sandstone, thereby making some 5000 feet of faunally barren strata Cambrian. Conformability of much of the section necessitates the abandonment of this convention. On the other hand, inhospitable environments suggested by the Campito and older rocks make preservation of any early Cambrian forms unlikely, and these strata may well be in part Cambrian. These factors indicate that the base of the Cambrian cannot yet be drawn in this section.

RESPONSE OF A CRITICALLY DAMPED MECHANICAL SEISMOMETER TO WAVELETS

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The seismometer equation is solved as an integral containing the acceleration of the earth. Numerical solutions are given for ground displacements of the forms

$$x(t) = e^{-1/2(t/\lambda)^2} \text{ and } x(t) = -t\, e^{-1/2(t/\lambda)^2}$$

for several ratios of seismometer period To to the wavelet parameter λ.

CRUSTAL STRUCTURE OF THE INDIAN OCEAN BASIN FROM RAYLEIGH-WAVE DISPERSION

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Earthquake surface waves of the Rayleigh type show that the crustal structure underlying the Indian Ocean Basin is identical to that beneath the Atlantic and Pacific oceans within the limits of accuracy of the method. The Mozambique Channel may be underlain by the continental type of crust. The average thickness of unconsolidated sediments on the Indian Ocean Basin is about 1.0 km.

REDESCRIPTION OF THE SINGLE-LAYER STRUCTURE OF THE MICAS

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It can be shown that the structure of single-layer micas described by Hendricks (1939) as "monoclinic hemihedral", space group $C_s^3 - Cm$, is very nearly holohedral. By adjustments in the x co-ordinates of some of the atoms not exceeding 0.005 and a new choice of origin at a center of symmetry all atomic co-ordinates can be brought into conformity with the conventional description for structures in space group $C_{2h}^3 - C2/m$. It is suggested that this description is preferable since no evidence is known requiring the lower symmetry previously assigned.

GALEITE, A NEW MINERAL FROM SEARLES LAKE, CALIFORNIA

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Galeite, a new mineral from Searles Lake, California, is named in honor of Mr. W. A. Gale, Director of Research of the American Potash and Chemical Corporation. Analysis (wt%): NaCl 6.27, Na_2SO_4 75.39, NaF 17.43, ignition loss (at 120°C.) 0.10, total 99.19. Cations other than sodium are present only as traces. The formula may be written $Na_2SO_4 \cdot Na(F, Cl)$, as for schairerite, with the ratio Cl/F close to 1/4.

Galeite has been found only in drill cores. It occurs in small nodular aggregates of minute white crystals, embedded in clay and other salt minerals. Maximum dimension of crystals is about 1 mm. In some nodules it is associated with gaylussite and northupite. The crystals are hexagonal, barrel-

shaped, rarely tabular, but a single rhombohedron with rho 66° 25' is the most persistent form and clearly indicates that the c axis is trigonal.

Numerical constants for galeite are:

a_0 12.17 ± 0.02Å, c_0 13.94 ± 0.02;
Space Group $D_{3d}^1 - P312/m$ (or $C_{3v}^2 - P31m$ or $D_3^1 - P312$)
Cell Content 15 formular units
S. G. Measured (by suspension) 2.605 ± 0.005, calculated 2.611
Uniaxial positive, $nO = 1.447 ± 0.002, nE = 1.449 ± 0.002$
$\qquad nE - nO = 0.002$ by direct measurement.

Galeite is closely related to schairerite whose cell dimensions are a_0 12.17, c_0 19.29, cell content 21 formular units in agreement with Frondel (1940). Possible space groups for schairerite are the same as for galeite. If, for crystals in these space groups, the forms are to be referred to axes corresponding to those of the lattice, rhombohedra or trigonal pyramids become second-order forms. Complete correlation of morphology with lattice was obtained for each species.

Some crystals of galeite show evidence of disorder in stacking in the c-axis direction and of interlayering with subordinate sheets of schairerite structure. They may be considered "polycrystals" in the sense of G. Donnay (1953).

The artificial double salt, $Na_2SO_4 \cdot NaF$, described by Foote and Schairer (1930) has been considered by Frondel (1940) and by Foshag (1931) to be "artificial schairerite", and attempts have been made to use the same axes of reference for both schairerite and this artificial material. $Na_2SO_4 \cdot NaF$ single crystals obtained from Schairer and similar single crystals grown from a melt of the same composition have the cell dimensions a_0 27.8, c_0 24.5 and possible space groups $R\bar{3}2/m$, $R3m$ or $R32$.

PRELIMINARY STUDIES OF SOME OF THE ORE DEPOSITS IN THE NORTHERN PART OF THE BOULDER BATHOLITH, MONTANA

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Two major types of veins occur in the Jefferson City quadrangle and the adjacent Clancy district in the northern part of the Boulder batholith: (1) quartz veins from which base and precious metals have been produced, and (2) veins consisting mainly of chalcedony, which occur in zones and some of which contain small deposits of silver, uranium, and gold.

Most of the chalcedony veins contain several generations of chalcedony and microcrystalline quartz and trend either E. or N. 60° E. They occur northwest of Boulder and near Clancy.

Most of the quartz veins occur west of a line connecting the two areas of chalcedony veins, in east-trending steeply dipping shear zones along which are found ore bodies containing galena, sphalerite, pyrite, arsenopyrite, chalcopyrite, and tetrahedrite associated with tourmaline, quartz, and also iron, manganese, and calcium carbonate minerals. Most of the quartz veins contain most of the ore and gangue minerals listed above, but the amounts and proportions of the minerals vary from vein to vein, from district to district, and along the strike of individual veins. Some of the veins contain uranium.

Indistinct zoning in the quartz veins is suggested by a higher content of chalcopyrite in veins east and northeast of the silver-lead deposits at Wickes and by an increase of carbonate minerals toward the ends of the Comet-Gray Eagle shear zone. Incomplete evidence indicates vertical zoning in the veins at the Comet, Gray Eagle, and Gregory mines.

CRETACEOUS OF SIMI HILLS, SOUTHERN CALIFORNIA

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Unnamed massive sandstones cropping out along Santa Susana Pass and the eastern and southern margin of the Simi Hills, Los Angeles and Ventura counties, California, were early thought to be of