

This, together with the combined experience of such men, which we possess as a rich heritage, has made possible a specialization of the world's work, and hence the development of many lines of professional technological work. With this there came, it would seem, two demands—first, a recasting of the college curriculum, and second, a radical change in preparatory or early education. The former has been conceded, not so fully as could be wished, yet conceded; the latter is still fighting its way; it must not only win the consent of the indifferent and hostile but also await an accumulated experience on the part of its friends.

These demands bring clearly to view a fact that needs to be emphasized, namely: the close and necessary relation that exists between the preparatory work of the schools and the technological work of the colleges. But what should be the scope of this preparatory work, and will one scheme suffice for all of what may be called the professional activities of life? It would seem that *one* must suffice, since otherwise a decision upon one of the most important of life's questions would be demanded at too early an age. This being granted, there remains the former question, and the answer to it is one of the impending educational problems. What follows is a general thought in this direction.

It should, from the beginning, educate the hand and eye as well as the mind; in its earliest stages it should teach how to *do*, and this largely through observation, next how to think and execute from facts and ideas that are supplied, reserving for the distinctive feature of college work the apprehension of facts and ideas themselves as well as the execution of them. To be more explicit, natural objects should be early in the hands of teacher and child, also a stimulus should be given to habits of accurate observation and clear perception through study of and actual contact with color and form, and later, with materials, as to texture, color, organi-

zation, structure, or mechanical properties. Mathematics, the natural sciences, modern languages, history, hygiene, economics and geography are subjects that should be taught, and further, there should be acquired such a familiarity with the English language that would render possible a *written* composition clear, terse and forcible. The Mechanic Arts seem to afford the best opportunities for the training of hand and eye; as for instance, wood and metal work, carried to the producing of true surfaces, lines and angles and the combination of these into elementary forms.

This would bring the student to the threshold of college life with the foundations well and broadly laid, prepared to elect a definite line of work, and to devote four years to a successful prosecution of it. A portion of the time of this last period should be devoted to the completion of those ethical, political and æsthetical studies that would tend to round out his character and broaden his conceptions, not only of a particular line of work and its relation to others, but also his relations, as an individual, to society and the state. This would also provide against the danger that threatens the success of technological education, namely: a one-sided development. This danger has been a necessary result, since, at first, only two years could be given (the Junior and Senior) to the newcomer, and it was further burdened by having some of the features of the older and long established system incorporated in it. This burdening was a natural result, and in many instances the best that could be done.

The length of time assigned and opportunities afforded have steadily increased, until now further progress in collegiate technological work depends, in a large measure, upon advance in preparatory training.

THE ALLEGHENIES.

Our Mountains! for they are ours in the sense that we love them; they have always shielded us from the cyclone's sweep, and the hurri-