With the advancement of prosperity and the enlightenment of the public, we find the capitalist commencing to lean on the judgment of the engineer for advice in the prosecution of large public works. The professional standing of the engineer is now a guarantee and one of the best recommendations he can have; it is therefore incumbent on him to make himself perfectly familiar with all the details of that special branch in which he practises. This opens up the field for the exercise of individual energy. The mechanical engineer must study out the various methods to obtain the fullest value from raw material. The prime factor of all our mechanical energy—heat—has many an unexplored field. We are still unable to utilize to its fullest development the heat unit of one pound of coal. The steam boiler and steam engine have not arrived at a condition of finished perfection; on land in the stationary and the locomotive engine, and on water in the marine boiler, with its intensely overheated and exhausting stoke hole, a field for improvement and invention is yet open.

In the applications of our newly acquired force—electricity—we have to depend on some other power for its generation, as we have not yet succeeded in abstracting it from the rays of the sun or the atmosphere. The recent discoveries by which electricity can be transmitted to great distances with but trifling loss—I think it is possible to do so now with the loss of only one per cent.—call for thought and attention in its generation. We have an untold amount of power lying idle, and we can say, truly, going to waste, in our magnificent inland rivers. We have in the various chains of lakes which dot our province ample and ready opportunities to store water, which can be let down as required, to maintain any given amount of head; and it does not need much argument to point out to any of you how readily one water power can work in connection with another, generating electricity at this point and sending it so far, till it reaches the current developed at the next point. The discoveries in the field of electrical science follow each other with a rapidity never attained in any other branch of pure or applied science.

These are some of the fields in which your energies have to be developed. I do not wish you to carry away an impression that I have come to speak pleasantries, and make you believe the country is full of work at present. The outline I have given you is a correct statement; the success which will attend you will depend on your individual effort. Let me say one word of warning: let not your youthful elasticity of spirits tempt you to undertake work beyond your powers, for the world has a most uncharitable habit of writing men's failures deeply into its memory.