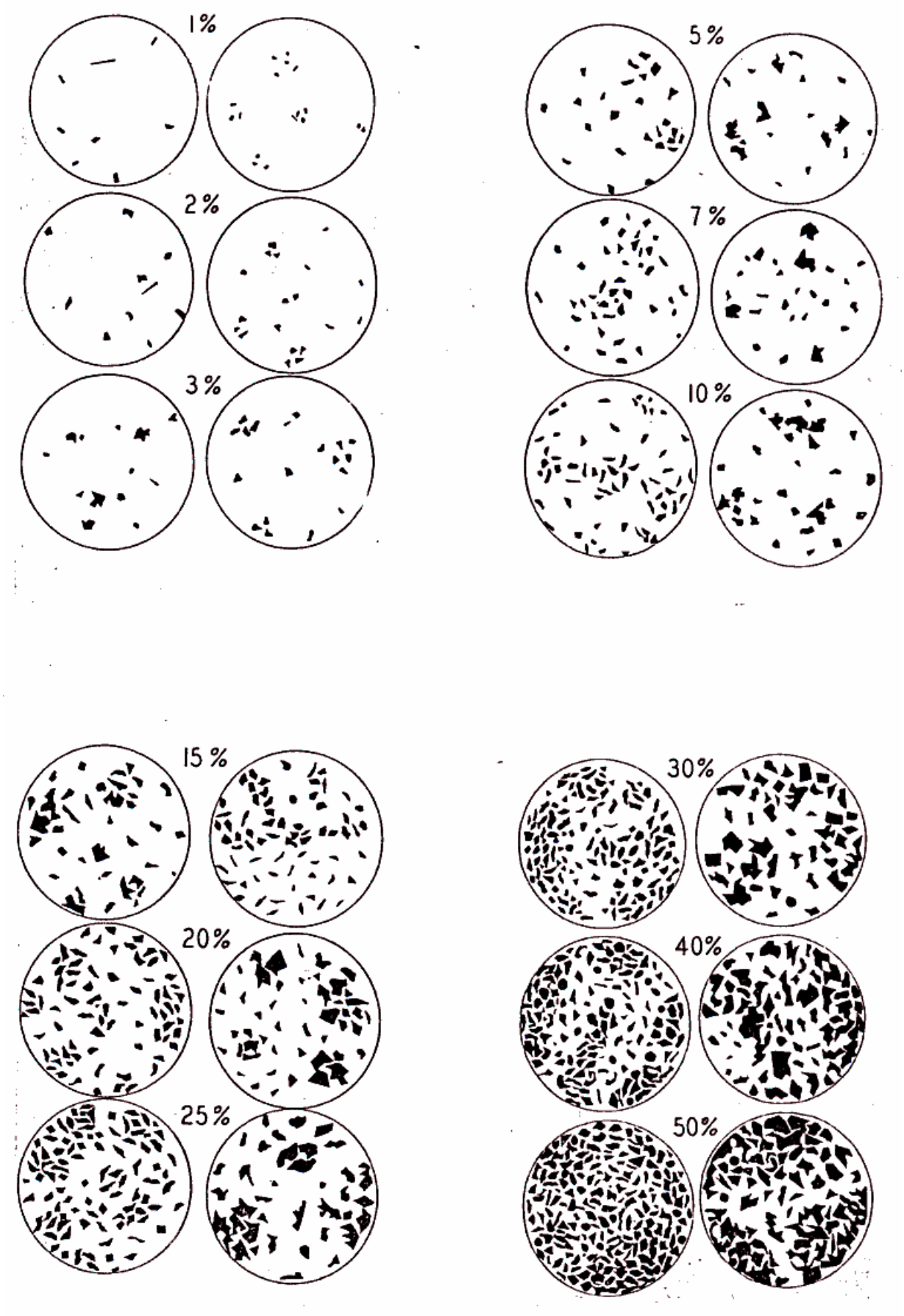
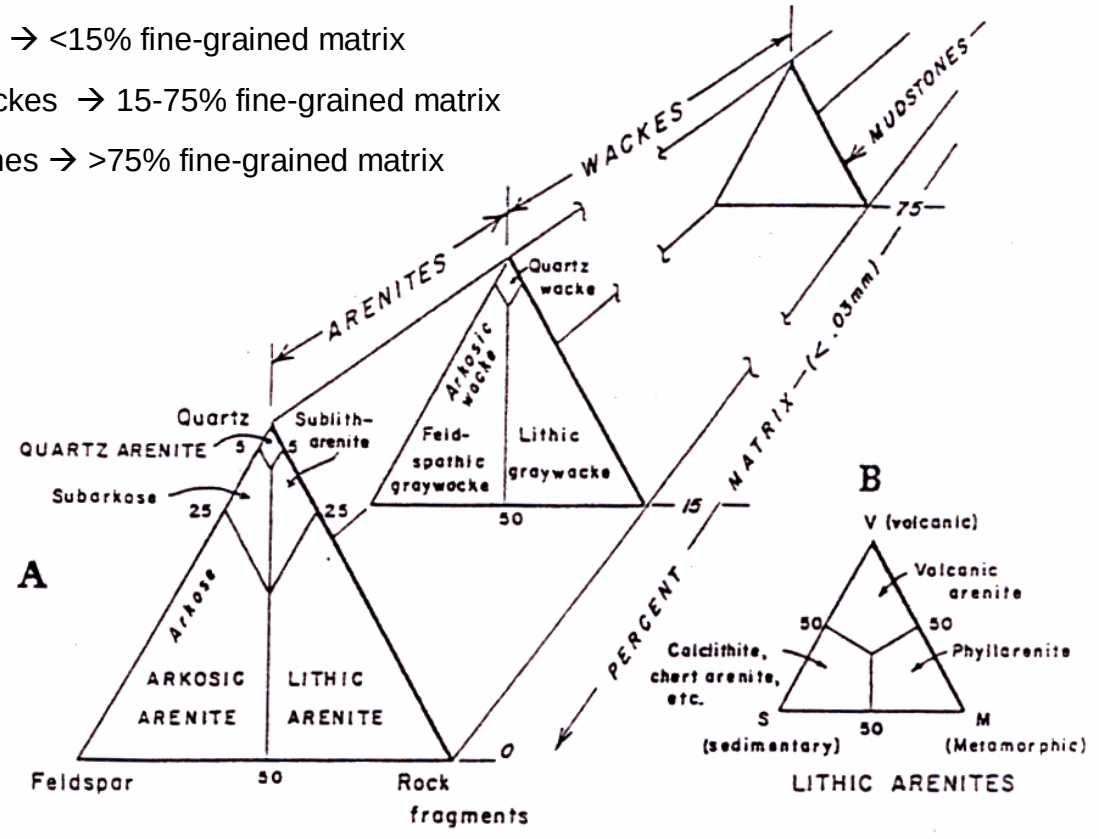

1%
2%
3%
5%
7%
10%
15%
20%
25%
30%
40%
50%

Arenites → <15% fine-grained matrix

Greywackes → 15-75% fine-grained matrix

Mudstones → >75% fine-grained matrix



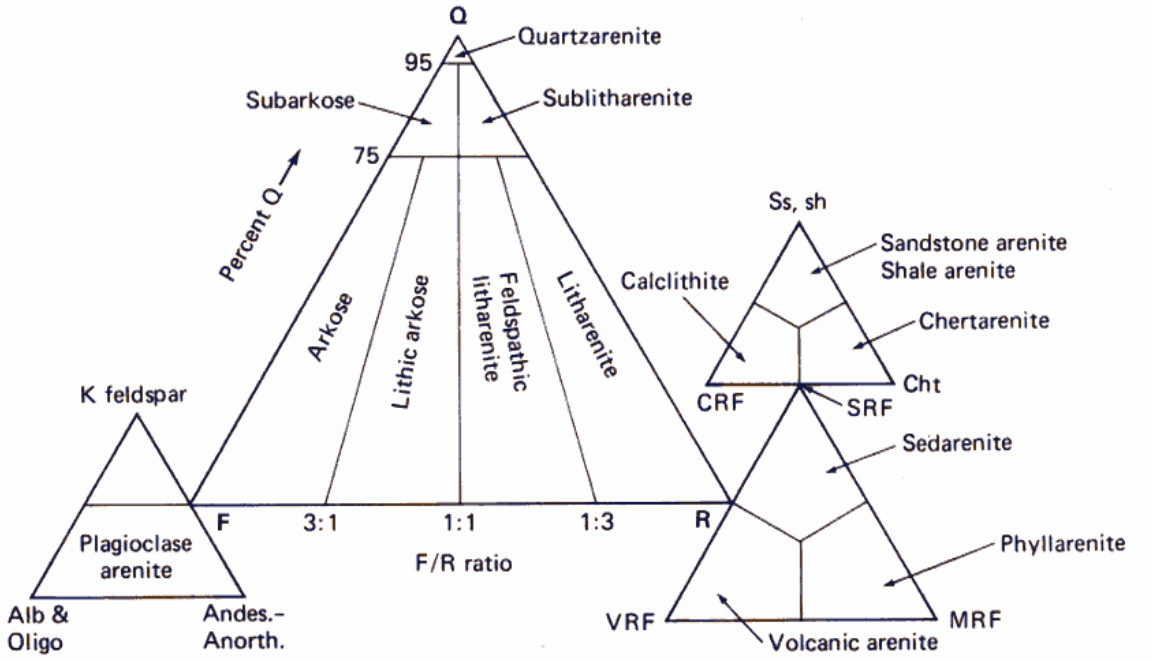
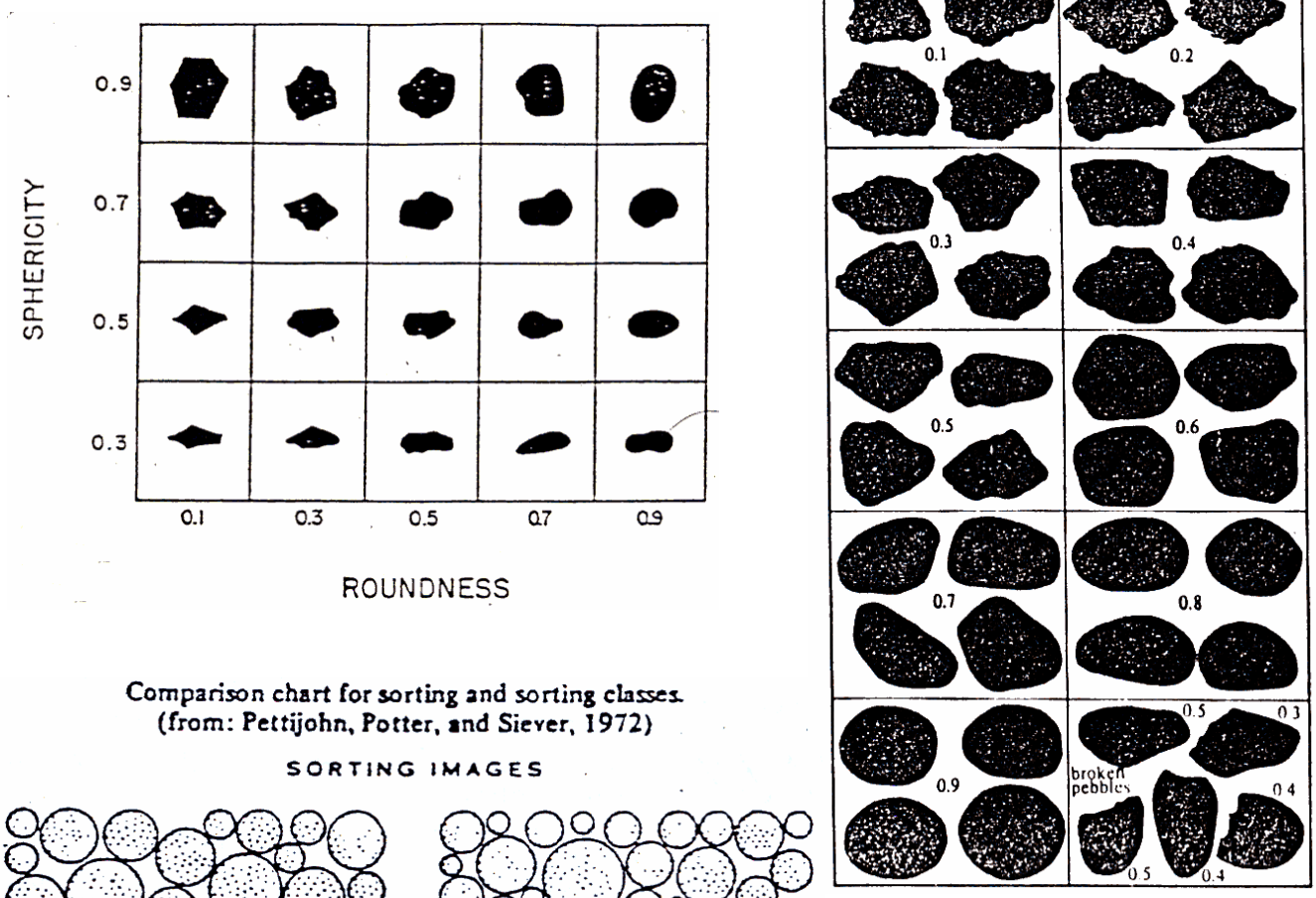
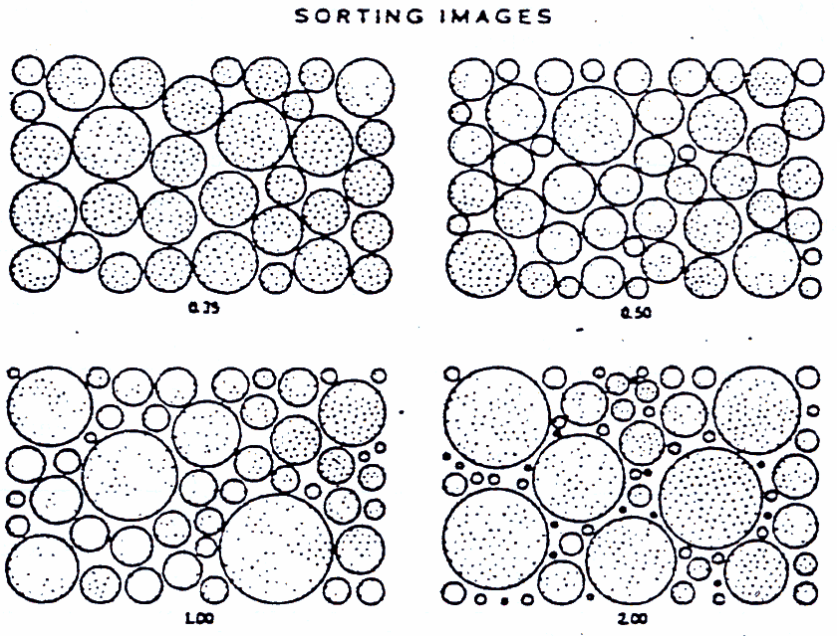




**Figure 1–18** Sandstone classification of R. L. Folk. Note that triangles are not to scale and percentage subdivisions in the central triangle are out of proportion. (From Folk, 1974, p. 127.)

**Figure 6.5** Images for the visual assessment of pebble roundness (based upon Krumbein 1941).




Comparison chart for sorting and sorting classes.
(from: Pettijohn, Potter, and Siever, 1972)




| Phi Standard Deviation | Verbal Scale | Maturity |
|---|---|---|
| 0 – 0.35 | Very well sorted | Mature |
| 0.36 – 0.50 | Well sorted | |
| 0.51 – 1.00 | Moderately sorted | Submature |
| 1.01 – 2.00 | Poorly sorted | |
| > 2.01 | Very poorly sorted | |

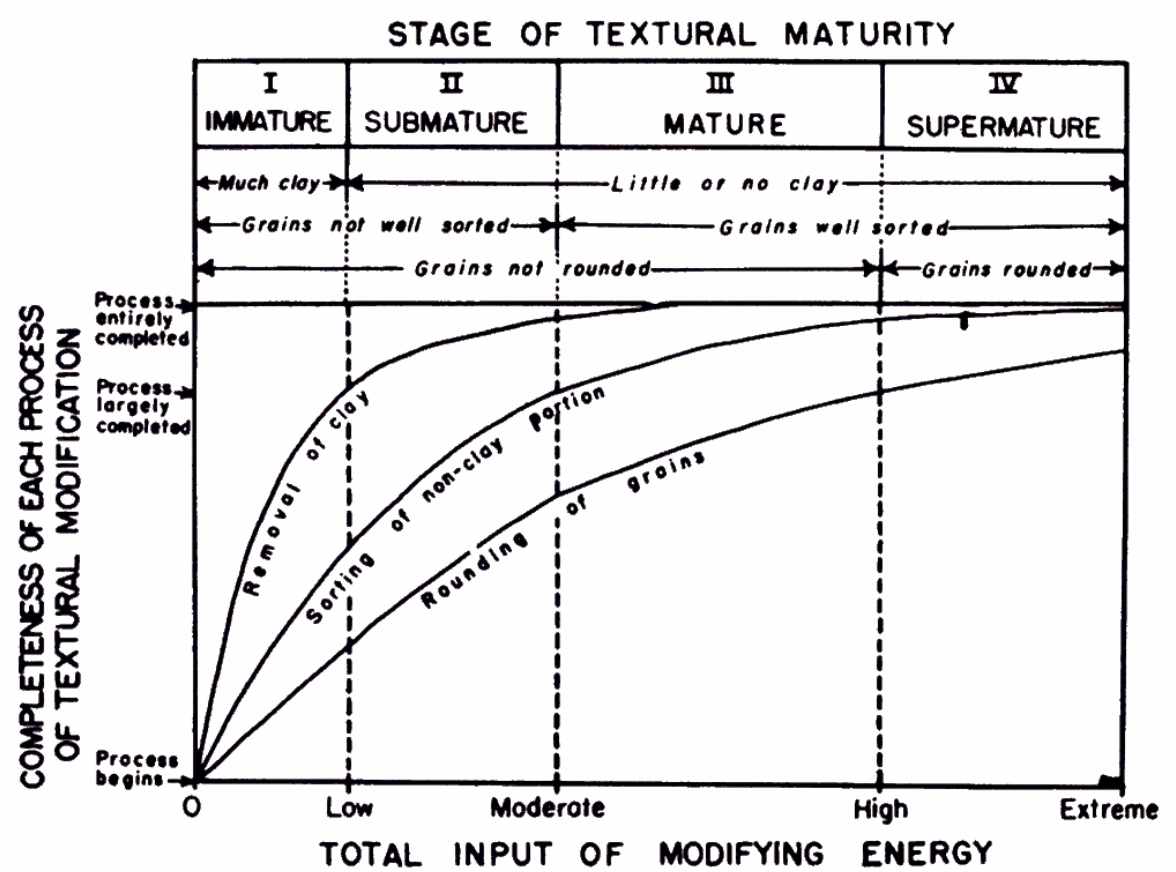
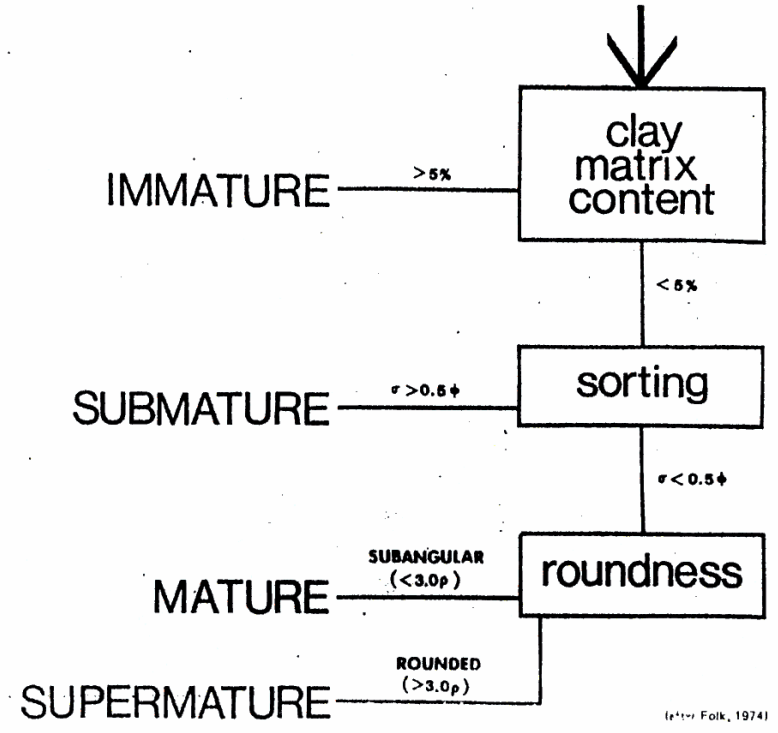
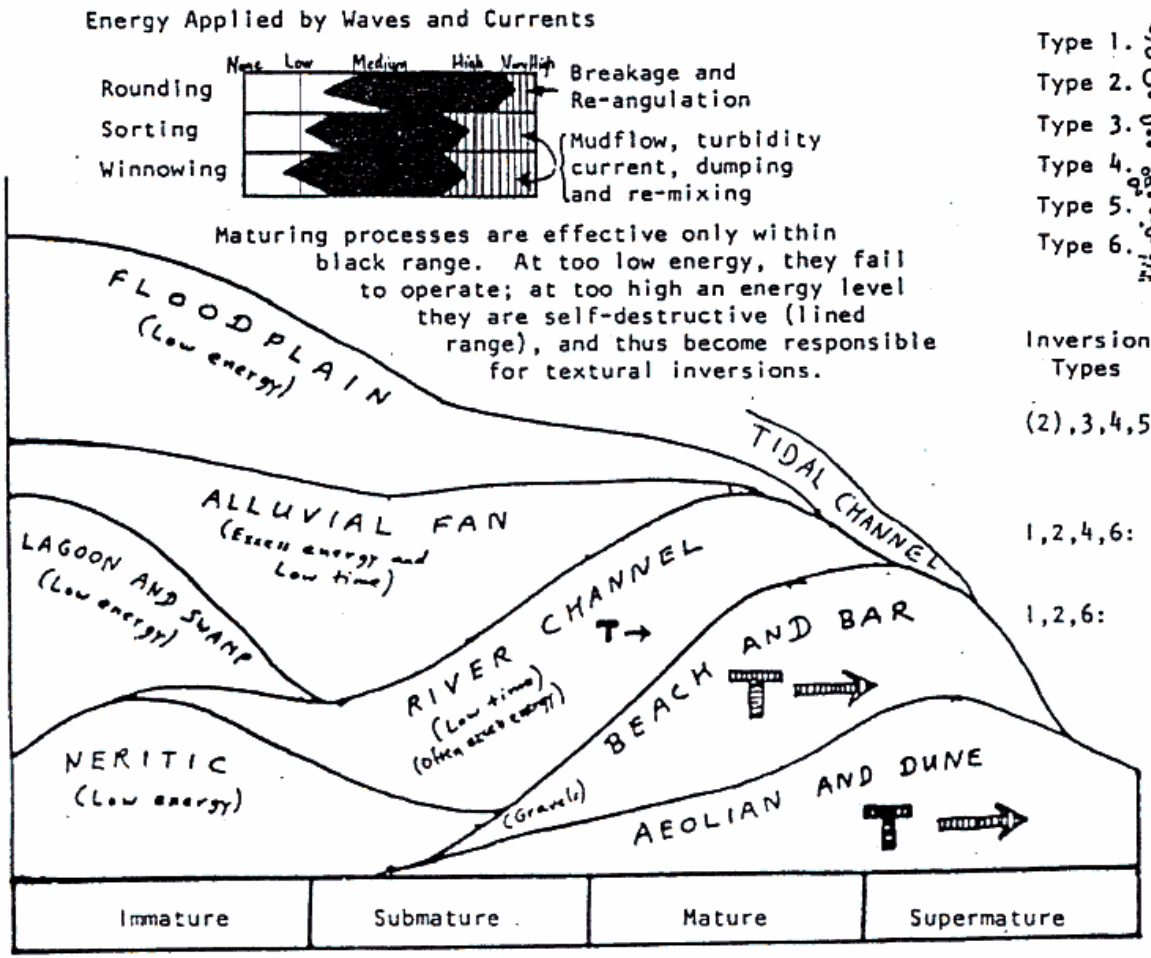



**Figure 1–13** Textural maturity of sands as a function of input of kinetic energy. (From Folk, 1951.)



# TEXTURAL MATURITY




## TEXTURAL INVERSIONS

Type 1. Rounded grains in clayey matrix

Type 2. Rounded but poorly sorted grains

Type 3. Abnormal size/roundness relations

Type 4. Bimodal roundness in same size grade

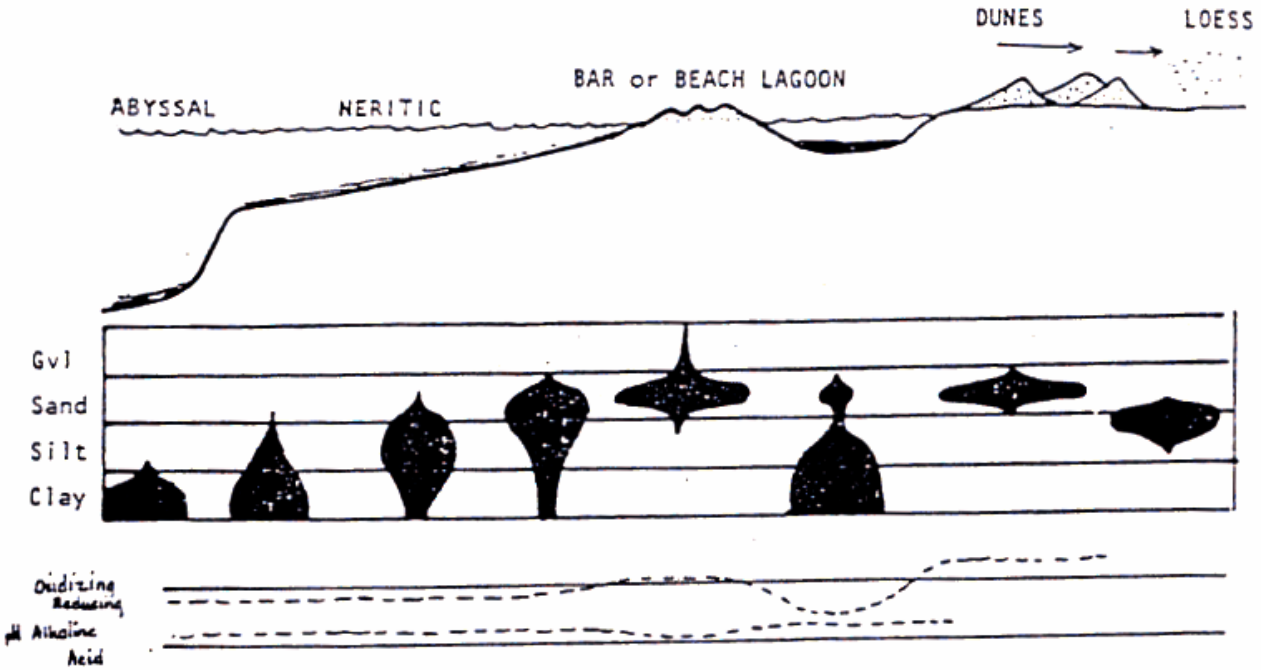
Type 5. Well-sorted bimodal sediments

Type 6. Well-sorted grains (not well rounded) in clayey matrix

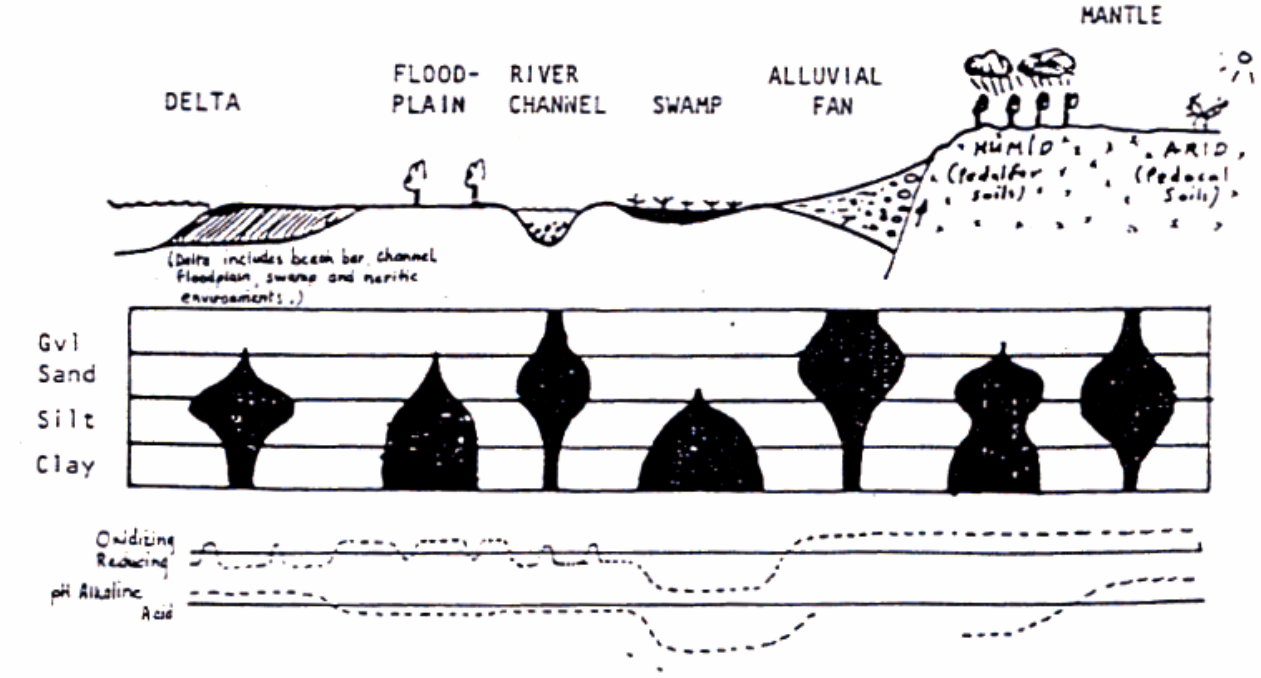
| Inversion Types | Probable cause |
|---|---|
| (2),3,4,5: | Multiple source; incorporation of reworked older sediments into primary material (e.g. rounded & sands with fresh granitic detritus) |
| 1,2,4,6: | Mixing of sediments from two different environments (e.g. barrier bar + lagoon) |
| 1,2,6: | Maturing process operating at too high an energy level hence becoming self-destructive (e.g. hurricane waves destroying a series of well-sorted beach deposits) |

Indicates that sediments in the environment in which the symbol appears move to the right (become more mature) if prolonged time is available. The other environments show little change with time. Reasons for the lack of maturity of sediments in some environments are given in parentheses. In a general way tectonic stability correlates with high maturity, instability with low maturity, thus tectonism and environmental influences both react on maturity.

## ENVIRONMENTS




NOTE: All above factors affected by geologic history. For example the sediments we find <u>now</u> in the neritic zone may have actually <u>formed</u> when sea level was much lower- ancient beaches are often buried under several hundred feet of water and their characters will be those of beach sands although they are now deep in the neritic zone. Beaches contain <u>gravel</u> if (1) gravel is the result of past geologic history (e.g. glacial); (2) hard rocks outcrop at the coastline; (3) competent rivers carry gravel to the sea.




NOTE: Proportion of gravel in the various loci depends on (1) nearness to hard rock outcrops or older reworkable gravel deposits, (2) competency of currents.