number. From the known behavior of the lanthanide elements in this type of elution (with lactate or citrate), it is expected that the remaining actinide elements, 101, 102 and 103, will also elute in the inverse order of their atomic numbers with spacings between them which will be closely analogous to the homologous lanthanide elements (i.e., the separation between elements 102 and 103 will be small). In the other types of elutions shown in Fig. 8, it is apparent that there exists a variety of rather complicated situations, and obviously the elution positions are not determined solely by simple considerations of ionic radii (which would lead to a monotonic elution sequence). Some of the factors which may influence elution positions are listed below.

A study of Fig. 8 shows that departures from a "simple" elution sequence occur in two positions:

(1) Relative to curium, americium is more highly retained by anion resin and less highly retained by cation resin than would be expected. (This effect is just noticeable in the Dowex 50-lactate or citrate elution.) Presumably, therefore, americium has a tendency to form anionic complexes which are stronger or more negatively charged than would be expected from a study of the behavior of curium.

(2) Relative to berkelium and element 99, californium is more highly retained by anion resin, less by cation resin, than would be expected. (This effect also is just noticeable in the Dowex 50-lactate or citrate elution.) Presumably californium, like americium, tends to form complex ions which are stronger or more negatively