

## PROBLEM 8

### Paleogeologic Map of the Cambrian System

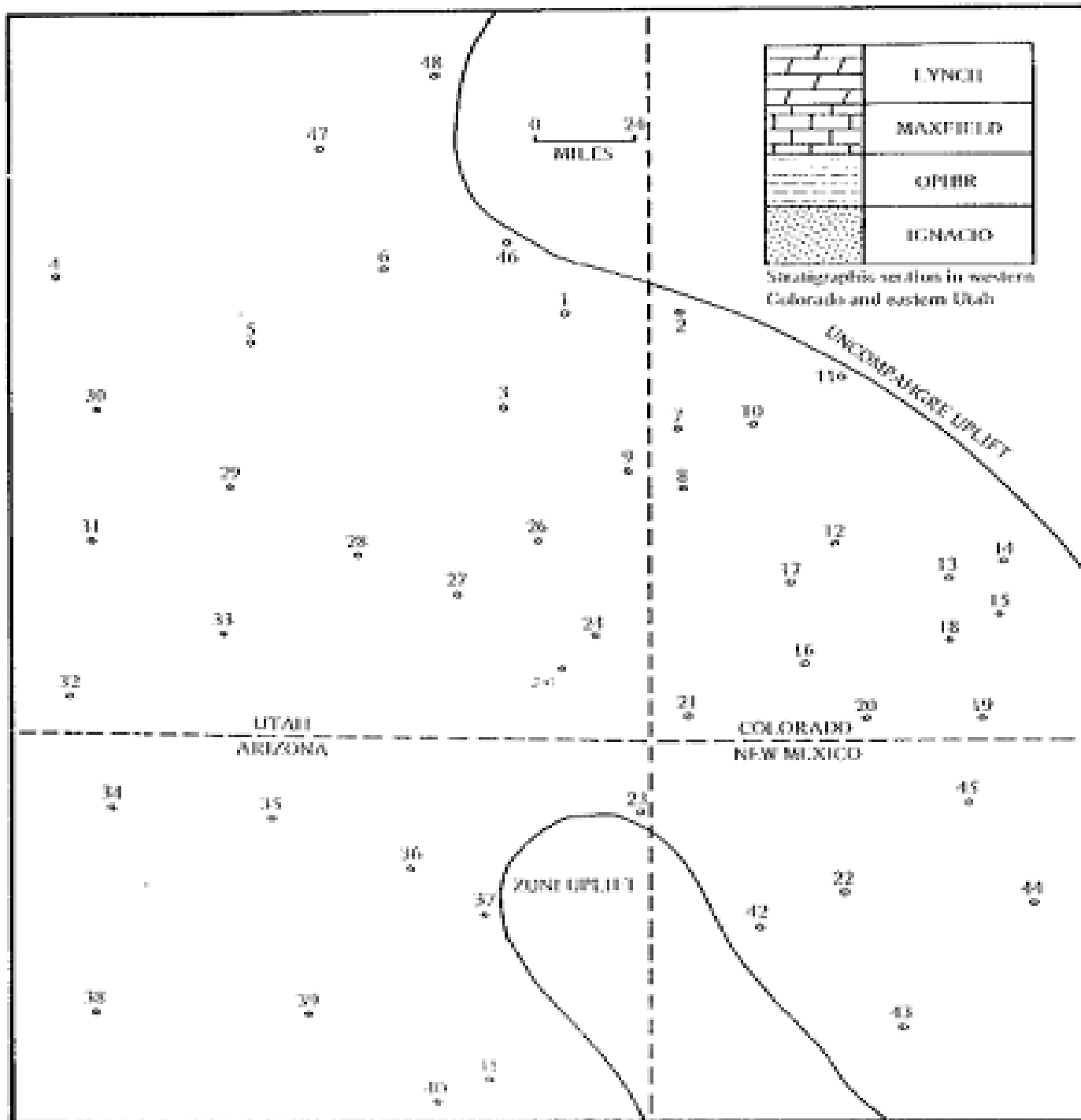
Data:

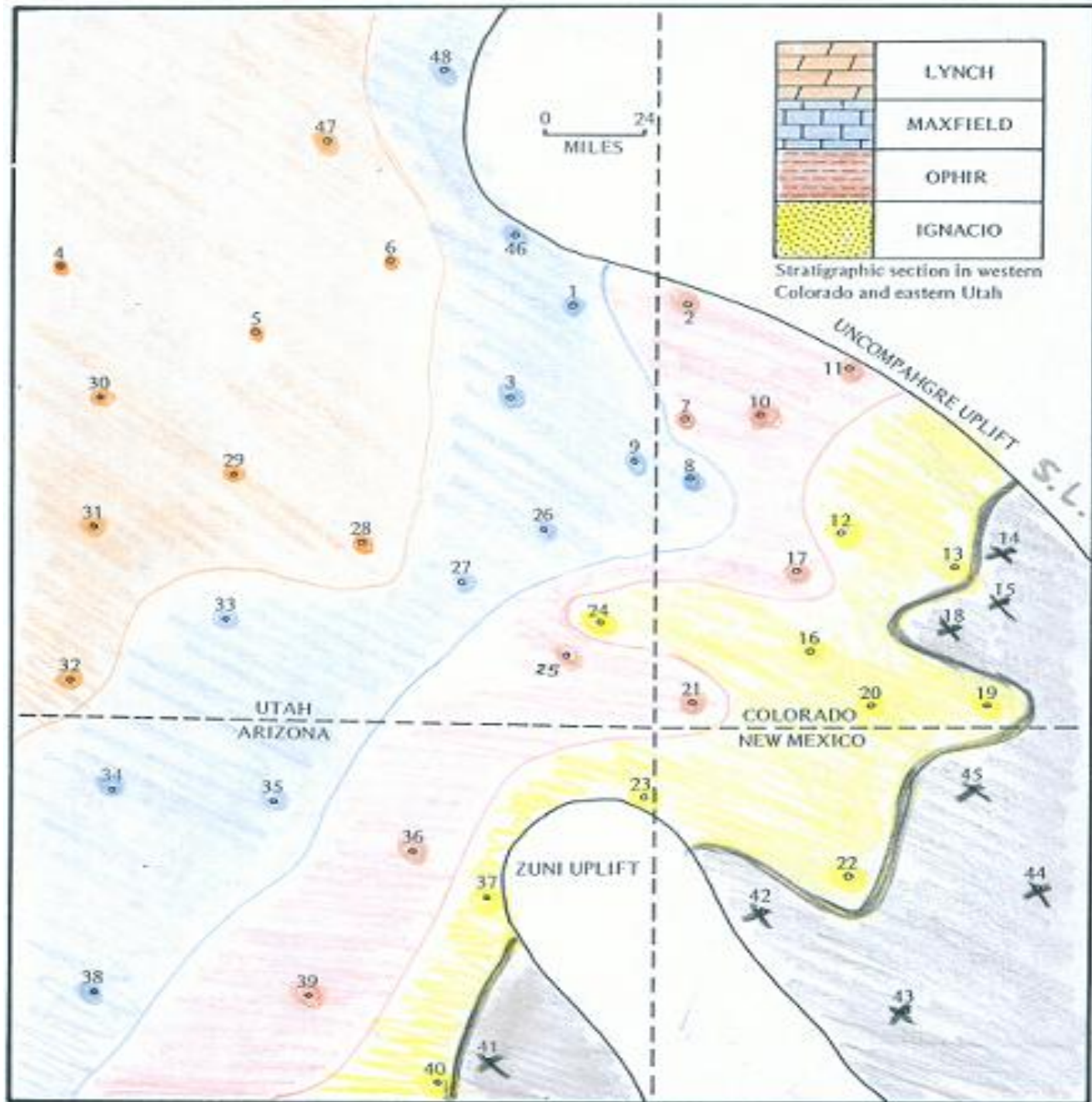
1. limestone	13. sandstone	25. shale	37. sandstone
2. shale	14. absent	26. limestone	38. limestone
3. limestone	15. absent	27. limestone	39. shale
4. dolostone	16. sandstone	28. dolostone	40. sandstone
5. dolostone	17. shale	29. dolostone	41. absent
6. dolostone	18. absent	30. dolostone	42. absent
7. shale	19. sandstone	31. dolostone	43. absent
8. limestone	20. sandstone	32. dolostone	44. absent
9. limestone	21. shale	33. limestone	45. absent
10. shale	22. sandstone	34. limestone	46. limestone
11. shale	23. sandstone	35. limestone	47. dolostone
12. sandstone	24. sandstone	36. shale	48. limestone

The paleogeologic map of the Cambrian system on page 103 shows the preserved Cambrian strata in the "Four Corners" area of the western United States. In Arizona, the names of the formations are the same as those Cambrian units found in the Grand Canyon. In the upper corner of the map there is a correlation chart giving the names of the Cambrian formations in western Colorado and eastern Utah.

Questions:

- Construct a lithofacies map for the Cambrian system (see page 103). Why can the same rock type have different formational names?
- Notice that the Cambrian lithostratigraphic facies apparently stop against the side of the Uncompahgre and Zuni uplifts and are absent in both the areas of the uplifts and in the southeastern portion of the mapped Cambrian area. Can the absence of the Cambrian strata be explained by the same geologic processes occurring at the same geologic time? Explain.





## PROBLEM

Construct a Lithofacies Map of the Mississippian Doggett Formation

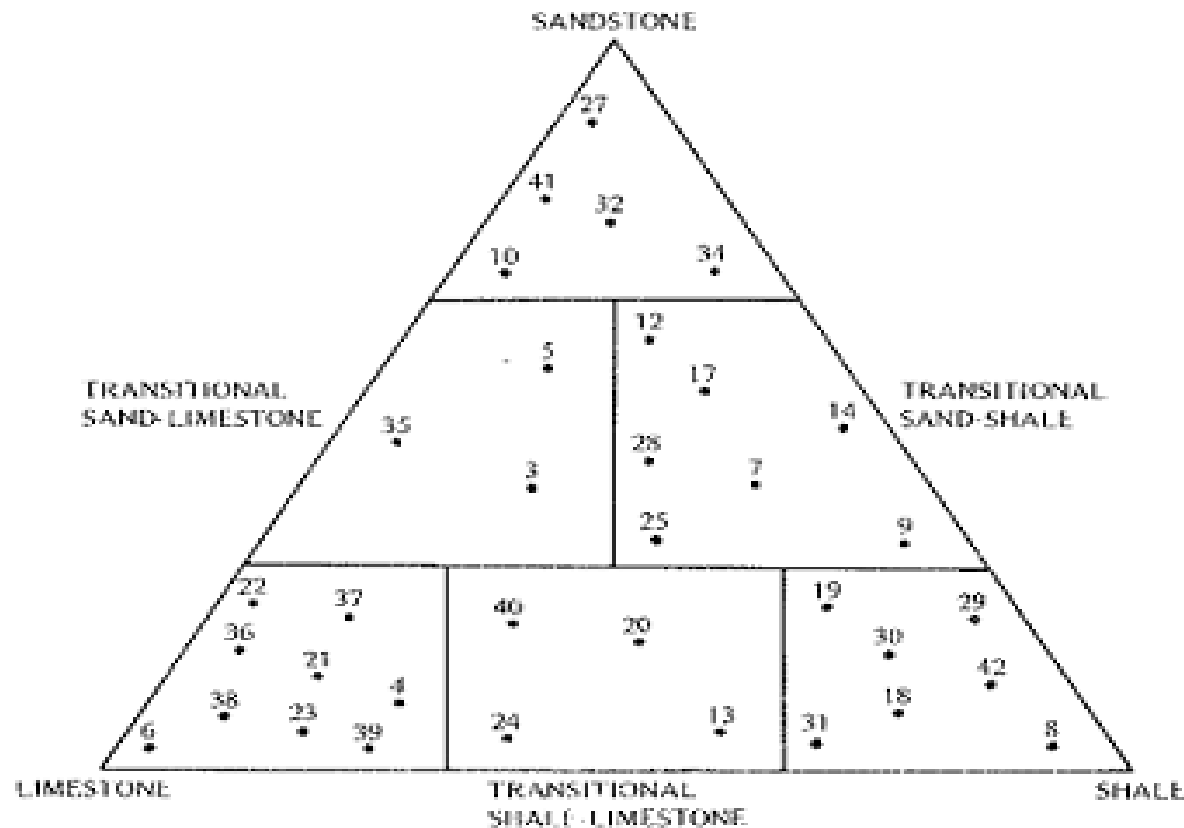
### Data

The following data were derived from cores while drilling for petroleum.

- Data points 1, 2, 11, 15, 16, 26, and 33 all reported no Doggett formation, but reported granite instead.
- All the cores were analyzed, and a dominant lithology was determined for the Doggett formation at each point. These lithologies are located in the ternary diagram presented below.

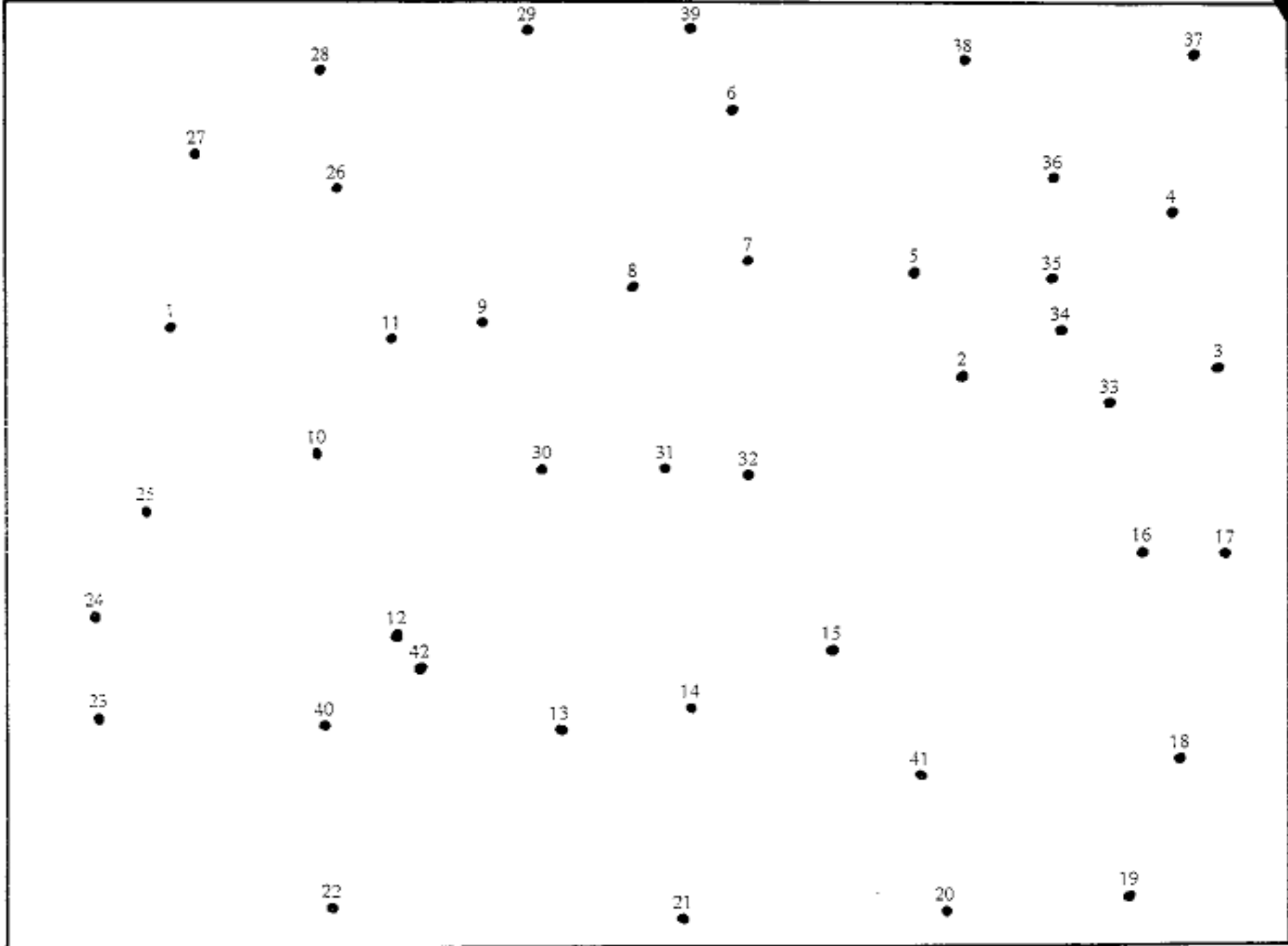
### Procedure

Find the lithology representative for each data point and transfer it to the location map. Next, contour the lithofacies map. (Remember, both the pure end members and the transitional lithologies must be included on the map.)

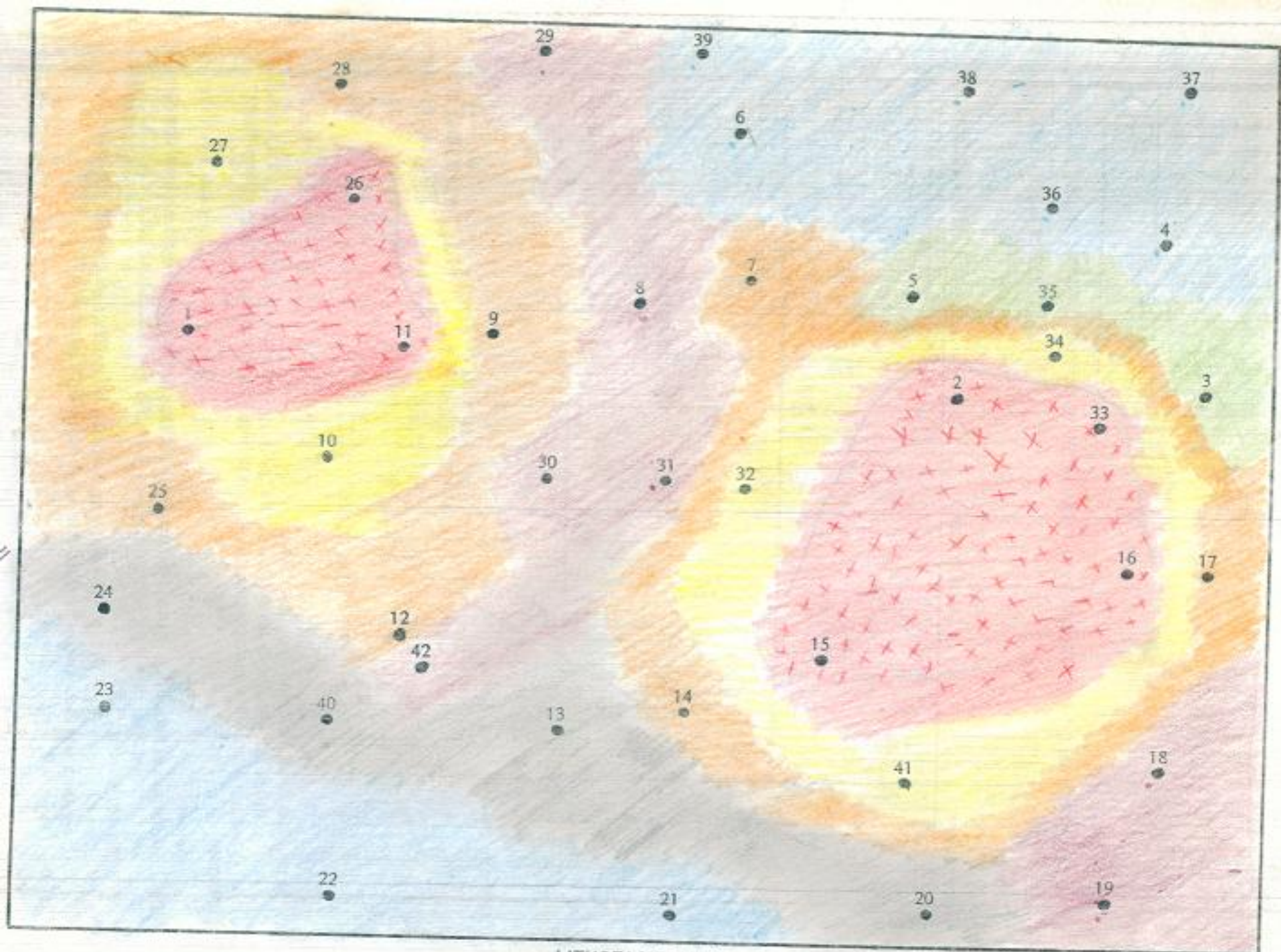


### Interpretation

Briefly discuss the paleogeography and distribution of lithologic patterns within the mapped area.



LITHOFACIES MAP



LITHOFACIES MAP