

choice should be made all at once, and that at the time when the boy leaves home; that from that time onward he should have the entire decision. We hold, on the contrary, that he should first develop somewhat in his new surroundings, learn better how to study, and what the different courses are, before he has the grave task of deciding. Moreover, a headlong plunge into freedom is not a good thing. I still think, also, that an educated man should enjoy a good training in the five great branches of human knowledge, — in mathematics; in language, including literature; in physical science; in the history of his race; in philosophy. Because, then, I do not think that the new education draws the line in the right place, I am opposed to its extreme measures.

One argument of Professor Palmer hardly admits of statistics. He thinks the type of manliness at Harvard higher than that to be found at colleges that have not so fully adopted the elective system. I reply, that I do not believe the men at Yale yield in manliness to those of any college.

My ideal of cultured manliness in the undergraduate agrees with that of Professor Palmer: as to how best to realize it, we differ. In my opinion, he gives too little weight to the great ethical law of habit, and to the value of the pressure of immediate necessity. We want to train the young to choose right spontaneously, but none of us live solely under the influence of high and remote ideals. Under a system of education, which kindly but firmly invites men to 'choose right,' in view of consequences that come closely home to them, the best characters will be formed.

Having now pretty fully traversed the ground of Professor Palmer's arguments from experience, I wish, in closing, to express, on behalf of the majority of educationists, the fears — honest and strong fears — which they feel as to the ultimate results of the new education.

We fear that the new education will increase the tendency to shallowness, already great enough in American student life. We have already too much smattering of many knowledges. The chief remedy must be to pursue certain topics with persistence and thoroughness. If the average American boy, on entering college, had had the discipline afforded by the drill of a German gymnasium, he might more safely judge for himself. Two years more of continued study of certain prescribed subjects — whatever these may be — is certainly little enough to require of him.

We are afraid of the effects of the new education on the academies of the country. They have been gradually improving under the increased requirements of the colleges; but how shall they meet the demands made by boys, who, under the

new education, may enter college in so many different ways? What interest, also, will boys take in mathematics and the ancient classics, when these are liable to be abandoned so soon as they have attained free election?

We are afraid of the effects of the new education on the higher education of the country, which has been constantly rising for years. The new methods, in themselves considered, are better than the old: and the new learning and science are, of course, far richer than those of the past. But, in order to introduce these, is it necessary to take the direct control from the older and wiser, and leave it to the choice of the inexperienced? Such a course will, in certain lines, destroy all connected and steady discipline in higher education.

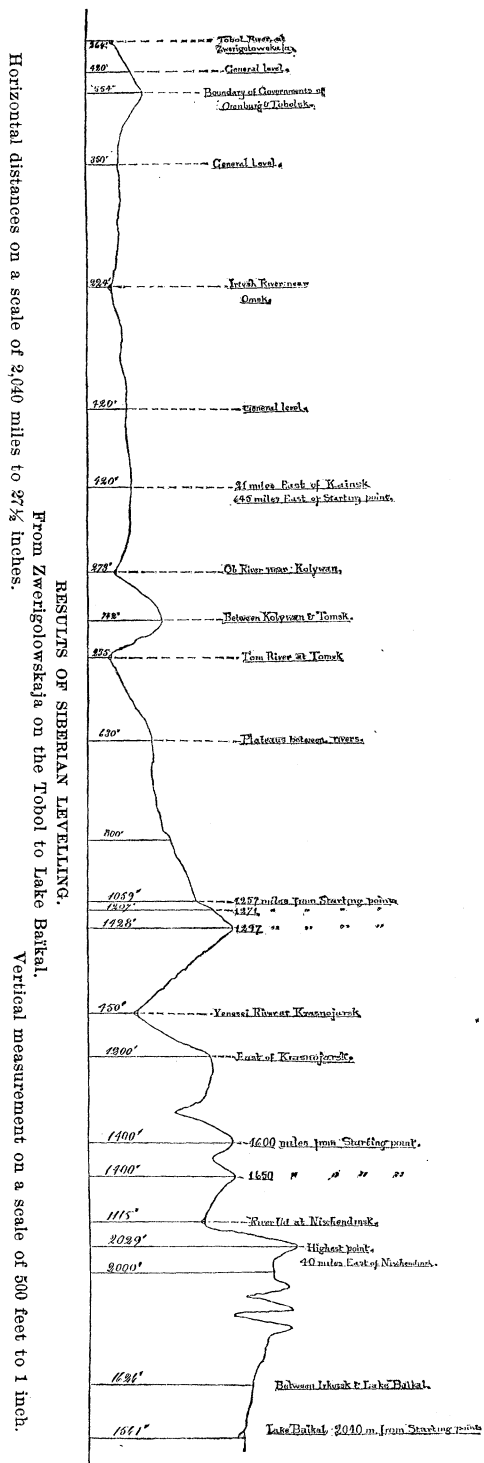
Finally, in spite of Professor Palmer's arguments, we are afraid of the effects of the new education on the character of the youth.

We think we have shown, that in every respect, except that of securing \$175,000 instead of \$250,000 a year, and of making a smaller percentage of annual gain in numbers, the results of the system in vogue at Yale are equal or superior to those at Harvard. We need much more light, both from reason and observation, before preferring the new education to one which is, in our judgment, wiser, though both new and old.

THE LEVELLING OF SIBERIA.

THE publication of the results of the Siberian levelling, the largest of the kind yet made, is at last ended. The survey originated in the Imperial Russian geographical society, which petitioned the Russian government to grant the necessary means, setting forth the want of an accurate knowledge of the height above sea-level of a great part of Siberia. The preliminary results were known in 1878, and gave a much greater height for Lake Baikal than was expected. The detailed calculations were delayed from different reasons, among which were the long illness and death of Mr. Moschkow, to whom was intrusted the greater part of the work. It was afterwards given to W. Fuss, who ended it. The whole length of the levelling from Zwerigowskaja on the Tobol to Lake Baikal is 3087.1 versts (2,040 English statute miles). Unfortunately the starting-point is not connected by levelling with the Black or Baltic seas, but by triangulation only, so that an uncertainty of perhaps thirty or even forty feet remains. The results are shown in the accompanying profile.

Gen. A. Tillo has the direction of different levellings under the ministry of public works. In 1884 the mean level of Lake Ladoga over the Gulf of Finland was determined, and found to be 16.3



English feet, while the formerly admitted height was 66 feet. Such a great difference from the formerly admitted height is startling, yet the new figures are the result of so accurate and well-checked operations and calculations that their result cannot be doubted. According to the new determination, the slope of the Neva is about the same as that of the Volga in its middle course, while the formerly admitted heights made it four times greater. To have another check on the height of Lake Ladoga, the barometric means of H. Schlusselfburg were compared with those of St. Petersburg for a mean of eight years. The difference of level of the Ladoga and Gulf of Finland, determined barometrically, is but 8.6 feet; that is, less by 7.7 feet than that determined by levelling. If we suppose both series of observations to be equally accurate, and the instrumental error determined with the greatest precision, this would prove that the mean pressure rises toward the east, — a result quite consistent with the general course of the isobars in Russia; but the difference is rather too large for so small a distance.

Lakes Husen and Onega have also been levelled, and the figures for them will shortly be published. Their height was also found to be smaller than formerly admitted.

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POPULAR PSYCHOLOGY.

SOCRATES, Cicero tells us, called down philosophy from heaven to earth, and introduced it into the cities and houses of men. In each stage of the development of a science an essential step is the diffusion of the general tendencies and results obtained amongst the intelligent public. Nowadays, when each branch of study must make good its claim to a place on the curriculum, it is more than ever necessary to acquaint the cultured and powerful public with the general problems and broad outlines of your science. Thus it has come about that a certain class of scientific men have almost made themselves specialists on the topic of popular science. It is largely to them that the public looks for their scientific enlightenment. A larger and more important class of popular scientists, very fortunately, are the masters of science themselves. When such men as Huxley and Helmholtz prepare with their own hands the scientific food for the public mind, there really must be an inadequate power of reception of such knowledge, if a healthful, wide-spread activity in science is not the result.

Psychology, since it has received the impulse which has made 'physiological psychology' a common description of it, has made sufficient