

istic of mountain formation and also examples of forms which are repeated over and over again in other mountain ranges of the world. As the foundation of the subject as treated in the lecture, the parallel was drawn between man in his artistic productions and Nature in her fashioning of existing mountains. The lecture thus fell into three divisions corresponding to Nature's activity as an architect, as a sculptor, and as a painter.

The raw material with which Nature works in mountain-building is derived from stratified rock-material originally deposited in thick and extensive layers on the sea-floor. The methods by which the once flat-lying submarine strata are elevated into a mountain-range, include the folding and faulting of those beds, due to great lateral pressure at right angles to the axis of the range. In the process of folding, the width of the belt of rock so engaged is diminished and the thickness is correspondingly increased. As one consequence the lower parts of the greater folds become so deeply buried as to feel the influence of subterranean heat and of hot water and gases circulating within the earth's crust. The folded marine strata are in this way subjected to alteration and crystallization: from them many kinds of crystalline schists, so characteristically developed in great ranges throughout the world, have been derived. Again, the mountain folds may be partially displaced by molten granite or allied rock-material rising from the earth's interior and invading the overlying formations. The importance of this kind of raw material used by Nature in producing her mountain architecture, is recognized by the tourist visiting, for example, the Yosemite Valley, perhaps for its area affording the grandest bit of scenery in the world. The "central granites" of most great mountain ranges usually furnish much of the scenic magnificence of those ranges. Finally, the fractures opened by folding and faulting in the rocks composing a range, may permit of the overflow of molten rock from subterranean sources; the result has been to form in the west, Mt. Baker, Mt. Rainier and other huge volcanoes, among the grandest units in the scenery of the Rocky Mountain Region. In summary, folding, faulting, metamorphism, granitic intrusion and volcanic eruption were briefly noted as the methods by which mountain architecture has been determined.