

it must compare the processes of growth, and these can be discovered by means of studies of the cultures of small geographical areas.

Thus we have seen that the comparative method can hope to reach the grand results for which it is striving only when it bases its investigations on the historical results of researches which are devoted to laying clear the complex relations of each individual culture. The comparative method and the historical method, if I may use these terms, have been struggling for supremacy for a long time, but we may hope that each will soon find its appropriate place and function. The historical method has reached a sounder basis by abandoning the misleading principle of assuming connections wherever similarities of culture were found. The comparative method, notwithstanding all that has been said and written in its praise, has been remarkably barren of definite results, and I believe it will not become fruitful until we renounce the vain endeavor to construct a uniform systematic history of the evolution of culture, and until we begin to make our comparisons on the broader and sounder basis which I ventured to outline. Up to this time we have too much reveled in more or less ingenious vagaries. The solid work is still all before us.

FRANZ BOAS.

*PRINCETON IN THE NATION'S SERVICE.**

It used to be taken for granted—did it not?—that colleges would be found always on the conservative side in politics (except on the question of free trade); but in this latter day a great deal has taken place which goes far toward discrediting the presumption. The college in our day lies very near, indeed, to the affairs of the world. It is a place of the latest experiments; its

* Concluding part of Prof. Woodrow Wilson's oration at the Princeton Sesquicentennial Exercises. Reprinted from *The Forum* for December, 1896.

laboratories are brisk with the spirit of discovery; its lecture rooms resound with the discussion of new theories of life and novel programmes of reform. There is no radical like your learned radical, bred in the schools; and thoughts of revolution have in our time been harbored in universities as naturally as they were once nourished among the Encyclopedists. It is the scientific spirit of the age which has wrought the change. I stand with my hat off at very mention of the great men who have made our age an age of knowledge. No man more heartily admires, more gladly welcomes, more approvingly reckons the gain and the enlightenment that have come to the world through the extraordinary advances in physical science which this great age has witnessed. He would be a barbarian and a lover of darkness who should grudge that great study any part of its triumph. But I am a student of society and should deem myself unworthy of the comradeship of great men of science should I not speak the plain truth with regard to what I see happening under my own eyes. I have no laboratory but the world of books and men in which I live; but I am much mistaken if the scientific spirit of the age is not doing us a great disservice, working in us a certain great degeneracy. Science has bred in us a spirit of experiment and a contempt for the past. It has made us credulous of quick improvement, hopeful of discovering panaceas, confident of success in every new thing.

I wish to be as explicit as carefully chosen words will enable me to be upon a matter so critical, so radical as this. I have no indictment against what science has done: I have only a warning to utter against the atmosphere which has stolen from laboratories into lecture rooms and into the general air of the world at large. Science—our science—is new. It is a child of the nineteenth century. It has trans-

formed the world and owes little debt of obligation to any past age. It has driven mystery out of the Universe; it has made malleable stuff of the hard world, and laid it out in its elements upon the table of every class-room. Its own masters have known its limitations; they have stopped short at the confines of the physical universe; they have declined to reckon with spirit or with the stuffs of the mind, have eschewed sense and confined themselves to sensation. But their work has been so stupendous that all other men of all other studies have been set staring at their methods, imitating their ways of thought, ogling their results. We look in our study of the classics nowadays more at the phenomena of language than at the movement of spirit; we suppose the world which is invisible to be unreal; we doubt the efficacy of feeling and exaggerate the efficacy of knowledge; we speak of society as an organism and believe that we can contrive for it a new environment which will change the very nature of its constituent parts; worst of all, we believe in the present and in the future more than in the past, and deem the newest theory of society the likeliest. This is the disservice scientific study has done us; it has given us agnosticism in the realm of philosophy, scientific anarchism in the field of politics. It has made the legislator confident that he can create, and the philosopher sure that God cannot. Past experience is discredited, and the laws of matter are supposed to apply to spirit and the make-up of society.

Let me say once more, this is not the fault of the scientist; he has done his work with an intelligence and success which cannot be too much admired. It is the work of the noxious, intoxicating gas which has somehow got into the lungs of the rest of us from out the crevices of his workshop—a gas, it would seem, which forms only in the outer air, and where men do not know

the right use of their lungs. I should tremble to see social reform led by men who had breathed it; I should fear nothing better than utter destruction from a revolution conceived and led in the scientific spirit. Science has not changed the laws of social growth or betterment. Science has not changed the nature of society, has not made history a whit easier to understand, human nature a whit easier to reform. It has won for us a great liberty in the physical world, a liberty from superstitious fear and from disease, a freedom to use nature as a familiar servant; but it has not freed us from ourselves. It has not purged us of passion or disposed us to virtue. It has not made us less covetous or less ambitious or less self-indulgent. On the contrary, it may be suspected of having enhanced our passions, by making wealth so quick to come, so fickle to stay. It has wrought such instant, incredible improvement in all the physical setting of our life, that we have grown the more impatient of the unreformed condition of the part it has not touched or bettered, and we want to get at our spirits and reconstruct them in like radical fashion by like processes of experiment. We have broken with the past and have come into a new world.

Can any one wonder, then, that I ask for the old drill, the old memory of times gone by, the old schooling in precedent and tradition, the old keeping of faith with the past, as a preparation for leadership in days of social change? We have not given science too big a place in our education, but we have made a perilous mistake in giving it too great a preponderance in method over every other branch of study. We must make the humanities human again; must recall what manner of men we are; must turn back once more to the region of practicable ideals.

Of course, when all is said, it is not learning, but the spirit of service, that will give

a college place in the public annals of the Nation. It is indispensable, it seems to me, if it is to do its right service, that the air of affairs should be admitted to all its classrooms. I do not mean the air of party politics, but the air of the world's transactions, the consciousness of the solidarity of the race, the sense of the duty of man toward man, of the presence of men in every problem, of the significance of truth for guidance as well as for knowledge, of the potency of ideas, of the promise and the hope that shine in the face of all knowledge. There is laid upon us the compulsion of the National life. We dare not keep aloof and closet ourselves while a nation comes to its maturity. The days of glad expansion are gone; our life grows tense and difficult; our resource for the future lies in careful thought, providence and wise economy; and the school must be of the Nation.

I have had sight of the perfect place of learning in my thought, a free place and a various, where no man could be and not know with how great a destiny knowledge had come into the world—itsself a little world; but not perplexed, living with a singleness of aim not known without; the home of sagacious men, hard-headed and with a will to know, debaters of the world's questions every day and used to the rough ways of democracy; and yet a place removed—calm Science seated there, recluse, ascetic, like a nun, not knowing that the world passes, not caring, if the truth but come in answer to her prayer; and Literature, walking within her open doors, in quiet chambers, with men of olden time, storied walls about her, and calm voices infinitely sweet; here 'magic casements, opening on the foam of perilous seas, in fairy lands forlorn,' to which you may withdraw and use your youth for pleasure; there windows open straight upon the street, where many stand and talk, intent upon the world of men and business. A place

where ideals are kept in heart in an air they can breathe; but no fool's paradise. A place where to hear the truth about the past and hold debate about the affairs of the present, with knowledge and without passion; like the world in having all men's life at heart, a place for men and all that concerns them; but unlike the world in its self-possession, its thorough way of talk, its care to know more than the moment brings to light; slow to take excitement, its air pure and wholesome with a breath of faith; every eye within it bright in the clear day and quick to look toward heaven for the confirmation of its hope. Who shall show us the way to this place?

CURRENT NOTES ON PHYSIOGRAPHY.

RECENT UNITED STATES GEOLOGIC FOLIOS.

RECENT folios of the Geologic Atlas of the United States contain more examples of physiographic features, well illustrated, described and explained, than can be here noted. The McMinnville, Tenn., folio reveals details of form and structure in a district that has been heretofore practically untouched since Safford's excellent description in the State Survey report many years ago. The Highland, at an elevation of about 1,000 feet, is surmounted on the east by the Cumberland plateau, 2,000 feet elevation, with outliers and deep marginal valleys, and broken on the northwest by the ragged rim that descends to the central basin. The Three Forks, Montana, folio includes the Madison Valley, a typical example of an extinct lake basin, forty miles long by ten wide, formed by warping a pre-existent mountain region, and drained by a thousand-foot gorge cut through the enclosing ridge. The lake sediments thus laid bare are about 1,000 feet thick and include thin layers of gray volcanic dust that fell into the lake, covered by thicker layers of reddish weathered dust that washed in from