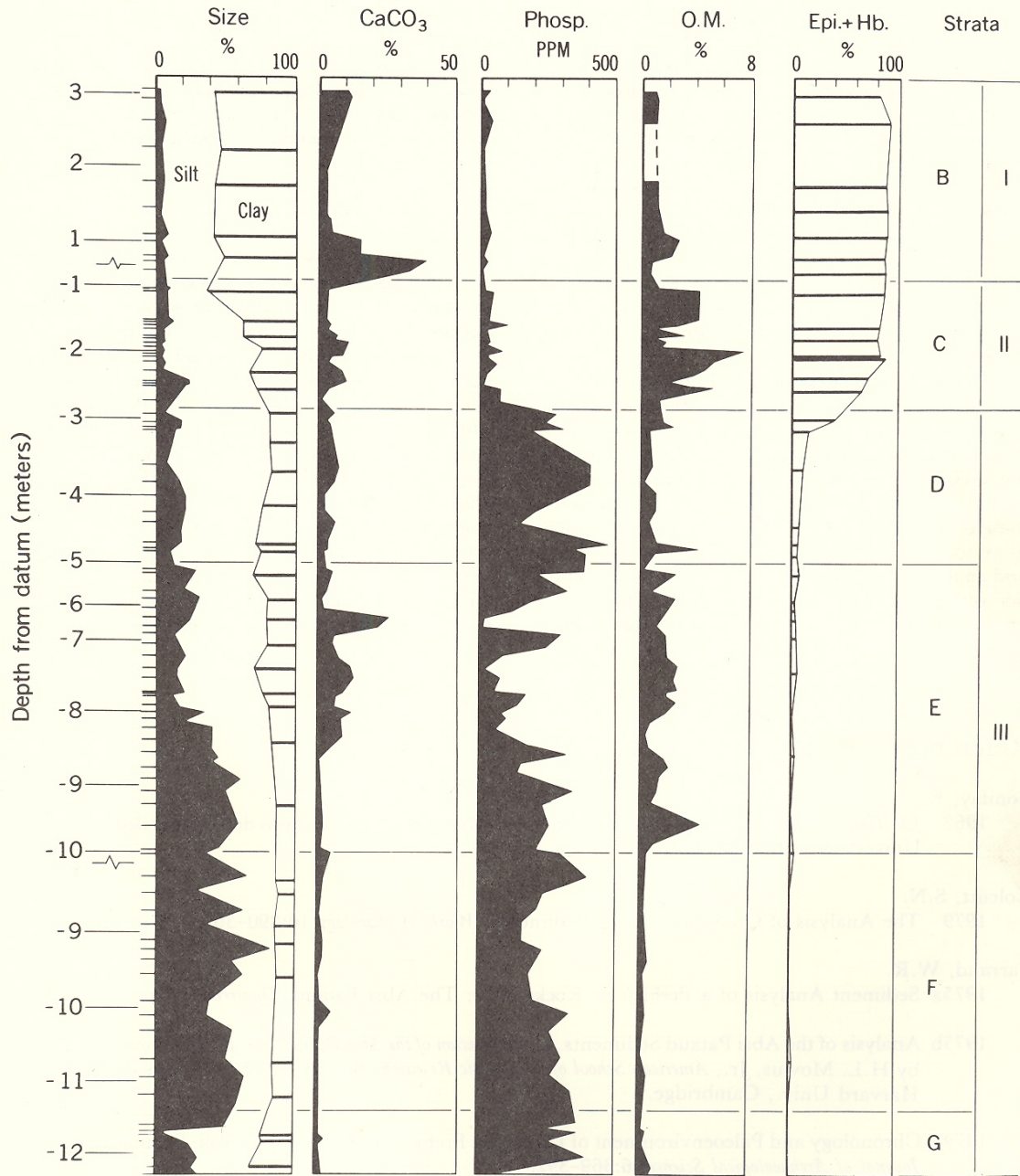


Figure 12. Summary of sedimentological diagram, Et-Tabun Cave.

## Geologic Data from Tabun Cave



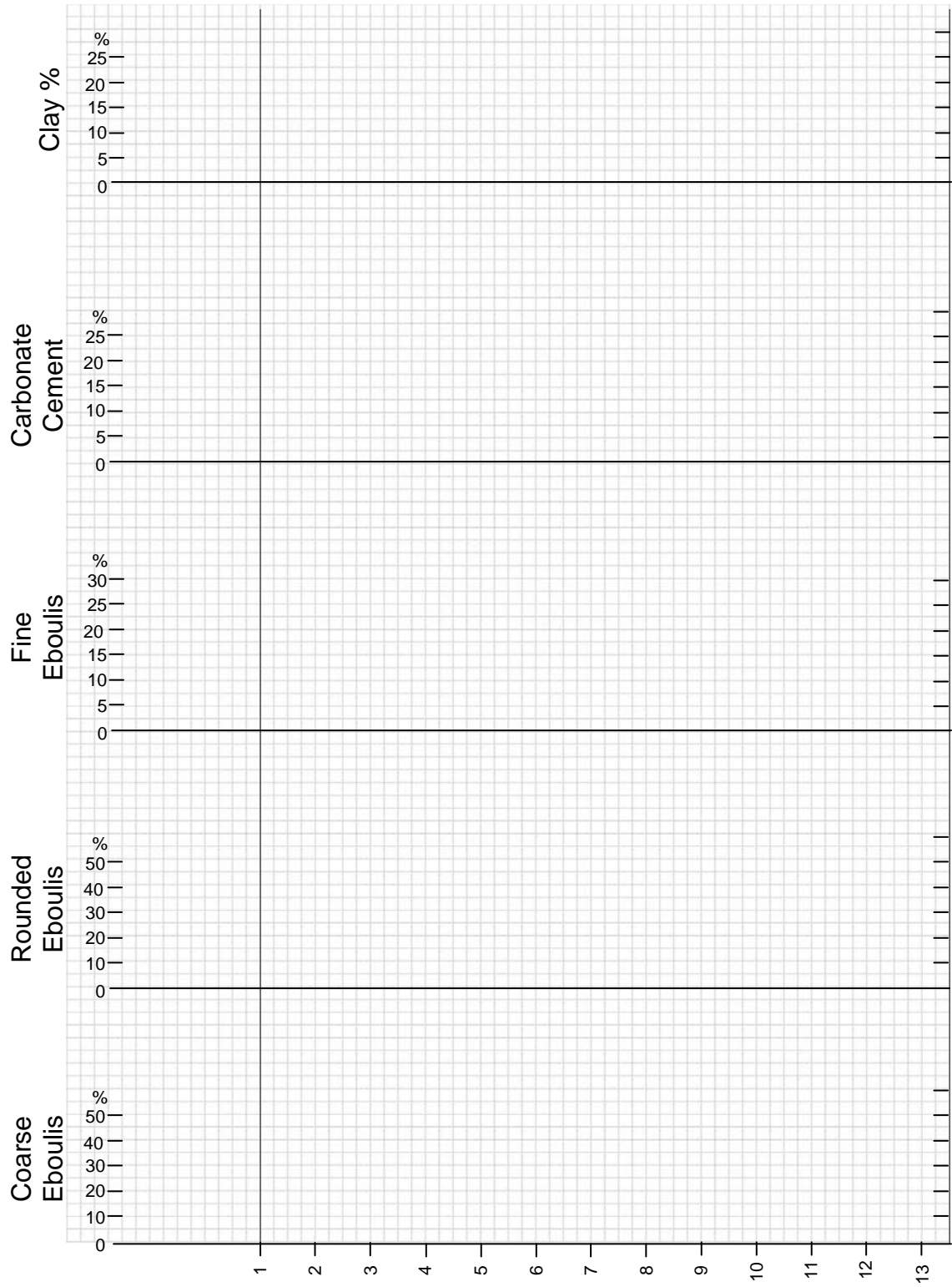
## Grotte du Perigord Analysis

Plot the lab data on the form provided on p. 79. Use dots for the data points, then connect them to form curves you can visually compare as for the Tabun data (you do not need to shade them, but neatness counts) (**5 points**)

Lab Data from Grotte du Perigord

Bed	Coarse Eboulis %	Rounded Eboulis %	Fine Eboulis %	Carbonate Cement %	Clay %	Color
1	37	44	2	3	4	10YR 6/2
2	28	39	4	6	6	10YR 6/3
3	15	28	8	9	7	10YR 7/2
4	16	20	10	8	10	10YR 7/1
5	12	18	13	7	11	10YR 4/3
6	18	23	12	9	12	10YR 5/4
7	35	48	25	21	23	10YR 5/6
8	32	45	18	22	18	5YR 5/6
9	34	50	10	16	14	7.5YR 5/6
10	53	34	7	5	6	7.5 YR 5/8
11	56	29	8	3	7	10YR 6/4
12	63	25	4	4	8	10YR 6/3
13	57	28	6	4	6	10YR7/2





Grotte du Perigord Geology Data.