

SCIENCE

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FRIDAY, AUGUST 29, 1902.

THE TRAINING AND WORK OF A GEOLOGIST.*

GEOLOGY is a dynamic science, subject to the laws of energy. Geology treats of a world alive, instead of, as commonly supposed, a world finished and dead. The atmosphere, or sphere of air, is ever unquiet; the hydrosphere, or sphere of water, is less active, but still very mobile; the lithosphere, or sphere of rock, has everywhere continuous although slow motions. The motions of the atmosphere, the hydrosphere, and the lithosphere alike include body motions by which the positions of large masses of material are changed, and interior motions, through which the mineral particles are constantly rearranged with reference one to another, and indeed are constantly remade. Furthermore, the molecules and even the atoms which compose the atmosphere, hydrosphere and lithosphere have motions of marvelous intricacy and speed. These motions of the atmosphere, the hydrosphere and the lithosphere, are all superimposed upon the astronomical motions—the wobbling revolution of the earth about its axis, the revolution of the earth-moon couple about their common center of gravity, the movement of this couple about the sun at the rate of 68,000 miles per hour, the

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

* Vice-Presidential address, Section E, Geology and Geography, American Association for the Advancement of Science, Pittsburgh Meeting, 1902.