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## EDUCATION IN GEOLOGY—HOW ADVANCE IT?<sup>1</sup>

By Professor CHESTER R. LONGWELL

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THE title of this address is a complex question calling for a number of answers, and I do not pretend to know all of them. In fact, without some definition of scope the question is too large and vague to furnish a hopeful point of attack in a brief discussion. It may be supposed that any one who has devoted a large share of his life to teaching geology would focus on the mechanics of the college curriculum as the chief matter for attention in a search for means to improve geological education. Undoubtedly improvements can and should be made in that quarter. Our subject has had spectacular recent growth in accumulation of critical factual material, in the development of powerful new techniques and in successful application of principles borrowed from other sciences. As a result our fighting front is far flung, and many parts of it are in a fluid condition. An adequate training pro-

gram requires frequent adjustments and changes of emphasis to insure proper balance in basic preparation on the one hand, and a high degree of specialized skill on the other.

Important as the college curriculum is, however, I prefer to examine some aspects of our educational program that, in my opinion, are even more fundamental and immediately critical. Attention has been strongly focused on some of these matters by Croneis, in a paper which met a general response indicating that the time is ripe for some concerted study and action.<sup>2</sup> Two facets of the general problem deserve particular thought. Both can be approached through questions that are somewhat more specific than the one in our title. (1) How can a larger number of top-rank students be attracted into geology? (2) How can appreciation of geology be widened and deepened among laymen? Although these two matters seem to

<sup>1</sup> Address of the retiring vice-president for 1943 of Section E—Geology and Geography, American Association for the Advancement of Science, Cleveland, Ohio, September 13, 1944.

<sup>2</sup> Carey Croneis, "Geology in War and Peace," *Bull. Am. Assoc. Petrol. Geol.*, vol. 26, pp. 1221-1249, 1942.

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