the determination of absolute ages of sedimentation of sedimentary zones.

K/Ar and Rb/Sr ages from glauconites are about 10–20% lower than the age of sedimentation where external controls on the ages are available. Previous studies have indicated that these low ages are not attributable to normal diffusion loss of Ar from glauconite crystallites.

The possibilities of argon loss from "open" potassium sites, such as on crystal surfaces and from expanded layers, was investigated by acid dissolution techniques. These studies show that potassium is removed from glauconites with low expandabilities at 3 different rates. The highest dissolution rate corresponds to cation exchange and comprises 5–10% of the total potassium. About 5% of the total potassium is removed at a much slower rate than that of cation exchange, but at an order of magnitude faster than most of the potassium.

The amount of potassium in "open" sites, interpreted to be subject to argon loss, was compared with the difference between radiometric age and stratigraphic age for some samples. It appears that low radiometric ages from glauconites can be explained largely by the presence of potassium in sites where argon is readily lost, although such factors as late epigenetic gain of potassium by glauconite may contribute to their low radiometric ages.

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GEOCHEMISTRY OF SOME LOWER EOCENE SANDSTONES IN ROCKY MOUNTAIN REGION

The lower Eocene sandstones in the Rocky Mountain region were studied to determine the geochemical setting for the valuable uranium and other mineral deposits they contain. Three pairs of samples were collected from each of 2 sections in 18 different basins and each sample was analyzed for chemical and mineral constituents. The resultant data on 216 samples have been treated statistically. The samples range from arkosic wackes derived from the crystalline cores of mountain ranges to quartz and carbonate arenites derived from the reworking of Mesozoic and Paleozoic strata. The average composition of the 216 samples, expressed as the geometric mean (geometric deviation follows in parentheses), is [in percent]: SiO_2 72.9 (1.2), Al_2O_3 6.6 (1.9), total iron as Fe_2O_3 1.2 (2.1), MgO 0.6 (3.0), CaO 2.4 (4.3), Na_2O 0.5 (4.6), K_2O 1.4 (2.3), H_2O^+ 1.4 (1.6), TiO_2 0.2 (1.9), P_2O_5 0.05 (2.6), MnO 0.06 (2.1), CO_2 0.7 (12.6); [in ppm] B 13 (2), Ba 415 (2), Co 4 (2), Cr 13 (3), Cu 8 (2), Ga 9 (2), La 12 (2), Ni 9 (2), Pb 8 (2), Sr 138 (3), V 24 (2), Y 10 (2), and Zr 113 (2). Compared with the average composition of sandstone as estimated by Pettijohn, these figures are high for Sr, V, La, Y, Ni, and Co, and low for Fe_2O_3, MgO, Na_2O, TiO_2 P_2O_5, MnO, Zr, and possibly B. Geometric mean values for each of the individual sections show considerable variation from the overall mean.

Analysis of variance data suggests that for most constituents the greatest percentage of variance occurs between pairs of samples. This variance also includes that resulting from analytical errors and sample inhomogeneity. For most constituents, significant variance exists between sections; Al_2O_3, K_2O, Na_2O, Ba, Cr, and Ga also show significant variance between basins, suggesting that these data are most useful for plotting regional trends.

Factor analysis of correlation coefficients was used to determine 3 principal geochemical groupings of constituents—quartz, carbonate, and feldspar. Among the minor elements, Cr, Ni, Co, Cu, and V tend to correlate with each other and with iron. Ba correlates best with Al_2O_3 and K_2O; Sr with CaO and plagioclase; Ga with Al_2O_3 and Na_2O. Zr tends to correlate with TiO_2; B with quartz; and MnO with CaO.

Similar statistical methods were applied to 4 separate color subsets of the 216 samples—identified as predominantly red, orange, yellow, or green. The subset of 11 green samples, which were yellowish green to greenish gray to olive gray, differs significantly from the other color subsets and the whole. The green subset shows higher concentrations of nearly every constituent except SiO_2, 14–15 Å clays, kaolin, quartz, potassium feldspar, and calcite. They are enriched especially in Co, Cr, Cu, Ni, Sr, V, Ga, and mica.

Individual stratigraphic sections that show high concentrations of some minor elements include the Patmos Head area of Utah, which is enriched in Cr, Cu, V, Ni, Pb, and TiO_2, and the Oregon Buttes area of Wyoming, which is enriched in MnO, Sr, Co, Cr, V, and Ni.

21ST ANNUAL MEETING OF GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES and GULF COAST SECTION OF SEPM
New Orleans, Louisiana
October 13–15, 1971

The New Orleans Geological Society invites you to come to New Orleans, "Where The Action Is," for the 21st Annual Meeting of the Gulf Coast Association of Geological Societies and Gulf Coast Section of SEPM.

Headquarters for all the action will be the complete convention facilities of the Jung Hotel, with additional housing available in other outstanding downtown and French Quarter hotels. Present plans include:

Technical sessions.—An outstanding program, geared to the oil finder and built around the theme "Where The Action Is," is being assembled. Included will be papers on all the currently active exploration areas from South Texas to peninsular Florida.

Field trips.—1. Pre-convention trip (Oct. 10–13) to the southern coastal waters and barrier reef of British Honduras, to study carbonate sedimentation, reef development, and mixed carbonate-clastic sequences. Cost of $190 includes transportation from New Orleans, meals, housing, boats, and guidebook.

2. Pre-convention trip (Oct. 11–13) to eastern Mississippi and western Alabama, to study the stratigraphy, paleontology, and environments of deposition of classical Gulf Coast Tertiary outcrops. Cost is approximately $40 for transportation, lodging, and guidebook (meals not included).

3. Post-convention trip (Oct. 16) to Bayou Lafourche and Grand Isle, Louisiana, to study barrier islands and ancient deltas of the Mississippi River delta complex. Cost of $35 includes lunch, guidebook, plane, and bus.

4. Post-convention trip (Oct. 16–17) via airplane and boat to the lower Mississippi delta Venice, Louisiana (Head of Passes), and the mouth of South Pass to study delta processes, sediments, and structures. Cost